

# **Appendix M**

## **Notice of Preparation and Scoping Comments**



COUNTY OF HUMBOLDT  
PLANNING AND BUILDING DEPARTMENT

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3015 H Street Eureka CA 95501  
Phone: (707) 445-7541 Fax: (707) 268-3792  
<http://www.co.humboldt.ca.us/planning/>

**NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT**

Date: May 28, 2021

To: Interested Parties  
All Recipients on the Distribution List

Lead Agency: County of Humboldt Planning & Building Department

Contact: Alyssa Suárez, Planner  
Humboldt County Planning & Building Department  
3015 H Street  
Eureka, CA 95501

Project Title: Nordic Aquafarms California, LLC Land-based Aquaculture Project

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**NOTICE IS HEREBY GIVEN THAT** the County of Humboldt (County) as lead agency under the California Environmental Quality Act (CEQA), circulated an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed project from April 23, 2021 to May 24, 2021 (SCH #2021040532). In response to the comments received from the public on the IS/MND, the County has prepared this Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for the Nordic Aquafarms California, LLC Land-based Aquaculture Project and associated Humboldt Bay Harbor, Recreation and Conservation District (Harbor District) Humboldt Bay Master Water Intakes Project. The NOP includes a description of the project, project location maps and site layout, and an overview of the potential impacts that will be addressed in the EIR. This NOP was prepared in accordance with Section 15082 of the CEQA Guidelines.

**THE PURPOSE OF THIS NOTICE IS:** (1) to solicit input, by June 29, 2021, from interested individuals, groups, and responsible and trustee agencies about the desired content and scope of the draft EIR to be prepared by the County of Humboldt for the proposed Project; and (2) to announce public scoping meetings for the proposed Project, to be held at the following times:

- A) Regulatory agency meeting: June 10, 2021 at 11:00 a.m. to 12:00 p.m.
- B) Public meeting: June 10, 2021 at 6:00 p.m. to 7:00 p.m.

Please use the link below to join the meeting via Zoom or phone:

1. <https://zoom.us/j/91600859767?pwd=bmtOQ0k5SGNrdFE5YVRjN0VvUi9mQT09>  
Passcode: 673021
2. Call in via telephone at 346-248-7799, enter meeting ID 916 0085 9767, enter password: 673021

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Nordic Aquafarms California, LLC. Coastal Development Permit Application

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**A 30-DAY NOP REVIEW PERIOD:** The NOP will be circulated for a 30-day review period from May 28, 2021, to June 29, 2021. The County of Humboldt Planning and Building Department welcomes responsible and trustee agency input during this review.

Written comments should be submitted or postmarked no later than **5:00 p.m. on June 29, 2021**. Please indicate a contact person in your response and send your comments to:

Alyssa Suárez, Planner II  
Humboldt County Planning & Building Department  
3015 H Street  
Eureka, CA 95501  
[asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)

**DOCUMENTS AVAILABLE FOR PUBLIC REVIEW:** The NOP and related project documents are available for public review online at: <http://www.humboldt.gov/2347/Major-Projects>

### PROJECT LOCATION AND SETTING:

The Project is located in the Samoa area, east of Vance Avenue, approximately 2,000 feet north from the intersection of Vance Avenue and Bay Street, on the property known as 364 Vance Avenue (Assessor Parcel Number 401-112-021). The parcel is accessed from Vance Avenue via New Navy Base Road and LP Drive and is served by a 50-foot-wide non-exclusive easement for ingress and egress on Vance Avenue.

The NAFC Project Site is situated in a developed industrial area of the Samoa Peninsula where timber processing and pulp mill and timber-related industrial operations have historically occurred for more than 50 years. The Project Site generally consists of remnant pulp mill infrastructure and concrete foundations associated with previously demolished pulp mill structures. Surrounding land uses are primarily industrial. The NAFC facility is proposed within a 36-acre lease area on the 76 -acre parcel. Water intakes are located approximately one-half mile apart along the Samoa Channel in Humboldt Bay at the Redwood Marine Terminal II (RMT II) Dock and Red Tank Dock.

The NAFC Project Site maintains a generally consistent elevation across the site, ranging from roughly 15 to 20 feet above mean sea level (MSL), then slightly increasing in elevation along the western portion of the site, ranging from approximately 20 to 25 feet above MSL. The topography of the western Project Site boundary, located west of Vance Avenue, gradually transitions into dune swales and the former Samoa Landfill (now capped) west of Vance Avenue. The Project Site is located on a former pulp mill site that remains an active Brownfield site (Regional Water Quality Control Board case no. 1NHU892), which includes Geotracker Field Points as shown in the EnviroStar and Geotracker online databases. The Project is located 1,000 feet east of the Samoa Solid Waste Disposal Site (SWDS).

### PROJECT SITE LAND USE AND ZONING:

The subject parcel is designated Industrial/Coastal-Dependent (MC) under the Local Coastal Program – Humboldt Bay Area Plan.

The subject parcel is zoned Coastal Dependent-Industrial (MC) and Industrial General (MG), with an Archaeological Resource Area Outside Shelter Cove (A) combining zone. The proposed work will be

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located on the portion of lands zoned MC/A. Aquaculture and aquaculture support facilities are principally permitted in both the MC and MG land use designations and is principally permitted in the MC zone.



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### **PROJECT DESCRIPTION:**

The applicant (Nordic Aquafarms California, LLC. (NAFC)) is requesting a Coastal Development Permit and Special Permit for the construction of a land-based finfish recirculating aquaculture system (RAS) facility, which includes the development of five buildings totaling approximately 766,530 square feet and the installation of 3-5 megawatt (MW) solar panel array mounted on building rooftops, covering approximately 690,000 square feet. The height of the tallest proposed building is 60 feet. The facility would have an annual production capacity of approximately 25,000-27,000 metric tons of Head On Gutted (HOG) fish once complete. The aquaculture facility would produce fresh head on gutted fish and fillets for delivery to regional markets. The species to be produced at the facility is intended to be Atlantic Salmon, although the applicant has not yet received approval from CDFW.

The project will include ancillary support features such as paved parking, fire access roads, security fencing, and stormwater management features. The project would require approximately 2.5 million gallons per day (MGD) of freshwater and industrial water sourced from the Mad River. Existing on-site water service supplied by the Humboldt Bay Municipal Water District would be connected to the new buildings for potable use, fire sprinklers, and irrigation. The project would require approximately 10 MGD of salt water, which will be provided via existing sea chest infrastructure located adjacent to the NAFC Project Site, which will be upgraded as described below. Treated wastewater would be discharged utilizing the existing Redwood Marine Terminal II ocean outfall pipe, which extends one and a half miles offshore. A total volume of 12.5 MGD is anticipated to be released daily. Wastewater discharge is permitted by the North Coast Regional Water Quality Control Board.

In order to supply saltwater to the project site, the Humboldt Bay Harbor, Recreation and Conservation District (District) proposes to upgrade/improve and operate two formerly used bay-water intake systems (sea chests) in Humboldt Bay. The impacts associated with the proposed improvements will be evaluated as part of this EIR. The water intakes are located approximately one-half mile apart along the Samoa Channel at the Redwood Marine Terminal II (RMT II) Dock and Red Tank Dock. The intake systems were operated by a pulp mill from around 1966 until the mill was closed in 2008. Salt water from the intakes would be used by District tenants and other entities for aquaculture and other allowable uses. The proposed project includes bay water withdrawal and pumping to specific upland points that will be connected to by future users. This proposed project also includes installation of a fire suppression water line and fire hydrant replacement. The line would have a critical role in future fire suppression on the Samoa Peninsula. The fire suppression line would share a trench with the bay water line. A bay water line would provide water from the RMT II Dock and Red Tank Dock water intakes to manifolds at RMT I, RMT II and NAFC. Aquaculturists and other users would connect to the manifolds to receive bay water.

The bay water line and fire suppression water line would be trenched except at one point where they would cross a stormwater feature and where the bay water line would run on the edges of Red Tank Dock and RMT II Dock. The fire suppression water line would terminate near the RMT I manifold, RMT II manifold and at Red Tank Dock. Figure 3 shows the general layout of the waterlines and manifolds. The fire suppression water line would have a maximum outside diameter of 12 inches. The bay water line would range from 18-36 inch maximum outside diameter. The maximum width of ground impacts would be 19 feet in sections where both pipes occur and 17 feet where only one pipe occurs. There is an existing walkway across the stormwater feature. The two pipes would be attached to this walkway or to a replacement structure of the same size or smaller.

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The proposed aquaculture facility will include a complete process, from egg to harvestable fish, contained indoors in separate buildings connected by swim pipes for fish transfer. The facility would include the following design elements:

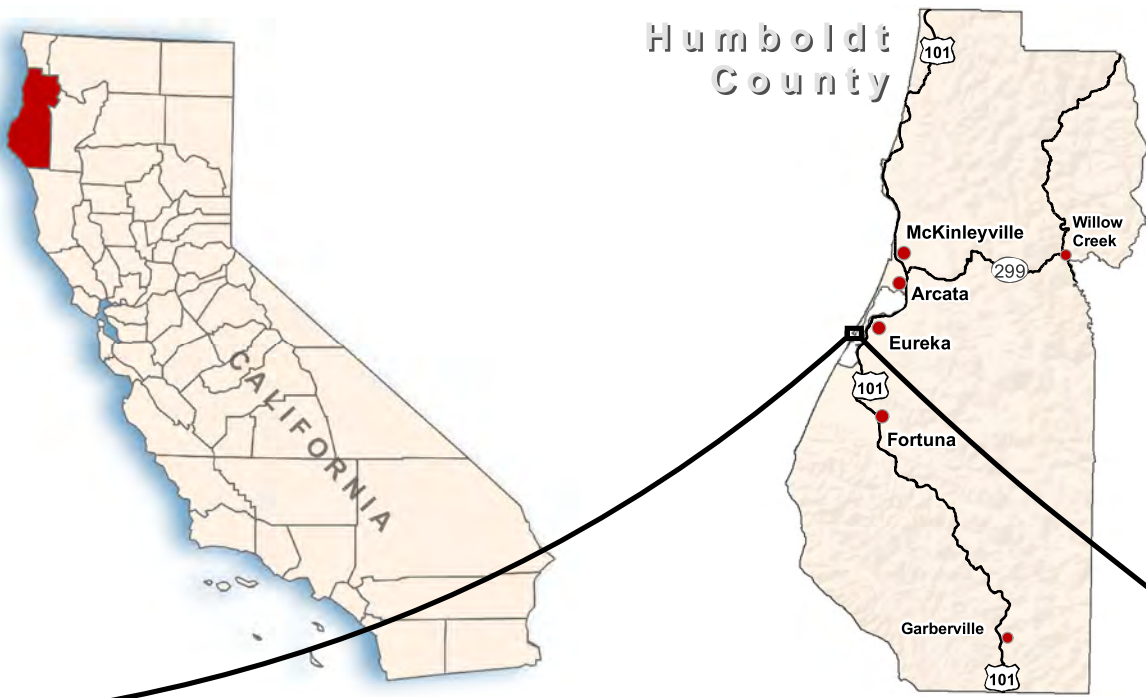
1. A hatchery operation where eggs are hatched, and fish fry grow to juvenile size (Building 3)
2. A grow-out operation with large tanks where fish are grown to market size (Buildings 1 & 2)
3. A fish processing facility from which fish is processed and fresh product is shipped out 4 days a week, coproducts are chilled and stored for sale (Building 4)
4. Backup systems that will enable critical functions to operate for many days in the event of a power outage
5. Oxygen generation plant and liquid oxygen storage
6. Water intake treatment that ensures consistently clean water for the fish (Buildings 1 & 2)
7. An advanced wastewater treatment plant to treat the discharge water, including a Moving Bed Biofilm Reactor, a membrane bioreactor, and Ultraviolet (UV-C) dosing (Building 5)
8. Administrative building and associated operations/maintenance facilities (Building 4)

### Project phasing:



The aquaculture facility is anticipated to be built out in two primary phases, with preliminary site preparation (Phase 0):

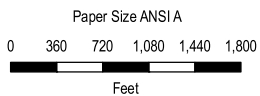
1. Phase 0 - Brownfield Redevelopment (2022): asbestos abatement; structure demolition; soil remediation; waste stream characterization, transportation, and disposal.
2. Phase 1 – Brownfield Redevelopment and Aquaculture Facility Stage 1 (2022 - 2023): Intake and outfall connections; ground densification to prepare construction of building foundations; construction of Phase 1 grow-out module (Building 1), Central Utility Plant (Building 3), Fish Processing Plant/Administrative (Building 4), Wastewater Treatment and Backup Power (Building 5); Oxygen generation storage; stormwater systems; onsite and offsite biological mitigation.
3. Phase 2 – Aquaculture Facility Stage 2 (2026 or 2027): Ground densification; Phase 2 grow-out module (Building 2); soil remediation; expansion of utilities; existing leach field decommissioning.

The proposed fire suppression systems and sea chests improvements are anticipated to begin prior to construction of Phase 1 of the aquaculture facility. Timing is dependent on obtaining all agency approvals and permits.

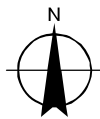


**Legend**

-  Project Location
-  Major Road



Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Nordic Aquafarms California, LLC  
 Samoa Peninsula Sustainable  
 Aquaculture Development Project  
 Samoa, Humboldt County, California

Project No. 11205607  
 Revision No. -  
 Date Apr 2021

Vicinity Map

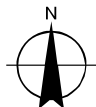
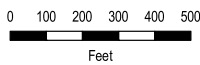
**FIGURE 1**



- Legend**
- - - Parcel Boundary (M. O'Hearn 2011 Survey)
  - Parcel Boundary provided by CRC
  - Proposed Structures
  - Area of Potential Effect
  - (E) Existing Infrastructure
  - ↔ HBMWD Water Main Line
  - HBMWD Water Trunk Line
  - - - Ocean Outfall Connection Path



Paper Size ANSI A



Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Nordic Aquafarms California, LLC  
Samoa Peninsula Sustainable  
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**Proposed Site Layout**

**FIGURE 2**



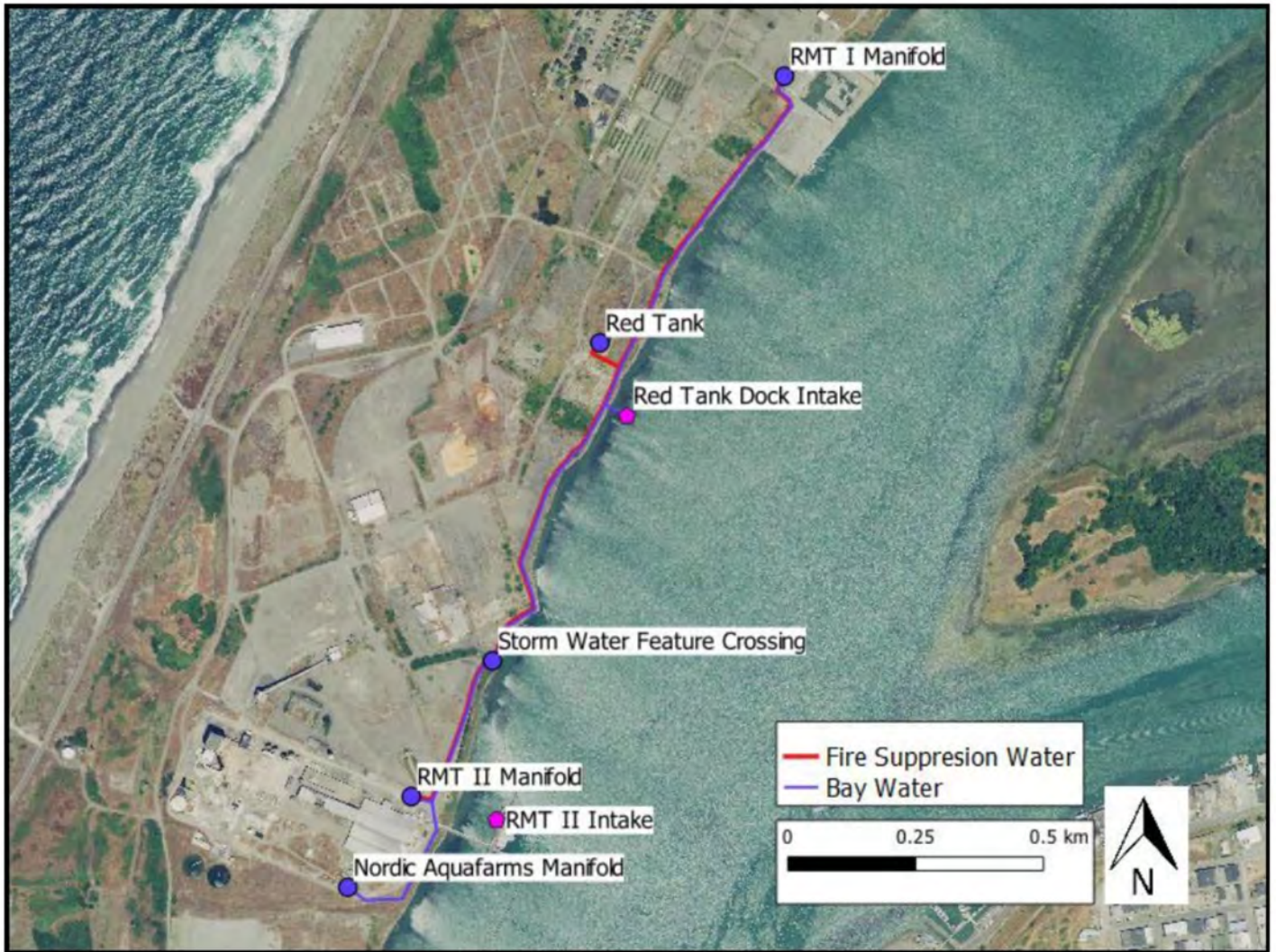


Figure 3: Proposed bay water intakes, bay water line, fire suppression line and manifolds that bay water will be delivered to.

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### SUMMARY OF KEY ENVIRONMENTAL ISSUES TO BE ADDRESSED IN THE EIR

Pursuant to Section 15064 of the State CEQA Guidelines, the discussion of potential Project effects on the environment in the EIR will concentrate on those impacts that the County has determined may be potentially significant. The detailed analysis will evaluate the Project; however, the EIR will also describe a range of reasonable alternatives to the proposed Project that are capable of meeting most of the Project's objectives, and that would avoid or substantially lessen any of the significant effects of the Project, consistent with State CEQA Guidelines Section 15126.6. The EIR will also evaluate the cumulative impacts of the Project when considered in conjunction with other related past, present, and reasonably foreseeable future projects.

The EIR will evaluate all CEQA Guidelines Appendix G topics; however, the County has determined that the proposed project could potentially result in environmental impacts to certain environmental resources. These topic areas will be evaluated in the EIR, and feasible and practicable mitigation measures will be recommended to reduce any potentially significant impacts. Therefore, the EIR will focus on the following topic areas:

- Aesthetics
- Air Quality
- Cultural Resources
- Energy
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazardous and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

Brief descriptions of proposed analyses follow.

**Aesthetics:** The project site is situated between the Pacific Ocean to the west, and Humboldt Bay to the east. The Aesthetics analysis will characterize the visual setting and evaluate potential direct and indirect impacts to the surrounding aesthetic of the existing land uses and development, and natural setting. Visual simulations will be compared to analyze the existing site development to the proposed NAFC facility. Avoidance and mitigation measures would be imposed if significant impacts are identified.

**Air Quality:** The EIR will consider direct and indirect impacts to regional and local air quality associated with project construction (including demolition activities) and operation. Emissions of criteria air pollutants will be estimated using computer models and methodology approved by the North Coast Unified Air Quality Management District (NCUAQMD). Project consistency with adopted plans or policies intended to address air quality will be evaluated and avoidance measures identified. Avoidance measures or permits may be identified in the Project EIR.

**Biological Resources:** The Project Site is a developed industrial area, characterized by hardscape and areas of historic grading and filling. The proposed project footprint lies on the east side of Vance Avenue, which is primarily characterized by existing concrete foundations and remnant pulp mill structures. The southern portion of the project site is characterized by an existing leach field, historic fill, concrete debris, and a cyclone fence approximately 20-feet from the southern property line. The Biological Resources analysis for the EIR will evaluate potential direct and indirect biological impacts on sensitive and rare species, habitat, migration corridors, and wetlands. The EIR will analyze the impacts on marine resources as a

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result of the proposed wastewater discharge from the ocean outfall pipe; impacts on biological resources in the Humboldt Bay associated with the proposed saltwater intake and required upgrades to the sea chest infrastructure (i.e., fish entrainment); and consider impacts to terrestrial and marine species as a result of project construction and operations, and in-water work associated with improving the sea chests.

**Cultural Resources:** The Cultural Resources analysis will evaluate potential direct and indirect impacts to archaeological and historic resources .

**Energy:** The estimated normal daily electricity usage for the project is 21.4 megawatts (MW), a portion of which will be offset by the 3-5 MW rooftop solar installation which will cover approximately 690,000 square feet of facility rooftops. The EIR will assess the proposed energy usage with regards to the State’s adopted energy goals and plans for renewable energy or energy efficiency. The EIR will also evaluate the impacts to Humboldt County’s electrical grid and capacity of the Pacific Gas & Electric (PG&E) King Salmon Power Plant to support the increase in energy use, while also considering the potential impacts of power use in the event of Public Safety Power Shutoffs (PSPS).

**Geology and Soils:** The project site is located on a generally flat site with elevations and slope stabilities rated as Low to Moderate Instability. The Project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. The EIR will evaluate impacts from landslides and unstable soils that could result from grading, roads, and new development.

**Greenhouse Gas Emissions:** In the North Bay Air Basin, North Coast Unified Air Quality Management District (NCUAQMD) regulates greenhouse gas emissions through its Rule 111 (Federal Permitting Requirements for Sources of Greenhouse Gases). The EIR will evaluate the Project for consistency with Rule 111, California’s Greenhouse Gas (GHG) reduction goals, recommendations contained in the AB 32 Scoping Plan, and other recent guidance documents regarding Project-generated GHG emissions, including those from operational truck traffic.

**Hazards and Hazardous Materials:** The project will occur within an industrial area host to hazardous materials associated with the former pulp mill site. The site is a designated Brownfields site with known contaminants occurring within existing structures proposed for demolition. The EIR will evaluate potential impacts associated with the risks to hazards, including but not limited to risks associated with Project demolition, construction, and operation. Avoidance and mitigation measures would be imposed if significant impacts are identified.

**Hydrology and Water Quality:** The project site is along the North Spit of the Humboldt Bay, and situated directly east of the Pacific Ocean. Flowing waters (streams, rivers, or natural drainages) are not located on site. The EIR will evaluate potential project impacts to Humboldt Bay associated with saltwater intake improvements and use, the Pacific Ocean associated with treated wastewater discharge, increased runoff and flooding, and water quality from project grading and construction. The project will analyze the impacts of treated wastewater on the surrounding ocean resources near the multi-port diffuser. Avoidance and mitigation measures would be imposed if significant impacts are identified.

**Land Use and Planning:** The Project site is located within lands designated for coastal dependent industrial uses by Humboldt County. The EIR will evaluate the proposed Project for consistency with existing local land use policies and regulations, including applicable habitat conservation plans, local coastal plans, and airport land use plans. No avoidance measures have been identified at this time, but such measures may be included in the Project EIR.

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**Noise:** Impact analysis for this section will include evaluation of noise and vibration resulting from three potential construction methods, including rammed aggregate piles, vibro displacement columns, and vibro soil densification. Impact analysis will also evaluate noise and vibrations that would result from the installation of sheet piling using a vibratory pile driver and installed to a depth of approximately 30 feet. Impact analysis will also evaluate the noise and vibration from the sea chest pumps during operation. Construction of the Project would temporarily increase noise in the immediate vicinity of the Project Site. Noise impacts resulting from construction would depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive areas. Operational noise would primarily consist of vehicles entering and leaving the Project Site. Noise and vibration resulting from operation of the Project would be analyzed for consistency with Industrial Performance Standards as established in Humboldt County Code Section 313-103-1.

**Public Services:** The project would result in development that could require additional police and fire protection. The Project is estimated to employ approximately 150 employees. It is anticipated that a majority of these employees would be hired locally. Because the majority of future employees already live in the area, they would not create a significant demand for additional housing. The Project would result in an increase in employees on the Samoa Peninsula, which could increase incidental demand for general retail and services such as lunch-time restaurants. The EIR will evaluate impacts on the provision of these services.

**Recreation:** The project would result in development that is unlikely to impact recreation. The EIR will evaluate impacts on recreation and recreational facilities, including public recreational access to the coast.

### **Transportation:**

**Roadways:** The Samoa Peninsula has limited vehicular access. New Navy Base Road is the primary route that links development along the peninsula. Immediately north of the town of Samoa, New Navy Base Road intersects with SR 255 and splits – resulting in one route southeast over the Samoa Bridge to Eureka and US 101 and one route north through the remainder of the Samoa Peninsula where it connects to US 101 in Arcata. These are the only two routes available for employees, visitors, and freight traffic to access the Project Site. Immediate access to the Project Site is provided by Vance Avenue, which runs parallel to a portion of New Navy Base Road. Vance Avenue is connected to New Navy Base Road primarily by Bay Street and LP Drive. All of these roads are two-way roads with one travel lane in each direction.

**Pedestrian and Bicycle Facilities:** As specified in the Humboldt County Regional Transportation Plan, all streets, roadways, and highways in Humboldt County are open to bicycle use (HCAOG 2018). The Humboldt County Regional Bicycle Plan identifies New Navy Base Road through the Project Site as a proposed future Class I bike path, which is defined as a separated, surfaced right-of-way designated exclusively for non-motorized use (can be solely for bicyclists, or can be shared with pedestrians and/or equestrians). The proposed Class I bike path would continue north along SR 255 to the City of Arcata (HCAOG 2018). Roadways in the Project Area do not include sidewalks, so pedestrians are limited to the roadway shoulder or in the road right-of-way.

**Public Transit:** There are currently no commuter transit services or fixed-route public transit routes in the Samoa Peninsula.

**Airports:** The nearest airport to the Project Site is Samoa Field Airport, which is owned and managed by the City of Eureka.



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**Vehicle Miles Traveled:** SB 743 creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative measure of effectiveness (MOE) for evaluating transportation impacts, which was done in early 2019. Humboldt County has not yet adopted VMT thresholds.

CEQA Guidelines section 15064.3 states "[V]ehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except projects for regarding roadway capacity, a project's effect on automobile delay shall not constitute a significant environmental impact." This section goes on to state in b(3), "If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc."

The EIR will assess transportation impacts associated with the project construction and operations, including vehicles coming and going to the site associated with employee traffic.

**Tribal Cultural Resources:** The Project is located within the traditional territory of Wiyot Tribe. The Project Site is not listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k). Consistent with the requirements of CEQA and the requirements of Public Resources Code section 21080.3.1, Humboldt County will initiate consultation regarding tribal cultural resources pursuant to AB 52.

**Utilities and Service Systems:** The industrial areas of the Samoa Peninsula, and specifically the Project Site, are well served by utilities because of the long history of high intensity industrial uses. Utilities and service systems for the project consist of the following:

**Water:** The Humboldt Bay Municipal Water District (HBMWD) provides wholesale and retail water services to the Samoa Peninsula. HBMWD maintains two separate pipeline systems delivering treated drinking water and untreated raw water to its customers in the area. HBMWD maintains a Capital Improvement Plan (CIP) to ensure that facilities and infrastructure are maintained and improved over time. These efforts have included projects on the Samoa Peninsula. The untreated raw water is currently supplied to industrial users on the peninsula. The source of the water is the Mad River. A one million-gallon (1 MG) raw water storage tank, owned and operated by HBMWD, is located southwest of the Project Site, approximately 600 feet west of the Project Site between Vance Avenue and New Navy Base Road. Lateral from the main water transmission lines already exist on the Project Site. Historically, this line served pulp mills on the peninsula; however, the majority of the industrial demand has since subsided. A will-serve letter was provided by the HBMWD on March 12, 2021. The letter confirmed the District has sufficient water to provide the needs of the Project, which include domestic water in the amount of 300,000 gallons per day and industrial non-potable water of 3 million gallons per day to the Project.

**Wastewater (Sanitary Sewer):** The only central sewer treatment system on the Samoa Peninsula is within the town of Samoa. Active industrial properties are served by on-site leachfields, which

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is the case for the Project Site. Phase 1 will continue to use the existing septic system. Phase 2 of the project would connect the project to the proposed Samoa Peninsula Wastewater Treatment System.

**Stormwater:** The peninsula is made up of typically well-drained soils (coarse sands) and topographic features that do not require addressing runoff issues. No formal stormwater systems, other than a few drainage ditches on some of the industrial properties, are located between the railroad tracks and Humboldt Bay. Some of these industrial areas have storm drain catch basins and underground piping, most of which is not formally mapped, and are owned and operated by private property owners. The stormwater system on the Project Site would be significantly upgraded to meet applicable stormwater requirements and contain on-site all stormwater resulting from an event up to the 100-year event.

**Solid Waste:** Solid waste and recyclables pickup within the Samoa Peninsula is collected by Recology, which also has a recycling plant on the Samoa Peninsula. The County, through Humboldt Waste Management Authority (HWMA), has been trucking its solid waste approximately 175 miles to two out-of-county landfills. The project would require transport of solid waste to an off-site facility.

**Energy:** Electricity is provided to the Samoa Peninsula by the Pacific Gas and Electric Company (PG&E). Power is transmitted to the Project Site through 115 kilovolt (kV) lines from the source to the PG&E substation located in Fairhaven. The power is then converted to be suitable for distribution via 12 kV overhead lines. Electricity is distributed via private lines and each structure has its own meter.

The EIR will evaluate the impacts to public utilities associated with the proposed new facilities, improvements to sea chests and fire suppression system.

**Wildfire:** The study area will include the Project Site and adjoining properties that could feasibly be impacted should a wildfire occur within the Project Site. The Project Site is located in a local responsibility area (LRA) meaning that it is in an area where local governments have financial responsibility for wildland fire protection. A portion of the Project Site is classified as having a "Moderate" fire hazard severity; the balance of the Project Site has no fire hazard ranking categorization. The EIR will assess potential impacts associated with wildfire.

**Cumulative Impacts:** Potential cumulative impacts of the project will be addressed in the EIR consistent with CEQA Guidelines Section 15130, including impacts associated with the modification and upgrade of the sea chests, as described in the project description and other projects proposed on the Samoa Peninsula.

**Other CEQA Issues:** The EIR will briefly discuss less than significant and/or insignificant issues, which at this time are expected to include agriculture and forest resources, mineral resources, and population and housing. CEQA allows a lead agency to limit the detail of discussion of the environmental effects that are not considered potentially significant (PRC Section 21100, 14 CCR Sections 15126.2[a] and 15128).

**Alternatives:** In accordance with the state CEQA Guidelines (14 CCR Section 15126.6), the EIR will describe a range of reasonable alternatives to the proposed project that are capable of meeting most of the project's objectives, and which would avoid or substantially lessen any potential significant effects

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that may be identified. The EIR will analyze the No Project Alternative, an off site alternative, and will also identify the environmentally superior alternative. The EIR will identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why.

<b>Affiliation</b>	<b>Commentor</b>	<b>Comment</b>	<b>Topic</b>
Humboldt 350	Dan Chandler	<p>Alternatives to HFCs or other high global warming gases and refrigerants, carb standard of 150 global warming potential and compliance measures per EPA</p> <p>Alternatives for energy use including increase in solar power</p> <p>Smaller plant (facility) size to minimize energy use</p> <p>Alternatives to salmon, i.e. steelhead</p> <p>Sea level rise alternative should be taken into account for plausible increase in SLR</p> <p>Alternative for transportation if the site is inundated by SLR, for utilities, impacts to HWY 101</p> <p>Cumulative Impact study should take into account new development on peninsula including pellet (pallet?) factory and hydrogen facility plans that Harbor District has in works</p>	<p>Refrigerants</p> <p>Alternative energy source</p> <p>Energy</p> <p>Species alternative</p> <p>Sea-Level Rise (SLR)</p> <p>Transportation</p> <p>Cumulative impacts</p>
Surfrider	Jessica Misha	<p>Impacts to coastal recreation, surfing, fishing should be looked at in terms of truck traffic with the 95 trucks per week and employees to the site.</p> <p>Traffic study should be included</p> <p>Improvements to designated coastal access points should be included in project</p> <p>Ocean outfall area is a popular surf area</p> <p>Naturally concerned with the 12.5 MGD discharge and impacts to ocean</p> <p>10-20% of energy use in Humboldt County = big issue</p> <p>Where is the energy being sourced from?</p>	<p>Truck traffic</p> <p>Traffic study</p> <p>Coastal access</p> <p>Surf impacts</p> <p>Discharge</p> <p>Energy use</p> <p>Energy source</p>
Citizen Advocate for Sustainable Transportation	Elaine Astrue	<p>Concerns with the limited scope regarding transportation</p> <p>Hwy 255 is a major bicycle corridor and not safe for bicyclists</p> <p>Already have concerns with large truck going over 255 bridge related to Fox Farms</p>	<p>Transportation</p> <p>Bike safety</p>
	Carol Griffith	<p>Concerns with workers at the site. EIR should ID # of contractors coming and going during construction and single occupancy employees during full build out</p> <p>Entertain alternative transit options, i.e. transit options, single occupancy trips</p>	<p>Employees</p> <p>Transportation</p>
Humboldt Fisherman's Marketing Association	Jake McMaster	<p>Look at sea chest improvements and impacts to commercial species including impacts to juvenile species including dungeness crabs</p> <p>Concerns with the temperature of effluent being discharged and how that can affect surrounding environment and spp.</p>	<p>Sea chest impacts</p> <p>Temperature</p>
	Darcy Evans	<p>Interested in process of importing the eggs, identify a list of pathogens that are screened for at egg stage and full size grow out, and identify monitoring protocol for pathogens and facility.</p>	<p>Fish eggs</p>

# HUMBOLDT FISHERMEN'S MARKETING ASSOCIATION, INC.

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(707) 443-0537

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5/16/2021

PLN-2020-16698

Attn:

Humboldt County Board of Supervisors

Humboldt County Planning Commission

Humboldt Fishermen's Marketing Association (HFMA), and other fishermen's associations along the California coast, have serious issues and concerns with Nordic Aquafarms' (NAF) industrial fish farm proposed for the Samoa Peninsula in Humboldt County, CA. We have not endorsed the project since its announcement, and our stance has remained unchanged. Established in 1955, HFMA has been a valued contributing member of this community for 66 years. To say its members have a deep love for Humboldt County's environment, local economy, and citizenry would be a considerable understatement.

Fishermen have long opposed the traditional method of raising farmed salmon in ocean-net pens. It is widely known that foreign net-pen salmon farms have devastating effects on native salmon stocks, wildlife, and local environments. While land-based facilities may seem at first glance to be free of these issues, they too come with their own set of serious concerns and drawbacks.

NAF's proposed project is massive in scale. Massive scale brings with it a massive carbon footprint. While it is true that NAF's product will be closer to domestic US markets, thus avoiding air freight from overseas, raising fish on land requires enormous amounts of power and redundant power systems. Most of the fish feed, which weighs considerably more than the finished fish product, will be flown in from around the world. We have also been led to believe that the eggs for the NAF facility will come from overseas, thus increasing the greenhouse gas emissions associated with the project.

NAF has not stated exactly how much power it will need, but the project application it submitted to the Humboldt County Planning and Building Dept. references backup generators that would supply 18 MW of electricity to power the facility during inevitable outages. Humboldt County's residential electricity usage is roughly 51 MW at peak demand (RCEA. 2004). This means that NAF would be consuming enough electricity to power over 35% of homes in the entire county.

Other potential issues which could result from this project include:

- Increased truck traffic, approximately 100 trucks per week (NAF, 2020)
- Increased carbon footprint and traffic on the Samoa peninsula
- Vast wastewater discharge. 541,553 lbs. total nitrogen per year and 4,667 lbs. phosphorous per year (NAF, 2020)
- Chemical waste and antibiotic usage



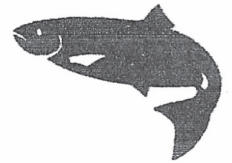
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- Fish escape
- Huge amounts of solid waste sludge, two to four “trucks” per day, with no confirmed final plan for re-use or disposal (NAF, 2020)
- Locating a land-based fin fish farm in a Tsunami Zone

NAF claims that fish escape is “virtually impossible”; however, fish can and do escape from land-based salmon farms. A recent study in Norway compiled escape data from Norwegian salmon farms that occurred between 2010 and 2018. The paper’s findings showed that 7% of escape incidents reported to the Norwegian government originated from land-based facilities, one particular case involving 49,000 fish. In the eight-year study period there were 17 distinct escape incidents from land-based facilities, equaling more than two per year (Fore and Thorvaldsen, 2019).

Atlantic salmon are a non-native species to the western U.S., and the north coast of California is home to multiple ESA-listed salmonids. Escaped Atlantic salmon would be an environmental, biological, and ecological disaster as non-native Atlantic salmon would compete with native stock for forage, spawning habitat, and feed on juveniles. Atlantic salmon are now found in 97% of coastal streams in British Columbia (Fisher et al., 2014), and juvenile Atlantic Salmon have been captured in the Tsitika River on Vancouver Island. Genetic testing of those juveniles confirmed that they were a product of natural spawning of escaped farmed salmon (Volpe et al., 2000). It is simply too risky to raise non-native Atlantic salmon in such close proximity to Federally listed threatened and endangered species, and a viable commercial and recreational fishery, even if the chance of escape is low.

Lastly, at the time of this writing, HFMA is unaware of any offer of financial protections from NAF to the County or its taxpayers in the event that the project fails. NAF’s two proposed U.S. projects (Belfast, Maine and Humboldt County, CA), would be the first of their kind at this scale and the first facilities that NAF is attempting to build on its own. Does Humboldt County or the state of California truly want to be the guinea pig for such a large and risky project? With no financial guarantees in place, local taxpayers will be liable for cleanup and decommissioning of the site should NAF’s project fail to be successful. Do we really want to relive the expensive nightmare of the Louisiana Pacific pulp mill that was abandoned at the very same location?

HFMA and its colleague associations thank you for your consideration, and hope this letter proved to be informative. We believe fish farming of this magnitude, especially salmon, takes focus away from preserving natural systems. We invite you to help us protect our precious waters and wild fish stocks.

Humboldt Fishermen’s Marketing Association

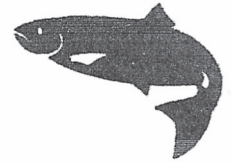
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## References:

Fisher AC, JP Volpe, JT Fisher. 2014. Occupancy dynamics of escaped farmed Atlantic salmon in Canadian Pacific coastal salmon streams: implications for sustained invasions. *Biological Invasions* 16, no. 10 (2014): 2137-2146.

Fore HM, T Thorvaldsen. 2019. Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010-2018. *Aquaculture* 532: 736002.

NAF. 2020. Humboldt County Planning and Building Dept. project application. Project Description, Rev. 2. 64pp.

RCEA (Redwood Coast Energy Authority). 2004. Humboldt County Energy Report. Draft, June 2004. 40pp.

Volpe JP, EB Taylor, DW Rimmer, BW Glickman. 2000. Evidence of natural reproduction of aquaculture-escaped Atlantic salmon in a coastal British Columbia river. *Conservation Biology*, 14(3): 899-903.

May 23, 2021  
Riparian Solutions  
9720 Buna Ct.  
Elk Grove, CA 95624

Humboldt County Planning and Building Dept.  
3015 H St.  
Eureka, CA 95501

ATTN: Alyssa Suarez, Planner

VIA EMAIL to: [planningclerk@co.humboldt.ca.us](mailto:planningclerk@co.humboldt.ca.us)

RE: Nordic Aquafarms Permits

Dear Mr. John Ford, Director, Humboldt Co. Planning Dept., and Planning Commissioners:

Nordic Aquafarms (Nordic) plans to build a fish farm (Project) on Samoa peninsula, Humboldt County, California. Significant environmental impacts that would result from the Project were inappropriately and incorrectly addressed for this major construction activity by the use of an Initial Study/Mitigated Negative Declaration (IS/MND) under the California Environmental Quality Act (CEQA). The IS/MND for the Project did not include the full range of effects of the Project, piecemealed essential Project components, and deferred mitigation to outside parties: thereby obfuscating Project impacts, truncating the CEQA public process, avoiding the National Environmental Policy Act (NEPA) impact analysis, and failing to conduct appropriate consultation under the federal Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA). In order for County Planners and Planning Commissioners to be aware of the full range of consequences of implementing the Project, and to make reasoned and informed decisions, a full and adequate environmental analysis should be conducted under CEQA, NEPA, ESA, MMPA, and the California Endangered Species Act (CESA).

An Environmental Impact Report (EIR) and ESA/CESA Biological Assessment are essential documents to allow decision-makers and the Public understand the consequences of permitting and implementing the Project.

The Project is a land-based recirculating aquaculture system (RAS) facility, which has led some to believe that environmental impacts will be minimal. The RAS is largely a flow-through aquaculture facility with water from wild, native salmonid habitat being used to produce Atlantic salmon. The residence time of the 12.5 million gallons per day (MGD) being used by the Project is approximately 36 hours, which comes with a high energy demand and with sewage effluent being released into salmonid habitat and recreational waters.



## **Substantial Carbon Footprint**

Nordic has not been forthcoming about their full energy demand for the Project. Nordic only included their electricity demand of 21.5 MW in their IS/MND and did not include their full energy demand that could be met using natural gas. The IS/MND mentions the PG&E natural gas pipeline to the facility, to be used in “power backup systems” (p. 2-5); however, the total energy demand, including supplementation with natural gas, has not been articulated.

There appears to be a typo on page 4-98 of the IS/MND, where it is stated that the solar arrays will provide 33% of Project energy supply. At most, the solar arrays would produce 3.3% of the energy for the Project and potentially between 1 and 3%. The energy demand for Nordic's smaller RAS facility in Belfast, Maine, is 28 MW (DNV-GL 2020). The Maine facility will use 7.5 MGD of combined fresh and seawater and has the same engineering and specs as the Samoa facility. When Nordic uses both gas and electricity to power the 12.5 MGD Samoa facility, they will be able to meet an energy demand of between 28 MW and 36.7 MW. Conservatively, the proposed solar arrays will produce between 1 and 3% of the Project's annual electricity usage when considering energy demand of between 28 and 36.7 MW. Humboldt County's residential electricity usage is roughly 51 MW at peak demand (RCEA 2004); therefore, the Project will have a significant impact on energy availability and infrastructure in Humboldt County. Although Nordic has committed to “use exclusively electricity” with regular testing and maintenance of the backup energy system, they have not described how the 12.5 MGD facility in Samoa will use less energy than the 7.5 MGD facility in Maine when the technology is the same.

Nordic has not committed to making the Project carbon neutral and proposes to only nominally reduce the operational carbon footprint. Nordic plans to pass on the burden of reducing carbon emissions to PG&E: “Grid energy would come from PG&E, which has met and exceeded the State's Renewable Portfolio Goal of providing 33% of energy from specified eligible-renewable resources, and is required to achieve a 60% renewables goal by 2030, and be 100% carbon-free by 2045” (p. 4-100). The IS/MND does not describe how PG&E will be able to meet its carbon-reduction goals locally with the additional burden of between 28 and 36.7 MW of combined electricity and natural gas demand from the Project. Passing the carbon-reduction mitigation for the Project to a third party, without an agreement or commensurate carbon-reduction actions, does not support the “less than significant” determination for energy use (p. 4-87).

Nordic has not addressed the carbon footprint of harvesting wild fish for fish meal, processing wild fish into fishmeal on factory ships, shipping fishmeal to fish feed factories in Canada, the use of petrochemical-dependent grains in the fish feed formulation, or shipping fish feed from Canada to the Samoa peninsula. Nordic has also not addressed the carbon footprint of shipping salt-laden sewage waste from the Samoa peninsula to a location in the Central Valley.

In “Office Hours” meetings with Nordic staff, attendees were told that Nordic had not selected a waste disposal site for the approximately 19,710 tons of salt-laden sewage waste per year, but they were in discussions regarding a composting facility in Marysville, California. The shipment of sewage solids from Samoa peninsula to Marysville equates to approximately 5,233,000 ton-miles per year and would generate approximately 847 metric tons of CO<sup>2</sup> per year.

A full and adequate accounting of actual energy demand for the 12.5 MGD fish farm on Samoa peninsula is necessary in order to understand the full impact of the Project on Humboldt County energy infrastructure. In addition to operational energy, the environmental carbon from shipping of waste and feed, and the carbon footprint of producing commercial, factory feed should be analyzed and reported in the EIR.

### **Threat to Sensitive Kelp Ecosystem**

Juvenile salmonid’s use of kelp beds and other macro-algae habitat for foraging and shelter from predators has been well established (Shaffer 2002, Shaffer 2004, Shaffer *et al.* 2019, Shaffer *et al.* 2020). Kelp beds in California have been subject to extreme weather conditions resulting in reduction of up to 95% of kelp forest habitat from Mendocino to Marin counties (Rogers-Bennett and Catton 2019, McPherson *et al.* 2021). Wernberg *et al.* (2019) found that diverse kelp forests were consistently more resilient to marine warming events than kelp forests lacking diversity.

The Project will result in localized warming in the vicinity of the diffuser pipe, and is likely to cause an increase in temperature of about 10°C (GHD 2020a). What has not been addressed is whether that localized temperature increase, combined with nutrient-laden effluent, will result in nearshore phytoplankton blooms, including Pseudo-nitzschia blooms, such as those that decimated the local crabbing industry in 2015 and 2016 due to algal production of domoic acid.

Coastal marine warming in 2014 and 2015 decimated both local commercial crabbing and kelp forests south of Mendocino. If the marine warming phenomenon, known as The Blob, moves into the Project outfall area, marine temperatures could increase as much as 3.5°C (Kintisch 2015). The potential for algal blooms caused by thermal increases and effluvia from the Project should be modeled in the context of potentially significant marine warming for marine temperatures of 1°C, 2°C, 3°C, 3.5°C and 4°C. The IS/MND, Numeric Modelling Report, and Marine Resources Biological Evaluation do not address marine warming in the context of thermal output from the Project.

Fragile macroalgae, such as sea lettuce may be degraded and killed from seasonal warming caused by the effluent. Bull kelp is the cornerstone species of the coastal sea kelp ecosystem. Nordic has not provided locality mapping to demonstrate the distance and condition of bull kelp or other macroalgae to the north and south of the Project or of kelp beds in general. The warm-water effluvia, combined with increased marine temperatures could result in sufficient heat to kill sea stars, which would trigger ecosystem collapse. That is: Increased marine temperatures can kill sea stars; without

sea star predation, urchin populations explode; urchins decimate the kelp beds and the ecosystem collapses. Recent sea kelp ecosystem collapse along the Pacific Coast means that the remaining algal structure on the coastal shelf is the last remaining habitat for many organisms, including dispersing juvenile salmonids. Sea kelp ecosystem collapse is a cumulative effect that increases the risk to salmonids from warm-water releases from the Project.

The IS/MND fails to address the importance of the kelp and macroalgae ecosystems to survival of juvenile salmonids and does not include any analyses on the effects of industrial cleaners on macroalgae or the kelp forest ecosystem. Kelp forests and macroalgae ecosystems are essential for salmonid smolt survival, because they provide food and cover when the juvenile fish enter the marine environment. The IS/MND does not include an analysis or explanation of the effect of miscible cleaners, solvents, antibiotics, fungicides, or dissolved nutrients on the diverse macroalgae in the kelp forest ecosystem. For example, *Saccharina latissima* (sugar kelp) is highly sensitive to hydrogen peroxide (Haugland 2019). Although Nordic does not plan to use hydrogen peroxide, they plan to use sodium hypochlorite, which is a strong oxidizing agent. There is no reporting on the LD50 for sodium hypochlorite on *S. latissima*, or other sensitive macroalgae. Of particular concern are the effects of the powerful fungicide Virkon, which includes the powerful oxidizing agent potassium peroxymonosulfate, on the vulnerable kelp forest ecosystem or on individual species of kelp. As a fungicide, Virkon may adversely affect many kelp species that juvenile salmonids depend upon for their survival.

### **Effluent-Stream Concerns**

The IS/MND and its supporting documents are not clear about where the industrial cleansers, fish blood and other body fluids, antibiotics, and antifungals from the factory floor in the fish processing area enter the effluent stream. Nordic's effluent schematic for their similar, but smaller, RAS facility in Maine shows a separate waste stream for effluent in the fish processing area (Nordic 2021). The risk of impacts to the marine environment from cleansers and factory-floor waste is very high. Liquids entering the marine environment could introduce disease to wild salmonids and degrade the kelp forest ecosystem.

The fecal material in the effluent stream will be filtered with biofilters (an experimental technology) and could be degraded by industrial by cleansers. Such degradation could reduce the efficiency of the biofilm reactors and membrane bioreactors, allowing for viruses and bacteria to pass through, and potentially increasing the solid material load in the effluent. To avoid damage to the biofilm reactors and membrane bioreactors, the effluent stream from the fish processing appears to follow a different path. If the drains in the factory floor are comingled with effluent leaving the facility, industrial cleansers, blood and other body fluids, antibiotics, and antifungals could be introduced into juvenile salmonid habitat the marine environment. Nordic should clearly describe how waste from the factory floor will be treated in a way that maintains the integrity of the biofilm

reactors and membrane bioreactors, and protects sensitive marine habitat—specifically kelp and other macroalgae that is essential to juvenile salmonid survival.

The *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a, Figure 7) clearly shows that effluent can enter Humboldt Bay. The modeling report used a single reference for carbon loading and did not include nitrogen loading or marine-floor effects from nitrogen-laden sediment. This is a serious omission. Carbon has a different pathway for increasing benthic ecosystem productivity than nitrogen compounds. The single source that they reference (Cromey *et al.* 1998) is only for carbon and does not address nitrogen compounds; therefore, their “‘very low’ risk of increased benthic ecosystem productivity” is unfounded.

Nordic Aquafarms used existing marine currents as a dilution factor for their modeling (GHD 2020a). This is of particular concern for sediment containing nitrogen compounds and organophosphates. By only using defined abiotic thresholds for “potential seabed effect” and “degraded seabed impacts”, but not addressing risk to sensitive species, Nordic Aquafarms has failed to adequately address potential adverse biotic effects to salmonids over time with sediment accumulation and sequestering of nitrogen and phosphorus-rich sediments that could be released during a storm event or upwelling.

The impact of Project chemicals and effluvia on critical habitat, and its effect on the feeding and sheltering of listed salmonids, should be analyzed. Nordic should also fully analyze the effect of their treatment chemicals on macroalgae and eelgrass in the marine environment and in Humboldt Bay. The Project should include mitigation for loss of juvenile salmonid habitat caused by miscible cleaners, solvents, antibiotics, fungicides, or dissolved nutrients entering the marine and estuarine environment where smolt shelter and where they disperse. Mitigation for habitat loss in Humboldt Bay, which is critical habitat for Chinook salmon, coho salmon, and steelhead should be included.

The IS/MND concluded that Project impacts were “Less than significant” (IS/MND, page 4-73) for Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit (ESU), California Coast Chinook Salmon ESU, Northern California Steelhead DPS. This is a premature conclusion that was based on inadequate analysis. The IS/MND misrepresents the life history requirements of Chinook salmon, coho salmon, and steelhead. It is true that salmonids migrate quickly through Humboldt Bay during their upstream migration, however the juveniles rear and grow in the estuary. The life history strategy of estuarine rearing for coho salmon has been well documented (NOAA Fisheries 2014), as has the importance of estuary/lagoon habitat complexity (shelter) for California Coastal Chinook salmon (NOAA Fisheries 2016a) and Northern California steelhead (NOAA Fisheries 2016b). Effluent from the diffuser is likely to come into Humboldt Bay when there is a combination of a southbound current and incoming tide, exposing the critical habitat and listed juvenile salmonids to nitrogen compounds, phosphorus, and miscible chemicals.

Because juvenile salmonids may rear for up to a year in the estuary, the exposure to diffuser effluent is likely to be prolonged. The results of long-term exposure may harm or injure juvenile salmonids, making this exposure significant. Effluent entering the estuary is contrary to the recovery plan strategies for Chinook salmon, coho salmon, and steelhead. With incoming tide and northward marine flows, effluent is likely to enter the Mad River estuary. With incoming tide and southbound marine flows, effluent is likely to enter Humboldt Bay and the Eel River estuary.

While it is true that “Critical habitat for California Coast Chinook and Southern Oregon/Northern California Coast Coho Salmon does not extend into the open ocean” (IS/MND p. 4-74) and “Critical habitat for Northern California Steelhead also does not extend out into the open ocean” (IS/MND p. 4-74), it is not equally true that Project effluent will not enter critical habitat on the incoming tide and potentially remain in the estuary for multiple tidal cycles. The Project study boundary is constrained and does not include the full dispersal of effluent into sensitive estuarine habitat such as Humboldt Bay, the Mad River estuary, or the Eel River estuary. Therefore, the conclusion that “there would be no impact to critical habitat for salmonids” is premature.

Humboldt Bay is currently listed as an impaired waterbody by the U.S. Environmental Protection Agency (USEPA). It is listed as impaired for polychlorinated biphenyls (PCBs). PCBs are a known contaminant of fish farming (see Fish Feed Sourcing and Contaminants, below). Nordic has not calculated or modeled the contribution PCBs from the Project to the existing levels in Humboldt Bay.

North Coast Regional Water Quality Control Board (CRWQCB, *in litt.* 2021) potentially granting the City of Eureka and exemption to the Bays and Rivers Discharge Requirements and allowing the release of municipal effluent into Humboldt Bay. This allows the City of Eureka’s Elk River Water Treatment Plant to discharge into Humboldt Bay on the outgoing tide for the next 30 years. The Nordic effluent is approximately four times Eureka’s summertime effluent. The potential for the Nordic effluent to enter Humboldt Bay on the incoming tide would create an ongoing effluent load throughout the tidal cycle in Humboldt Bay. The cumulative effect of the Elk River Water Treatment Plant to discharge should be addressed in the draft EIR.

## **Disease Risk**

Nordic is putting considerably more effort into cleaning the water entering the Project than into cleaning the water leaving the Project. This is a significant concern, because viruses and bacteria will enter the facility via imported brood stock and feed. For example, fish-borne viruses are likely to enter the facility via brood stock, but there is currently brood stock available for Atlantic salmon that has been proven to be virus-free. In addition, antibiotic-resistant bacteria are likely to enter the facility via fish feed. Nordic specifications for fish feed allow for up to 20% of the raw material in the salmon feed will come from poultry byproduct. Antibiotic resistance in poultry farming is a well-established environmental concern, and the antibiotic resistant biome (“resistome”) has left poultry farms and entered the greater environment (Gao *et al.* 2018, WHO 2015,

Yang 2018, Zhao 2020). Antibiotic resistance in RAS systems, such as in Nordic's Project design is an emerging disease threat (Liu *et al.* 2020).

The known, antibiotic-resistant bacteria from poultry farms are *Campylobacter sp.*, *Escherichia coli*, *Enterococcus sp.*, and *Staphylococcus aureus* (Apatha 2009, Liu *et al.* 2002, Nandi 2004). Chuah *et al.* 2016 noted the increase of antibiotic resistant bacteria in aquaculture and suggested that "efforts are needed to promote the development and enforcement of ... a regulatory structure." Chuah *et al.* (2016) suggested alternate forms of treatment to reduce the use of antibiotics in aquaculture. Antibiotic-resistant bacteria from the Project that enters the facility via fish feed may put workers and recreational ocean-water users at risk.

Without adequate monitoring, treatment, and containment, the risk of antibiotic resistant bacteria reaching the marine environment is high. Of particular concern are antibiotic resistant *E. coli* and *Staphylococcus aureus* in waters used by swimmers and surfers. Recent research on antibiotic resistant strains of bacteria in fish farming indicates that this is a very real concern. Liu *et al.* 2020 described antibiotic resistance genes as "a class of emerging micro-contaminants." A primary concern is that they persist and spread in the environment (Gao *et al.* 2018, Watts 2017, WHO 2015).

There is recently described antibiotic resistance in aquaculture from *Vibrio vulnificus* and *Vibrio parahaemolyticus* (Elmahdi *et al.* 2016). These *Vibrio* species are the leading causes of seafood-borne mortality and illness in the United States (Haendiges *et al.*, 2014), and are resistant to ampicillin, penicillin, tetracycline, colistin, cephalothin, amoxicillin, carbencillin, and ceftazidime (Elmahdi *et al.* 2016). In 2014, the World Health Organization (WHO) referenced recommendations by Dr Bjørn Røthe Knudtsen, a Norwegian government specialist on fish disease, where he stated: "Ideally, a single generation of fish should be kept in each site. If that's not possible, farmers periodically empty holding areas for fish, disinfect them and leave them empty for a few months. Such methods help prevent cross-contamination between old and new generations." Unfortunately, the Project design does not allow for keeping a single generation of fish in the facility, or leaving tanks empty for a few months after being treated for fish disease.

Although not included in the IS/MND, Nordic committed to vaccinating the Atlantic salmon in the facility. While it is excellent that Nordic proposes to vaccinate fish, the only approved vaccine for salmonids in the United States is for bacterial kidney disease. There are no other approved vaccines for salmonids (Ma *et al.* 2019). This means that other fish diseases may proliferate, such as: Infections Pancreatic Necrosis Virus, Infectious Salmon Anemia Virus, Salmonid Alphavirus, Piscine Orthoreovirus, Novel Totivirus, and Novel Piscine Reovirus. All of these viruses pose a risk to juvenile salmonids growing to adulthood in the marine habitat in the area of the diffuser pipe and exposed to effluent during tidal cycles in Humboldt Bay, Mad River estuary, and Eel River estuary. Exposing young fish to disease can destabilize salmonid populations and lead to run and cohort failure in wild fish. This is a significant effect that needs to be addressed.

It is unfortunate that the wastewater leaving the Project will not be as fully treated as the river and estuary water entering the Project (*i.e.*, incoming water will be filtered, UV treated, and ozone treated; outgoing water will only be filtered and UV treated). The experimental design of the Project may not be adequate to protect humans and wild fish from exposure to pathogens; therefore, viruses and antibiotic bacteria may enter the marine environment and cause harm.

It is unproven that UV-C sterilization will fully treat the 12.5 MGD of effluent leaving the Project. In addition, both the biofilm reactors and membrane bioreactors can be degraded from cleaning agents used in the facility in general and in the fish-processing area specifically. Reduced efficiency and micro-tears can lead to larger viral particles passing through the system and exposing juvenile salmonids as they feed and shelter in the estuarine and off-shore marine environment.

### **Need for adequate effects analysis and ESA consultation**

Nordic proposes to withdraw 2 million gallons per day (MGD) from the Mad River for their freshwater source, but they have piecemealed the impacts of this withdrawal by passing analysis to Humboldt Bay Municipal Water District (HBMWD): “The HBMWD is currently conducting a project to ensure necessary upgrades of this infrastructure for NAFC and other future users at the Peninsula” (GHD 2021, page 2-16). The Nordic withdrawals of 2 MGD equate to approximately 3 cubic feet per second. The burden of this level of withdrawal during an extreme drought event (conditions which will become more common due to climate change) in the Mad River is likely to result in death and injury to juvenile Chinook salmon and steelhead in a manner that has not been analyzed, addressed, or considered. During an extreme drought, algal blooms, anoxia, fish die-offs downstream of Station 6 on the Mad River are likely to occur. Increased reduction of Mad River flows by as much as 30% (such as would occur in an August 2008 type drought scenario) could reduce juvenile salmonid rearing habitat by greater than 50%. The IS/MND referred to the 1976-1977 hydrology, but quantifying riparian and estuarine impacts from reduced flows has evolved substantially since then. Instream flow incremental methodology (IFIM) allows for a deep understanding of bathymetry and habitat parameters that can be modeled at targeted flows. Using modern methodology and modeling is essential for quantifying habitat loss in the Mad River that would result from Project withdrawals in dry and very dry water years. Although August 2008 was an extreme event, other drought events, such as in 2020 and upcoming in 2021, should be closely examined.

Nordic proposes to withdraw 10 MGD from Humboldt Bay from the “sea chest” intakes that are currently not in use and will require upgrade in order to deliver water for the Project. Nordic has decoupled and piecemealed the impacts of this withdrawal by passing analysis and Clean Water Act permitting to Humboldt Bay Harbor, Recreation, and Conservation District (HBHRCD), when HBHRCD is clearly planning to upgrade and retrofit the intakes: “goal for upgrading the sea chests is to support growth of the aquaculture industry on the Samoa Peninsula by Nordic Aquafarms and other entities” (p. 2-12).

Nordic staff has asserted in public meetings that they do not need to consult with NOAA Fisheries on impacts to listed salmonids or critical habitat, even though the Project will withdraw water from occupied critical habitat and will disperse sewage effluent containing industrial cleaners, solvents, antibiotics, fungicides, and dissolved nutrients into juvenile salmonid habitat in the marine environment and estuaries. Nordic does not propose any monitoring of fish diseases, and they are using an untried technology that may release fish viruses into habitat occupied by wild, native fish.

The IS/MND (Table 4-4) statement that the “Project’s effluent discharge would not discharge into a coastal wetland area or area of special biological significance, marine reserves, or kelp beds” is not precisely correct. The discharge pipe will allow flow of effluent into the Samoa State Marine Conservation Area (SSMCA) when the current is in a northbound direction. SSMCA is a Marine Conservation Area protected under the California Marine Life Protection Act of 1999. Sensitive kelp and macroalgae ecosystems that are found in the SSMCA may be degraded by the effluent stream from the Project, resulting in lower macroalgae diversity and reduced forage and cover for juvenile salmonids. The existing modeling is not sufficient to determine how much effluent will reach the Trinidad Head Area of Special Biological Significance (THASBS) or the South Cape Mendocino State Marine Reserve (SCMSMR). There has not been an adequate analysis to determine how the Project will affect water quality in these protected areas or whether the ecosystems in these areas will be injured or damaged. Because there has not been a full analysis on the effluent effects on the SSMCA, THASBS, SCMSMR, or on critical habitat, nor has there been an exposure or risk analysis for toxic chemical discharges on rearing habitat for salmonids, it is premature to conclude that these areas of special biological significance would not be significantly impacted.

The IS/MND does not clearly describe or quantify the total pounds or tonnage of nitrogen and phosphorus that will be entering juvenile salmonid habitat annually. For example, the 298 metric tons of NH<sub>x</sub> and NO<sub>x</sub> per year of discharge (calculated from GHD 2020a, Table 4) can be calculated by a reader, from milligrams per liter to pounds per year; however, it is not helpful to have nutrient loading disguised in difficult to reach tables that require calculation for better understanding. The discharge of 298 metric tons of NH<sub>x</sub> and NO<sub>x</sub> per year into occupied salmonid habitat is an important consideration. The modeling report (GHD 2020a) also did not describe or appear to take into account the shifts in the coastal current and the tidal surge that will draw effluent into Humboldt Bay, the Mad River estuary, and potentially the Eel River estuary. Effluent entering estuaries can have prolonged residence times that prolong exposure for juvenile salmonids. Modeling that includes coastal currents, tidal currents, upwelling, and sediment residence time should be completed and included in a draft EIR.

The water intakes that are clearly a part of the Project should be adequately addressed through ESA consultation. The federal nexus for the Mad River intake would be the need for a revised Habitat Conservation Plan (U.S. Fish and Wildlife Service is the federal nexus) and the need for Clean Water Act permitting at for the in-water work to



upgrade the sea chest water intakes (U.S. Army Corps of Engineers is the federal nexus). These could be joint or separate ESA consultations with NOAA Fisheries, but they must be for the full scope of Project effects on listed species and critical habitat.

## **Fish Feed Sourcing and Contaminants**

In addition to the poultry byproduct issues described above. Fish feed sourcing has implications for both ecosystem and human health. Nordic plans to use 7 to 10% fish oil and 7 to 10% fish meal in their Atlantic salmon fish feed formulation (Nordic 2021). Fish harvested for the purpose of making fish meal disrupts regional indigenous fisheries, causing fishery collapse, ecosystem collapse, and starvation in indigenous communities that depend on local fish harvest to feed their families. A recent New Yorker Magazine article (Urbina 2021) tells the story well.

<https://www.newyorker.com/magazine/2021/03/08/fish-farming-is-feeding-the-globe-whats-the-cost-for-locals>

Commercial fish feed is a source of dioxins, PCBs, organochlorine pesticides, polybrominated diphenyl ethers (PBDEs), and mercury (Buckman *et al.* 2016, Choi *et al.*, Dietrich *et al.* 2015, Jacobs *et al.* 2002, Ng *et al.* 2018). These toxic chemicals are both bioaccumulated into fish tissue and excreted into the environment. The IS/MND only addresses residual, onsite dioxins, PCBs, organochlorine pesticides, and PBDEs (p. 4-120) and does not address fish feed and excrement as a source of dioxins, PCBs, organochlorine pesticides, PBDEs, and mercury. None of these known contaminants are mentioned in Nordic's *Marine Resources Biological Evaluation Report* (GHD 2020b).

Commercial fish feed has other problems. EthoxyQuin is a food stabilizer and preservative that is used to keep fish oils and fish meal from becoming rancid. Ethoxyquin is an antioxidant that bioaccumulates in salmon tissue, and the parent compound and its metabolites are toxic. It is known to cause reproductive disorders, dermatological problems, and immune-mediated diseases. It is also toxic to pets.

<https://www.sciencedirect.com/topics/immunology-and-microbiology/ethoxyquin>

Nordic has committed to attempting to use non-GMO sources for its fish feed. Unfortunately, it is close to impossible to find non-GMO corn, soy, rapeseed (source of Canola oil), unless the source is organic and certified as both organic and non-GMO. There are no non-GMO sources of soy or rapeseed in Canada, where the fish food will likely be sourced. Up to 67% of Nordic's fish feed will be corn, soy, rapeseed, and wheat. All of these grains are heavily treated with glyphosate, unless they are designated as organic. Glyphosate bioaccumulates in tissue and is a carcinogen and teratogen (causes birth defects). Glyphosate is an herbicide that is used on to suppress weeds in fields of GMO corn, soy, and rapeseed. It causes autism-like behaviors, brain fog, and malaise (Argou-Cardozo and Zeidan 2018, Beecham and Seneff 2016). It is used in both the United States and Canada (likely grain-source countries) as a desiccant in wheat.

## **Seismic and Fish Escapes Concerns**

Føre and Thorvaldsen (2021) analyzed Atlantic salmon and rainbow trout fish escapes from fish farms in Norway from 2010 through 2018. They found that 7% of escapes came from land-based fish farms. SRF is concerned that fish escapes from the Nordic facility in Humboldt County could impact wild, native fish through competition, disease introduction, and predation.

In addition to the human error component of fish escapes identified by Føre and Thorvaldsen (2021), seismic events could also precipitate fish escapes. The IS/MND states that a “site-specific seismic study is underway” (p. 2-20), and concludes that seismic related ground failure, including liquefaction, is “less than significant with mitigation incorporated” (pp. 4-49, 4-90). It is premature to conclude less than significant effects prior to completing the seismic study that includes the total weight of the facility. We recommend that a third-party seismic review be conducted that addresses liquefaction of saturated substrate, load from at-capacity rearing tanks, and the potential for shear and buckling of tanks and pipes.

In the IS/MND Nordic has addressed human safety, and protection of fuels and generators, during a tsunami event; however, it is not clear how fish escapes will be prevented or how the powerful oxidants and other operational chemicals will be walled-off and anchored in preparation for a tsunami. The conclusion that “impact of pollutants released as a result of a tsunami would therefore be less than significant” (p. 4-119) is not consistent with the fact that many of the chemicals proposed for Project operation are highly toxic to macroalgae and can damage the fragile kelp and macro algae ecosystems in the vicinity of the Project.

## **Need for Marine Mammal Act Consultation**

The IS/MND concluded that “Any potential impact would be less than significant” (pp. 4-58, 4-70) for the California Sea Lion, Stellar Sea Lion, Pacific Harbor Seal, Gray Whale, and Harbor Porpoise from hydroacoustic noise and vibration from soil densification construction methods: including rammed aggregate piles, vibro displacement columns, vibro soil densification, and sheet piling. Gray whales rest their calves in shallow marine water during their northward migration. There is no seasonal-restriction for construction activities, so ramming, pile-driving, and vibrational soil compaction are likely to cause sufficient noise to disrupt northward migration of mother whales and their calves, forcing resting mothers and calves into deeper, less sheltered waters. The conclusion of less than significant is unfounded, and harassment of whale mothers and their calves should be addressed through ESA and MMPA consultation on harassment from disruption of behavioral patterns.

## **Conclusion**

It is time for this major construction activity to go through adequate environmental analysis. A draft EIR should be prepared that fully addresses the impacts of the Project

and is clear about: energy demand, effluent impacts on fragile kelp and macroalgae ecosystems, total effluent load, effluent distribution and residence times in local estuaries, waste-solids end points, disease risk and monitoring, effects to listed species and critical habitat, fish feed sourcing and environmental risks, fish escapes, seismic risk, and harassment of marine mammals. The multiple, flawed “less-than-significant impact” conclusions in the IS/MND indicated that third-party scientific review of environmental documents is warranted.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alison Willy".

Alison Willy

## References

- Apata, D.F., 2009. Antibiotic resistance in poultry. *International Journal of Poultry Science*, 8(4), pp.404-408.
- Argou-Cardozo, I. and Zeidán-Chuliá, F., 2018. Clostridium bacteria and autism spectrum conditions: a systematic review and hypothetical contribution of environmental glyphosate levels. *Medical Sciences*, 6(2), p.29.
- Beecham, J.E. and Seneff, S., 2016. Is there a link between autism and glyphosate-formulated herbicides? *Journal of Autism*, 3(1), p.1.
- Buckman, A.H., Wong, C.S., Chow, E.A., Brown, S.B., Solomon, K.R. and Fisk, A.T., 2006. Biotransformation of polychlorinated biphenyls (PCBs) and bioformation of hydroxylated PCBs in fish. *Aquatic toxicology*, 78(2):176-185.
- Choi, M.H. and Cech Jr, J.J., 1998. Unexpectedly high mercury level in pelleted commercial fish feed. *Environmental Toxicology and Chemistry: An International Journal*, 17(10):1979-1981.
- Chuah, L.O., Effarizah, M.E., Goni, A.M. and Rusul, G., 2016. Antibiotic application and emergence of multiple antibiotic resistance (MAR) in global catfish aquaculture. *Current environmental health reports*, 3(2):118-127.
- Cromey, C.J., K.D. Black, A. Edwards and I.A. Jack (1998). Modelling the deposition and biological effects of organic carbon from marine sewage discharges. *Est. Coast. Shelf Sci.* 47:295-308.
- CRWQCB. 2021 *in litt*. North Coast Region Resolution No. R1-2021-0017 Approving the Elk River Restoration Project as an Exemption to the Enclosed Bays and Estuaries Policy Prohibiting Waste Discharges to Humboldt Bay Humboldt County. Draft notice dated March 23, 2021.
- Dietrich, J.P., Strickland, S.A., Hutchinson, G.P., Van Gaest, A.L., Krupkin, A.B., Ylitalo, G.M. and Arkoosh, M.R., 2015. Assimilation efficiency of PBDE congeners in chinook salmon. *Environmental science & technology*, 49(6):3878-3886.
- DNV-GL. 2020. Data Review, including Comparison of Load Summaries for NE Upper Maine. Attachment in DOCKET NO. 2011-00138. 7pp
- Elmahdi, S., DaSilva, L.V. and Parveen, S., 2016. Antibiotic resistance of *Vibrio parahaemolyticus* and *Vibrio vulnificus* in various countries: a review. *Food microbiology*, 57:128-134.
- Føre, H.M. and Thorvaldsen, T., 2021. Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010–2018. *Aquaculture* 532:736002.
- GHD. 2020a. Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report August 2020. 53pp.
- GHD. 2020b. Marine Resources Biological Evaluation Report Samoa Peninsula Land-based Aquaculture Project Prepared for Nordic Aquafarms California. August 24, 2020. 29pp.
- Haendiges, J., Rock, M., Myers, R.A., Brown, E.W., Evans, P. and Gonzalez-Escalona, N., 2014. Pandemic *Vibrio parahaemolyticus*, Maryland, USA, 2012. *Emerging infectious diseases*, 20(4):718-720.
- Haugland, B.T., 2019. Effects of fish farm effluents on kelp forest ecosystems: Kelp performance, associated species, and habitats.

Jacobs, M.N., Covaci, A. and Schepens, P., 2002. Investigation of selected persistent organic pollutants in farmed Atlantic salmon (*Salmo salar*), salmon aquaculture feed, and fish oil components of the feed. *Environmental science & technology*, 36(13):2797-2805.

Kintisch, E. 2015. 'The Blob' invades Pacific, flummoxing climate experts. *Science Magazine*, April 5, 2015. <https://science.sciencemag.org/content/348/6230/17>

Koike, H., Kanda, M., Hayashi, H., Matsushima, Y., Nakajima, T., Yoshikawa, S., Ohba, Y., Hayashi, M., Nagano, C., Sekimura, K. and Otsuka, K., 2021. Monitoring of residual antibacterial agents in animal and fishery products in Tokyo from 2003 to 2019: application and verification of a screening strategy based on microbiological methods. *Food Additives & Contaminants. Part B*:1-8.

Liu, D., Chai, T., Xia, X., Gao, Y., Cai, Y., Li, X., Miao, Z., Sun, L., Hao, H., Roesler, U. and Wang, J., 2012. Formation and transmission of *Staphylococcus aureus* (including MRSA) aerosols carrying antibiotic-resistant genes in a poultry farming environment. *Science of the total environment*. 426:139-145.

Liu, X., Wang, H. and Zhao, H., 2020. Propagation of antibiotic resistance genes in an industrial recirculating aquaculture system located at northern China. *Environmental Pollution*, 261, p.114155.  
Nandi, S., Maurer, J.J., Hofacre, C. and Summers, A.O., 2004. Gram-positive bacteria are a major reservoir of Class 1 antibiotic resistance integrons in poultry litter. *Proceedings of the National Academy of Sciences*. 101(18):7118-7122.

Ma, J., Bruce, T.J., Jones, E.M. and Cain, K.D., 2019. A review of fish vaccine development strategies: conventional methods and modern biotechnological approaches. *Microorganisms*, 7(11):569.

McKenna, C. 2021. Canada's herring facing 'biological decimation', say First Nations and activists. *Guardian Newspaper*. April 3, 2021. <https://www.theguardian.com/environment/2021/apr/03/canada-herring-collapsing-moratorium-commercial-fishing>

McPherson, M.L., Finger, D.J., Houskeeper, H.F., Bell, T.W., Carr, M.H., Rogers-Bennett, L. and Kudela, R.M., 2021. Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave. *Communications biology* 4(1):1-9.

Nandi, S., Maurer, J.J., Hofacre, C. and Summers, A.O., 2004. Gram-positive bacteria are a major reservoir of Class 1 antibiotic resistance integrons in poultry litter. *Proceedings of the National Academy of Sciences*, 101(18):7118-7122.

Ng, C.A., Ritscher, A., Hungerbuehler, K. and von Goetz, N., 2018. Polybrominated diphenyl ether (PBDE) accumulation in farmed salmon evaluated using a dynamic sea-cage production model. *Environmental science & technology*, 52(12):6965-6973.

NOAA Fisheries. 2014. Final Recovery Plan for the Southern Oregon/ Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*). 1841pp.

NOAA Fisheries. 2016a. Coastal Species Recovery Plan: Volume II, California Coastal Chinook Salmon. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol2.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol2.pdf)

NOAA Fisheries. 2016b. Coastal Species Recovery Plan: Volume III, Northern California Steelhead. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol3.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol3.pdf)

Nordic. 2020. Nordic Aquafarms Preliminary Process Flow Diagram for NAE Belfast, Maine, USA. Dated March 23, 2021.

Nordic. 2021. Nordic Aquafarms Fish Feed Presentation on April 28, 2021. 3pp.

O'Neill, J. 2016. Tackling drug-resistant infections globally: final report and recommendations. May 19, 2016. Government of the United Kingdom Publication <https://apo.org.au/node/63983>

[RCEA] Redwood Coast Energy Authority. 2012. Humboldt County Comprehensive Action Plan for Energy Adopted September 2012. 23pp. <https://redwoodenergy.org/wp-content/uploads/2017/08/CAPE-Final-9-2012.pdf>

Rogers-Bennett, L. and Catton, C.A., 2019. Marine heat wave and multiple stressors tip bull kelp forest to sea urchin barrens. *Scientific reports* 9(1):1-9.

Shaffer, S., 2004, March. Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. In *Proceedings of the 2003 Georgia Basin/Puget Sound Research Conference* (Vol. 31, pp. 1-11). Olympia, Washington: Puget Sound Water Quality Authority.

Shaffer, A., Parks, D., Schoen, E.R. and Beauchamp, D., 2019. Salmon, forage fish, and kelp. *Frontiers in Ecology and the Environment*, 17(5), pp.258-258.

Shaffer, J.A., 2002. Nearshore habitat mapping of the central and western Strait of Juan de Fuca II: Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. *A report to the WDFW and Clallam County Marine Resources Committee*.

Shaffer, J.A., Munsch, S.H. and Cordell, J.R., 2020. Kelp Forest Zooplankton, Forage Fishes, and Juvenile Salmonids of the Northeast Pacific Nearshore. *Marine and Coastal Fisheries*, 12(1), pp.4-20.

Smale, D.A., 2020. Impacts of ocean warming on kelp forest ecosystems. *New Phytologist*, 225(4):1447-1454.

Steneck, R.S., Vavrinec, J. and Leland, A.V., 2004. Accelerating trophic-level dysfunction in kelp forest ecosystems of the western North Atlantic. *Ecosystems*, 7(4), pp.323-332.

Urbina, I. 2021. Fish farming is feeding the globe: What's the cost for locals. *New Yorker*. March 8, 2021. <https://www.newyorker.com/magazine/2021/03/08/fish-farming-is-feeding-the-globe-whats-the-cost-for-locals>

Watts, J.E., Schreier, H.J., Lanska, L. and Hale, M.S., 2017. The rising tide of antimicrobial resistance in aquaculture: sources, sinks and solutions. *Marine drugs*, 15(6):158, 16pp.

Wernberg, T., Coleman, M.A., Bennett, S., Thomsen, M.S., Tuya, F. and Kelaher, B.P., 2018. Genetic diversity and kelp forest vulnerability to climatic stress. *Scientific Reports*, 8(1), pp.1-8.

WHO. 2015. Vaccinating salmon: How Norway avoids antibiotics in fish farming. October 2015. <https://www.who.int/features/2015/antibiotics-norway/en/>

Yang, Y., Ashworth, A.J., Willett, C., Cook, K., Upadhyay, A., Owens, P.R., Ricke, S.C., DeBruyn, J.M. and Moore Jr, P.A., 2019. Review of antibiotic resistance, ecology, dissemination, and mitigation in US broiler poultry systems. *Frontiers in microbiology*, 10:2639.

Zhao, Y., Yang, Q.E., Zhou, X., Wang, F.H., Muurinen, J., Virta, M.P., Brandt, K.K. and Zhu, Y.G., 2020. Antibiotic resistance in the livestock and aquaculture industries: Status and solutions. *Critical Reviews in Environmental Science and Technology*. 2020:1-38.



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May 24, 2021

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**SUBJECT: NORDIC AQUAFARMS CALIFORNIA, LLC LAND-BASED  
AQUACULTURE PROJECT  
DRAFT MITIGATED NEGATIVE DECLARATION  
SCH# 2021040532**

Dear Ms. Suarez,

The California Department of Fish and Wildlife (Department) received the Draft Mitigated Negative Declaration (MND) from the Humboldt County Planning Department for the Nordic Aquafarms California, LLC Land-based Aquaculture Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.<sup>1</sup>

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife resources. Likewise, we appreciate the opportunity to provide comments regarding aspects of the Project that the Department, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

## **DEPARTMENT ROLE**

The Department is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the state (Fish & G. Code, Section 711.7, subd. (a) & 1802; Pub. Resources Code, Section 21070; CEQA Guidelines Section 15386, subd. (a)). The Department, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, Section 1802). Similarly, for purposes of CEQA, the Department is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish

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<sup>1</sup> CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.



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and wildlife resources. The Department is also responsible for marine biodiversity protection under the Marine Life Protection Act in coastal marine waters of California and ensuring fisheries are sustainably managed under the Marine Life Management Act.

Additionally, the Department oversees and manages aquaculture activities in the State under the authority provided by the Fish and Game Code (Fish & G. Code, §§ 15000-15703) and Title 14 of the California Code of Regulations. All facilities devoted to the propagation, cultivation, maintenance, and harvesting of fish, shellfish and plants in marine, brackish, and freshwater are required to register annually with the Department (Cal. Code Regs., tit. 14, §235). State law also requires an Importation Permit from the Department to import most live aquatic plants and animals, in all forms (Cal. Code Regs., tit. 14, §236). Statutory authorities for aquaculture disease and aquatic animal health management are embodied in Fish and Game Code (§15500 et seq.). Regulations regarding aquaculture disease controls and responses, including a list of diseases and parasites and the aquatic plants and animals they are known to infect or parasitize, are outlined in Fish and Game Code (Fish & G. Code, §§ 15500-15516) and Section 245 of Title 14, California Code of Regulations (Cal. Code Regs., tit. 14, §245).

## PROJECT DESCRIPTION SUMMARY

**Proponent:** Humboldt County Planning Department (County)

**Objective:** Nordic Aquafarms California, LLC (Nordic) proposes to develop a land-based finfish recirculating aquaculture facility on the Samoa Peninsula and intends to cultivate Atlantic Salmon (*Salmo salar*) subject to Department approval. The proposed aquaculture facility will include operations to grow-out fish from egg to harvestable size. The fish will be contained indoors in separate buildings connected by underground pipes for fish transfer. At full capacity, the facility will produce approximately 25,000-27,000 metric tons of whole fish annually. A total of five buildings (intake water treatment, grow out modules, hatchery, fish processing, and wastewater treatment) will be constructed with a combined footprint of 766,530 square feet. The Project will include ancillary support features such as paved parking, fire access roads, security fencing, and stormwater management features. Seawater for raising fish will be supplied from Humboldt Bay by water intake infrastructure operated by the Humboldt Bay Harbor, Recreation and Conservation District (Harbor District). Treated wastewater (12.5 million gallons per day) will be discharged into the Pacific Ocean utilizing the existing Redwood Marine Terminal (RMT) II ocean outfall pipe located 1.5 miles offshore of the Samoa Peninsula.

**Location:** The Project site is situated on the Samoa Peninsula, bounded on the west by dunes and the Pacific Ocean and on the east by Humboldt Bay, and located at the site of the former Samoa Pulp Mill in the unincorporated community of Samoa in Humboldt County (APN 401-112-021).

**Timeline:** Demolition and construction is anticipated to begin between the fall of 2021 and the summer of 2022.



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## BIOLOGICAL SIGNIFICANCE

Humboldt Bay is California's second largest bay, and the largest estuary on the Pacific coast between San Francisco Bay and Oregon's Coos Bay. The marine and estuarine habitats of Humboldt Bay provide refuge and nursery habitat for more than 300 fish and invertebrate species, many with important associated commercial and recreational fisheries. Humboldt Bay and its wetlands and dunes are habitat for at least 20 State- and federally listed species and numerous California Species of Special Concern. Habitat for special status plant species occur within saltmarshes, freshwater wetlands, and areas adjacent to the Project area.

The open coast in the vicinity of Humboldt Bay consists of soft bottom habitat and sandy beaches backed by dunes. This habitat provides fish, invertebrates, seabirds, shorebirds, and mammals with nursery grounds, shelter, and areas to forage and reproduce, supporting the region's coastal economy, including numerous commercial and recreational fisheries.

## COMMENTS AND RECOMMENDATIONS

Pursuant to our jurisdiction and authority, the Department offers the following comments and recommendations to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife resources.

### I. Special Status Species

Special status species and Sensitive Natural Communities (SNC) that are listed under the California Endangered Species Act (CESA), Federal Endangered Species Act, Fish and Game Code as Fully Protected (FP), California Species of Special Concern (SSC) or Watch List (WL), the California Rare Plant Ranking (CRPR) System, or the Vegetation Classification and Mapping Program with sensitive Global (G) / State (S) Heritage Ranks occur in the Project area and may be impacted by direct and/or indirect Project impacts.

#### Fish

- Coho Salmon (*Oncorhynchus kisutch*), State and federally-threatened (Southern Oregon/Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU));
- Chinook Salmon (*Oncorhynchus tshawytscha*), federally-threatened (California Coastal ESU);
- Coastal cutthroat trout (*Oncorhynchus clarkii clarkii*), State SSC;
- Steelhead trout (*Oncorhynchus mykiss*), federally-threatened (Northern California Distinct Population Segment (DPS)), State-endangered candidate (Northern California Summer Steelhead);
- Longfin smelt (*Spirinchus thaleichthys*), State-threatened;

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- Green sturgeon (*Acipenser medirostris*), federally-threatened (southern DPS), State SSC (northern and southern DPS);
- White sturgeon (*Acipenser transmontanus*), State SSC;
- Pacific lamprey (*Entosphenus tridentatus*), State SSC; and
- Western river lamprey (*Lampetra ayresii*), State SSC.

The Draft MND and Marine Resources Biological Evaluation Report (Appendix D) do not include longfin smelt, white sturgeon, coastal cutthroat trout, or western river lamprey under special status species. The Department recommends the Final MND include an analysis of impacts to these species under Section 4.3 (Biological Resources), including Table 4-3 (Sensitive and Special Status Species), and in Appendix D.

### **Amphibians**

- Northern red-legged frog (*Rana aurora*), State SSC.

### **Mammals**

- Townsend's big-eared bat (*Corynorhinus townsendii*), State SSC; and
- Pallid bat (*Antrozous pallidus*), State SSC.

### **Birds**

- Black brant (*Branta bernicla*), State SSC;
- Marbled murrelet (*Brachyramphus marmoratus*), State-endangered, federally-threatened;
- Sharp-shinned hawk (*Accipiter striatus*), State WL;
- Vaux's swift (*Chaetura vauxi*), State SSC;
- Northern harrier (*Circus hudsonius*), State SSC;
- White-tailed kite (*Elanus leucurus*); State FP;
- Bald eagle (*Haliaeetus leucocephalus*), State-endangered;
- Long-billed curlew (*Numenius americanus*), State WL;
- Osprey (*Pandion haliaetus*), State WL;
- Double-crested cormorant (*Phalacrocorax auritus*), State WL;
- California brown pelican (*Pelecanus occidentalis californicus*), State FP; and
- Bank swallow (*Riparia riparia*), State-threatened.

### **Plants**

- Dark-eyed gilia (*Gilia millefoliata*), CRPR 1B.2;

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- *Abronia latifolia-Ambrosia chamissonis* alliance (dune mat), SNC G3/S3;
- *Salix hookeriana* alliance (coastal willow thickets), SNC G4/S3; and
- *Rubus ursinus* alliance (coastal brambles), SNC G4/S3.

## II. Project Impacts

### Potential for Cultured Fish to Escape Project Facilities

**Comments:** The Department is concerned with the potential for cultured Atlantic Salmon to escape from Nordic's proposed facility into local marine, estuarine, and freshwater environments. Humboldt Bay provides habitat for a number of anadromous fish species, many of which are State- or federally-listed (e.g., Chinook Salmon, Coho Salmon, steelhead trout, longfin smelt, green sturgeon). If fish escape from Nordic's facility, they could compete with, prey upon, and/or transfer pathogens to some of these species (Waknitz et al. 2003; Naylor et al. 2005; Jonsson and Jonsson 2006; Coghlan et al. 2007). For the biological impacts of the Project to be less than significant, the probabilities of escape and/or establishment should be negligible to non-existent.

The Draft MND concludes that the risk of escape from Project facilities is eliminated by multiple physical barriers (e.g., jump screens on tanks, grates in the drainage system, fine screens in the wastewater treatment plant) and by using underground pipes to move fish between buildings. In their outreach (Lost Coast Outpost, Mar. 31, 2021), Nordic has proposed using all-female eggs to make reproduction inviable as an additional biological safeguard against escape risks; however, the Draft MND does not include this proposal.

Given its design and land-based setting, the Department agrees that the risk of fish escaping from the proposed facilities may be low, but not zero. The Project's proposed location is subject to seismic and tsunami hazards and may hold millions of Atlantic Salmon as close as 300 feet to Humboldt Bay at any one time. The Draft MND and associated documents describe some of the structures and practices that will help mitigate this risk. At this time, however, it is not apparent that structural designs are sufficient to conclude that the risk of escape from seismic activity and tsunami inundation are eliminated. In fact, the site-specific seismic study is still underway and has not been presented as part of the Project documents. Additionally, escapes may occur due to human error or defects in barriers. Even well-designed land-based facilities outside of tsunami hazard areas have had unintended releases due to structural or operational failures. During 2010-2018, there were 17 reported incidents of escaped salmon and rainbow trout from land-based facilities in Norway (Føre and Thorvaldsen 2021). Therefore, it is important the Final MND contain a thorough analysis of the risk that escaped Atlantic Salmon (and alternate farmed species) may pose to native species and ecosystems, counter to the applicant's conclusion that the biological impact analysis is not affected by final species selection (Draft MND p 4-55).

Given that few studies have addressed competition between Atlantic Salmon and *Oncorhynchus* spp. (Gibson 1981; Hearn and Kynard 1986; Jones and Stanfield 1993;

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Houde et al. 2017), and that no such studies have been carried out under conditions specific to the northern California environment, the risk of competition, predation, and/or establishment remains unclear. However, studies on the impacts of escaped Atlantic Salmon conducted in the Pacific Northwest, where escapes from net-pen facilities have frequently occurred, may lend insight pertinent to California. Past work suggests that farmed Atlantic Salmon have difficulty transitioning from a pellet-fed diet to one requiring the capture of wild prey, but there is evidence of eventual foraging success in novel/natural environments (ADFG 2002; McKinnell and Thomson 1997; McKinnell et al. 2008; Morton and Volpe 2002). Studies from the Pacific Northwest and Europe also suggest there is potential for reproduction to occur following escape events (Volpe et al. 2000; Fisher et al. 2014; Glover et al. 2016), although the ability of Atlantic Salmon to establish strongholds outside of its native range remains unclear, and some studies suggest it may be limited (Arismendi et al. 2014; Nash 2003; Sepulveda et al. 2013). However, monitoring within regions experiencing frequent escapes may not be sufficient to conclude that colonization has not occurred (e.g., Fisher et al. 2014).

Ultimately, the risk of competition with native salmonids in the freshwater, estuarine, or marine environment will depend on the number, size, and condition of fish that escape from the facility, timing of escape, and their ability to adapt to local conditions. The potential for impact may be amplified if escaped Atlantic Salmon can establish local breeding populations. This will largely depend on the number of fish that escape in a single event and their likelihood of surviving to maturity, reaching suitable spawning grounds along with conspecifics, and ultimately repeating this over multiple generations.

Based on the documents provided, the risk of fish escaping from the Nordic facility may be reduced if site-design plans adequately incorporate the engineering recommendations aimed at minimizing risks from seismic activity and tsunami inundation (SHN 2020). Culturing reproductively inviable fish (e.g., all-females, triploids; Benfey 2016) offers a means to effectively minimize the risk of establishment. However, this does not eliminate potential ecological impacts caused by the first generation of escapees.

**Recommendations:** The Department recommends the Final MND include the following to reduce the risk of escape to a level less than significant:

- Include a mitigation measure that Nordic will work exclusively with non-reproductive fish assemblages, such as all-females or triploids to minimize the risk of escaped fish from reproducing and establishing in the wild. Nordic should include methods that will be used to measure the effectiveness of producing non-reproductively viable fish.
- Include a comprehensive analysis of potential impacts escaped Atlantic Salmon may cause to native species in the worst-case scenario of an unintentional release to Humboldt Bay or the Pacific Ocean.
- Include an analysis of farming alternate fish species to identify potential impacts from other species. The analysis should include impacts associated with fish escaping from the facility, including the risk of competition, predation, establishment, and introduction of pathogens to native species.

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- Include final building design criteria provided by engineers (SHN 2020) to minimize the risk of escape from seismic activity and tsunami inundation.
- The Department also recommends the Final MND include an Emergency Escape Response & Recovery Plan. The plan should include immediate reporting (within 12 hours) of escaped fish and the circumstances surrounding the incident to the Department and other appropriate regulatory agencies. The plan should include an established recovery plan for escapees and proposed mitigation measures for any damages to the environment caused by those escaped fish. The Department recommends Nordic consult with the Department and other regulatory agencies in the development and implementation of this plan.

### **Introduction of Pathogens**

**Comments:** The Department is concerned that pathogens associated with Atlantic Salmon may be introduced to wild salmonid populations, an impact that could persist within native populations even if Atlantic Salmon are unsuccessful at establishing reproductively viable populations. Pathogens of concern include piscine orthoreovirus and infectious salmon anemia virus, among others. The Draft MND proposes to source certified pathogen-free eggs but does not disclose if the entire source facility will be certified pathogen-free.

The Draft MND includes additional measures to reduce the risk of pathogens from entering their cultured population and the natural environment, including disinfecting and quarantining eggs upon arrival, testing samples from each cohort, monitoring fish for disease, treating or disposing of fish that test positive for pathogens, and ultraviolet sterilization of wastewater to neutralize pathogens in facility discharge. The Department appreciates the measures included to minimize the risk of introducing pathogens, however, the potential for pathogens to enter the marine or estuarine environment are difficult to fully eliminate and the Draft MND lacks details on how these measures will be implemented. The Project proposes to grow 20-25 times more fish than Nordic's existing facilities, thus the effectiveness of disease prevention or pathogen outbreaks in Nordic's other facilities provides limited assurance given the vast difference in scale. The Draft MND does not discuss whether pharmaceuticals or therapeutics, such as antibiotics, will be used for disease prevention or treatment. Potential pathways for pathogens to escape the facility include the wastewater discharge (if not effectively treated or due to accidental spills/leaks) at the ocean outfall, through fish that escape from the facility, improper disposal of carcasses, and pathogens carried outside the facility on equipment or personnel.

If the concerns regarding pathogens and fish escape summarized above are not adequately addressed, the proposed Project may have indirect and direct negative impacts on the quality and viability of native fish populations, and recreational and commercial fisheries in the adjacent area. For example, the negative effects of a novel pathogen on northern California's threatened Chinook Salmon and Coho Salmon stocks could result in fishery restrictions and/or closures or further collapse. Low abundance/poor status for Klamath-Trinity Rivers Fall-run and Spring-run Chinook Salmon, for example, has resulted in heavy fishery restrictions for the entirety of the California coast in three (2016, 2017, 2021) of the last six ocean salmon seasons, and has similarly affected fishing opportunity



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in river fisheries. Thus, disease management is not only a matter of economic and environmental concern, but most importantly, species preservation.

**Recommendations:** The Department recommends the Final MND include the following measures to reduce the risk of pathogens to a level less than significant:

- Nordic must source their eggs from Department-approved certified specific pathogen-free production facilities. If listed pathogens of concern are detected at the source hatchery, this information must be provided immediately.
- The Department recommends the Final MND include the development of a Fish Health Monitoring Program that specifies the frequency and number of fish at various life stages that are tested for listed pathogens and identifies which pathogens are being tested for. The program should include immediate reporting (within 24 hours) of listed-pathogen detections to the Department. The program should also include an annual Fish Health Monitoring Report that summarizes measures taken to screen for and minimize the risk of pathogens. The annual report should be provided to the Department and other regulatory agencies.
- The Department also recommends the Final MND include the development and implementation of a monitoring plan to ensure the efficacy of the effluent disinfection system prior to wastewater being discharged.

### **Wastewater Discharge**

**Comments:** Treated wastewater from the land-based fish farm will be discharged into the RMT II ocean outfall pipe and multiport diffuser, located approximately 1.5 miles offshore at a depth of 80 feet. The total water volume discharged at full operational capacity is estimated at 12.5 million gallons per day (MGD). Nordic's wastewater will pass through fine filtration, biological treatment, and ultraviolet sterilization prior to being discharged. The wastewater system is expected to reduce total suspended solids (TSS), biological oxygen demand (BOD), and phosphorous by 99%, and total nitrogen by 90%. However, the Draft MND does not disclose how the effectiveness of the system will be measured or reported. It is also not clear if the facility will include redundancies in the wastewater treatment filtration/disinfection systems or an emergency contingency system to prevent unwanted discharges in case there are equipment failures.

The temperature of the discharge effluent will range between 68 to 72°F, approximately 20°F above the average ambient temperature of 51.8°F. The discharge will be comprised of 10 MGD seawater sourced from Humboldt Bay and 2.5 MGD freshwater, with an expected salinity of 27 practical salinity units (psu) (compared to ambient salinity of 33.5 psu). Additional sources of wastewater that will be discharged into the RMT II ocean outfall include the DG Fairhaven Power Company and future Samoa sewage treatment plant (Nordic's discharge will comprise 95-97% of the comingled discharge). The dilution study (Appendix E) concludes the risk of enhanced pelagic or benthic productivity from elevated nutrients is 'very low', and there is a 'low' risk of impacting the benthic community from sedimentation. The Marine Resources Biological Evaluation Report (Appendix D) concludes all evaluated special status marine species would have a 'very low' risk of any

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potential impact resulting from the discharge, thus no mitigation for impacts to marine species or habitats is proposed.

The Department has reviewed the modeling study of the discharge and notes it relies on data that is not directly at the discharge site. Additionally, no water quality monitoring or biological surveys at the discharge location to validate model predictions or to ensure no adverse impacts to marine resources occur are described within the Draft MND.

**Recommendations:** The Department recommends the Final MND include the following measures to reduce the risk of adverse impacts from the facilities wastewater discharge to the marine environment:

- Provide a detailed wastewater flow diagram, which specifies all water sources and locations of the filtration/disinfection systems.
- Conduct or require regular inspections and maintenance of the ocean outfall pipe and multiport diffuser to ensure full functionality.
- The Department recommends the Final MND include an analysis of potential impacts to water quality and the marine environment from the use of pharmaceuticals and antibiotics.
- The Department recommends the Final MND contain a Water Quality & Biological Monitoring & Mitigation Plan developed in consultation with the Department, North Coast Regional Water Quality Control Board (NCRWQCB), and other relevant regulatory agencies. The plan should include a description of mitigation measures that will be immediately implemented if biological impacts associated with the wastewater discharge are observed. An annual monitoring report should be provided to the NCRWQCB, Department, and other regulatory agencies that discloses the amount of seawater withdrawn from the Bay, amount of wastewater discharged into the ocean, characteristics of the effluent, and results from the Water Quality & Biological Monitoring & Mitigation Plan.
- The Department also recommends the Final MND include an Operations and Maintenance Plan for the wastewater treatment system that includes redundancies in all the wastewater treatment filtration/disinfection systems and an emergency contingency system preventing unwanted discharges that can be used if the treatment system fails. The Operations and Maintenance Plan should incorporate the ability to detect and immediately respond to system malfunctions and deviations in water quality.

### **Seawater Intakes**

**Comments:** The Draft MND states that no in-water work in Humboldt Bay is proposed as part of this Project, thus no impacts to special status species or aquatic habitat will occur. However, Nordic's preference is to grow-out fish in seawater, which will be sourced from seawater intakes (referred to as sea chests) located at the RMT II and Red Tank Docks in Humboldt Bay. The sea chests are not currently permitted and will require upgrades, including screens to minimize the risk of impingement and entrainment of juvenile fish and other marine life, before they can be used to withdraw water from the Bay. Even with

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implementation of fish screens that meet the Department and National Marine Fisheries Service fish screening criteria, the intake system is anticipated to result in take of larval species, including CESA-listed longfin smelt and other species of biological importance.

The Draft MND does not disclose how much seawater the facility will use, although it is assumed based on the discharge analysis in the Draft MND that Nordic will source at least 10 MGD. The Draft MND does not discuss or analyze the environmental impacts associated with the seawater intake system, and instead cites that the seawater intakes will be analyzed in a future CEQA document (referred to as the Bay Water Intake Project) that will be permitted by the Harbor District. The Department is concerned the Draft MND relies on a future CEQA document to analyze and mitigate for potentially significant biological impacts associated with the seawater intake system, especially since Nordic's facility will rely on those upgrades and be a primary user of the intake system. The Department understands the Harbor District has contracted a consulting firm to develop a model that will assess biological impacts from the intake system. However, the results from this study have not yet been provided, and mitigation measures that reduce the potential impacts of the seawater intake system to a level less than significant have not been identified. Without information about the intake system, the Department cannot assess the cumulative impacts of the proposed Project and whether they are significant and mitigatable. Alternatively, if Nordic seeks to proceed with CEQA and permitting with a proposal that operates on freshwater alone, then the Final MND will need to fully characterize this as an alternative.

### **Recommendations:**

- The Department recommends the Final MND disclose the amount (as well as information on instantaneous flow rates) of seawater that will be supplied daily from the Humboldt Bay seawater intake system to the Nordic facility. The Department recommends the Final MND analyze the potentially significant biological impacts associated with the seawater intake system, including entrainment of CESA-listed species and other species of commercial, recreational, and biological importance.
- To minimize impacts to salmonids and longfin smelt, all intakes utilized for the Nordic facility shall comply with the Department's fish screening criteria.
- If Nordic is considering using only freshwater for their operations, an alternative analysis should be included in the Final MND.

### **Fish Waste**

**Comments:** Nordic's facility will produce a significant amount of fish waste (8,000 to 12,000 metric tons of annual processing waste), which will require 2 to 4 truckloads per day to remove fish sludge from the facility. Nordic has not identified a disposal location for the waste. Given the significant amount of sludge that will be trucked offsite daily, more information is needed to assess the environmental impacts associated with sludge disposal.



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**Recommendations:** The Department recommends the Final MND include the location(s) of sludge disposal and an analysis of impacts. Impacts may include but not be limited to onsite impacts, disposal site, and potential for spills during transportation.

### **Dark-eyed Gilia Mitigation**

**Comments:** The Draft MND states approximately 100,000 dark-eyed gilia plants occur within the study area and approximately 0.87 acres of dark-eyed gilia and/or dark-eyed gilia habitat will be impacted during construction and operation of the Project, primarily through direct impacts. Dark-eyed gilia has a California Rare Plant Rank of 1B (plants rare, threatened, or endangered in California and elsewhere) and a State Heritage rank of S2 (imperiled; at high risk of extirpation in the jurisdiction due to restricted, range, few populations or occurrences, steep declines, severe threats, or other factors). The Draft MND Mitigation Measure Bio-1 states dark-eyed gilia habitat shall be mitigated at a ratio of no less than 3:1 based on habitat area. However, the mitigation measure lacks quantitative density-based success criteria, and instead proposes success as the presence of dark-eyed gilia with no minimum population count or density criteria.

**Recommendations:** Given the high density of dark-eyed gilia within portions of the impacted Project area, quantitative success criteria for mitigation locations should be included in Mitigation Measure Bio-1. Success criteria should include that mitigation areas have produced an estimated number of dark-eyed gilia plants that are equal or greater than the estimated amount impacted. This analysis may be scaled to non-affected dark-eyed gilia reference sites to account for natural annual variations in population sizes.

### **Osprey Nest Management Plan**

**Comments:** The Draft MND states an Osprey Management Plan is being developed and will include nest site protection measures, nest removal, and creation of new nest sites. Although this pending plan is briefly discussed on Draft MND page 4-68, it is not specifically referenced in Mitigation Measure Bio-5 or other mitigation measure sections.

**Recommendations:** The Department recommends the Final MND include an Osprey Management Plan as part of Mitigation Measure Bio-5 or as a new, stand-alone mitigation measure. The Osprey Management Plan should include performance criteria such as no-net-loss of osprey nests within the Project parcel.

### **Use of Explosives and Nesting Birds**

**Comments:** Effects of structure demolition explosives use on nesting birds is addressed in Mitigation Measure Bio-5, with a nesting season avoidance window or a pre-ground disturbance nesting survey within the construction footprint or up to 500 feet from construction activities. However, the Draft MND discloses that sound pressures 800 to 1,100 feet from explosions may result in overpressure levels between 142 to 150 dB, and 141 to 142 dB at distances of 1,300 to 1,500 feet. Given that a single blast noise over 140 dB will likely result in bird ear damage and 93 dB may lead to behavioral and/or

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physiological effects (Dooling and Popper 2007), a larger nesting bird survey radius may be needed if explosive use occurs during the nesting season.

**Recommendations:** The Department recommends the Project avoid use of explosives during the nesting bird season. If explosives will be used during the nesting season, the Final MND should provide further analysis of explosion sound pressures distances that may result in bird hearing damage or nest failure. As a result, pre-ground disturbance nesting surveys may need to occur in excess of 1,500 feet from explosion sites.

### **Cumulative Impacts Analysis**

**Comment:** The Department is concerned that the Draft MND does not adequately analyze the potentially significant cumulative environmental impacts associated with the proposed Project and foreseeable projects in the area, including the future Bay Water Intake Project and Humboldt Bay Renewable Energy Port Project. The proposed Project relies on the future Bay Water Intake Project for seawater supply, which may result in potentially significant impacts to CESA-listed species, including longfin smelt and Coho Salmon, in addition to other species of biological importance. The Draft MND also does not include a cumulative impact analysis for the Harbor District's Humboldt Bay Renewable Energy Port Project, which proposes to replace the existing Redwood Marine Terminal I with a 7-acre dock directly adjacent to the Nordic facility.

**Recommendation:** The Department recommends the County consider whether preparing an Environmental Impact Report, rather than a Final MND, is appropriate to assess the potentially significant and cumulative impacts to the environment from the proposed Project, Bay Water Intake Project, and Humboldt Bay Renewable Energy Port Project, in addition to other projects.

### **ENVIRONMENTAL DATA**

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link:

<https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data#44524419-online-field-survey-form>.

The completed form can be submitted electronically or mailed electronically to CNDDDB at the following email address: [CNDDDB@wildlife.ca.gov](mailto:CNDDDB@wildlife.ca.gov). The types of information reported to CNDDDB can be found at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

### **FILING FEES**

The Project, as proposed, would have an impact on fish and wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the

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Lead Agency and serve to help defray the cost of environmental review by the Department. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

## CONCLUSION

The Department appreciates the opportunity to comment on the Nordic Aquafarms California, LLC Land-based Aquaculture Project Draft MND to assist the County and Nordic in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed to Corianna Flannery, Environmental Scientist at 707-499-0354 or [Corianna.Flannery@wildlife.ca.gov](mailto:Corianna.Flannery@wildlife.ca.gov).

Sincerely,

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## REFERENCES

ADFG (Alaska Department of Fish and Game). 2002. Atlantic Salmon White Paper. [https://www.adfg.alaska.gov/static/species/nonnative/invasive/pdfs/atlantic\\_salmon\\_white\\_2002.pdf](https://www.adfg.alaska.gov/static/species/nonnative/invasive/pdfs/atlantic_salmon_white_2002.pdf)

Arismendi, I., Penaluna, B.E., Dunham, J.B., De Leaniz, C.G., Soto, D., Fleming, I.A., Gomez-Uchida, D., Gajardo, G., Vargas, P.V. and León-Munoz, J. 2014. Differential invasion success of salmonids in southern Chile: patterns and hypotheses. *Reviews in Fish Biology and Fisheries*, 24(3), pp.919-941

Benfey, T.J. 2016. Effectiveness of triploidy as a management tool for reproductive containment of farmed fish: Atlantic salmon (*Salmo salar*) as a case study. *Reviews in Aquaculture*, 8(3), pp.264-282.

Burns, Ryan. "Nordic Aquafarms Plans to Grow Atlantic Salmon in Land-Based Fish Farm on Former Pulp Mill Property." *Lost Coast Outpost*, 31 Mar. 2021, [lostcoastoutpost.com/2021/mar/31/nordic-aquafarms-plans-grow-atlantic-salmon-land-b/](http://lostcoastoutpost.com/2021/mar/31/nordic-aquafarms-plans-grow-atlantic-salmon-land-b/).

Coghlan Jr., S.M., Connerton, M.J., Ringler, N.H., Stewart, D.J., Mead, J.V. 2007. Survival and growth responses of juvenile salmonines stocked in eastern Lake Ontario tributaries. *Trans. Am. Fish. Soc.* 136, 56–71.

Dooling, R. J. and A.N. Popper. 2007. The Effect of Highway Noise on Birds. Prepared by Environmental BioAcoustics, LLC for California Department of Transportation. Rockville, MD.

Fisher, A.C., Volpe, J.P. and Fisher, J.T. 2014. Occupancy dynamics of escaped farmed Atlantic salmon in Canadian Pacific coastal salmon streams: implications for sustained invasions. *Biological invasions*, 16(10), pp.2137-2146.

Føre, H.M. and Thorvaldsen, T. 2021. Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010–2018. *Aquaculture*, 532, pp.736002.

Gibson, R.J. 1981. Behavioural interactions between coho salmon (*Oncorhynchus kisutch*), Atlantic salmon (*Salmo salar*), brook trout (*Salvelinus fontinalis*) and steelhead trout (*Salmo gairdneri*), at the juvenile fluvial stages. *Can. Tech. Rep. Fish. Aquat. Sci.* No. 1029, v + 116 pp.

Glover, K.A., Solberg, M.F., McGinnity, P., Hindar, K., Verspoor, E., Coulson, M.W., Hansen, M.M., Araki, H., Skaala, Ø. and Svåsand, T. 2017. Half a century of genetic interaction between farmed and wild Atlantic salmon: Status of knowledge and unanswered questions. *Fish and Fisheries*, 18(5), pp.890-927.

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Hearn, William & Kynard, B. 1986. Habitat Utilization and Behavioral Interaction of Juvenile Atlantic Salmon (*Salmo salar*) and Rainbow Trout (*S. gairdneri*) in Tributaries of the White River of Vermont. Canadian Journal of Fisheries and Aquatic Sciences 43. 1988-1998. 10.1139/f86-244.

Houde, A.L.S., Wilson, C.C. and Neff, B.D. 2017. Performance of four salmonids species in competition with Atlantic salmon. Journal of Great Lakes Research, 43(1), pp.211-215.

Stanfield, Les & Jones, Michael. 2003. Factors Influencing Rearing Success of Atlantic Salmon Stocked as Fry and Parr in Lake Ontario Tributaries. North American Journal of Fisheries Management. 23. 1175-1183. 10.1577/M01-181.

Jonsson, B., and Jonsson, N. 2006. Cultured Atlantic salmon in nature: a review of their ecology and interaction with wild fish. e ICES Journal of Marine Science, 63: 1162e1181.

McKinnell, S., and Thomson, A.J. 1997. Recent events concerning Atlantic salmon escapees in the Pacific. ICES Journal of Marine Science, 54: 1221-1225.

McKinnell, S., Thomson, A.J., Black, E.A., Wing, B.L., Guthrie III, C.M., Koerner, J.F. and Helle, J.H. 2008. Atlantic salmon in the North Pacific. Aquaculture Research, 28(2), pp.145-157.

Morton, A. and Volpe, J. 2002. A description of escaped farmed Atlantic salmon *Salmo salar* captures and their characteristics in one Pacific salmon fishery area in British Columbia, Canada, in 2000. Alaska Fishery Research Bulletin, 9(2), pp.102-110.

Nash, CE. 2003. Interactions of Atlantic salmon in the Pacific Northwest VI. A synopsis of the risk and uncertainty. Fisheries Research 62:339-347.

Naylor, R., Hindar, K., Fleming, I.A., Goldberg, R., Williams, S., Volpe, J., Whoriskey, F., Eagle, J., Kelso, D. and Mangel, M. 2005. Fugitive salmon: assessing the risks of escaped fish from net-pen aquaculture. BioScience, 55(5), pp.427-437.

SHN. 2020. Preliminary Geotechnical Investigation Report, Proposed Nordic Aquafarms California, LCC Development, Redwood Marine Terminal II, Samoa Peninsula, Humboldt County, California. Prepared for Nordic Aquafarms California, LCC, Eureka, CA.

Sepúlveda, M., Arismendi, I., Soto, D., Jara, F. and Farias, F. 2013. Escaped farmed salmon and trout in Chile: incidence, impacts, and the need for an ecosystem view. Aquaculture Environment Interactions, 4(3), pp.273-283.

Volpe, J. P., Taylor, E. B., Rimmer, D. W., & Glickman, B. W. 2000. Evidence of natural reproduction of aquaculture-escaped Atlantic salmon in a coastal British Columbia river. Conservation Biology, 14, pp.899–903.

Alyssa Suarez, Planner 1  
Humboldt County Planning Department  
May 24, 2021  
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Volpe, J.P., Anholt, B.R., Glickman, B.W. 2001. Competition among juvenile Atlantic salmon (*Salmo salar*) and steelhead (*Oncorhynchus mykiss*): relevance to invasion potential in British Columbia. Can. J. Fish. Aquat. Sci. 58, pp.197–207.

Waknitz, F.W., Iwamoto, R.N. and Strom, M.S. 2003. Interactions of Atlantic salmon in the Pacific Northwest: IV. Impacts on the local ecosystems. Fisheries Research, 62(3), pp.307-328.





## Salmonid Restoration Federation

Humboldt County Planning and Building Dept.  
3015 H St.  
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ATTN: Alyssa Suarez, Planner, "Submitted by email" to [planningclerk@co.humboldt.ca.us](mailto:planningclerk@co.humboldt.ca.us)

RE: Nordic Aquafarms Permits

Dear Mr. John Ford, Director, Humboldt Co. Planning Dept., and Planning Commissioners:

The Salmonid Restoration Federation (SRF) appreciates the opportunity to comment on the Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Nordic Aquafarms facility in Humboldt County. Although SRF appreciates Nordic's attempt to reduce impacts to salmonid habitat and to build a project that has fewer aquatic impacts than traditional net pens, we are concerned that project effects to juvenile salmonids have not been fully addressed.

Juvenile salmonids use of kelp beds for foraging and shelter from predators has been well established (Shaffer 2002, Shaffer 2004, Shaffer et al. 2019, Shaffer et al. 2020). Kelp beds in California have been subject to extreme weather conditions resulting in reduction of up to 95 percent of kelp forest habitat from Mendocino to Marin counties (Rogers-Bennett and Catton 2019, McPherson et al. 2021). Wernberg et al. (2019) found that diverse kelp forests were consistently more resilient to marine warming events than kelp forests lacking diversity.

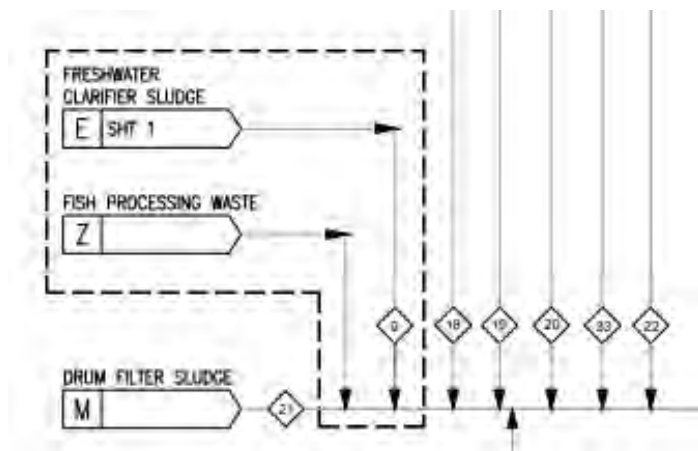
The IS/MND fails to address the importance of the kelp ecosystem to survival of juvenile salmonids. Kelp forests are essential for smolt survival, because they provide food and cover when the juvenile fish enter the marine environment. The IS/MND does not include an analysis or explanation of the effect of miscible cleaners, solvents, antibiotics, fungicides, or dissolved nutrients on the diverse macroalgae in the kelp forest ecosystem. For example, *Saccharina latissima* (sugar kelp) is highly sensitive to hydrogen peroxide (Haugland 2019). Although Nordic does not plan to use hydrogen peroxide, they plan to use sodium hypochlorite, which is a strong oxidizing agent. There is no reporting on the LD50 for sodium hypochlorite on *S. latissima*, or other sensitive macroalgae. Of particular concern are the effects of the powerful fungicide Virkon, which includes the powerful oxidizing agent potassium peroxydisulfate, on the vulnerable kelp forest ecosystem or on individual species of kelp. As a fungicide, Virkon may adversely affect many kelp species that juvenile salmonids depend upon for their survival. The extent of macroalgae and eelgrass beds that could be exposed to effluent and oxidizing agents from the project has not been determined. The baseline and extent of macroalgae and eelgrass beds should be determined, and an exposure profile and risk assessment should be included in subsequent environmental documents.



## Effluent Stream Concerns

The IS/MND and its supporting documents are not clear about where the cleansers, blood and other body fluids, antibiotics, and antifungals from the factory floor in the fish processing area enter the effluent stream. Nordic's effluent schematic for their similar, but smaller, RAS facility in Maine shows a separate waste stream for effluent in the fish processing area (Figure 1).

The fecal material in the effluent stream will be filtered with biofilters that could be degraded by industrial cleansers. Such degradation could reduce the efficiency of the biofilm reactors, allowing for viruses and bacteria to pass through, and potentially increasing the dry material load in the effluent. To avoid damage to the biofilm reactors, the effluent stream from the fish processing appears to follow a different path. If the drains in the factory floor are comingled with effluent leaving the facility, industrial cleansers, blood and other body fluids, antibiotics, and antifungals could be introduced into juvenile salmonid habitat the marine environment. Nordic should clearly describe how waste from the factory floor will be treated in a way that maintains the integrity of the biofilm reactors and protects sensitive marine habitat.



**Figure 1.** Excerpt from Nordic Aquafarms Preliminary Process Flow Diagram for NAE Belfast, Maine, USA. Dated March 23, 2021.

The *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a, Figure 7) clearly shows that effluent can enter Humboldt Bay. The impact of project chemicals and effluvia on critical habitat, and its effect on the feeding and sheltering of listed salmonids, should be analyzed.

We recommend that Nordic fully analyze the effect of their treatment chemicals on macroalgae and eelgrass in the marine environment and in Humboldt Bay. The project should include mitigation for loss of juvenile salmonid habitat caused by miscible cleaners, solvents, antibiotics, fungicides, or dissolved nutrients entering the marine and estuarine environment where smolts shelter and where they disperse. Mitigation for habitat loss in Humboldt Bay, which is critical habitat for Chinook salmon, coho salmon, and steelhead should be included.

The IS/MND concluded that project impacts were “Less than significant” (IS/MND, page 4-73) for Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit (ESU), California Coast Chinook Salmon ESU, Northern California Steelhead DPS. This is a premature conclusion that was based on inadequate analysis. The IS/MND misrepresents the life history requirements of Chinook salmon, coho salmon, and steelhead. It is true that salmonids migrate quickly through Humboldt Bay during their upstream migration, however the juveniles rear and grow in the estuary. The life history strategy of estuarine rearing for coho salmon has been well documented (NOAA Fisheries 2014), as has the importance of estuary/lagoon habitat complexity (shelter) for California Coastal Chinook salmon (NOAA Fisheries 2016a) and Northern California steelhead (NOAA Fisheries 2016b). Effluent from the diffuser is likely to come into Humboldt Bay when there is a combination of a southbound current and incoming tide, exposing the critical habitat and listed juvenile salmonids to nitrogen compounds, phosphorus, and miscible chemicals.

Because juvenile salmonids may rear for up to a year in the estuary, the exposure to diffuser effluent is likely to be prolonged. The results of long-term exposure may harm or injure juvenile salmonids, making this exposure significant. Effluent entering the estuary is contrary to the recovery plan strategies for Chinook salmon, coho salmon, and steelhead. With incoming tide and northward marine flows, effluent is likely to enter the Mad River estuary. With incoming tide and southbound marine flows, effluent is likely to enter Humboldt Bay and the Eel River estuary.

While it is true that “Critical habitat for California Coast Chinook and Southern Oregon/Northern California Coast Coho Salmon does not extend into the open ocean” (IS/MND p. 4-74) and “Critical habitat for Northern California Steelhead also does not extend out into the open ocean” (IS/MND p. 4-74), it is not equally true that project effluent will not enter critical habitat on the incoming tide and potentially remain in the estuary for multiple tidal cycles. The project study boundary is constrained and does not include the full dispersal of effluent into sensitive estuarine habitat such as Humboldt Bay and the Mad River estuary. Therefore, the conclusion that “there would be no impact to critical habitat for salmonids” is premature.

#### Need for adequate effects analysis and ESA consultation

Nordic proposes to withdraw 2 million gallons per day (MGD) from the Mad River for their freshwater source. They are depending on an existing habitat conservation plan (HCP) agreed upon by NMFS for Humboldt Bay Municipal Water District (HBMWD) withdrawals from the Mad River. The implementing agreement for the HCP was issued December 7, 2004. In order to address take of listed species under the HCP, NOAA Fisheries wrote a biological opinion (BiOp). The NOAA Fisheries BiOp exempted take under the ESA of listed Chinook salmon and coho salmon from HBMWD water withdrawal, and it was signed on March 10, 2005. Nordic expects HBMWD capacity will be increased through intake modification: “The HBMWD is currently conducting a project to ensure necessary upgrades of this infrastructure for NAFC and other future users at the Peninsula” (GHD 2021, page 2-16).

On January 2, 2006, NOAA Fisheries designated Critical Habitat went into effect for the conservation of California Coastal Chinook salmon in the Eureka Plain Hydrologic Unit (including the lower Mad River) and Northern California steelhead in the Mad River Hydrologic Unit. In August of 2008 the Mad River had extremely low flows during a drought event. It is unclear how NMFS addressed the Critical

Habitat designations or the extraordinarily low flows in 2008, but the March 10, 2005 BiOp is clear in this regard. “[R]einitiation of formal consultation is required where discretionary Federal involvement or control over the action has been retained...and if: (1) the amount or extent of take is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent to previously considered in this opinion, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action” (NMFS 2005 BiOp, page 73).

The Nordic withdrawals of 2 MGD equate to approximately 3 cubic feet per second. The burden of this level of withdrawal during an extreme drought event in the Mad River is likely to result in death and injury to juvenile Chinook salmon and steelhead in a manner that has not been analyzed, addressed, or considered. During an extreme drought, algal blooms, anoxia, fish die-offs downstream of Station 6 on the Mad River are likely to occur. Increased reduction of Mad River flows by as much as 30 percent (such as would occur in an August 2008 type drought scenario, see Figure 2) could reduce juvenile salmonid rearing habitat by greater than 50 percent. The IS/MND referred to the 1976-1977 hydrology, but quantifying riparian and estuarine impacts from reduced flows has evolved substantially since then. Instream flow incremental methodology (IFIM) allows for a deep understanding of bathymetry and habitat parameters that can be modeled at targeted flows. Using modern methodology and modeling is essential for quantifying habitat loss in the Mad River that would result from project withdrawals in dry and very dry water years. Although August 2008 was an extreme event, other drought events, such as in 2020 and upcoming in 2021, should be closely examined.

The IS/MND (Table 4-4) statement that the “Project’s effluent discharge would not discharge into a coastal wetland area or area of special biological significance, marine reserves, or kelp beds” is not precisely correct. The discharge pipe will allow flow of effluent into the Samoa State Marine Conservation Area (SSMCA) when the current is in a northbound direction. SSMCA is a Marine Conservation Area protected under the California Marine Life Protection Act of 1999. Sensitive kelp and macroalgae ecosystems that are found in the SSMCA may be degraded by the effluent stream from the Project resulting in lower macroalgae diversity and reduced forage and cover for juvenile salmonids. The existing modeling is not sufficient to determine how much effluent will reach the Trinidad Head Area of Special Biological Significance (THASBS) or the South Cape Mendocino State Marine Reserve (SCMSMR). There has not been an adequate analysis to determine how the Project will affect water quality in these protected areas or whether the ecosystems in these areas will be injured or damaged. Because there has not been a full analysis on the effluent effects on the SSMCA, THASBS, SCMSMR, or on critical habitat, nor has there been an exposure or risk analysis for toxic chemical discharges on rearing habitat for salmonids, it is premature to conclude that these areas of special biological significance would not be significantly impacted.

## Seismic and Fish Escapes Concerns

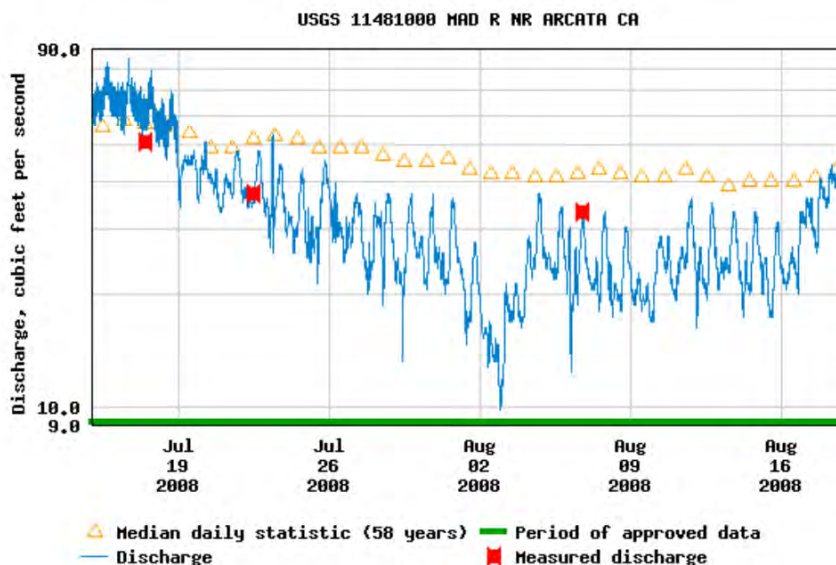
Føre and Thorvaldsen (2021) analyzed Atlantic salmon and rainbow trout fish escapes from fish farms in Norway from 2010 through 2018. They found that 7% of escapes came from land-based fish farms. SRF is concerned that fish escapes from the Nordic facility in Humboldt County could impact wild, native fish through competition, disease introduction, and predation.

In addition to the human error component of fish escapes identified by Føre and Thorvaldsen (2021), seismic events could also precipitate fish escapes. The IS/MND states that a “site-specific seismic study is underway” (p. 2-20), and concludes that seismic related ground failure, including liquefaction, is “less than significant with mitigation incorporated” (pp. 4-49, 4-90). It is premature to conclude less than significant effects prior to completing the seismic study. We recommend that a third-party seismic review be conducted that addresses liquefaction of saturated substrate, load from at-capacity rearing tanks, and the potential for shear and buckling of tanks and pipes.

In the IS/MND Nordic has addressed human safety, and protection of fuels and generators, during a tsunami event; however, it is not clear how fish escapes will be prevented or how the powerful oxidants and other operational chemicals will be walled-off and anchored in preparation for a tsunami. The conclusion that “impact of pollutants released as a result of a tsunami would therefore be less than significant” (p. 4-119) is not consistent with the fact that many of the chemicals proposed for project operation are highly toxic to macroalgae and can damage the fragile kelp ecosystem adjacent to the project.

### Discharge, cubic feet per second

Most recent instantaneous value: 412 04-07-2021 10:45 PDT



**Figure 2.** Mad River discharge at USGS station 11481000, near Arcata, California

## Conclusion

We respectfully ask that the Humboldt Planning Commission delay decision-making on the project until a final EIR is prepared that fully addresses the impacts of the project on salmonids and the sensitive ecosystems salmonids depend upon for their survival.

Sincerely,



Dana Stolzman

Dana Stolzman, Executive Director  
Salmonid Restoration Federation

## References

- Føre, H.M. and Thorvaldsen, T., 2021. Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010–2018. *Aquaculture* 532:736002.
- GHD. 2020a. Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report August 2020. 53pp.
- GHD. 2020b. Marine Resources Biological Evaluation Report Samoa Peninsula Land-based Aquaculture Project Prepared for Nordic Aquafarms California. August 24, 2020. 29pp.
- Haugland, B.T., 2019. Effects of fish farm effluents on kelp forest ecosystems: Kelp performance, associated species, and habitats.
- McPherson, M.L., Finger, D.J., Houskeeper, H.F., Bell, T.W., Carr, M.H., Rogers-Bennett, L. and Kudela, R.M., 2021. Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave. *Communications biology* 4(1):1-9.
- NOAA Fisheries. 2014. Final Recovery Plan for the Southern Oregon/ Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*). 1841pp.
- NOAA Fisheries. 2016a. Coastal Species Recovery Plan: Volume II, California Coastal Chinook Salmon. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol2.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol2.pdf)
- NOAA Fisheries. 2016b. Coastal Species Recovery Plan: Volume III, Northern California Steelhead. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol3.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol3.pdf)
- Rogers-Bennett, L. and Catton, C.A., 2019. Marine heat wave and multiple stressors tip bull kelp forest to sea urchin barrens. *Scientific reports* 9(1):1-9.
- Shaffer, S., 2004, March. Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. In *Proceedings of the 2003 Georgia Basin/Puget Sound Research Conference* (Vol. 31, pp. 1-11). Olympia, Washington: Puget Sound Water Quality Authority.
- Shaffer, A., Parks, D., Schoen, E.R. and Beauchamp, D., 2019. Salmon, forage fish, and kelp. *Frontiers in Ecology and the Environment*, 17(5), pp.258-258.
- Shaffer, J.A., 2002. Nearshore habitat mapping of the central and western Strait of Juan de Fuca II: Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. *A report to the WDFW and Clallam County Marine Resources Committee*.
- Shaffer, J.A., Munsch, S.H. and Cordell, J.R., 2020. Kelp Forest Zooplankton, Forage Fishes, and Juvenile Salmonids of the Northeast Pacific Nearshore. *Marine and Coastal Fisheries*, 12(1), pp.4-20.
- Smale, D.A., 2020. Impacts of ocean warming on kelp forest ecosystems. *New Phytologist*, 225(4):1447-1454.
- Steneck, R.S., Vavrinec, J. and Leland, A.V., 2004. Accelerating trophic-level dysfunction in kelp forest ecosystems of the western North Atlantic. *Ecosystems*, 7(4), pp.323-332.
- Wernberg, T., Coleman, M.A., Bennett, S., Thomsen, M.S., Tuya, F. and Kelaher, B.P., 2018. Genetic diversity and kelp forest vulnerability to climatic stress. *Scientific Reports*, 8(1), pp.1-8.

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California North Coast Regional Water Quality Control Board  
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Santa Rosa, CA 95403

ATTN: Matthias St. John

VIA EMAIL to: [NorthCoast@waterboards.ca.gov](mailto:NorthCoast@waterboards.ca.gov)

RE: Nordic Aquafarms Permit, NPDES No. CA1000003 (**amended comments**)

Dear Board Members:

The California North Coast Regional Water Quality Control Board (RWQCB) has issued a Draft National Pollutant Discharge Elimination System (NPDES) Permit (ORDER R1-2021-0026, NPDES NO. CA1000003) for discharge from the proposed Nordic Aquafarms (Nordic) fish farm (Project) on the Samoa peninsula, Humboldt County, California. Significant environmental impacts that would result from the Project were inappropriately and incorrectly addressed for this major construction activity by the use of an Initial Study/Mitigated Negative Declaration (IS/MND) under the California Environmental Quality Act (CEQA). The IS/MND for the Project did not include the full range of effects of the Project. In response to myriad concerns raised by the public during the comment period on the IS/MND: On May 25, 2021, Nordic announced their decision to “transfer” the IS/MND to an Environmental Impact Report (EIR) for the Project.

Effluent from the Project is likely to affect ESA-listed coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*O. tshawytscha*), steelhead (*O. mykiss*), and green sturgeon (*Acipenser medirostris*), as well as critical habitat for all four species; however, no ESA consultation with NOAA Fisheries has been conducted. Although Nordic maintains that there is no federal nexus to ESA consultation for the Project, that position is not precisely correct. The U.S. Army Corps of Engineers (USACE) can provide the federal nexus when issuing Clean Water Act Permits for in-water work on the marine water intakes that will be upgraded to provide 10 million gallons of water per day (MGD) to the Project from salmonid critical habitat. NOAA Fisheries will need to amend the existing Humboldt Bay Municipal Water District (HBMWD) Habitat Conservation Plan and biological opinion (BiOp) to address HBMWD operations, facility modifications, and the additional 2 MGD Project withdrawals from critical habitat in the Mad River. Unfortunately, neither USACE nor HBMWD have oversight over pollutant discharge entering green sturgeon critical habitat or flowing into coho salmon, Chinook salmon, or steelhead critical habitat. Lack of federal oversight leaves take exemption under ESA to

Nordic through ESA Section 10 or for the U.S. Environmental Protection Agency (EPA) to retain an ESA Section 7 nexus and conduct formal consultation under 50 CFR 402.14.

Although the Draft NPDES Permit (CA1000003) includes discussion of EPA promulgated Seafood Processing Effluent Guidelines and Standards from 1974 and 1975, it does not address take of listed species or impacts to critical habitat that are likely to occur from the Project. Several listing actions, and ESA regulations, have occurred since the promulgation of the 1974 and 1975 seafood effluent guidelines. Effects to Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (NOAA Fisheries 1997), California Coast Chinook Evolutionarily Significant Unit (NOAA Fisheries 1999b), Northern California Steelhead Distinct Population Segment (NOAA Fisheries 2000b), Southern Distinct Population Segment of North American green sturgeon (NOAA Fisheries 2006), Coho salmon critical habitat (NOAA Fisheries 1999a), California Coast Chinook salmon critical habitat (NOAA Fisheries 2006), Northern California steelhead critical habitat (NOAA Fisheries 2000a), **and** green sturgeon critical habitat (NOAA Fisheries 2009) should be addressed through ESA consultation with NOAA Fisheries. It is premature to issue an NPDES Permit for the Project without Nordic complying with either Section 10 or Section 7 of the ESA.

*The Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a, Figure 7) clearly shows that effluent from the Project is likely to enter Humboldt Bay. With incoming tide and southbound marine flows, effluent is likely to enter both Humboldt Bay and the Eel River estuary. With incoming tide and northward marine flows, effluent is likely to enter the Mad River estuary. Humboldt Bay, Mad River estuary, and Eel River estuary are juvenile rearing habitat for listed salmonids. Nordic has not conducted exposure analyses for Project effluent entering the Mad River and Eel River estuaries.

## **Effluent-Stream Concerns**

The IS/MND and its supporting documents are not clear about where the industrial cleansers, fish blood and other body fluids, antibiotics, and antifungals from the factory floor in the fish processing area enter the effluent stream. Nordic's effluent schematic for their similar, but smaller, RAS facility in Maine shows a separate waste stream for effluent in the fish processing area (Nordic 2021). The risk of impacts to the marine environment from cleansers and factory-floor waste is very high. Liquids entering the marine environment from the factory floor could introduce disease to wild salmonids and degrade the marine ecosystem.

Nordic proposes to separate the fecal material from the effluent stream using biofilters in the form of biofilm reactors and membrane bioreactors (experimental technology). Biofilm reactors and membrane bioreactors are sensitive to powerful oxidizing agents and could be degraded by industrial cleansers, such as those listed in the Draft NPDES Permit. Such degradation could reduce the efficiency of the biofilm reactors and



membrane bioreactors; allowing for viruses and bacteria to pass through, also potentially increasing the solid material load in the effluent. To avoid damage to the biofilm reactors and membrane bioreactors, the effluent stream from the fish processing appears to follow a different path. If the drains in the factory floor are comingled with effluent leaving the facility, industrial cleansers, blood and other body fluids, antibiotics, and antifungals could be introduced into juvenile salmonid habitat **and** the marine environment. The RWQCB may want to determine how waste from the factory floor will be treated in a way that maintains the integrity of the biofilm reactors and membrane bioreactors, **while also protecting** sensitive marine habitat, listed juvenile salmonids, green sturgeon, and critical habitat.

## Dioxin and PCBs

The Draft NPDES Permit does not explain that the Project effluent will enter Humboldt Bay with the tidal cycle, as illustrated in the *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a, Figure 7). Humboldt Bay is a CWA Section 303(d) listed Impaired Water Body due to Dioxin Toxic Equivalents and polychlorinated biphenyls (PCBs). Dioxins and PCBs are known contaminants resulting from fish farming (Foran *et al.* 2005, Wang *et al.* 2010).

Commercial fish feed is a source of dioxins, PCBs, organochlorine pesticides, polybrominated diphenyl ethers (PBDEs), and mercury (Buckman *et al.* 2016, Choi *et al.*, Dietrich *et al.* 2015, Jacobs *et al.* 2002, Ng *et al.* 2018). These toxic chemicals are both bioaccumulated into fish tissue and excreted into the environment. The IS/MND only addresses residual, onsite dioxins, PCBs, organochlorine pesticides, and PBDEs (p. 4-120) and does not address fish feed and excrement as a source of dioxins, PCBs, organochlorine pesticides, PBDEs, and mercury. None of these known contaminants are mentioned in Nordic's *Marine Resources Biological Evaluation Report* (GHD 2020b).

The Draft NPDES Permit mentions mercury: "U.S. EPA Method 1631E for mercury is not currently listed in Ocean Plan Appendix II, but it is published with an ML of 0.5 ng/L that makes it a sufficiently sensitive analytical method" (Draft NPDES Permit Attachment E). However, Nordic's Appendix K Restoration and Monitoring Plan does not include any mention of mercury. Nordic is depending on a significant dilution factor from their discharge of 12.5 MGD, but their measurable sediment load and sediment accumulation could contain measurable levels of mercury. Mercury deposited in sediments may not be of initial concern, but methylation of mercury in mud flats and tidal areas in and around Humboldt Bay may result in increased levels of bioavailable mercury entering the ecosystem and potentially human food resources. It would be helpful to have a well-established baseline for mercury in Humboldt Bay, particularly in the muddy, tidal areas where methylation of mercury would occur (Podar *et al.* 2015). Clear guidance, specific to mercury monitoring and remediation, should be included in the Final NPDES Permit.

Commercial fish feed has additional problems. EthoxyQuin is a food stabilizer and preservative that is used to keep fish oils and fish meal from becoming rancid. Ethoxyquin is an antioxidant that bioaccumulates in salmon tissue, and the parent compound and its metabolites are toxic. It is known to cause reproductive disorders, dermatological problems, and immune-mediated diseases. It is also toxic to pets. <https://www.sciencedirect.com/topics/immunology-and-microbiology/ethoxyquin>

Monitoring and determining the amount and significance of dioxin toxic equivalents and PCBs being discharged from the Project and entering Humboldt Bay would be a first step in protecting Humboldt Bay from further impairment. Monitoring for other toxic compounds such as EthoxyQuin, PBDEs, and mercury could allow for added protection of the sensitive estuarine habitat of Humboldt Bay.

The RWQCB is potentially granting the City of Eureka an exemption to the Bays and Rivers Discharge Requirements and allowing the release of municipal effluent into Humboldt Bay (RWQCB, *in litt.* 2021). This allows the City of Eureka's Elk River Water Treatment Plant to discharge into Humboldt Bay on the outgoing tide for the next 30 years. The Nordic effluent is approximately four times Eureka's summertime effluent. The potential for the Nordic effluent to enter Humboldt Bay on the incoming tide would create an ongoing effluent load throughout the tidal cycle in Humboldt Bay. It would be helpful to have the cumulative effect of discharges from the Elk River Water Treatment Plant and from Nordic to be addressed through robust environmental analysis prior to finalizing the NPDES Permit.

## **Disease Risk**

The Draft NPDES Permit prohibits the discharge of detectable levels of chemicals used for the treatment and control of disease, but puts confidence in Nordic's ability to prevent viruses and bacteria from being introduced into the marine environment. Nordic is putting considerably more effort into cleaning the water entering the Project than cleaning the water leaving the Project. This is a significant concern, because viruses and bacteria will enter the facility via imported brood stock and feed. For example, fish-borne viruses are likely to enter the facility via brood stock, but there is currently **no** brood stock available for Atlantic salmon that has been proven to be virus-free. In addition, antibiotic-resistant bacteria are likely to enter the facility via fish feed.

It is unfortunate that the wastewater leaving the Project will not be as fully treated as the river and estuary water entering the Project (*i.e.*, incoming water will be filtered, UV treated, and ozone treated; outgoing water will only be filtered and UV treated). The experimental design of the Project may not be adequate to protect humans and wild fish from exposure to pathogens; therefore, viruses and antibiotic bacteria may enter the marine environment and cause harm. It is unproven that UV-C sterilization will fully treat the 12.5 MGD of effluent leaving the Project.

The Draft NPDES Permit addresses minimizing discharge of unconsumed feed, feed storage, record keeping, and personnel training. Nordic specifications for fish feed allow

for up to 20% of the raw material in the salmon feed to come from poultry byproduct. Antibiotic resistance in poultry farming is a well-established environmental concern, and the antibiotic resistant biome (“resistome”) has left poultry farms and entered the greater environment (Gao *et al.* 2018, WHO 2015, Yang 2018, Zhao 2020). Antibiotic resistance in recirculating aquaculture systems, such as in Nordic’s Project design, is an emerging disease threat (Liu *et al.* 2020). Sediment monitoring for antibiotic-resistant bacteria in the deposition zone of the effluent pipe should be conducted to protect surfers and beachgoers from exposure to this new resistome.

The known antibiotic-resistant bacteria from poultry farms are *Campylobacter sp.*, *Escherichia coli*, *Enterococcus sp.*, and *Staphylococcus aureus* (Apata 2009, Liu *et al.* 2012, Nandi 2004). Chuah *et al.* (2016) noted the increase of antibiotic resistant bacteria in aquaculture and suggested that “efforts are needed to promote the development and enforcement of ... a regulatory structure.” Chuah *et al.* (2016) suggested alternate forms of treatment to reduce the use of antibiotics in aquaculture. Antibiotic-resistant bacteria from the Project that enters the facility via fish feed may put workers and recreational ocean-water users at risk.

Without adequate monitoring, treatment, and containment, the risk of antibiotic resistant bacteria reaching the marine environment is high. Of particular concern are antibiotic resistant *E. coli* and *Staphylococcus aureus* in waters used by swimmers and surfers. Recent research on antibiotic resistant strains of bacteria in fish farming indicates that this is a very real concern. Liu *et al.* 2020 described antibiotic resistance genes as “a class of emerging micro-contaminants.” A primary concern is that they persist and spread in the environment (Gao *et al.* 2018, Watts 2017, WHO 2015).

There is recently described antibiotic resistance in aquaculture from *Vibrio vulnificus* and *Vibrio parahaemolyticus* (Elmahdi *et al.* 2016). These *Vibrio* species are the leading causes of seafood-borne mortality and illness in the United States (Haendiges *et al.*, 2014), and are resistant to ampicillin, penicillin, tetracycline, colistin, cephalothin, amoxicillin, carbencillin, and ceftazidime (Elmahdi *et al.* 2016). In 2014, the World Health Organization (WHO) referenced recommendations by Dr Bjørn Røthe Knudtsen, a Norwegian government specialist on fish disease, where he stated: “Ideally, a single generation of fish should be kept in each site. If that’s not possible, farmers periodically empty holding areas for fish, disinfect them and leave them empty for a few months. Such methods help prevent cross-contamination between old and new generations.” Unfortunately, the Project design does not allow for keeping a single generation of fish in the facility, or leaving tanks empty for a few months after being treated for fish disease.

Although not included in the IS/MND, Nordic committed to vaccinating the Atlantic salmon in the facility. While it is excellent that Nordic proposes to vaccinate fish, the only approved vaccine for salmonids in the United States is for bacterial kidney disease. There are no other approved vaccines for salmonids (Ma *et al.* 2019). This means that other fish diseases may proliferate, such as: **Infectious** Pancreatic Necrosis Virus, Infectious Salmon Anemia Virus, Salmonid Alphavirus, Piscine Orthoreovirus, Novel Totivirus, and Novel Piscine Reovirus. All of these viruses pose a risk to juvenile

salmonids growing to adulthood in the marine habitat in the area of the diffuser pipe and exposed to effluent during tidal cycles in Humboldt Bay, Mad River estuary, and Eel River estuary. Exposing young fish to disease can destabilize salmonid populations and lead to run and cohort failure in wild fish. This is a significant effect that needs to be addressed.

Recent technology allows for rapid and efficient monitoring of viruses and bacteria in wild salmon (Laurin *et al.* 2019, Miller 2017, Miller *et al.* 2017, Vollset *et al.* 2021). Host-gene activity profiling and molecular-bases species identification metabarcoding are excellent ways to monitor for infectious agents and determine baseline health of wild salmonids (Miller 2017, Miller *et al.* 2017). Nordic's claim that their effluent treatment will remove all viruses and bacteria has not been supported through testing or demonstration. An optimal measure to track and monitor wild fish health prior to Project operations would be to test wild fish in Humboldt Bay and the Eel and Mad rivers for baseline viral and bacterial loading. The salmon host transcriptional biomarkers analysis developed by Miller *et al.* (2017) and used by Laurin *et al.* (2019) to detect bacterial, protozoan, and parasite histopathological change provides for rapid testing that denotes overall fish health over broad range of diseases.

It is very concerning that both the biofilm reactors and membrane bioreactors can be degraded from the cleaning agents (*e.g.*, sodium hypochlorite and potassium monopersulfate) used in the facility in general and in the fish-processing area specifically. Reduced efficiency and micro-tears can lead to larger viral particles passing through the system and exposing juvenile salmonids as they feed and shelter in the estuarine and off-shore marine environment.

### **Loss of Juvenile Salmonid Marine Habitat**

The Draft NPDES Permit states that: "The Facility will not discharge in the vicinity of an area of special biological significance (ASBS)." Although the juvenile salmonid habitat in the vicinity of the outfall pipe has not been designated as an ASBS, it is still likely to support feeding and sheltering listed salmonids. Species listed under the ESA are protected, even when their habitat has not received a specific designation. Juvenile salmonids' use of kelp beds and other macroalgae habitat for foraging and shelter from predators has been well established (Shaffer 2002, Shaffer 2004, Shaffer *et al.* 2019, Shaffer *et al.* 2020). Kelp beds in California have been subject to extreme weather conditions resulting in reduction of up to 95% of kelp forest habitat from Mendocino to Marin counties (Rogers-Bennett and Catton 2019, McPherson *et al.* 2021). Wernberg *et al.* (2019) found that diverse kelp forests were consistently more resilient to marine warming events than kelp forests lacking diversity.

Nordic has not conducted any mapping of the kelp and other macroalgae habitat in the vicinity of the Project; however, remote sensing is a proven effective way to establish kelp and other macroalgae locations and distribution (Casal *et al.* 2011). Given that Nordic plans to begin construction in the fall of 2021, this is the only feasible way to

expeditiously determine the baseline of the juvenile salmonid habitat in the area that will be exposed to Project effluent.

The Project will result in localized warming in the vicinity of the diffuser pipe, and is likely to cause an increase in temperature of about 10°C (GHD 2020a). The Draft NPDES Permit (page 14) clearly states: “The discharge shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system.” What is missing is: (1) protection of the marine floor habitat in the vicinity of the discharge pipe; (2) climate change **cumulative** effects, such as whether the Project’s localized temperature increase combined with nutrient-laden effluent will result in nearshore phytoplankton blooms—including Pseudo-nitzschia blooms, such as those that decimated the local crabbing industry in 2015 and 2016 due to algal production of domoic acid; (3) potential harm to juvenile salmonids if local macroalgae and kelp habitat is degraded from the combination of warming and industrial cleansers.

Coastal marine warming in 2014 and 2015 decimated both local commercial crabbing and kelp forests south of Mendocino. If the marine warming phenomenon, known as The Blob, moves into the Project outfall area, marine temperatures could increase as much as 3.5°C (Kintisch 2015). The **9 to 10.9°C** temperature increases in the vicinity of the outfall pipe (**GHD 2020a, Table 6 and p.15**) could result in a tipping point, raising temperatures enough for a localized algal bloom. The potential for algal blooms caused by thermal increases and effluvia from the Project should be modeled in the context of potentially significant marine warming for marine temperatures of 1°C, 2°C, 3°C, 3.5°C and 4°C. Nordic’s IS/MND, Numeric Modelling Report, and Marine Resources Biological Evaluation do not address marine warming in the context of thermal output from the Project. If this modeling becomes available during the CEQA process, it would assist the RWQCB in determining whether a 4°F (2.2°C) increase (**or a 9.0 to 10.9°C localized increase**) is protective of local marine organisms—including juvenile salmonids and their habitat.

Fragile macroalgae, such as sea lettuce may be degraded and killed from seasonal warming caused by the effluent. This pattern has already been seen in kelp, a more robust brown macroalgae (Smale 2020). The warm-water effluvia, combined with increased marine temperatures, could result in sufficient heat **that would lead to** kelp and macroalgae ecosystem collapse as has been seen along the Pacific Coast. The remaining kelp and other macroalgal structure on the coastal shelf are the last remnants of habitat for many organisms, including dispersing juvenile salmonids. Sea kelp and macroalgae ecosystem collapse is a cumulative effect that increases the risk to salmonids from warm-water releases from the Project.

Kelp forests and macroalgae ecosystems are essential for salmonid smolt survival, because they provide food and cover when the juvenile fish enter the marine environment. Early marine growth increases juvenile salmonid survival (Duffy and Beauchamp 2011). Although the Draft NPDES Permit includes a list of chemicals that will be permitted, there has not been an analysis or explanation of the effect of miscible

cleaners, solvents, antibiotics, fungicides, or dissolved nutrients on the diverse macroalgae in the kelp and macroalgae ecosystems that juvenile salmonids depend upon for their survival. For example, *Saccharina latissima* (sugar kelp) is highly sensitive to hydrogen peroxide (Haugland 2019). Although Nordic does not plan to use hydrogen peroxide, they plan to use sodium hypochlorite and potassium monopersulfate. These strong oxidizing agents may kill kelp and other macroalgae in the vicinity of the outfall pipe and in the current stream to the north and south of the Project. The IS/MND and its supporting documents fail to address the importance of the kelp and macroalgae ecosystems to survival of juvenile salmonids and does not include any analyses on the effects of industrial cleaners on sugar kelp (*Laminaria saccharina*), rock weed (*Saccharina dentigera*), sea cabbage (*Saccharina sessilis*), sea lettuces (*Ulva* spp.), or on any other macroalgae or kelp species that may be exposed to Project effluent.

The brown and green macroalgae that contribute to the diversity of the subtidal zone of the near-shore marine environment are likely to be highly sensitive to the powerful oxidizing agents proposed for Project operations. There is no reporting on the LD50 for sodium hypochlorite or potassium monopersulfate on sugar kelp, rock weed, sea cabbage, the sea lettuces, or any other local macroalgae or kelp species. Of particular concern are the effects of the powerful fungicide Virkon (currently not permitted for use in California) on the vulnerable macroalgae ecosystem, or on individual species of kelp or seaweed. As a fungicide, Virkon may adversely affect many kelp species that juvenile salmonids depend upon for their survival. The extent of macroalgae and eelgrass beds that could be exposed to effluent and oxidizing agents from the project has not been determined. The baseline and extent of macroalgae and eelgrass beds should be determined, and an exposure profile and risk assessment should be included in subsequent environmental documents.

Recent remote-sensing technology allows for rapid baseline surveying of macroalgae (Casal *et al.* 2011). In order to determine ongoing effects of the Project, a baseline survey should be conducted. If the potential loss of habitat is quantified, follow-up monitoring should be conducted to determine whether the amount or extent of take of listed species has been exceeded.

Haugland *et al.* (2021) found that effluent affected the macroalgae community at high-effluent farm sites and that habitat heterogeneity was also reduced by the high bryozoan biomass at the high-effluent sites. For juvenile salmonids, that depend on the diverse macroalgae community for food and cover, this could have population-level effects. There could be additional ecosystem effects and potential adverse biotic effects to salmonids over time, with sediment accumulation and sequestering of nitrogen and phosphorus-rich sediments **potentially** released during a storm event or upwelling. If this causes zooplankton blooms, there could be additional, indirect adverse effects to listed salmonids. Chittenden *et al.* (2018) speculated that the “presence of *Noctiluca* and jellyfish in the zooplankton blooms may be repelling young salmon from a critical early marine food source and reducing their survival.”



## Loss of Juvenile Salmonid Estuarine Habitat

The life history strategy of estuarine rearing for coho salmon has been well documented (NOAA Fisheries 2014), as has the importance of estuary/lagoon habitat complexity (shelter) for California Coastal Chinook salmon (NOAA Fisheries 2016a) and Northern California steelhead (NOAA Fisheries 2016b). Effluent from the diffuser is likely to come into Humboldt Bay when there is a combination of a southbound current and incoming tide, exposing the critical habitat and listed juvenile salmonids to nitrogen compounds, phosphorus, and miscible chemicals. Because juvenile salmonids may rear for up to a year in the estuary, the exposure to diffuser effluent is likely to be prolonged.

The results of long-term exposure may harm or injure juvenile salmonids, making this exposure significant. These juvenile salmon may experience metabolic disruption and decreased survival (Meador 2020), which may not result in death until they become adults and attempt to return to natal spawning area—with adult mortality as much as 80% (Miller 2017). Effluent entering the estuary is contrary to the recovery plan strategies for Chinook salmon, coho salmon, and steelhead (NMFS 2004, 2006a, 2006b).

Eelgrass (*Zostera marina*) habitat, emergent marsh, and mudflat habitats provide food for juvenile salmon (Plummer *et al.* 2013, Woo *et al.* 2019). The importance of estuarine habitat and eelgrass beds for overall salmonid survival has been extensively documented (*e.g.*, Kennedy *et al.* 2018, NMFS 2004, 2006a, 2006b), and recent work indicates that it is more important than has already been recognized (Chalifour *et al.* 2021).

The impact of Project chemicals and effluvia on salmonid critical habitat in the bays and estuaries near the Project, and its effect on the feeding and sheltering of listed salmonids in the marine environment, should be analyzed. Nordic should also fully analyze the effect of their treatment chemicals on macroalgae and eelgrass in the marine environment and in Humboldt Bay. The Project should include mitigation for loss of juvenile salmonid habitat caused by miscible cleaners, solvents, antibiotics, fungicides, or dissolved nutrients entering the marine and estuarine environment where smolts shelter and where they disperse. Mitigation for habitat loss in Humboldt Bay, which is critical habitat for Chinook salmon, coho salmon, and steelhead should be included.

Although NOAA Fisheries may have difficulty in quantifying take of listed salmonids resulting from the Project, there is a precedent for using acres of lost habitat to represent injury to listed species in the form of harm [*Babbitt, Secretary of the Interior v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995)]. NOAA Fisheries, RWQCB staff, or Nordic could quantify the amount of lost habitat for juvenile salmonids in the marine environment by doing an exposure analysis of the industrial cleaners that could degrade and kill macroalgae and kelp. The baseline for the number of acres of habitat lost or degraded could be measured using recent methodologies (Casal *et al.* 2011, Norris *et al.* 2007). To determine the number of listed salmonids that

could be harmed, killed, or injured from the Project (pursuant to ESA Section 9), NOAA Fisheries or Nordic could estimate or measure the density of juvenile salmonids per acre (Norris *et al.* 2011, Sharpe *et al.* 2019).

### **Impacts to Green Sturgeon and Its Critical Habitat**

Of the 298 metric tons of NH<sub>x</sub> and NO<sub>x</sub> per year of discharge from the Project (calculated from GHD 2020a, Table 4) that will be released into green sturgeon critical habitat annually, there has not been any analysis or discussion of how that nutrient loading and sediment deposition will affect green sturgeon foraging or the primary constituent elements of its critical habitat (NOAA Fisheries 2009).

Green sturgeon spend 1-4 years in the estuarine environment (Nakomoto 1995) and both adult and subadult green sturgeon forage in Humboldt Bay (NOAA Fisheries 2009). Prolonged residence times in Humboldt Bay equate to prolonged exposure to effluent from the Project. Green sturgeon are also dependent upon optimized foraging in the coastal marine environment (NOAA Fisheries 2009).

Green sturgeon are benthic feeders (NOAA Fisheries 2006, 2009). Many species of benthic macroinvertebrates are associated with macroalgae and eelgrass. When determining primary constituent elements of critical habitat, NOAA Fisheries (2009) found that green sturgeon prey primarily consists of: “crangonid shrimp, burrowing thalassinidean shrimp (particularly the burrowing ghost shrimp), amphipods, isopods, clams, annelid worms, crabs, sand lances, and anchovies.” They concluded that: “These prey species are critical for the rearing, foraging, growth, and development of juvenile, subadult, and adult green sturgeon within the bays and estuaries.”

The primary constituent elements of nearshore coastal marine critical habitat areas that are essential for the conservation of the Southern DPS of green sturgeon are: (i) Migratory corridor—a migratory pathway for the safe and timely passage within marine and between estuarine and marine habitats; (ii) Water quality—nearshore marine waters with adequate dissolved oxygen levels and acceptably low levels of contaminants (*e.g.*, pesticides, organochlorines, elevated levels of heavy metals) that may disrupt the normal behavior, growth, and viability of sub-adult and adult green sturgeon; (iii) Food resources—abundant prey items for sub-adults and adults, which may include benthic invertebrates and fishes (NOAA Fisheries 2009).

A robust analysis of the effects of the Project on green sturgeon foraging and critical habitat is warranted, because the food resources for the species may be compromised and reduced by the Project. A baseline assessment of macroinvertebrate and macroalgae densities and distribution has not been conducted in Humboldt Bay or in the marine environment in the exposure zone for Project effluent. Invertebrate sampling, and an exposure/risk analysis is needed in order to quantify effects and risk to green sturgeon and its critical habitat.

## Conclusion

It seems premature to move forward with an NPDES Permit when a draft EIR has not been written and significant environmental concerns remain. It appears that the Project and permitting are continuing to move forward without the protective coverage of either Section 7 or Section 10 of the ESA. Serious concerns remain regarding Project effects on ESA-listed species and critical habitat. An established baseline, well-developed monitoring and reporting, remediation, habitat restoration, and supplemental mitigation would go a long way toward conserving our threatened coastal salmonids.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alison Willy".

Alison Willy

## References

- Apata, D.F., 2009. Antibiotic resistance in poultry. *International Journal of Poultry Science*, 8(4), pp.404-408.
- Buckman, A.H., Wong, C.S., Chow, E.A., Brown, S.B., Solomon, K.R. and Fisk, A.T., 2006. Biotransformation of polychlorinated biphenyls (PCBs) and bioformation of hydroxylated PCBs in fish. *Aquatic toxicology*, 78(2):176-185.
- Casal, G., Kutser, T., Domínguez-Gómez, J.A., Sánchez-Carnero, N. and Freire, J., 2011. Mapping benthic macroalgal communities in the coastal zone using CHRIS-PROBA mode 2 images. *Estuarine, Coastal and Shelf Science*, 94(3), pp.281-290.
- Choi, M.H. and Cech Jr, J.J., 1998. Unexpectedly high mercury level in pelleted commercial fish feed. *Environmental Toxicology and Chemistry: An International Journal*, 17(10):1979-1981.
- Chuah, L.O., Effarizah, M.E., Goni, A.M. and Rusul, G., 2016. Antibiotic application and emergence of multiple antibiotic resistance (MAR) in global catfish aquaculture. *Current environmental health reports*, 3(2):118-127.
- Dietrich, J.P., Strickland, S.A., Hutchinson, G.P., Van Gaest, A.L., Krupkin, A.B., Ylitalo, G.M. and Arkoosh, M.R., 2015. Assimilation efficiency of PBDE congeners in chinook salmon. *Environmental science & technology*, 49(6):3878-3886.
- Duffy, E.J. and Beauchamp, D.A., 2011. Rapid growth in the early marine period improves the marine survival of Chinook salmon (*Oncorhynchus tshawytscha*) in Puget Sound, Washington. *Canadian Journal of Fisheries and Aquatic Sciences*, 68(2):232-240.
- Elmahdi, S., DaSilva, L.V. and Parveen, S., 2016. Antibiotic resistance of *Vibrio parahaemolyticus* and *Vibrio vulnificus* in various countries: a review. *Food microbiology*, 57:128-134.
- Foran, J.A., Carpenter, D.O., Hamilton, M.C., Knuth, B.A. and Schwager, S.J., 2005. Risk-based consumption advice for farmed Atlantic and wild Pacific salmon contaminated with dioxins and dioxin-like compounds. *Environmental health perspectives*, 113(5), pp.552-556.
- Gao, P., Mao, D., Luo, Y., Wang, L., Xu, B. and Xu, L., 2012. Occurrence of sulfonamide and tetracycline-resistant bacteria and resistance genes in aquaculture environment. *Water research*, 46(7):2355-2364.
- Gao, Q., Li, Y., Qi, Z., Yue, Y., Min, M., Peng, S., Shi, Z. and Gao, Y., 2018. Diverse and abundant antibiotic resistance genes from mariculture sites of China's coastline. *Science of the Total Environment*, 630:117-125.
- Gao, M., Qiu, T., Sun, Y. and Wang, X., 2018. The abundance and diversity of antibiotic resistance genes in the atmospheric environment of composting plants. *Environment international*, 116:229-238.
- GHD. 2020a. Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report August 2020. 53pp.
- GHD. 2020b. Marine Resources Biological Evaluation Report Samoa Peninsula Land-based Aquaculture Project Prepared for Nordic Aquafarms California. August 24, 2020. 29pp.
- Haendiges, J., Rock, M., Myers, R.A., Brown, E.W., Evans, P. and Gonzalez-Escalona, N., 2014. Pandemic *Vibrio parahaemolyticus*, Maryland, USA, 2012. *Emerging infectious diseases*, 20(4):718-720.

Haugland, B.T., 2019. Effects of fish farm effluents on kelp forest ecosystems: Kelp performance, associated species, and habitats.

Haugland, B.T., Armitage, C.S., Kutti, T., Husa, V., Skogen, M.D., Bekkby, T., Carvajalino-Fernández, M.A., Bannister, R.J., White, C.A., Norderhaug, K.M. and Fredriksen, S., 2021. Large-scale salmon farming in Norway impacts the epiphytic community of *Laminaria hyperborea*. *Aquaculture Environment Interactions*, 13:81-100.

Jacobs, M.N., Covaci, A. and Schepens, P., 2002. Investigation of selected persistent organic pollutants in farmed Atlantic salmon (*Salmo salar*), salmon aquaculture feed, and fish oil components of the feed. *Environmental science & technology*, 36(13):2797-2805.

Kennedy, L.A., Juanes, F. and El-Sabaawi, R., 2018. Eelgrass as valuable nearshore foraging habitat for juvenile Pacific salmon in the early marine period. *Marine and Coastal Fisheries*, 10(2):90-203.

Kintisch, E. 2015. 'The Blob' invades Pacific, flummoxing climate experts. Science Magazine, April 5, 2015. <https://science.sciencemag.org/content/348/6230/17>

Koike, H., Kanda, M., Hayashi, H., Matsushima, Y., Nakajima, T., Yoshikawa, S., Ohba, Y., Hayashi, M., Nagano, C., Sekimura, K. and Otsuka, K., 2021. Monitoring of residual antibacterial agents in animal and fishery products in Tokyo from 2003 to 2019: application and verification of a screening strategy based on microbiological methods. *Food Additives & Contaminants. Part B*:1-8.

Laurin, E., Jaramillo, D., Vanderstichel, R., Ferguson, H., Kaukinen, K.H., Schulze, A.D., Keith, I.R., Gardner, I.A. and Miller, K.M., 2019. Histopathological and novel high-throughput molecular monitoring data from farmed salmon (*Salmo salar* and *Oncorhynchus* spp.) in British Columbia, Canada, from 2011–2013. *Aquaculture*, 499:220-234.

Liu, D., Chai, T., Xia, X., Gao, Y., Cai, Y., Li, X., Miao, Z., Sun, L., Hao, H., Roesler, U. and Wang, J., 2012. Formation and transmission of *Staphylococcus aureus* (including MRSA) aerosols carrying antibiotic-resistant genes in a poultry farming environment. *Science of the total environment*. 426:139-145.

Liu, X., Wang, H. and Zhao, H., 2020. Propagation of antibiotic resistance genes in an industrial recirculating aquaculture system located at northern China. *Environmental Pollution*, 261, p.114155.

Nandi, S., Maurer, J.J., Hofacre, C. and Summers, A.O., 2004. Gram-positive bacteria are a major reservoir of Class 1 antibiotic resistance integrons in poultry litter. *Proceedings of the National Academy of Sciences*. 101(18):7118-7122.

Ma, J., Bruce, T.J., Jones, E.M. and Cain, K.D., 2019. A review of fish vaccine development strategies: conventional methods and modern biotechnological approaches. *Microorganisms*, 7(11):569.

McPherson, M.L., Finger, D.J., Houskeeper, H.F., Bell, T.W., Carr, M.H., Rogers-Bennett, L. and Kudela, R.M., 2021. Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave. *Communications biology* 4(1):1-9.

Miller, K.M. 2017. Disease and pathogens in wild and farmed salmon. Watershed Watch presentation September 15, 2017. <https://www.youtube.com/watch?v=qfIGzDrTtJA>

Miller, K.M., Günther, O.P., Li, S., Kaukinen, K.H. and Ming, T.J., 2017. Molecular indices of viral disease development in wild migrating salmon. *Conservation Physiology*, 5(1).

Nakamoto, R.J., T.T. Kisanuki, G.H. Goldsmith. 1995. Age and Growth of Klamath River Green Sturgeon (*Acipenser medirostris*). U.S. Fish and Wildlife Service, Arcata, California. Project # 93-FP-13 January 31, 1995, 27pp.

Nandi, S., Maurer, J.J., Hofacre, C. and Summers, A.O., 2004. Gram-positive bacteria are a major reservoir of Class 1 antibiotic resistance integrons in poultry litter. *Proceedings of the National Academy of Sciences*, 101(18):7118-7122.

Ng, C.A., Ritscher, A., Hungerbuehler, K. and von Goetz, N., 2018. Polybrominated diphenyl ether (PBDE) accumulation in farmed salmon evaluated using a dynamic sea-cage production model. *Environmental science & technology*, 52(12):6965-6973.

NOAA Fisheries 1997. Endangered and Threatened Species; Threatened Status for Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU) of Coho Salmon. May 6, 1997 *Federal Register* 62:24588.

NOAA Fisheries. 1999a. Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. May 5, 1999. *Federal Register* 64:24049-24062.

NOAA Fisheries. 1999b. Endangered and Threatened Species; Threatened Status for Two Chinook Salmon Evolutionarily Significant Units (ESUs) in California. September 16, 1999 *Federal Register* 64:50394.

NOAA Fisheries. 2000a. Designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California. March 17, 2000 *Federal Register* 65:7764-7787.

NOAA Fisheries. 2000b. Endangered and Threatened Species: Threatened Status for One Steelhead Evolutionarily Significant Unit (ESU) in California. June 7, 2000 *Federal Register* 65:36074.

NOAA Fisheries. 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. *Federal Register* 70:52487-52627.

NOAA Fisheries. 2006. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon. *Federal Register* 71:17757-17766.

NOAA Fisheries. 2009. Critical Habitat Designation for Southern Distinct Population Segment of North American Green Sturgeon, Final Rule. *Federal Register* 74:52299.

NOAA Fisheries. 2014. Final Recovery Plan for the Southern Oregon/ Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*). 1841pp.

NOAA Fisheries. 2016a. Coastal Species Recovery Plan: Volume II, California Coastal Chinook Salmon. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol2.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol2.pdf)

NOAA Fisheries. 2016b. Coastal Species Recovery Plan: Volume III, Northern California Steelhead. 514pp. [https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery\\_plan-vol3.pdf](https://media.fisheries.noaa.gov/dam-migration/2016-multispecies-recovery_plan-vol3.pdf)

Nordic. 2020. Nordic Aquafarms Preliminary Process Flow Diagram for NAE Belfast, Maine, USA. Dated March 23, 2021.

Nordic. 2021. Nordic Aquafarms Fish Feed Presentation on April 28, 2021. 3pp.

O'Neill, J. 2016. Tackling drug-resistant infections globally: final report and recommendations. May 19, 2016. Government of the United Kingdom Publication <https://apo.org.au/node/63983>



Podar, M., Gilmour, C.C., Brandt, C.C., Soren, A., Brown, S.D., Crable, B.R., Palumbo, A.V., Somenahally, A.C. and Elias, D.A., 2015. Global prevalence and distribution of genes and microorganisms involved in mercury methylation. *Science advances*, 1(9), p.e1500675.

[RCEA] Redwood Coast Energy Authority. 2012. Humboldt County Comprehensive Action Plan for Energy Adopted September 2012. 23pp. <https://redwoodenergy.org/wp-content/uploads/2017/08/CAPE-Final-9-2012.pdf>

Rogers-Bennett, L. and Catton, C.A., 2019. Marine heat wave and multiple stressors tip bull kelp forest to sea urchin barrens. *Scientific reports* 9(1):1-9.

RWQCB. 2021 *in litt*. North Coast Region Resolution No. R1-2021-0017 Approving the Elk River Restoration Project as an Exemption to the Enclosed Bays and Estuaries Policy Prohibiting Waste Discharges to Humboldt Bay Humboldt County. Draft notice dated March 23, 2021.

Shaffer, J.A., 2002. Nearshore habitat mapping of the central and western Strait of Juan de Fuca II: Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. *A report to the WDFW and Clallam County Marine Resources Committee*.

Shaffer, S., 2004, March. Preferential use of nearshore kelp habitats by juvenile salmon and forage fish. In *Proceedings of the 2003 Georgia Basin/Puget Sound Research Conference* (Vol. 31, pp. 1-11). Olympia, Washington: Puget Sound Water Quality Authority.

Shaffer, J.A., Crain, P., Kassler, T., Penttila, D. and Barry, D., 2012. Geomorphic habitat type, drift cell, forage fish and juvenile salmon: are they linked? *Journal of Environmental Science and Engineering*, A, 1(5A).

Shaffer, A., Parks, D., Schoen, E.R. and Beauchamp, D., 2019. Salmon, forage fish, and kelp. *Frontiers in Ecology and the Environment*, 17(5), pp.258-258.

Shaffer, J.A., Munsch, S.H. and Cordell, J.R., 2020. Kelp Forest Zooplankton, Forage Fishes, and Juvenile Salmonids of the Northeast Pacific Nearshore. *Marine and Coastal Fisheries*, 12(1), pp.4-20.

Sharpe, C., 2017. *Abiotic and biotic dimensions of habitat for juvenile salmon and other fishes in the Skeena River estuary* (Doctoral dissertation, Science: Biological Sciences Department).

Sharpe, C., Carr-Harris, C., Arbeider, M., Wilson, S.M. and Moore, J.W., 2019. Estuary habitat associations for juvenile Pacific salmon and pelagic fish: Implications for coastal planning processes. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 29(10):1636-1656.

Smale, D.A., 2020. Impacts of ocean warming on kelp forest ecosystems. *New Phytologist*, 225(4):1447-1454.

Steneck, R.S., Vavrinec, J. and Leland, A.V., 2004. Accelerating trophic-level dysfunction in kelp forest ecosystems of the western North Atlantic. *Ecosystems*, 7(4), pp.323-332.

Urbina, I. 2021. Fish farming is feeding the globe: What's the cost for locals. *New Yorker*. March 8, 2021. <https://www.newyorker.com/magazine/2021/03/08/fish-farming-is-feeding-the-globe-whats-the-cost-for-locals>

Wang, I.C. and Lee, W.J., 2010. Polychlorinated dibenzo-p-dioxin, polychlorinated dibenzofurans and polychlorinated biphenyls in farmed fish, water, sediment, and feed. *Journal of Environmental Science and Health Part A*, 45(2), pp.201-210.

Watts, J.E., Schreier, H.J., Lanska, L. and Hale, M.S., 2017. The rising tide of antimicrobial resistance in aquaculture: sources, sinks and solutions. *Marine drugs*, 15(6):158, 16pp.

Wernberg, T., Coleman, M.A., Bennett, S., Thomsen, M.S., Tuya, F. and Kelaher, B.P., 2018. Genetic diversity and kelp forest vulnerability to climatic stress. *Scientific Reports*, 8(1), pp.1-8.

WHO. 2015. Vaccinating salmon: How Norway avoids antibiotics in fish farming. October 2015. <https://www.who.int/features/2015/antibiotics-norway/en/>

Vollset, K.W., Lennox, R.J., Davidsen, J.G., Eldøy, S.H., Isaksen, T.E., Madhun, A., Karlsson, S. and Miller, K.M., 2021. Wild salmonids are running the gauntlet of pathogens and climate as fish farms expand northwards. *ICES Journal of Marine Science*, 78(1):388-401.

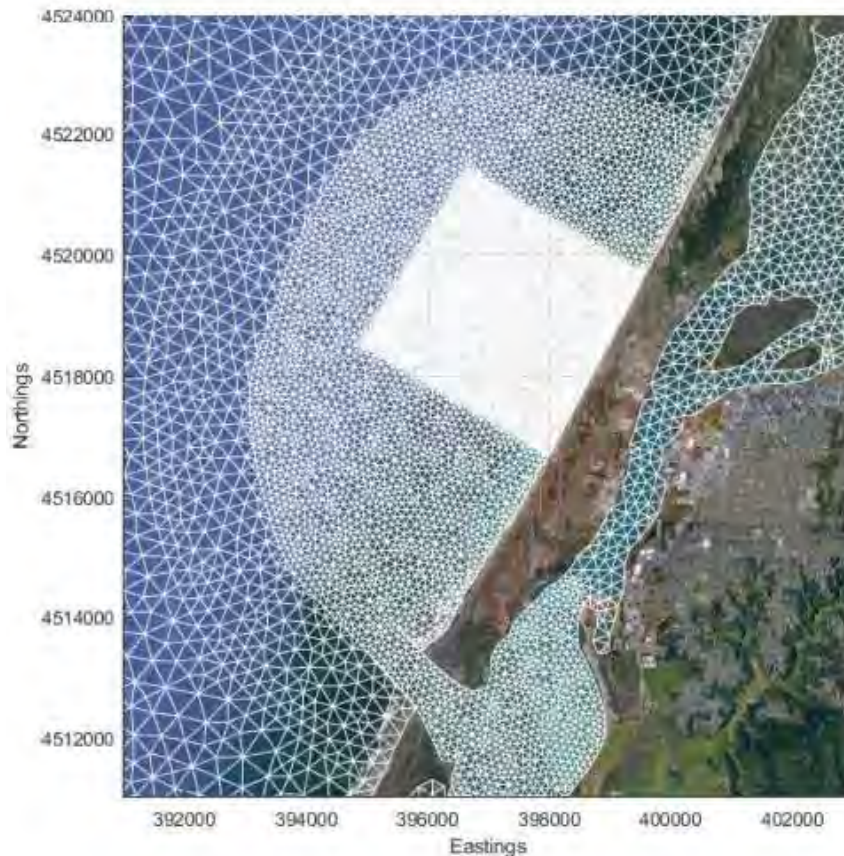
Yang, Y., Ashworth, A.J., Willett, C., Cook, K., Upadhyay, A., Owens, P.R., Ricke, S.C., DeBruyn, J.M. and Moore Jr, P.A., 2019. Review of antibiotic resistance, ecology, dissemination, and mitigation in US broiler poultry systems. *Frontiers in microbiology*, 10:2639.

Zhao, Y., Yang, Q.E., Zhou, X., Wang, F.H., Muurinen, J., Virta, M.P., Brandt, K.K. and Zhu, Y.G., 2020. Antibiotic resistome in the livestock and aquaculture industries: Status and solutions. *Critical Reviews in Environmental Science and Technology*. 2020:1-38.

## Critical Habitat Exposure Analyses

Supplemental to comments provided by Alison Willy to PFMC on June 24, 2021

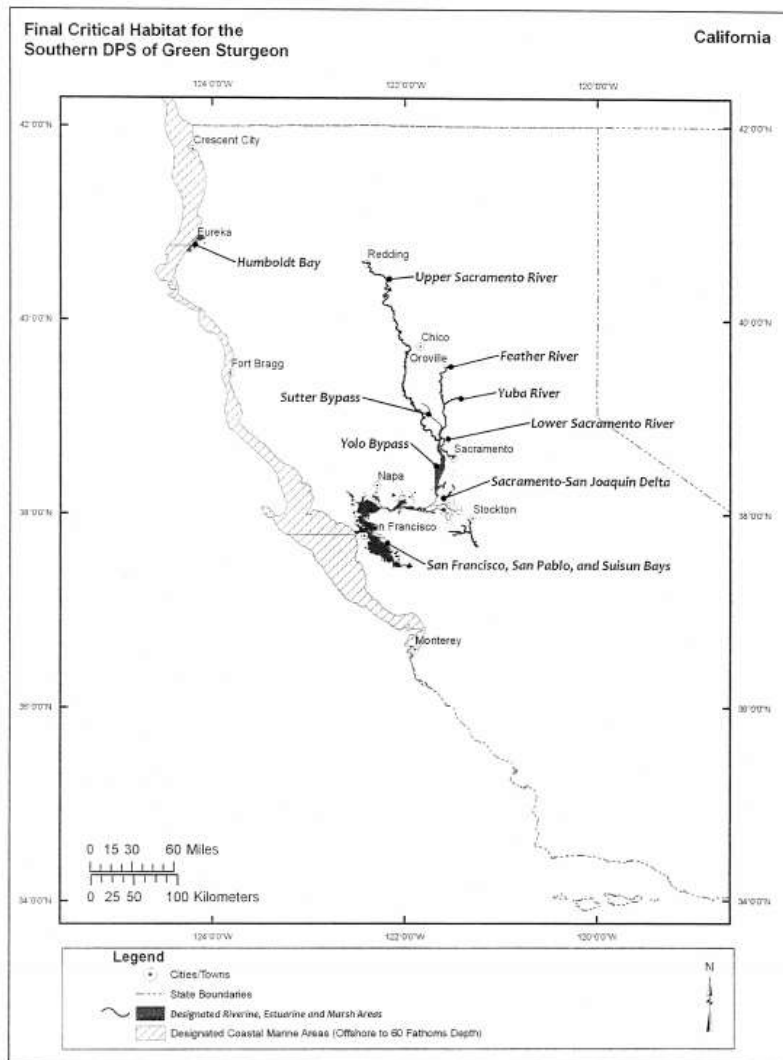
The *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a) clearly shows that effluent from the Project discharged into coastal marine water will enter Humboldt Bay (Figure 1). The modeling in GHD 2020a is incomplete, because only a unidirectional, southbound current was modeled. In the vicinity of the outfall pipe, strong currents shift from a southbound current to a northbound current. Although the modeling is incomplete, a preliminary inquiry into effluent impacts on critical habitat for listed species is possible. The full range of discharge distribution should be analyzed using existing data on local currents. Once the effluent distribution has been fully analyzed and explained, the effects of the effluent on the primary constituent elements of critical habitat and the physical or biological features essential for conservation listed species should be determined. In the meantime, effects to primary constituent elements of critical habitat can be partially described.



**Figure 1.** Excerpt from Figure 7 of the *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a)

## Green Sturgeon Critical Habitat

Critical habitat for the Southern DPS of green sturgeon (green sturgeon) includes both Humboldt Bay and the marine waters off the coast of Samoa Peninsula (NOAA Fisheries 2009). The coastal marine waters from Humboldt Bay to Coos Bay (OR) have a high conservation value for survival and recovery of the green sturgeon. Tributaries to Humboldt Bay that are included in the green sturgeon critical habitat designation are: Elk River, Eureka Slough, Freshwater Creek, Freshwater Slough, Bannon Slough, Jacoby Creek, Liscom Slough, Mad River Slough, McDaniel Slough, Rocky Gulch/Washington Gulch, Salmon Creek, an unnamed tributary, and White Slough.



**Figure 2.** Map of Final Critical Habitat for the Southern DPS of Green Sturgeon, clearly showing Humboldt Bay and the Coastal Marine Waters Included in the October 9, 2009, Critical Habitat Designation.

The primary constituent elements of nearshore coastal marine critical habitat areas that are essential for the conservation of green sturgeon are: (i) Migratory corridor—a migratory pathway for the safe and timely passage within marine and between estuarine and marine habitats; (ii) Water quality—nearshore marine waters with adequate dissolved oxygen levels and acceptably low levels of contaminants (*e.g.*, pesticides, organochlorines, elevated levels of heavy metals) that may disrupt the normal behavior, growth, and viability of sub-adult and adult green sturgeon; (iii) Food resources—abundant prey items for sub-adults and adults, which may include benthic invertebrates and fishes (NOAA Fisheries 2009). Both water quality and food resources are likely to be adversely affected by effluent from the Project.

The primary constituent elements of estuarine critical habitat areas that are essential for the conservation of green sturgeon are: (i) Food resources—Abundant prey items within estuarine habitats and substrates for juvenile, subadult, and adult life stages. (ii) Water flow—Within bays and estuaries adjacent to the Sacramento River (*i.e.*, the Sacramento-San Joaquin Delta and the Suisun, San Pablo, and San Francisco bays), sufficient flow into the bay and estuary to allow adults to successfully orient to the incoming flow and migrate upstream to spawning grounds. (iii) Water quality—Water quality, including temperature, salinity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages. Humboldt Bay serves as important feeding, rearing, and migratory habitat for subadult and adult Southern DPS green sturgeon (NOAA Fisheries 2009). Food resources and water quality in Humboldt Bay are likely to be adversely affected by effluent from the Project.

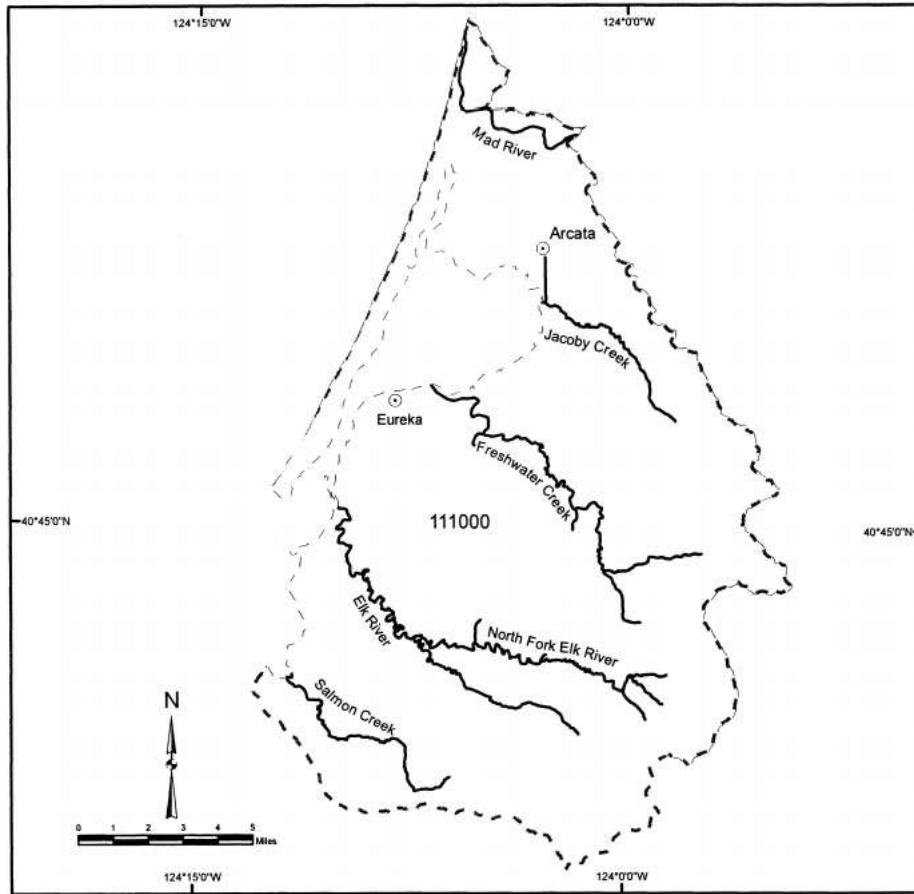
### **Chinook Salmon and Steelhead Critical Habitat**

Critical habitat for the California Coast Chinook Evolutionarily Significant Unit (Chinook salmon) and Northern California Steelhead Distinct Population Segment (steelhead) was listed concurrently on September 2, 2005 (NOAA Fisheries 2005). It can easily be seen that the Eureka Plain Hydrologic Unit of critical habitat (Figure 3) overlaps with the modeled discharge of the analyzed southbound current (Figure 1). It can also be easily ascertained that Elk River and Salmon Creek are likely to be exposed to higher rates of effluent discharge than Freshwater Creek, Jacoby Creek, Mad River, and Eel River.

When modeling is completed that includes northbound longshore flows and an incoming tide, the Mad River section of the Eureka Plain Hydrologic Unit (seen in Figure 3) and the Mad River Hydrologic Unit (Figure 4) some level of effluent will be seen to enter these critical habitat units. At this point, incomplete modeling is yielding an incomplete answer.

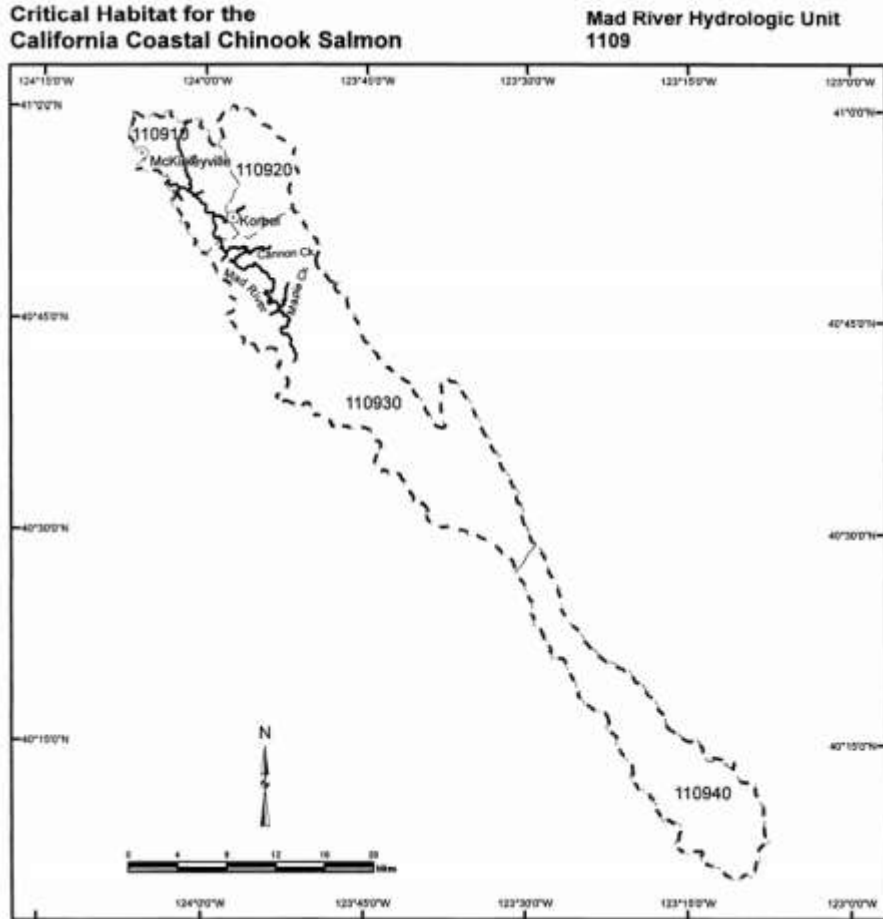
**Critical Habitat for the  
California Coastal Chinook Salmon**

**Eureka Plain Hydrologic Unit  
1110**



**Figure 3.** Eureka Plain Hydrologic Unit, map from page of 52543 of *Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California* (NOAA Fisheries 2005) The Eureka Plain Hydrologic Unit is also critical habitat for steelhead, as is shown on page 52558 of NOAA Fisheries 2005.



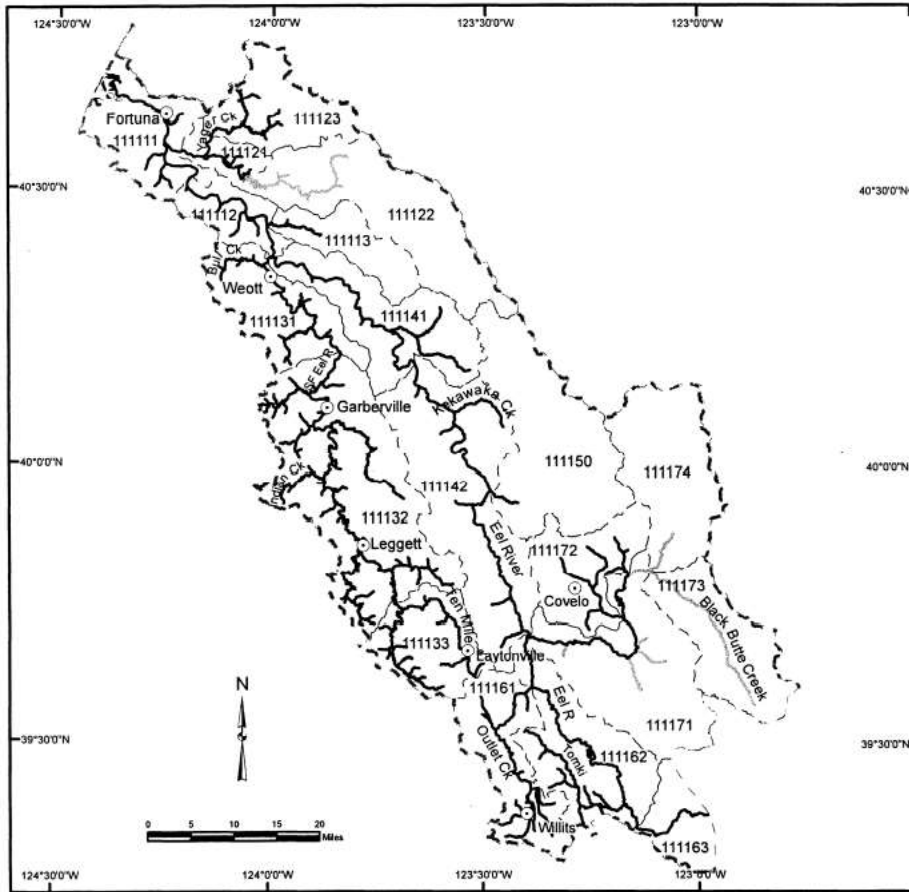


**Figure 4.** Mad River Hydrologic Unit, map from page of 52542 of *Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California* (NOAA Fisheries 2005). The Mad River Hydrologic Unit is also critical habitat for steelhead, as is shown on page 52557 of NOAA Fisheries 2005.

In addition to not considering actual current conditions in the vicinity of the outfall pipe. No modeling has been presented that addresses effluent distribution during upwelling and storm events. The area analyzed in the modeling does not adequately address the full potential distribution of effluent. A consideration of storm conditions and upwelling should be included in order to determine the impact of effluent on critical habitat in the Eel River (Figure 5).

**Critical Habitat for the  
California Coastal Chinook Salmon**

**Eel River Hydrologic Unit  
1111**



**Figure 5.** Eel River Hydrologic Unit, map from page of 52544 of *Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California* (NOAA Fisheries 2005) The Eel River Hydrologic Unit is also critical habitat for steelhead, as is shown on page 52559 of NOAA Fisheries 2005.

The primary constituent elements of the Eureka Plain, Mad River, and Eel River Hydrologic Units affected by effluent from the project are as follows:

“4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation. These features are essential to conservation because without them juveniles cannot reach the ocean in a timely manner and use the variety of habitats that allow them to avoid predators, compete successfully, and complete the behavioral and physiological changes needed for life in the ocean. Similarly, these features are essential to the conservation of adults because they

provide a final source of abundant forage that will provide the energy stores needed to make the physiological transition to fresh water, migrate upstream, avoid predators, and develop to maturity upon reaching spawning areas.

5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels. As in the case with freshwater migration corridors and estuarine areas, nearshore marine features are essential to conservation because without them juveniles cannot successfully transition from natal streams to offshore marine areas.”

Effluent from the project will reduce the water quality for juvenile salmonids in the estuarine and nearshore marine ecosystems. Oxidizing agents in the effluent, from fish processing and sanitization, are likely to reduce the macroalgae substrate that supports the aquatic invertebrates and fishes juvenile salmonids depend upon for growth and survival.

The fish treatment drugs Parasite-S, Formalin-F, and Formacide-B (Formalin) may diminish salmonid prey in the effluent stream and in critical habitat in the Mad River, Humboldt Bay, and the Eel River harming individual fish and potentially causing significant reductions in local salmonid numbers. A risk analysis for loss of salmonid prey species should be conducted to determine Project effects to Chinook salmon and steelhead critical habitat, as well as individual and population-level effects to these species.

### **Coho Salmon Critical Habitat**

*Designated Critical Habitat; Central California Coast and Southern Oregon/ Northern California Coasts Coho Salmon Coho* (NOAA Fisheries 1999a): “is designated to include all river reaches accessible to listed coho salmon between Cape Blanco, Oregon, and Punta Gorda, California. Critical habitat consists of the water, substrate, and adjacent riparian zone of estuarine and riverine reaches (including off-channel habitats) in hydrologic units and counties identified in Table 6 of this part. Accessible reaches are those within the historical range of the ESU that can still be occupied by any life stage of coho salmon.”

The importance of the Eel River and Mad River for survival and recovery were specifically addressed in the May 6, 1997, listing of the coho salmon. Above concerns and comments relative to critical habitat and food resources for Chinook salmon and steelhead apply to the coho salmon critical habitat. Essential features of coho salmon critical habitat include adequate: (1) substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions. Water quality, water temperature, cover/shelter, and food will all be adversely affected by effluent from the project.

## **Eulachon Critical Habitat**

Critical habitat for the Southern Distinct Population Segment of the Eulachon includes the Mad River (NOAA Fisheries 2011). The Mad River Critical Habitat Unit extends from the mouth of the Mad River upstream to the confluence with the North Fork Mad River. When modeling is completed that includes northbound marine currents and an incoming tide, effluent from the Project will be shown to enter eulachon critical habitat in the Mad River.

The physical or biological features essential for conservation of the eulachon include nearshore and offshore marine foraging habitat with water quality and available prey that supports eulachon juveniles and adult survival. The listing of eulachon critical habitat states: “The components of the nearshore and offshore marine foraging essential feature include: Food: Prey items, in a concentration that supports foraging leading to adequate growth and reproductive development for juveniles and adults in the marine environment. Eulachon larvae and juveniles eat a variety of prey items, including phytoplankton, copepods, copepod eggs, mysids, barnacle larvae, and worm larvae (Barraclough, 1967; Barraclough and Fulton, 1967; Robinson et al., 1968a, 1968b). Eulachon adults feed on zooplankton, chiefly eating crustaceans such as copepods and euphausiids (Hart, 1973; Scott and Crossman, 1973; Hay, 2002; Yang et al., 2006), unidentified malacostracans (Sturdevant, 1999), and cumaceans (Smith and Saalfeld, 1955). Water Quality: Water quality suitable for adequate growth and reproductive development. The water quality requirements for eulachon in marine habitats are largely unknown, but they would likely include adequate dissolved oxygen levels, adequate temperature, and lack of contaminants (such as pesticides, organochlorines, elevated levels of heavy metals) that may disrupt behavior, growth, and viability of eulachon and their prey.”

Juvenile and adult eulachon are dependent upon good water quality and nearshore and offshore marine foraging habitat for their survival. Eulachon depend upon very small marine invertebrates (copepods, euphausiids, cumaceans, mysids, barnacle larvae, and worm larvae) that are likely to be highly sensitive to drugs used by Nordic to reduce parasites on farmed fish. The fish treatment drugs Parasite-S, Formalin-F, and Formacide-B (Formalin) may diminish eulachon prey in the effluent stream and in critical habitat in the Mad River, harming individual fish and potentially causing significant reductions in local eulachon numbers. A risk analysis for loss of eulachon prey species should be conducted to determine Project effects to eulachon critical habitat, as well as individual and population-level effects to the species.

## References

GHD. 2020a. Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report August 2020. 53pp.

NOAA Fisheries 1997. Endangered and Threatened Species; Threatened Status for Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU) of Coho Salmon. May 6, 1997 *Federal Register* 62:24588.

NOAA Fisheries. 1999a. Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. May 5, 1999. *Federal Register* 64:24049-24062.

NOAA Fisheries. 1999b. Endangered and Threatened Species; Threatened Status for Two Chinook Salmon Evolutionarily Significant Units (ESUs) in California. September 16, 1999 *Federal Register* 64:50394.

NOAA Fisheries. 2000a. Designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California. March 17, 2000 *Federal Register* 65:7764-7787.

NOAA Fisheries. 2000b. Endangered and Threatened Species: Threatened Status for One Steelhead Evolutionarily Significant Unit (ESU) in California. June 7, 2000 *Federal Register* 65:36074.

NOAA Fisheries. 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. *Federal Register* 70:52487-52627.

NOAA Fisheries. 2006. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon. *Federal Register* 71:17757-17766.

NOAA Fisheries. 2009. Critical Habitat Designation for Southern Distinct Population Segment of North American Green Sturgeon, Final Rule. *Federal Register* 74:52299.

NOAA Fisheries. 2010. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of Eulachon. March 18, 2010 *Federal Register* 75(52):13012-13024.

NOAA Fisheries. 2011. Endangered and Threatened Species; Designation of Critical Habitat for the Southern Distinct Population Segment of Eulachon. *Federal Register* 76:65323-65352.

NOAA Fisheries. 2014. Final Recovery Plan for the Southern Oregon/ Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*). 1841pp.

**From:** [Bruce Campbell](#)  
**To:** [Suarez, Alyssa](#)  
**Subject:** Scoping Comments on Nordic Aquafarms California, LLC Land-based Aquaculture Project  
**Date:** Wednesday, June 30, 2021 11:31:29 PM

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June 29-30, 2021

Alyssa Suárez, Planner II  
Humboldt County Planning & Building Department  
3015 H Street Eureka, CA 95501

Dear Ms. Suarez and to whom it may concern at the Humboldt County Planning & Building Dept. and beyond,

Thank you for this opportunity to provide scoping comments for the E.I.R. that shall be prepared on the proposed Nordic Aquafarms facility in Samoa, California.

**A key question** comes to mind in regards to this proposed massive salmon-raising operation.

## **Will the Humboldt Bay Municipal Utility District add SODIUM FLUORIDE to the Mad River WATER that would be piped to the Nordic Aquafarms facility ???**

If I make **a single point** that gets through in this whole comment, it is that the **IMPACTS from SODIUM FLUORIDE must ABSOLUTELY be ANALYZED for in this E.I.R. !!!** But there is a relatively **simple way to avoid such an analysis in the forthcoming E.I.R. which is to work out an agreement with the Humboldt Bay Municipal Water District so THAT THEY DO NOT ADD SODIUM FLUORIDE to HBMWD's Mad River WATER before it is piped to the proposed Nordic Aquafarms facility in Samoa.**

But if there is not a serious analysis of the impacts from adding SODIUM FLUORIDE to Nordic Aquafarm's water supply, then that E.I.R. should be tossed out since it is clearly a serious issue based on reality that is clearly being raised in this scoping comment. **Unless my earlier advised proposed agreement to not add sodium fluoride to Nordic Aquafarms' water comes together before the emergence of the Draft E.I.R., then it is these few key issues that particularly need thorough evaluation:**

- 1. EVALUATE the IMPACT that SODIUM FLUORIDE could have on the SALMON being raised at Nordic Aquafarms facility;**



**2. EVALUATE the IMPACT that SODIUM FLUORIDE could have on CONSUMERS of SALMON raised at the Nordic Aquafarms facility;**

**3. EVALUATE the IMPACT that SODIUM FLUORIDE could have on SPECIES in the vicinity of the ocean outfall pipe planned to be used by the Nordic Aquafarms facility, and would these impacts partially depend on the volume of effluent with sodium fluoride flowing out the discharge pipe into the Pacific Ocean offshore area(?).**

\*\*\*\*\*

In your **analysis of the likelihood of ongoing sufficient quantities of HBMWD Mad River water to provide projected amounts to the proposed Nordic Aquafarms facility, besides evaluating probability of less water in most years due to what a number of scientists believe could be the worst drought in 1200 years in the American West**, please also consider **other pressures on the Mad River** such as **toxic areas** on and near the river (with more toxin-using facilities proposed) which may impact amount of potable water from the Mad River at some point, as well as **pressure on Mad River water from increasing numbers of cannabis mega-grows** both legal and illegal in the watershed.

Perhaps one alternative could be for, say, 2/3 of the projected salmon to be raised during a year -- rather than the full 75 million salmon a year I recall that projected number being. (This is in case there needs to be a reduction in Mad River water via HBMWD, or if the projected amount of fish raised at the facility needs to be reduced to be able to manage diseases in the salmon.)

\*\*\*\*\*

**Evaluate the advantages and disadvantages of raising ATLANTIC versus PACIFIC SALMON at the proposed facility in Samoa, California.**

Somewhere in your evaluation, you must consider that the Cascadia Subduction is overdue for a greater than 9 magnitude earthquake! During a huge quake and during some tsunamis (whether or not they are related), the Nordic Aquafarms facility will be destroyed and millions of fish will escape to the Humboldt Bay / Pacific Ocean. Evaluate the pluses and minuses of Atlantic versus Pacific salmon in terms of such a "great escape" scenario.

\*\*\*\*\*

**Evaluate Nordic Aquafarms facilities in Scandanavian countries to determine history of disease outbreaks at these facilities – which may assist in determining likelihood of disease outbreaks at the proposed facility in Samoa.**

*It must be noted that it appears Nordic Aquafarms was being rather sly in earlier environmental paperwork by their claim that there has never been a disease outbreak at a facility run by the California subsidiary of Nordic Aquafarms. It appears that this NA's subsidiary has likely never raised a fish in California!*

Are there **plans to use antibiotics if there are outbreaks of disease in salmon** at the Nordic Aquafarms Samoa facility? Do you plan to use any antibiotics as somewhat of a "preventative" – even though too much use can impact the effectiveness of the antibiotic

when it is really needed?

\*\*\*\*\*

**Evaluate how the California-endangered Marbled Murrelet could be impacted by the Nordic Aquafarms facility, ocean discharge from the facility, and increased activity and water intake from Humboldt Bay.** Also please evaluate how the **prey species of fish consumed by the murrelet may be impacted** by the **ocean discharge** from the Nordic Aquafarms outfall pipe, as well as from **increased activity within Humboldt Bay** due to the Nordic Aquafarms facility.

\*\*\*\*\*

**What will the constituents be entering the ocean from the Nordic Aquafarms discharge pipe, and how much water a day do you believe will join those other constituents in exiting that discharge pipe?**

\*\*\*\*\*

**What toxic material is likely to be churned up by my more work activities in Humboldt Bay? What toxic material is likely to be deposited on soil at the Samoa site due to destruction of old buildings(?)** – please consider PCBs in caulking in building material in that era as well as asbestos and other toxic material. **Please assess the “Redwood Marine Terminal II ocean outfall pipe” for dioxin and furan contamination,** as well as for **leaching heavy metals** from the pipe itself.

\*\*\*\*\*

I just read that there are plans to use **diesel generators at the Samoa site.** I am aware that there are **more than 40 carcinogens in the basic diesel mixture,** and am also aware of the fairly high cancer rate in Humboldt County. Would such generators only be used if PG&E cannot meet the electric demand generally or in case of shutting down certain power lines due to wildfire dangers? Please consider such in the E.I.R. as well.

Thank you for consideration of these comments.

Sincerely yours,

Bruce Campbell  
10008 National Bl. # 163  
Los Angeles, CA 90034

**From:** [John Friedenbach](#)  
**To:** [Suarez, Alyssa](#)  
**Cc:** [Ford, John](#); "[Marianne Naess](#)"  
**Subject:** SCH #2021040532 Nordic  
**Date:** Thursday, June 10, 2021 8:19:29 AM

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Hi Alyssa,

I am unable to attend this morning's agency meeting regarding the Nordic project as today is my District's monthly board meeting.

I do have a general comment about the NOP. There are several water sources referenced throughout the document, but the source water is not clear.

I suggest that you include a reference to either: domestic water (potable); industrial water (non-potable) or sea water (sea chest) as appropriate when referring to the various uses of water in your document.

This will clarify for the readers the respective area of potential environmental impact.

One specific example is the discussion regarding use of the sea chest which includes a discussion about fire suppression. It is unclear whether the fire suppression water will be sea water or industrial water or domestic water.

If you wish to discuss further, please do not hesitate to contact me.

Regards,

John Friedenbach  
General Manager  
Humboldt Bay Municipal Water District  
[www.hbmwd.com](http://www.hbmwd.com)  
707-443-5018 work  
707-362-7509 cell





Dear Humboldt County Officials:

We are writing out of deep concern over the proposed Nordic Aquafarms facility, which plans to operate a massive 766,530 square-foot factory fish farm on the Samoa Peninsula. I was pleased to see County's decision to heed public outcry and undertake a thorough environmental review under the California Environmental Quality Act. I urge you to closely adhere to the strict requirements imposed by CEQA while conducting this review, including by seriously considering a no-action alternative as well as an alternative that only allows land-based aquaculture facilities to abide by the following requirements: the facility must run on majority clean, renewable energy such as wind or solar; refrain from using feed that contains fish meal, fish oil, or GMO ingredients; operate without regular water discharge; and abstain from administering routine pharmaceuticals, drugs, and other chemicals as a preventative health measure.

Not only will the massive amount of wastewater produced daily by this facility impact nearby water quality, existing wildlife habitats, and infrastructure, but I also have significant concern over the carbon footprint that the operation will create. This facility could produce up to 60 million pounds of fish per year and discharge six million gallons of wastewater into our coastal waters daily. Based on the myriad of environmental and socio-economic impacts the operation will have, I respectfully request that the Board deny the proposed NPDES permit. Please do all you can to prevent a land-based factory fish farm from harming Humboldt Bay's precious coastline.

Our community does not want Nordic to operate along our coast. California's coastline is a treasure. It is where we take our children to play and teach them about the wonders of nature. It is where businesses and families continue California's rich history of nourishing ourselves with wild, native seafood. California's bustling tourism industry relies heavily on maintaining a clean, healthy coastal ecosystem. Our state is also home to many iconic marine animals, a number of which are endangered species. Fish feed practices at these operations heavily rely on wild fish and land-based crops like soy, which inherently and unavoidably contain GMOs. Moreover, factory farms like this operation are corporate-driven, which only means higher profits at the expense of sustainable operations and quality products. Factory fish farms could lead to the demise of our wild fishing communities and related industries by placing downward pressure on fishing prices and creating competition for limited marine space. We cannot risk all of this just to benefit corporations – especially a foreign-owned corporation - that will pollute our waters with harmful chemicals, deadly parasites, and lethal viruses that could infect our wild fish stocks.

We know that County officials understand the value of California's coastline, which belongs to the people of California. We care deeply about the well-being of our ocean ecosystem, and we want our precious resources protected so our children and their children can enjoy them. Please do not take steps toward allowing industrial fish farms in our State. Thank you for your consideration.

Sincerely,

<b>First name</b>	<b>Last name</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
B.J.	Biffel	Acampo	CA	952209702
Joan	Fry	Acton	CA	81007
Taryn	Braband	Agoura	CA	91301
roger	ewing	Agoura Hills	CA	913012215
Michelle	Quigley	Agoura Hills	CA	913013430
Jess	Thomas	Agoura Hills	CA	913011832
Lillian	Barton	Agoura Hills	CA	913014112
Tamara	Lesser	Agoura Hills	CA	913013358
Carol	Graves	Agoura Hills	CA	913015208
Rudolph	Quintana	Agoura Hills	CA	913011932
cathy	crum	Agoura Hills	CA	913013508
Midi	Berry	Agoura Hills	CA	913012062
Tamara	Lesser	Agoura Hills	CA	913013358
Tamara	Lesser	Agoura Hills	CA	91301
Michael	Lichstein	Agoura Hills	CA	913011580
Victor	Kemp	Aguanga	CA	925369730
Lacey	Crawford	Aguanga	CA	925369799
Mike	Kehl	Alameda	CA	945011325
Mana-Jean	WAGNON	Alameda	CA	945013006
Suzan	Kaplan	Alameda	CA	945011218
Susan	Deutsch	Alameda	CA	945027715
jamie	Le	Alameda	CA	945012341
Nicholas	Ratto	Alameda	CA	945015417
Geralyn	Gulseth	Alameda	CA	94502
Randall	Miller	Alameda	CA	94501
Randall	Hughes	Alameda	CA	945013220
Kevin	Slauson	Alameda	CA	945014706
Lynda	Lynch	Alameda	CA	945011736
Ann	Williams	Alameda	CA	945026418
victoria	kuhns	Alameda	CA	945011730
Keith	Gleason	Alameda	CA	945016120
Patricia	Gannon	Alameda	CA	945027048
Kiri	Mah	Alameda	CA	945013015
Theresa	Tan	Alameda	CA	945015849
Scott	Wilson	Alameda	CA	94501
Elizabeth	Finn	Alameda	CA	945013211
Ruth	Feldman	Alamo	CA	94507
Jerry	Zampino	Alamo	CA	945072207
Paula	Minicucci	Alamo	CA	945071748
Fred	Winik	Albany	CA	947062447
Letitia	Berlin	Albany	CA	947061037
Lynn	Quirolo	Albany	CA	947062337
michael	sullivan	Albany	CA	947062101
Melanie	Goldberg	Albany	CA	947062132
Elizabeth	Krainer	Albany	CA	947061541
Patricia	Reese	Albany	CA	947061315

Ian	MacLeod	Albany	CA	947061710
Elizabeth	Johnson	Albany	CA	947061524
Tina	Kremzner-Hsing	Albany	CA	947062125
Jean	Abe	Albany	CA	947062209
Barbara	Williamson	Albany	CA	947061544
Kyle	Heger	Albany	CA	947062018
Beatrice	Sims	Alhambra	CA	918033720
Anjanette	Caron	Alhambra	CA	918032207
Ruben	Terveen	Alhambra	CA	918012146
Tom	Atha	Alhambra	CA	918013278
Angel	Orona	Alhambra	CA	918033440
Rebecca	Wang	Alhambra	CA	918016817
Bonnie	Mitchell	Aliso Viejo	CA	926566990
Mari	Flower	Aliso Viejo	CA	926563331
Victoria	Shankling	Aliso Viejo	CA	926568040
Carmen	Jurado	Aliso Viejo	CA	926562964
Carissa	Kalogianis	Aliso Viejo	CA	926564202
Michelle	Kyman	Aliso Viejo	CA	926566260
George	Inashvili	Aliso Viejo	CA	926562827
Linda	Walters	Alpine	CA	919013643
Brian	Benjamin	Alpine	CA	919012240
Miriam	Baum	Alta Loma	CA	917013111
Angela	Hoyes	Alta Loma	CA	917373936
Laurie	Barre	Altadena	CA	910011912
Rosemary	Crane	Altadena	CA	910012117
Venetia	Large	Altadena	CA	910036572
Vic	Bostock	Altadena	CA	910011819
Rosiris	Paniagua	Altadena	CA	910014408
Jamie	Kenwood	Amador City	CA	956010544
Rudolph	Morgenfruh	Anaheim	CA	928082210
Mia	Elias	Anaheim	CA	928011748
Matthew	Johnson	Anaheim	CA	928011327
Marlene	Tucay	Anaheim	CA	928064334
Eleanore	Kaufmann	Anaheim	CA	928064664
Mario	Salgado	Anaheim	CA	928011779
John	Lee	Anaheim	CA	928042554
Mike	Sam	ANAHEIM	CA	92802
Keith	Harrison	Anaheim	CA	928064830
Ken	De La Rosa	Anaheim	CA	928043877
Teri	Gee	Anaheim	CA	928052140
June	Kusaka	Anaheim	CA	928015811
Linda	Shadle	Anaheim	CA	928045257
Michael	Sanchez	Anaheim	CA	928015437
valorie	paladino	Anaheim	CA	92801
Natalie	Blasco	Anderson	CA	960078901
Robert	Buehler	Anderson	CA	960073638
Mary Lou	Roberts	Anderson	CA	960079704



Sharon	Lieberman	Annapolis	CA	954129752
Randall	Frank	Antelope	CA	95843
Jessica	Mitchell-Shihabi	Antelope	CA	958435935
Barbara	Trerice	Antioch	CA	945092183
Jane	Kelsberg	Antioch	CA	945092009
Jacqueline	Wandry	ANTIOCH	CA	94561
Kimberly	Talton	Antioch	CA	945318060
Lindsey	Kalfsbeek	Antioch	CA	945095529
Lauren	Nelson	Antioch	CA	945093501
Rebecca	maldonado	Apple Valley	CA	923074823
Julia	Deasley	Apple Valley	CA	92308
carole	Johnson	Apple Valley	CA	923071773
Jenny	Wilder	Apple Valley	CA	923089340
Sarah	Peterson	Aptos	CA	95003
Steven	Waldrip	Aptos	CA	950033999
Margaret	Wessels	Aptos	CA	950035927
Carol	Easton	Aptos	CA	950039762
Delayne	Auerbach	Aptos	CA	950034256
Jennifer	Greening	Aptos	CA	950034813
Leah	Berman	Aptos	CA	950033305
Penelope	Baring	Aptos	CA	950034440
Alex	Seibert	Aptos	CA	950033504
Bryce	H.	Aptos	CA	950011851
Nina	Granlund	Aptos	CA	950034919
Hannah	Whitted	Aptos	CA	950035504
Maria	Nesheim	Aptos	CA	950033347
Linda	Vierra	Aptos	CA	950039610
Holly	Heron	Aptos	CA	950033190
Richard	smith	Aptos	CA	950034517
joanne	Katzen	Aptos	CA	95003
Victoria	Erickson	Aptos	CA	950035132
Bruce	Campbell Adamson	Aptos	CA	95001
Blaise	Brockman	Arcadia	CA	910076917
Irene	Dobrzanski	Arcadia	CA	910078027
Mary	Quimby	Arcadia	CA	910064753
NANCY	Adams	Arcadia	CA	910077062
Diane	Mojica	Arcadia	CA	910064931
Gina	Truex	Arcadia	CA	910061501
William	Heuser	Arcadia	CA	910076425
Scott	Wardlaw	Arcadia	CA	910077846
Dixie	English	Arcadia	CA	910063554
Linda	Busche	Arcadia	CA	910061609
Bonnie	MacRaith	Arcata	CA	955215119
Sophie	Rocheleau	Arcata	CA	955215020
Rita	A	Arcata	CA	955215752
Madlen	Simms	Arcata	CA	955218330
Ed	Ward	ARCATA	CA	95521

J	P	Arcata	CA	955218206
Mary	Budworth	Arnold	CA	952230705
Barbara	Frances	Aromas	CA	950049709
Paul	Katz	Aromas	CA	950049710
Judy	Fukunaga	Arroyo Grande	CA	934211206
Shelagh	Garren	Arroyo Grande	CA	934204128
Mary	Simmons	Arroyo Grande	CA	934205932
Linda	Abbott Trapp	Arroyo Grande	CA	934205550
Joseph	Read	Arroyo Grande	CA	934205567
Ellen	Evans	Atascadero	CA	934226106
Eric	Weiss	Atascadero	CA	934221574
Gregory	Bell	Atascadero	CA	934224154
gloria	boyd	Atascadero	CA	934228857
Tara	Gonzales	Atascadero	CA	934224340
Judy	Ransom	Atascadero	CA	93422
Genevieve	Gater	Atascadero	CA	934222202
Deborah	McKrell	Atascadero	CA	934222405
Theresa	Winterling	Atherton	CA	940273843
Harold	Broadstock	Atwater	CA	953013816
Anna	Hamre	Auberry	CA	936029656
Marilyn	Barthelow	Auburn	CA	956029314
Lori	Wilson-Hopkins	Auburn	CA	956035913
Virginia	Ward	Auburn	CA	956033855
Elizabeth	Cutter	Auburn	CA	956033508
Jeffrey	Roughgarden	Auburn	CA	956029334
Suzanne	Wood	Auburn	CA	956035504
Mildred	Livingston	Auburn	CA	956033803
Denise	Redden	Auburn	CA	956034125
Gregory	Lake	Auburn	CA	956033538
claude	duss	Auburn	CA	95602
Rev. . Dr. Aaron	Bendavid	Auburn	CA	956029751
Robert	Andrade	Auburn	CA	956035248
Laurie	Hernandez	Avalon	CA	90704
Maria	Cardenas	Azusa	CA	91702
Liana	Garcia	Azusa	CA	917023887
Silvia	Rocha	Azusa	CA	91702
Felena	Puentes	Bakersfield	CA	93312
Caryn	Cowin	Bakersfield	CA	933087575
Louise	Doozan	Bakersfield	CA	933099315
Steve	Sketo	Bakersfield	CA	933125144
Sarah	Kalinay	Bakersfield	CA	933111642
Etta	Robin	Bakersfield	CA	933125824
Robin	Vosburg	Bakersfield	CA	933081757
Lisa	Dykes	Bakersfield	CA	93307
Ramon	Felix	Bakersfield	CA	933093129
Rosalie	Prieto	Bakersfield	CA	933112878
Linda	Alvarado	Bakersfield	CA	933014942

Kelly	Ardis	Bakersfield	CA	933086401
Jan	Repp	Baldwin Park	CA	917062364
Jesse	Caldron	Baldwin Park	CA	917063151
Colin	R. Coward	Baldwin Park	CA	917064551
khai	hang	Baldwin Park	CA	917061437
Tiana	Lee	Banning	CA	922203103
Debi	McDowell	Barstow	CA	923112831
Bonnie	Shand	Bayside	CA	955249049
Michelle	DuBord	Beaumont	CA	922231608
David	Ohrberg	Beaumont	CA	92223
Ryan	Schrader	Bellflower	CA	907062337
Jan	Sownie	Bellflower	CA	90706
Jason	Nolasco	Bellflower	CA	907064111
Cecilia	Gonzalez	Bellflower	CA	907065075
Kristie	Guzman	Bellflower	CA	907071534
Jennie	Winter	Belmont	CA	94002
terry	dillard	Belmont	CA	940022034
Andrea	Kevech	Belmont	CA	940021221
Glenn	Reid	Belmont	CA	940022151
Fereshteh	Valamanesh	Belmont	CA	940022150
Tim	Linerud	Belmont	CA	940021911
Catherine	Cakebread	Belmont	CA	940021526
Shiela	Cockshott	Belmont	CA	940023019
Angela	Gantos	Belvedere Tiburon	CA	949202010
Karen	Rasmussen	Belvedere Tiburon	CA	949202016
Jhea Anne	McCloskey	Ben Lomond	CA	950059664
J. Patrick	Kidd	Ben Lomond	CA	950059521
Craig and Nancy	Phillips	Ben Lomond	CA	950059435
Theresa	Kellgreen	Ben Lomond	CA	950059358
Cynthia	Hellmuth	Benicia	CA	945104454
Sandra	Plate	Benicia	CA	94510-1733
Rudy	Zeller	Benicia	CA	945101434
Forest	Frasieur	Benicia	CA	945103288
Dominic	De Bellis	Benicia	CA	94510
jonathan	weinstock	Berkeley	CA	947102305
Inger	Acking	Berkeley	CA	947101844
Mary	Sperling	Berkeley	CA	947021333
Emily	Earl	Berkeley	CA	947032006
Charles	Winter	Berkeley	CA	947043325
Jonathan	Eden	Berkeley	CA	947071520
Jeff	Zittrain	Berkeley	CA	947022464
Lindsay	Mugglestone	Berkeley	CA	947051948
Carol	Hirth	Berkeley	CA	947021009
Mitch	Cohen	Berkeley	CA	94709
Saraswathi	Devi	Berkeley	CA	947091405
Mary	Rose	Berkeley	CA	947021438
HALI	HAMMER	Berkeley	CA	947032323

Carol	Fusco	Berkeley	CA	947082058
Bob	Schildgen	Berkeley	CA	94703-1630
Jane	Ellis	Berkeley	CA	94710
Steve	Robey	Berkeley	CA	947081229
Asano	Fertig	Berkeley	CA	947021427
Karen	Borst-Rothe	Berkeley	CA	947072407
joan	macbeth	Berkeley	CA	947021473
thomas	andrae	Berkeley	CA	947031210
Stephen	josephson	Berkeley	CA	947102158
Ann	Myers	Berkeley	CA	947051955
Waltraud	Buckland	Berkeley	CA	947082124
Sheryl	Rose	Berkeley	CA	947021001
John	Hagopian	Berkeley	CA	94702
Kimi	Hosoume	Berkeley	CA	947031129
Stephen	Brown	Berkeley	CA	947043214
Carole	Kalous	Berkeley	CA	947041541
Lois	Yuen	Berkeley	CA	94707
Marie	Pappas	Berkeley	CA	947051233
sybil	marcus	Berkeley	CA	947051416
Joan	Wager	Berkeley	CA	947081719
Sandra	Barlow	Berkeley	CA	947051350
William	Buchholz	Berkeley	CA	947071732
Melissa	Hafez	Berkeley	CA	947081841
Camilla	Comanich	Berkeley	CA	947071926
Marjory	Keenan	Berkeley	CA	947031138
Karen	Eisenstadt	Berkeley	CA	947052702
Niloofer	Shambayati	Berkeley	CA	947072407
Joan	Andersson	Berkeley	CA	947081705
Elizabeth	Liebert	Berkeley	CA	94708
Walter John	Bankovitch	Berkeley	CA	947031601
Karen	Harrington	Berkeley	CA	947071716
Rina	Margolin	Berkeley	CA	94702
Rachel	Gordon	Berkeley	CA	947072522
Kaiya	Garcia	Berkeley	CA	947031927
Maureen	Prochaska	Berkeley	CA	947062307
Elizabeth	Dodge	Berkeley	CA	947081537
Carol	Nicklas	Berkeley	CA	94708-1829
Marjolein	Bruinen	Berkeley	CA	947091764
Heather	Formaini	Berkeley	CA	94710
Paul	Vesper	Berkeley	CA	947031237
Maureen	Shockley	Berkeley	CA	947021400
Paul	Gruber	Berkeley	CA	947031518
Diana	Howard	Berkeley	CA	947052802
Helen	Cameron	Berkeley	CA	947071816
Joanna	Katz	Berkeley	CA	947021707
Mara	Carman	Berkeley	CA	947081317
janet	perlman	Berkeley	CA	947051052

Maggie	Hughes	Berkeley	CA	947042247
Tim	Arai	Berkeley	CA	947021332
David	Coulter	Berkeley	CA	947091512
Anne	Casey	Berkeley	CA	947051882
Christopher	Hamilton	Berkeley	CA	947062506
Kasra	Kamoonah	Berkeley	CA	947022713
Patricia	Williams	Berkeley	CA	947022024
c	D	Berkeley	CA	947031019
Pat	Brooks	Berkeley	CA	947032241
Marion	Frank	Berkeley	CA	947041418
Debbie	Tenenbaum	Berkeley	CA	947031375
Susanne	DeWitt	Berkeley	CA	947082108
Hilary	Clark	Berkeley	CA	94705
Robert	Godes	Berkeley	CA	947052517
Jerine	Kurashige	Berkeley	CA	947071513
Nancy	Schimmel	Berkeley	CA	947031651
Jose	Constantino	Berkeley	CA	94703
Joanna	Lennon	Berkeley	CA	94705
Fredrick	Seil	Berkeley	CA	94708-1734
Zachary	Rymland	Berkeley	CA	94706
MaryAnne	Glazar	Berkeley	CA	947102050
suzanne	mcmillan	Berkeley	CA	947031321
Janet	Sovin	Berkeley	CA	947052332
Les	Shipnuck	Berkeley	CA	947032554
Stephanie	Wellemeyer	Berkeley	CA	947102085
Katherine	Lunine	Berkeley	CA	94708-1352
Scott	Nelson	Bethel Island	CA	945111075
Canan	Tzelil	Beverly Hills	CA	90210
Karen	M.	Beverly Hills	CA	902127105
Brian	Florian	Beverly Hills	CA	902111756
Val	Barri	Beverly Hills	CA	902104303
Laurie	S	Beverly Hills	CA	902112216
B.	Tepp	Beverly Hills	CA	902113561
Suzanne	Beaton	Beverly Hills	CA	902101901
Kristina	Shook	Beverly Hills	CA	902112810
Val	Barri	Beverly Hills	CA	902104303
Mehry	Sepanlou	Beverly Hills	CA	902103943
Margaret	Lewis	Beverly Hills	CA	902103527
Michael	Reppenhagen	Beverly Hills	CA	90210
Sarena	Knapik	Beverly Hills	CA	902104913
Anna	Hittrich	BEVERLY HILLS	CA	V5j4w4
korinna	Shan.	Beverly Hills	CA	90210
Fabio	Bogdanic	BEVERLY HILLS	CA	90210
David	Stobie	Beverly Hills	CA	902103406
Lindsay	Marks	Beverly Hills	CA	902114706
Inger	Eppland	Beverly Hills	CA	902112810
Ken	Rosen	Beverly Hills	CA	902122275

Chris	Taylor	BEVERLY HILLS	CA	90210
Heather	Parekh	Beverly Hills	CA	90210
Nafisa	Hamouda-Asgill	Beverly Hills	CA	90210
Smith	Portman	Beverly Hills	CA	90210
J	Yuan	Beverly Hills	CA	902104155
Petra	Lentz-Snow	Big Pine	CA	93513
Eliza	Alvarez	Biola	CA	936060372
shawn	delehanty	Bishop	CA	935151715
Ann	Klinefelter	Bishop	CA	935147105
Jan	Rhoades	Bishop	CA	935142944
nancy	brettell	Bishop	CA	97405
Ardis	Hitchborn	Bishop	CA	935148090
Hugh	Bialecki	Blue Jay	CA	923170275
Alice	Alford	Blythe	CA	922262323
breanna	Rodriguez	Blythe	CA	922255604
Robert	Mizar	Bodega Bay	CA	949230410
Kevin	Reynolds	Bodfish	CA	932059795
Tina	Ann	Bolinas	CA	94924-0265
Margaret	Littlefield	Bolinas	CA	94924
Howard	Dillon	Bolinas	CA	94924
Dave	Elmore	Bonita	CA	919022537
Lucy	Larom	Bonita	CA	91902
Jeanie	Crowell	Bonita	CA	91902
Mischa	Kandinsky	Bonny Doon	CA	95060
Sandra	Sterling	Borrego Springs	CA	92004
Catherine	Harrington	Boulder Creek	CA	950060558
Ed	Atkins	Boulder Creek	CA	950068733
Starbear	Nygaard	Boulder Creek	CA	950060680
Ann	Thryft	Boulder Creek	CA	950069676
Karie	Hillery	Boulder Creek	CA	95006
Kathryn	St. John	Boulder Creek	CA	950069511
Lynn	Sentenn	Brea	CA	928211849
Piroja	Montgomery	Brea	CA	928211837
Robert	McHugh	Brentwood	CA	945135276
Cindy	Marconi	Brentwood	CA	945135288
John	DeYoung	Brentwood	CA	945131897
Dyan	Osborne	Brentwood	CA	945136972
Trina	Takahashi	Brentwood	CA	94513
Alyssa	Olivas	Brentwood	CA	945136383
Laura	Murrau	Bright	CA	12345
Mikel	Davenport	Brisbane	CA	940051622
Stephanie	Glatt	Buellton	CA	934276821
Nicole	Martel	Buellton	CA	93427
Nelson	Molina	Buena Park	CA	906202148
Kristin	Young	Buena Park	CA	90620
Patty	Hatcher	Buena Park	CA	90621
Marilyn	Livote	Buena Park	CA	906212718

Matthew	Sorensen	Burbank	CA	915053413
K	Glover	Burbank	CA	915054501
Jude	Lotz	Burbank	CA	915051607
Geoff	Regalado	Burbank	CA	915034183
Sandra	Christopher	Burbank	CA	915051856
D	Pioli	Burbank	CA	915101525
Tyson	Martin	Burbank	CA	915053742
Mary	Casale	Burbank	CA	915052018
Sal	Ortiz	Burbank	CA	915034361
Laura	Herndon	Burbank	CA	91505
Kathleen	Ford	Burbank	CA	915053445
David	Camp	Burbank	CA	915012637
Megan	Rangel-Lynch	Burbank	CA	915051537
Analise	McNeill	Burbank	CA	915054244
Diane	Charles	Burbank	CA	915063039
Christine	Angeles	Burlingame	CA	940105667
Cliff	Atendido	Burlingame	CA	940105163
Amita	Jain	Burlingame	CA	940105672
Laura	Overmann	Burlingame	CA	940105141
Amy	jobin	Burlingame	CA	940104454
Carolyn	Crow	Burlingame	CA	940105973
brandon	gregg	Burlingame	CA	940107516
Melanie	Fisher	Calabasas	CA	913023073
Jacqueline	Broulard	Calabasas	CA	913021828
Donna	Mason Adams	Calabasas	CA	913021758
Janice	Fagan	Calabasas	CA	91372
Paula	Krems	Calabasas	CA	913021806
Carol	Uschyk	Calistoga	CA	945151122
Olivia	Angell	Calistoga	CA	945159646
Cara	O'Neill	Calistoga	CA	945159634
Richelle	Boudinot	Calistoga	CA	94515
Maria	Gilardin	Calpella	CA	95418
Barbara	Tacker	Camarillo	CA	930127715
Suzanne	Menne	Camarillo	CA	930107820
Patricia	Little	Camarillo	CA	930103002
Christopher and Patricia	Ehret	Camarillo	CA	930129207
Grace	Cunningham	Camarillo	CA	930106246
Lawrence	Hubbs	Camarillo	CA	930106016
Susan	Beil	Camarillo	CA	930128946
Pam	Cellucci	Camarillo	CA	93010
Jeanette	Desmond	Camarillo	CA	930108604
Nadine	Hatcher	Camarillo	CA	930102016
Sharon	Lovell	Camarillo	CA	930125254
Richard	Swift	Camarillo	CA	930101842
Cy	Johnson	Camarillo	CA	930101722
Jennifer	Kopczynski	Camarillo	CA	930102147
James	Standlee	Cambria	CA	934282102



FRANCESCA	BOLOGNINI	Cambria	CA	934282503
Linda	Kierce	Cambria	CA	934282101
Mary A	Leck	Cambria	CA	934282508
Matt	McGurrin	Cambria	CA	934285973
Gwen	Thomas	Cambria	CA	934283259
Susan	Pitts	Cambria	CA	93428
Jill	Burnham	Cameron Park	CA	956827663
Melissa	Coleman	Cameron Park	CA	95682
Jim	Bearden	Camp Connell	CA	952234112
Lynda	James	Campbell	CA	950085352
Rita	Williams	Campbell	CA	950083602
Anne	Swanson	Campbell	CA	950080706
Steve	Recktenwald	Campbell	CA	950082983
Susan	LeClair	Campbell	CA	950082910
Eleanor	Anderson-Miles	Canoga Park	CA	913041526
Melissa	Marote	Canoga Park	CA	913031035
Peter	Volz	Canoga Park	CA	91303
Elena	Tyrrell	Canyon	CA	94516
HIROSHI	SUZUKI	Canyon Country	CA	913876213
Helene	Minniti	Canyon Country	CA	913515294
Alexandra	Herrera	Canyon Country	CA	913873906
Richard	Bockover	Capitola	CA	950102644
Javier	Reza	Capitola	CA	950102718
Nancy	DeJarlais	Capitola	CA	95010
Charlene	Kemp	Cardiff	CA	920072408
janet	mcclain	Cardiff	CA	920071346
Susan	Willhoit	Cardiff By The Sea	CA	920071905
C	vanderlip	Cardiff By The Sea	CA	920071021
Kin	Nadel	Cardiff By The Sea	CA	920072314
Mercedes	Benet	Carlsbad	CA	920097301
Lynette	Chasen	Carlsbad	CA	920114021
Keith	Hunter	Carlsbad	CA	920081049
Caryl	Parrish	Carlsbad	CA	920099122
Edward	Bacallao	Carlsbad	CA	920097523
Bruce	Stubbs	Carlsbad	CA	920102185
Heather	Lutz	Carlsbad	CA	920082614
R.	Felice	Carlsbad	CA	920114701
Frank	Salonia	Carlsbad	CA	920087003
Tom	Vance	Carlsbad	CA	92008
Dawn	Navis	Carlsbad	CA	920096978
Bryan	Fork	Carlsbad	CA	92010
Jennifer	Deckert	Carlsbad	CA	920082381
Lynda	Daniels	Carlsbad	CA	920102895
Roger	Roth	Carlsbad	CA	920113340
Sarah	Louie	Carlsbad	CA	920113948
Mark	D'Andrea	Carlsbad	CA	92009
David	Carlson	Carlsbad	CA	920096829

Gary	Wenk	Carlsbad	CA	92011
Cindi	Bouvier	Carlsbad	CA	92008
James	Collier	Carlsbad	CA	920115504
Carole	Erickson	Carmel	CA	939238425
Catherine	Whitaker	Carmel	CA	939214023
Gayle	Smith	Carmel	CA	93923-8034
Diana	North	Carmel	CA	939239728
Laurel	Emsley	Carmel	CA	939239739
Laura	Tryon	Carmel	CA	939238939
Stefanie	Kaku	Carmel	CA	939220554
Alyce	Foster	Carmel	CA	939238674
Natasha	Zeligs	Carmel By The Sea	CA	939210272
Julie	Dalton	Carmel By The Sea	CA	939214659
John	Reinhardt	Carmel By The Sea	CA	939217163
Liana	Olson	Carmel Valley	CA	939249358
Gail	Lundell	Carmichael	CA	956086020
Joseph	Porterfield	Carmichael	CA	95608-1826
Leigh	Stamets	Carmichael	CA	956081324
Heather	Vollstedt	Carmichael	CA	956083675
Myra	Bassin	CARMICHAEL	CA	95608
Warren	Hageman	Carmichael	CA	956081487
Elizabeth	Adan	Carmichael	CA	956081858
Cheryl	Berg	Carmichael	CA	956088027
Adam	Gaither	Carmichael	CA	956085861
Benjamin	Wiener	Carpinteria	CA	930133076
Catherine	Robson	Carpinteria	CA	93013
Sandy	Vandeman	Carpinteria	CA	930132437
Mary	Wiener	Carpinteria	CA	930133076
Julie	Russell	Carpinteria	CA	930133309
Mark	Fuller	Carson	CA	907453653
MEGAN	SNIPES	Carson	CA	907451014
myra	berario	Castaic	CA	913844323
Jim	Haley	Castaic	CA	913100297
Jim	Haley	Castaic	CA	91383
Gloria	Aguirre	Castaic	CA	913842518
Kimberly	Smiley	Castaic	CA	99004
Maurizio	Toniato	Castellarano	CA	41049
Mary	Preston	Castro Valley	CA	945521719
John	Giles	Castro Valley	CA	945522624
glen	deardorff	Castro Valley	CA	945462722
Dave	Hall	Castro Valley	CA	945461350
Gloria	Carmody	Castro Valley	CA	945467107
Katarina	Grabowsky	Castro Valley	CA	945462942
Aaron	Kenna	Castro Valley	CA	94592
Gerard	Ridella	Castro Valley	CA	945462506
Greg	Rosas	Castro Valley	CA	945463653
Patricia	Blackwell-Marchant	Castro Valley	CA	945521708

Eric	Nichandros	Castro Valley	CA	945521601
Kerri	McGoldrick	Castro Valley	CA	945466350
Pamela	Sibley	Castro Valley	CA	945463855
Pati	Jio	Castro Valley	CA	94546
Elisabeth	Bathgate	Castro Valley	CA	945466522
Barbara	Harper	Castroville	CA	950122926
Lori	Smith	Cathedral City	CA	922346726
Kelly	Erwin	Cathedral City	CA	92234
Phillip	Cripps	Cathedral City	CA	922347932
Nancy	Shannon	Cathedral City	CA	922342047
George F	Klipfel II	Cathedral City	CA	922348405
gary	Baxel	Cathedral City	CA	922343861
Janet	Flanagan	Catheys Valley	CA	953069706
Susan	Dodd	Cayucos	CA	934301154
Jon	Anderholm	Cazadero	CA	954219580
Penny	Heintz	Cedar Ridge	CA	959240362
Gail	Mcconnell	Cedarville	CA	961040117
Marie	Perry	Ceres	CA	953074102
JAMES	LINDGREN	Cerritos	CA	907036711
S	P	Chatsworth	CA	913113153
Pamela	Davis	Chatsworth	CA	87144
Ron	Thomas	Chatsworth	CA	913112917
Pritam	Singh	Chatsworth	CA	913114213
Chris	Heitkemper	Chatsworth	CA	913113905
Kenneth	Althiser	Cherry Valley	CA	922233658
Charles	Plopper	Chester	CA	960200395
Sharon	Fritsch	Chico	CA	959287267
Angelo	Simao	Chico	CA	959286580
Valerie	Fannin	Chico	CA	959738759
Bruce	McLean	Chico	CA	959273888
Alex	Sorger	Chico	CA	959730463
Angela Treat	Lyon	Chico	CA	959263487
Monique	sonoquie	Chico	CA	959286532
Garrett	Alden	Chico	CA	959287488
Caroline	Warren	Chico	CA	959730751
Wesley	Jensen	Chico	CA	959285920
Dee	Randolph	Chico	CA	959265132
Jerry	Peavy	Chico	CA	959262518
Mike	Davis	Chico	CA	959285614
Kate	Transchel	Chico	CA	95926
Kristin	Gerry	Chico	CA	959263141
Rachael	Pendleton	Chico	CA	959738322
Marianne	McDermott	Chico	CA	959283959
heinz	grimm	Chico	CA	95927
Ann	Polivka	Chico	CA	959285859
Sharon	Stallings	Chico	CA	959261711
Anna	Ashley	Chico	CA	959286370

Emma	Kovac	Chico	CA	959286053
Henry	Feilen	Chino	CA	917103131
Sara	Compean	Chino	CA	917102639
Brigid	Murphy	Chino	CA	917105383
Terrie	Maguire	Chino	CA	917103929
Mary	Burns	Chino Hills	CA	917092320
Cindy	cindy	Chino Hills	CA	917092576
Andy	Hou	Chino Hills	CA	917092702
John	Teevan	Chula Vista	CA	91914
Alicia	Amador	Chula Vista	CA	919104520
Connie	Juergens	Chula Vista	CA	919131827
Raymie Lynn	Huerta	Chula Vista	CA	919116840
carol	vonsederholm	Chula Vista	CA	919133706
Angela	Barbee	Chula Vista	CA	919106241
Patris	Loyer	Chula Vista	CA	919132630
Paloma	Carrillo	Chula Vista	CA	919144125
Bill	Todd	Citrus Heights	CA	956211660
Carol	Brady	Citrus Heights	CA	956107285
Sally	Allen	Citrus Heights	CA	95621
Renee	Cocks	Citrus Heights	CA	956103138
Sharon	Hawkinson	Citrus Heights	CA	95610
Cari	Chenkin	Citrus Heights	CA	956103823
Catherine	Les	Citrus Heights	CA	956102982
Maggie	Lopez	Citrus Heights	CA	956106744
Donna	Myers	Citrus Heights	CA	95621
Grace	Morsberger	Claremont	CA	917113505
Erica	Tyron	Claremont	CA	917113818
Joanna	Dewey	Claremont	CA	917114535
Marilyn	Brunger	Claremont	CA	917114236
JOHN	MAHER	Claremont	CA	91711
Dave	Lutz	Claremont	CA	917114225
Richard	Shepard	Claremont	CA	917110219
Harvey	Fryer	Claremont	CA	917115524
Lois	Harris	Claremont	CA	917112753
John	Wetzork	Claremont	CA	917114639
John	Cobb	Claremont	CA	917114236
Ellen	Webster	Claremont	CA	917114210
Nancy	Ruyter	Claremont	CA	917115010
Danny	Castori	Clayton	CA	945170830
Tracy	Cooper	Clayton	CA	945171507
Kelly	Davidson	Clayton	CA	945179702
Cleo	Masur	Clearlake	CA	954229034
Hester Mary	Rybka	Clearlake Oaks	CA	954230335
Dan	Towers	Clearlake Oaks	CA	95423
Sharon	Chang	Clearlake Oaks	CA	95423
Pat	Goodson	Clearlake Oaks	CA	95423
Karen	Chinn	Cloverdale	CA	954255457

Mignon	Moskowitz	Cloverdale	CA	954253338
R. M.	ST. ANGELO	Cloverdale	CA	954253535
Ron and Malinda	Thal	Cloverdale	CA	954254305
Kim	Peterson	Cloverdale	CA	954251090
Jay	Ray	Cloverdale	CA	954253701
Cara	Barnhill	Clovis	CA	936114423
Victoria	Warren	Clovis	CA	936120875
Sharon	Colyar	Clovis	CA	936125829
Sungmin	Kim	Clovis	CA	936115147
Patricia	Porter	Clovis	CA	936124850
Ielia	bogard	Coarsegold	CA	936140024
Dennis	Rickard	Coarsegold	CA	936148621
Amie	Oliver	Coarsegold	CA	936140417
David	Coleman	Cobb	CA	954261321
Leslie	Harper	Colfax	CA	95713
William	Sullivan	Colfax	CA	95713
Kathleen	Olsson Nelson	Colfax	CA	957131143
Diane	Hestich	Colton	CA	923244532
Nina	Gallardo	Colton	CA	923242558
Shakayla	Thomas	Compton	CA	902202645
Señor	Hall	Compton	CA	902223022
Jerry	Horner	Concord	CA	945182322
Rebecca	Paulson	Concord	CA	945192361
Sharon	Budde	Concord	CA	945215005
Silva	Harr	Concord	CA	945212205
Ian	Nolan	Concord	CA	945181407
Jess	Hernandez	Concord	CA	945212135
lisa	maker	Concord	CA	945203756
Howard	Flowers	Concord	CA	945184035
Carol	Lane	Concord	CA	945183731
Leslie	Myers	Concord	CA	945214402
Caren	Briggs	Concord	CA	945212439
gary	lozano	Concord	CA	945192216
Patricia	Carpenter	Concord	CA	945212974
Robert	Underwood	Concord	CA	945192002
Sheila	Dixon	Concord	CA	945213546
JASON	SCHARNAGEL	Concord	CA	945203314
Christine	Rivera	Concord	CA	945211505
Aaron	Kirschenbaum	Concord	CA	945192850
Anne	Spesick	Cool	CA	956142332
Joseph	White	Cool	CA	956140262
Thomas	Hernandez	Corona	CA	928813743
Julie	Bodwell	Corona	CA	928825756
Jacquelyn	Valentino	Corona	CA	928834913
Kaelan	Shannon	Corona	CA	928828330
wendy	fears	Corona Del Mar	CA	926251434
wendell	turner	Corona Del Mar	CA	926251434

Linda	Oeth	Corona Del Mar	CA	92625
Paola	Covarrubias	Coronado	CA	921183080
Diana	Conquist	Coronado	CA	921181831
Jess	White	Coronado	CA	92118
Jeff	Mckay	Corte Madera	CA	949251333
Lynne	Boynton	Corte Madera	CA	94925
Phyllis	Galanis, LMFT	Corte Madera	CA	94925
CARLA	DAVIS	Corte Madera	CA	949251768
Rhys	Atkinson	Corte Madera	CA	949251599
Andre	Pessis	Corte Madera	CA	949251314
Felicia	Bander	Costa Mesa	CA	92626
Barbara	Williamson	Costa Mesa	CA	926273160
Lori	Pellizzari	Costa Mesa	CA	926275691
Kim	nero	Costa Mesa	CA	926277600
diana	koeck	Costa Mesa	CA	926274013
John	Preston	Costa Mesa	CA	926272226
Melissa	Spangler	Costa Mesa	CA	926271750
Guy	Nguyen	Costa Mesa	CA	926274625
Rachelle	Cox	Costa Mesa	CA	926271573
Kathy	Lee	Costa Mesa	CA	92627
Jose	Acosta	Costa Mesa	CA	926263866
Steph	Hart	Costa Mesa	CA	926274033
Russell	Symonds	Costa Mesa	CA	926272268
Lex	Eddy	Costa Mesa	CA	926265534
Ann	Sparlks	Costa Mesa	CA	92626
Sally	Warrick	Costa Mesa	CA	926277529
Virginie	Norwood	Costa Mesa	CA	92626
Gina	Gehricke	Coto De Caza	CA	926794111
Leslie	Hutchinson	Cottonwood	CA	960228598
Wendy	Monterrosa	Covina	CA	917220408
Ellen	Straw	Covina	CA	917221409
Leah	Mercado	Covina	CA	917223545
Bonita	Lacy	Covina	CA	917242241
Ronald	Thompson	Crescent City	CA	95531
Janet	Gilbert	Crescent City	CA	955319413
Jennifer	Hayes	Crescent City	CA	95531
Geraldine	May	Creston	CA	93432
Nancy	Rieser	Crockett	CA	945251204
Bonnie	Pannell	Crockett	CA	945251227
Greg	Cahill	Culver City	CA	902323212
brian	rutkin	Culver City	CA	902303741
Jill	Davine	Culver City	CA	902323207
Diana	Solomon	Culver City	CA	90230
Susannah	Baxendale	Culver City	CA	902323437
Sonya	Hanlon	Culver City	CA	902305328
Celina	Dority	Culver City	CA	902323610
Karen	Espanol	Culver City	CA	902304873

Andres	Echeverria	Culver City	CA	902323119
Katherine	Nolan	Cupertino	CA	950142455
Wallace	limura	Cupertino	CA	950142206
Margaret	Rich	Cupertino	CA	950140563
Robert	Jardine	Cupertino	CA	950142794
Candace	Erickson	Cupertino	CA	95014
Jason	Li	Cupertino	CA	950143411
Farzam	Moshtagh	Cupertino	CA	95014
Arlene	Fullaway	Cypress	CA	906303627
Diane	Brandt	Cypress	CA	90630
Randy	Gerlach	Daly City	CA	940141407
Pacia	Dewald	Daly City	CA	940152440
larry	Nerney	Daly City	CA	940154711
Marian	Hardin	Daly City	CA	940154555
Noah	Haydon	Daly City	CA	940151963
Joanne	Scott	Daly City	CA	940142840
emily	tong	Daly City	CA	94014
Ye	Shen	Daly City	CA	940143446
Jennifer	Zahgkuni	Daly City	CA	94015
elena	orozco	Daly City	CA	940152172
Tom	Nulty	Dana Point	CA	926292901
Susan	Bliss	Dana Point	CA	926294504
craig	pfaffl	Dana Point	CA	98096
Aram	Haroutiounian	Dana Point	CA	926291059
Susaan	Aram	Dana Point	CA	926291059
M	Masek	Danville	CA	945263739
Rick	Edmondson	Danville	CA	945263934
Eileen	ONeill	Danville	CA	945264359
Megan	Klopp	Danville	CA	945263928
Susan	Cohen	Danville	CA	945265610
Neale	Migliani	Danville	CA	945262918
Leanne	Friedman	Davis	CA	956160853
Barbara	Greer	Davis	CA	956185424
allen	bohnert	Davis	CA	956180509
Don	Johnston	Davis	CA	956184418
Jack	Milton	Davis	CA	956163058
Sherri	Venezia	Davis	CA	956169416
Joan	Sallee	Davis	CA	956163221
James	Snyder	Davis	CA	956160849
Maria L.	Cabrera	Davis	CA	956175168
James	Dawson	Davis	CA	95618
Melanie	Bowden	Davis	CA	956161860
Ann	Campbell	Davis	CA	956162728
Sarah	Mayhew	Davis	CA	956162908
Alan	Colombano	Davis	CA	956163049
Patricia	BRADFORD	Davis	CA	95618
Judy	Beachler	Davis	CA	956185076



Deanna	Johnson	Davis	CA	956181411
Nicole	Slaton	Davis	CA	956185051
Sandra	McPherson	Davis	CA	956165918
S	P	Del Mar	CA	92014
Stephanie	de los Rios	Del Mar	CA	920142925
Richie	Masino	Del Mar	CA	920142637
David	Shannahoff-Khalsa	Del Mar	CA	920145708
Judith	Blick	Del Mar	CA	920143241
Arnold	Reinsch	Del Mar	CA	920143529
Scott	Laxier	Del Rey Oaks	CA	939405727
Sara	Bakker	Denair	CA	95316
sarah	sultana	Desert Hot Springs	CA	92240
Steven	Henderson	Desert Hot Springs	CA	922404032
Ben	Barnes	Desert Hot Springs	CA	922401110
Kelly	Frazier	Desert Hot Springs	CA	922409555
Raven	Skye	Desert Hot Springs	CA	922401608
Barbra	Nystrom	Diablo	CA	945280709
melony	Paulson	Diamond Bar	CA	917652844
Jeffrey	Jenkins	Diamond Bar	CA	917651256
Marilyn	Eng	Diamond Bar	CA	917651747
Seth	Picker	Diamond Springs	CA	956191252
Karen	Schmidt	Discovery Bay	CA	945051300
sharon	byers	Downey	CA	902424831
Dean	Peppard	Downey	CA	902402472
Disa	Balderama	Downey	CA	90241
james	symington	Downey	CA	902402009
Ann	Zrodlo	Downey	CA	902413126
Sarah	Sismondo	Duarte	CA	91010
Michelle	van Asten	Dublin	CA	945681115
Nancy	Nilssen	Dublin	CA	94568
Stephen	Rentmeesters	Dublin	CA	945681105
Michael	Jordan	Dublin	CA	Dublin 15N72W
Jean	Olds	Dublin	CA	945681357
Keisha	Evans	East Palo Alto	CA	94303-1528
Selena	Rice	East Palo Alto	CA	943032745
Nancy	Leech	East Palo Alto	CA	943031722
Douglas	Rapp	East Palo Alto	CA	943032302
Kirk	Wells	Eastvale	CA	928808993
susanne	berntsson	Eastvale	CA	928808919
Rose	Kabir	Eastvale	CA	917527607
Kathryn	Riley	El Cajon	CA	920193450
Joe	May	El Cajon	CA	920193770
Michelle	Mattingly	El Cajon	CA	92021
Karlee	Schnyder	El Cajon	CA	920201058
Anna	Salvatierra	El Cajon	CA	92021
Will	Agee	El Cajon	CA	920204768
joe	smith	El Cajon	CA	920203909

Nancy	Porter-Steele	El Cajon	CA	92020
Lauren	Kloepper	El Cajon	CA	920194163
Laurie	Fraker	El Centro	CA	922432335
William	Grosh	El Centro	CA	922432127
Gabriella	Sidhu	El Centro	CA	922439615
Ronald	Bogin	El Cerrito	CA	945301424
Lauren	Schiffman	El Cerrito	CA	94804
Lorraine	Seiji	El Cerrito	CA	945303217
Rhiannon	McNeely	El Cerrito	CA	945301503
Jan	Jones	El Cerrito	CA	945301437
Linda	Daniel	El Cerrito	CA	945301610
Toni	Mayer	El Cerrito	CA	945302544
Elke	Savala	El Cerrito	CA	945303824
Kristie	Koehler	El Cerrito	CA	945303014
Robin	Mitchell	El Cerrito	CA	94530
Michael	Kenney	El Cerrito	CA	945301610
Candice	Toyoda	El Cerrito	CA	945303254
terrence	kaufman	El Cerrito	CA	94530
Edie	Bruce	El Cerrito	CA	945302512
George	Fosselius	El Cerrito	CA	945302435
Lee	Robinson	El Dorado Hills	CA	957629747
Mary	Foley	El Dorado Hills	CA	957629747
Karen	Miner	El Dorado Hills	CA	95762
Danielle	k	El Dorado Hills	CA	957626914
Richard	Schwerin	El Dorado Hills	CA	957625018
Arlene	Kaplan	El Dorado Hills	CA	95762
Michelle	Santy	El Granada	CA	940181540
Jamie	McEachen	El Granada	CA	940182735
Sonja	Nguyen	El Monte	CA	917323742
Sean	Brandlin	El Segundo	CA	902453114
Linda	Klein	El Segundo	CA	902453259
Bruce	Wimberley	El Segundo	CA	902452053
Matthew	Lubs	El Segundo	CA	902452273
Karl	Lohrmann	El Segundo	CA	902452616
Donna	Erie	El Segundo	CA	902454348
Robert	Johnson	El Segundo	CA	902453259
Diane	Hill	El Sobrante	CA	948031115
Karen	Dallow	El Sobrante	CA	948031732
Thomas	Kendrick	El Sobrante	CA	948201238
Rebecca	Boyer	El Sobrante	CA	948032760
Deborah	Schmidt	El Sobrante	CA	948033147
Marsha	Lowry	El Sobrante	CA	948031023
Jay Atkinson	and Ariel Summerlin	El Sobrante	CA	948031627
andrew	johns	El Sobrante	CA	948031736
N.	Kaluza	El Sobrante	CA	94803
Ramsey	Gregory	Elk Grove	CA	957587315
Caroline	Kleinheksel	Elk Grove	CA	957584446

Connie	Arnold	Elk Grove	CA	95758
Shannon	Kemena	Elk Grove	CA	957581020
Anabel	Crouch	Elk Grove	CA	957583903
Liliana	Camacho	Elk Grove	CA	957574613
Anthony	Stratton	Elk Grove	CA	956242125
Tammy	Andrews	Elk Grove	CA	957586092
Claudine	Smith	Elk Grove	CA	957576309
Mary	Haley	Elk Grove	CA	957587637
Janine	Buikema	Elverta	CA	95626
Tom	Johnson	Emerald Hills	CA	94062
Jeffrey	Grinnell	Emerald Hills	CA	940623429
Margaret	Hirst	Emerald Hills	CA	940623129
Vicki	Davis	Emerald Hills	CA	940623440
Vicki	Davis	Emerald Hills	CA	940623440
Barbara	Witney	Emeryville	CA	946081652
Bruce	Higgins	Emeryville	CA	946081646
Lynette	Getchell	Emeryville	CA	946082605
Sarah	Stryhanyn	Emeryville	CA	946082423
Nancy	Karp	Emeryville	CA	946083563
Cyle	Linstrom	Encinitas	CA	920242852
Laurena	Brown	Encinitas	CA	92024
Shawn	Johnson	Encinitas	CA	920244552
Robert	Rector	Encinitas	CA	92023
Dawn	Lyons	Encinitas	CA	92024
Barbara	Mintz	Encinitas	CA	920243642
Twila	Roth	Encinitas	CA	920235712
K	Grant	Encinitas	CA	920244649
Mark	Nagy	Encinitas	CA	920243130
June	Evans	Encinitas	CA	920242144
Wesley	Boyce	ENCINITAS	CA	92024
Barbara	Stanforth	Encinitas	CA	920242624
Jesse	Kozak	Encinitas	CA	92009
Catherine	Lanzl	Encinitas	CA	92024
Hans	Petermann	Encinitas	CA	92024
Hillary	Ostrow	Encino	CA	913161013
Victoria	Miller	Encino	CA	914361541
Cynthia	Baer	Encino	CA	914362105
Felicia	Chase	Encino	CA	914362733
Mary Ellen	Petrich	Encino	CA	914363617
Ben	Rigrod	Encino	CA	913162707
Andrew	Russell	Encino	CA	913161434
Andrew	Rigrod	Encino	CA	913162707
E.	Wright`	Encino	CA	913163516
Felicia	Chase	Encino	CA	914362733
Anne Marie	Zuckerman	Encino	CA	91316
Susan	Souveroff	Encino	CA	91436-1313
Annie	Shipp	Encino	CA	914363922

Joanne	Tenney	Escondido	CA	920261930
Christine	Stewart	Escondido	CA	920261461
Eric	Thein	Escondido	CA	92026
Rena	Zaman-Zade	Escondido	CA	920273408
L.	Adams	Escondido	CA	920266210
Jim	Kilby	Escondido	CA	920268200
Walter	Steffen	Escondido	CA	920271770
Carol	Boyd	Escondido	CA	920274064
Ken	Sanford	Escondido	CA	920294307
Danny	Greene	Escondido	CA	920256012
Linda	Oster	Escondido	CA	920298127
Johannah	Frank	Escondido	CA	920257849
Richard	Meyst	Escondido	CA	920254167
Brenda	Bergstrom	Escondido	CA	920264008
JACOB	HATCH	Escondido	CA	920261824
Ellen	McCann	Escondido	CA	920271401
Karynn	Merkel	Eureka	CA	95503
Richard	Whaley	Eureka	CA	955038913
Jenny	Pschaida	Eureka	CA	955035662
Annika	Backstrom	Eureka	CA	95501
Gina	Ness	Eureka	CA	955014141
Christie	Childs	Eureka	CA	955035143
Henry	Kruger	Eureka	CA	95501
James	Richards	Eureka	CA	95501
Cheryn	English	Eureka	CA	955010710
Sasha	Parlier	Eureka	CA	955037004
Jessica	Heiden	Eureka	CA	955034823
Sharon	Hafner	Eureka	CA	955039773
Susan	Tatro	Eureka	CA	955034814
Douglas	Mitchell	Eureka	CA	955013304
Harry	Blumenthal	Eureka	CA	955013304
graciela	ramirez	Eureka	CA	955027033
Rev. Elizabeth	Zenker	Eureka	CA	955014348
Ella	Craig	Eureka	CA	95501
Geraldine	Card	Exeter	CA	932211101
Paula	Summers	Fair Oaks	CA	956284033
Donald	Taylor	Fair Oaks	CA	956286411
Brian	Gray	Fair Oaks	CA	956283444
Helen	Lubin	Fair Oaks	CA	956281384
Julie	Underwood	Fair Oaks	CA	956284014
Casey	Simcoe	Fair Oaks	CA	956285451
Rebel	Kreklow	Fair Oaks	CA	956284175
Bruce	Monfross	Fair Oaks	CA	956286542
Sheila	Nason	Fair Oaks	CA	956285503
Patricia	Wood	Fair Oaks	CA	956284309
Laurie	Trombla	Fairfax	CA	949301927
Thomas	Kelly	Fairfax	CA	949302216

Steve	Woodward	Fairfax	CA	949301270
Vakila ter Veld	Terveld	Fairfax	CA	949301831
Jackie	Robson	Fairfax	CA	949301516
Jesse	Hoopes	Fairfax	CA	94930
Cindy	Stameroff	Fairfax	CA	949301633
John	Hauf	Fairfax	CA	949302019
Samuel	Durkin	Fairfield	CA	945347400
Bill	Oliver	Fairfield	CA	945332816
Meiling	Albert	Fairfield	CA	945341554
Bill	Oliver	Fairfield	CA	94533
Marjorie	Lutz	Fairfield	CA	94533
Antoinette	Williams	Fairfield	CA	945346671
Amy	Kiba	Fairfield	CA	945347546
Bill	Oliver	Fairfield	CA	945332816
Joe	Marsala	Fairfield	CA	94534
Steven	Aderhold	Fallbrook	CA	920881135
Jane	Kemp	Fallbrook	CA	920288517
Lily	Rivertree	Fallbrook	CA	920289346
Valerie	Bump	Fallbrook	CA	920882015
Jamie	Valentine	Fallbrook	CA	920288853
William	Willis	Fallbrook	CA	920283420
Lilian	Morgan	Felton	CA	950181118
Pamela	Morgan	Felton	CA	95018-1407
Elaine	Alfaro	Felton	CA	950189637
LD	Anderson	Felton	CA	950180139
Matthew	Thomson	Felton	CA	950189048
Ann	Lopez	Felton	CA	950189267
Nancy	Keleher	Ferndale	CA	955361327
Jim	Franzi	Fiddletown	CA	956299707
Diana	Sanchez	Fillmore	CA	930151950
Jessica	Dardarian	Folsom	CA	956307643
David	Mazariegos	Folsom	CA	956302675
Ananth	Karanam	Folsom	CA	956306312
Joan	Normington	Folsom	CA	956301655
Jodi	Shadle	Fontana	CA	92336
Benjamin	Billhardt	Fontana	CA	92337
Susan	McLaughlin	Foothill Ranch	CA	926102429
Veronica	Mohn	Foothill Ranch	CA	926101915
Jill	Marrington	FOOTHILL RANCH	CA	73132
Liam	Cottrell	Forest Knolls	CA	949330456
Raymond	Marshall	Foresthill	CA	956319201
bob	flagg	Forestville	CA	954361591
M.	Steere	Forestville	CA	954369374
HC	Cannon	Forestville	CA	954369752
Sarah	Olson	Forestville	CA	954369443
B	Dudney, MD	Forestville	CA	954369604
Gilia	Humrich	Forestville	CA	954369774

Robert	Harrison	Forestville	CA	954369604
Tara	Greggains	Forestville	CA	954369384
sandra	orr	Forestville	CA	954369590
Katherine	Montgomery	Fort Bragg	CA	954377775
Roberta	Heist	Fort Bragg	CA	954377743
laureen	picciani	Fort Bragg	CA	954378253
James	Murphey	Fort Bragg	CA	95437-1696
Ah	Ho	Foster City	CA	944041828
Anthony	Presutto	Foster City	CA	944043820
Steve	Baker	Foster City	CA	944041442
Elise	Beliak	Foster City	CA	944041818
Jacqueline	Meyer	Foster City	CA	944041431
Mark	Rhynsburger	Foster City	CA	944043595
lloyd	reynolds	Fountain Valley	CA	927081145
Deborah	Paul	Fountain Valley	CA	92708
Mo	Salama	Fountain Valley	CA	927086850
Mary	Brooks	Frazier Park	CA	932259611
Lois	Bacon	Freedom	CA	950190007
Carol	Mock	Fremont	CA	945361601
Jo Ellen	Haniford	Fremont	CA	945366544
Nancy	Hom	Fremont	CA	945393018
Pamela	Nitsos	Fremont	CA	945385557
Jonathan	Chu	Fremont	CA	945394440
Nodra	Crabb	Fremont	CA	945362412
Urmila	Padmanabhan	Fremont	CA	945383946
Christopher	Ware	Fremont	CA	945396850
Utkarsh	Nath	Fremont	CA	945552907
moira	macpherson	Fremont	CA	94539 5898
Cecilia	Canales	Fremont	CA	945395898
Vince	Lindain	Fremont	CA	945553236
Taochiung	Chi	Fremont	CA	945393633
G. Austin	Smith	Fremont	CA	945364926
Johanna	Lindsay	Fremont	CA	945393006
Gina	Jager	Fremont	CA	945384003
Timothy	Charles	Fremont	CA	945382906
Michael	Dorer	Fremont	CA	945381248
Lynn	Locher	Fremont	CA	945393054
D.	Rincon	Fresno	CA	937031239
Michael	Bordenave	Fresno	CA	937282941
Teresa	Zollars	Fresno	CA	937044808
Rex	Payne	Fresno	CA	937283346
Robert	Berend	Fresno	CA	937264439
Patricia	Lewis	Fresno	CA	937263511
Richard	Paul	Fresno	CA	937041141
Nancy	Mccormick	Fresno	CA	937107005
Amy	Gable	Fresno	CA	937204049
Jerry	Goodwin	Fresno	CA	937051330

James	Flaherty	Fresno	CA	93704
Robert	Glover	Fresno	CA	937262313
Joe	Catania	Fresno	CA	937281522
Randy	Caffejian	Fresno	CA	937045445
Laurette	Silva	Fresno	CA	937281805
Jeffrey	Trafican	Fresno	CA	937104613
Marie	Mock	Fresno	CA	937276044
Kathleen	Duket	Fresno	CA	937055148
CATHERINE	MCCARTHY	FRESNO	CA	93704
Suzanne	Abrams	Fresno	CA	937106348
Robert	Firestine	Fresno	CA	937044828
John	Nimmo	Fresno	CA	937224353
marin	brant	Fresno	CA	937117173
Lillian	Valverde	Fresno	CA	937275680
Evan	McDermit	Fullerton	CA	928321110
Gaby	Santamaria	Fullerton	CA	928333326
Lynn	Hoang	Fullerton	CA	928331557
Brett	Walling	Fullerton	CA	928322433
Jennifer	Carr	Fullerton	CA	928333310
Melodi	Gulsen	Fullerton	CA	928311645
MARLA	HESS	Fullerton	CA	928313318
Cynthia	Miller	Galt	CA	956328146
Christine	Doyka	Garberville	CA	955429405
nadine	chapelaine	Garberville	CA	955420670
Carolyn	Dennison	Garden Grove	CA	928406041
Ronald	Ringler	Garden Grove	CA	928405271
Stewart	Casey	Garden Grove	CA	928414638
Dana	May	Garden Grove	CA	928404208
Kelly	Kramer	Garden Grove	CA	928401716
Suellen	Carroll	Garden Valley	CA	956339477
Pam	Evans	Garden Valley	CA	956339439
Donna	Dymally	Gardena	CA	902473057
Helen	Stone	Gardena	CA	902494625
Celinda-Carlisle	Cheskawich	Gazelle	CA	960340155
Susan	Kofnovec	Gilroy	CA	950207951
Susan	Rodriguez	Gilroy	CA	950203303
Kelly	Been	Gilroy	CA	950205333
Hank	Schlinger	Glendale	CA	912011278
Susi	Higgins	Glendale	CA	912031221
Michael	Lopez	Glendale	CA	912021605
Peter	Hogan	Glendale	CA	91206
flo	randall	Glendale	CA	912052087
Molly	Joseph	Glendale	CA	912071447
barbara	cunningham	Glendale	CA	912054409
Patricia	Grogan	Glendale	CA	91202-1417
Sudi	McCollum	Glendale	CA	912061419
Charlie	O'Hanlon	Glendale	CA	912012360



Dena	Hernandez-Kosche	Glendale	CA	912012585
Ronald	Warren	Glendale	CA	912061905
Keith	Wright	Glendale	CA	912012130
Michelle	Pinto-e-Costa	Glendale	CA	912267071
Anita	Liao	Glendale	CA	912011674
Annemarie	Sulatycky	Glendale	CA	912021516
Daria	Marinelli	Glendale	CA	912042882
Brian	Campbell	Glendale	CA	912064725
Bertha	Albright	Glendale	CA	91201-3012
Steven	Arm	Glendale	CA	912064114
Melinda	Encinas	Glendora	CA	917406701
Howard	Whitaker	Gold River	CA	956708301
Martin	Henderson	Goleta	CA	931172859
Alfred	Pomerleau	Goleta	CA	931171766
Barbara	Lyon	Goleta	CA	931161175
Michelle	Kosinski	Goleta	CA	931171500
Marina	read	Goleta	CA	931172413
Alison	Tamminga	Goleta	CA	931173405
Kathy	Kosinski	Goleta	CA	931171500
Michiele	Goebel	Goleta	CA	93117
Felicia	Saunders	Goleta	CA	931172512
randall	parada	Goleta	CA	931172582
Gail	Tinsley	Goleta	CA	931171004
Michael	Shapiro	Goleta	CA	931171305
Felicia	Saunders	Goleta	CA	931172512
Carole	Shapiro	Goleta	CA	931172007
Ally	Premutati	Gonzales	CA	939262659
Tom	Thompson	Graeagle	CA	96103
Theodore C	Snyder	Granada Hills	CA	913441062
Lisa	Hammermeister	Granada Hills	CA	913442857
LEIGH	CLARK	Granada Hills	CA	913446858
Sharyl	Swink	Granada Hills	CA	913444805
Barbara	Blatz-Stone	Granada Hills	CA	913441002
Monica	Rodriguez	Granada Hills	CA	913442602
Wayne	Aller	Granada Hills	CA	913442642
Joyce	Sortland	Grass Valley	CA	95945
Karen	Donaldson	Grass Valley	CA	959453215
Evette	Andersen	Grass Valley	CA	959454813
Hilary	Emberton	Grass Valley	CA	959457317
Paul	Marwood	Grass Valley	CA	95949
Amy	Spencer	Grass Valley	CA	959499041
Avila	Lowrance	Grass Valley	CA	959455513
Robert	Hubbard	Grass Valley	CA	959459087
Kalita	Todd	Grass Valley	CA	959457956
Hilary	Dart	Grass Valley	CA	959457804
val	santillanes	Grass Valley	CA	959455761
Katarine	Quintana	Grass Valley	CA	959496592

Chad	Ryan	Grass Valley	CA	959498954
Madeleine	Gepner	Grass Valley	CA	95945
Juliet	Pearson	Grass Valley	CA	959496923
Susan	Smith	Grass Valley	CA	959499476
Virginia	Hilsman	Grass Valley	CA	959497143
Joyce	Banzhaf	Grass Valley	CA	95945
john	fleming	Grass Valley	CA	95945
Judith	Fenley	Graton	CA	954440023
nancy	lamb	Greenbrae	CA	949043017
Roz	Goldstein	Greenbrae	CA	94904
Maria	Mangold	Greenbrae	CA	949041949
Purple	Puglee	GREENBRAE	CA	94904
Erin	Carmichael	Groveland	CA	953219398
Debra	Ugalde	Grover Beach	CA	93433
rhonda	myers	Grover Beach	CA	934331715
Kirsten	Cutler	Gualala	CA	95497
Lisa A.	Wiggins	Gualala	CA	95445-8327
Green	Greenwald	Guerneville	CA	954469509
Dusty	Prentiss	Guerneville	CA	954469373
Erica	Arellano	Guerneville	CA	954469509
Andrea	Kaufman	Guerneville	CA	95446
violet	noranbrock	Hacienda Heights	CA	917453816
JOSE	SANCHEZ	Hacienda Heights	CA	917453845
Janet	Crist-Whitzel	Half Moon Bay	CA	940191406
Karen	Erickson	Half Moon Bay	CA	940191325
Theresa	Shiels	Half Moon Bay	CA	940194851
Mariaelena	Springsted	Half Moon Bay	CA	940191477
William	Tyrrell	Half Moon Bay	CA	940191632
Joy	Lesperance	Hanford	CA	932303360
Karen	Connell	Harbor City	CA	907104853
Thilo	Kubernuss	HATHAWAY PINES	CA	95233
Evette	Garcia	Hawaiian Gardens	CA	907162310
Bonnie	Maloney	Hawthorne	CA	902508393
Nadra	McClain	Hawthorne	CA	902503420
Jeri	Ledenbach	Hawthorne	CA	902503417
Amro	E	Hayward	CA	945452044
Timothy	Devine	Hayward	CA	94544
roger	lema	Hayward	CA	945413464
Marie Annette	Burkart	Hayward	CA	945444978
Kristin	Mikkelson Jonsson	Hayward	CA	945415719
Sandra	Stewart	Hayward	CA	945416597
Rachel	Asturias	Hayward	CA	945422443
Richard	Patenaude	Hayward	CA	945413477
Jane	Gates	Hayward	CA	945446591
elaine	patience	Hayward	CA	945413001
Judy	Trahan	Hayward	CA	945446004
Catherine	Mills	Hayward	CA	945446035

Lina	Chhim	Hayward	CA	945411012
Denise	Olberg	Hayward	CA	945415429
Cynthia	Florenzen	Healdsburg	CA	954484402
John	Essman	Healdsburg	CA	954481381
Rose	Bostaph	Healdsburg	CA	954483421
Robert	Rutherford	Healdsburg	CA	954483748
Elise	Villemaire	Healdsburg	CA	954489424
Bobette	Barnes	Healdsburg	CA	954484319
Jerry	Floyd	Hemet	CA	925458102
Joseph	McDonough	Hemet	CA	925446723
Teresa	Hensley	Hemet	CA	925433077
Jeffrey	Plotnik	Hemet	CA	925432884
Rhonda	Weber	Hercules	CA	945472098
Benjamin	Rodriguez	Hercules	CA	945473640
Stephen	Golden	Hercules	CA	945472212
Jason	Penarelli	Hercules	CA	945471413
Katherine	Salinaro	Hercules	CA	945473693
Maria	Wanless	Herlong	CA	961130333
Carol	Wood	Hermosa Beach	CA	902542412
James	Caulkins	Hermosa Beach	CA	902542411
Jessica	Denham	Hermosa Beach	CA	902543246
Grace	Urich	Hermosa Beach	CA	902542136
Mark	Orlando	Hesperia	CA	92345
Julie	Knutson	Hesperia	CA	923452639
Elizabeth	Rue	Hidden Valley Lake	CA	954678818
P	Perry	Hidden Valley Lake	CA	954678826
Janice	Arteche	Highland	CA	923464834
Ashley	Hirsch	Highland	CA	923461752
Nicholas	Hermosillo	Highland	CA	923461819
Romona	Czichos-Slaughter	Hollister	CA	950236720
Dusty	DoMoe	HOLLISTER	CA	95023
Patricia	Marlatt	Hollywood	CA	900681211
Beth	Mulhern	Homeland	CA	92548
Dave	Johnson	Homeland	CA	925489530
Debbie	Bailey	Hoopa	CA	95546
Mary	Tindukasiri	Huntington Beach	CA	92647
Greg	Hilbers	Huntington Beach	CA	926475257
vicki	hughes	Huntington Beach	CA	926482861
Alexa	McMahan	Huntington Beach	CA	926492363
Debi	Carter	Huntington Beach	CA	92649
Gary	Bender	Huntington Beach	CA	926464751
kathleen	fernandez	Huntington Beach	CA	92646-6739
Julie	Rivera	Huntington Beach	CA	926492048
KYLE	CALCAGNO	Huntington Beach	CA	926493615
val	phillips	Huntington Beach	CA	60613
Karen	Millet	Huntington Beach	CA	926483825
K	Jenkins	Huntington Beach	CA	926465547

Ian	James	Huntington Beach	CA	926494241
Michael	McMahan	Huntington Beach	CA	926492363
Grant	Fontan	Huntington Beach	CA	926476428
Ginabella	Mallari	Huntington Beach	CA	92649
val	phillips	Huntington Beach	CA	92648
Michael	Henderson	Huntington Beach	CA	926492443
Polly D	Pitsker	Huntington Beach	CA	926483311
Mary	Martin	Huntington Beach	CA	926476080
Cindy	Monge	Huntington Park	CA	902556038
Sylvia	Cardella	Hydesville	CA	955479416
Neal	Feuerman	Hydesville	CA	955479407
Ann	Kindfield	Idyllwild	CA	925494071
DON	BROWN	Indian Wells	CA	922108631
Patricia	Mann	Indio	CA	922019514
Cheri	Loehr	Indio	CA	922037894
Brent	Riggs	Inglewood	CA	903021846
Linda	Larsen	Inglewood	CA	903041023
charlotte	williams	Inglewood	CA	90302
S	Gipson	Inglewood	CA	90305
Jayne	Cerny	Inverness	CA	949370241
N	Henning	Irvine	CA	926500001
Dorrine	Marshall	Irvine	CA	926202024
Celia	Thilgen	Irvine	CA	92618
Carla	Gilbert	Irvine	CA	926021068
Alice	Shaw	Irvine	CA	926188307
Lorne	Cheeseman	Irvine	CA	92620
Janice	Rosse	Irvine	CA	926044650
Diana	Light	Irvine	CA	926121712
F	Fitz	Irvine	CA	926043270
Cameron	Walker	Irvine	CA	926201869
Deborah	Brooks	Irvine	CA	92618
Robin	Weirich	Irvine	CA	926183349
Marilyn	Mednick	Irvine	CA	926044658
Laura	Freeman	Irvine	CA	926043145
Melissa	Clement	Irvine	CA	926200327
Pati	Tomsits	Irvine	CA	926201915
David	Smith	Irvine	CA	926174071
Amy	Munnelly	Irvine	CA	926044675
Sherry	Althouse	Irvine	CA	926121708
Silvia	Raum	Irvine	CA	926202503
benjamin	wang	Irvine	CA	926122244
Deborah	Gulickson	Irvine	CA	926043165
Michael-Ann	Herring	Irvine	CA	92612
Teresita	Vanderdys	Irvine	CA	926147900
Denise	Stephens	Jackson	CA	956422411
Adriana	Guastavino	Jamestown	CA	95327
Margrit	Spear	Jamul	CA	919350711

Julie	McKee	Janesville	CA	961149699
Pauline	Bedford	Joshua Tree	CA	922522754
Joan	Scott	Joshua Tree	CA	922520810
Cody	Dolnick	Joshua Tree	CA	922520887
Peter	Stern	Joshua Tree	CA	92252
Barbara	Delph	Joshua Tree	CA	92252
Peter	Reardon	Jurupa Valley	CA	91752
Barbara	Haire	Jurupa Valley	CA	917521367
Derrell	Chambers	Kensington	CA	947081131
Joan	Connolly	Kensington	CA	947071337
HILARY	LORRAINE	Kensington	CA	947081131
Andrew Paul	Gutierrez	Kensington	CA	94707 - 1035
Dagmar	Friedman	Kensington	CA	947071107
Linda	Frankel	Kensington	CA	947071412
Alex	Tananbaum	Kensington	CA	947071212
Storm	Smiles	Kensington	CA	947071212
Nancy	Berman	Kensington	CA	947071412
lenore	sorensen	Kensington	CA	947071337
Jill	Mistretta	Kentfield	CA	949041572
Patricia	Campbell	Kentfield	CA	949041410
Cecile	Cooke	Kenwood	CA	954520665
Rita	Payne	Kernville	CA	932380195
Richard	Ramirez	Kings Beach	CA	961431720
Peter	Fairley	Kings Beach	CA	961434504
Cami	Colby	KINGSBURG	CA	93631
Debra	MacQueen	Kneeland	CA	955499035
Dale	Ball	La Canada Flintridge	CA	910111345
Tom	Feldman	La Canada Flintridge	CA	910112020
Bettina	Rosenfeld	La Canada Flintridge	CA	910113403
Lauren	Bryant	La Crescenta	CA	912141323
Thomas	Zachary	La Crescenta	CA	912143506
barbara	poland	La Crescenta	CA	912142007
Lisa	Gee	La Crescenta	CA	91224-0674
Helen	Nicholson	La Crescenta	CA	912143417
Dave	Myers	La Grange	CA	953299440
Dannette	DeWeese	La Habra	CA	906319043
Michael	Kloby	La Habra	CA	906316656
Michael	Kloby	La Habra	CA	90631
Lara	Hall	La Habra Heights	CA	90631
Amy	Franz	La Habra Heights	CA	906318433
Karl	Bane	La Honda	CA	940200012
michael-leonard	creditor	La Jolla	CA	920380654
Deb	Federin	La Jolla	CA	920375176
Winke	Self	La Jolla	CA	920371602
Susan	Knee	La Jolla	CA	920377622
Purush	Kotha	La Jolla	CA	920374032
Kathleen M	Murphy	La Jolla	CA	920371627

Janet	Smarr	La Jolla	CA	92037
Michele	Gelboin	La Jolla	CA	920372319
Karen	Toyohara	La Mesa	CA	919416710
Arthur	Fink	La Mesa	CA	919422844
Leslie	Fadem	La Mesa	CA	919443191
Barbara	Speidel	La Mesa	CA	919422611
Laurise	Michel	La Mesa	CA	919426939
Brenda	Thompson	La Mesa	CA	919428829
Josephine	Baldwin	La Mesa	CA	919417212
Adrian	Ahearn	La Mesa	CA	919429318
Harlan	Lebo	La Mirada	CA	906370614
Andrea	Choi	La Mirada	CA	906384051
Vivian	Caldera	La Puente	CA	917446110
Anthony	Palesano	La Puente	CA	917444627
Claudia	Monahan	La Quinta	CA	922535516
Richard Michael	O'Donnell	La Quinta	CA	922538825
Hana	Correa	La Quinta	CA	922533691
Blair	Karp	La Quinta	CA	922532340
Michael	Karp	La Quinta	CA	92253
AYDEE	PALOMINO	La Quinta	CA	922534261
Anabelle	Anderson	La Verne	CA	917501633
Norma	Bermudez	La Verne	CA	917502062
Judith	Heffron	La Verne	CA	917502102
Nancy	S Spittler	Lafayette	CA	945493206
Lucinda	Henderson	Lafayette	CA	945492140
Blake	Wu	Lafayette	CA	945493712
Elaine	Levin	Lafayette	CA	945495405
Martha	Engelbert	Lafayette	CA	85704
Christoph	Nauer	Lafayette	CA	945495428
Robert	Reed	Laguna Beach	CA	926512455
Adam	Kaplan	Laguna Beach	CA	926511845
Stacy	Cornelius	Laguna Beach	CA	926513160
Jan	Snedegar	Laguna Beach	CA	926516929
Kevin	O'Brien	Laguna Beach	CA	926511337
Cathy	Mullins	Laguna Beach	CA	926511106
Margaret	White	Laguna Beach	CA	926512552
Deborah	Shields	Laguna Beach	CA	926512800
Sue	Garber	Laguna Beach	CA	926513139
Brandy	Faber	Laguna Beach	CA	92651
Mary	Franz	Laguna Beach	CA	926512816
Ileana	Ramirez	Laguna Hills	CA	926535653
Lance	Rava	Laguna Niguel	CA	926776315
Melissa	Waters	Laguna Niguel	CA	926771447
Erik	Kemper	Laguna Niguel	CA	926775842
lynne	Jeffries	Laguna Niguel	CA	926778800
barbette	curran	Laguna Woods	CA	926372763
Janice	Burstin	Laguna Woods	CA	926372866

Paula	Hollie	Laguna Woods	CA	926378849
Janice	Burstin	Laguna Woods	CA	92637
Shari	Horne	Laguna Woods	CA	926372288
Sandra	Van Horn	Laguna Woods	CA	926370203
Lela	Ratta	Laguna Woods	CA	92637
Kathleen	Goldman	Laguna Woods	CA	92637
Lauren	Linda	Laguna Woods	CA	926378151
Rita	Felts	Lake Almanor	CA	961379731
Elizabeth	Gann	Lake Arrowhead	CA	923523188
Paul	Van de Riet	Lake Arrowhead	CA	923520054
Rick	Friesen	Lake Balboa	CA	914065615
Jenifer	Steele	Lake Balboa	CA	914062747
Eric Scott	Gould	Lake Balboa	CA	914062415
Regina	Flores	Lake Elsinore	CA	92532
Rita	Davenport	Lake Elsinore	CA	925304126
Travis	Benneian	Lake Elsinore	CA	925321657
James	Gilmore	Lake Elsinore	CA	92530
Linda	Wohlgemuth	Lake Forest	CA	926307069
Anita	Hilyer	Lake Forest	CA	92630
Kate	Brotherton	Lake Forest	CA	926306630
Cynthia	Coley	Lake Forest	CA	926302607
Lynne	Holt	Lake Forest	CA	926308039
Erdal	Aksoy	Lake Forest	CA	926302419
John	Liddy	Lake Forest	CA	926305631
Linda	Schulz	Lake Hughes	CA	935320994
Shelley	Strohm	Lake Isabella	CA	932409426
Alexandra	Pelayo	Lake View Terrace	CA	91342
Craig	Guenther	Lakeport	CA	954533834
Sally	Mountain	Lakeport	CA	954539815
Irene	Roos	Lakeside	CA	920404614
Cynthia	Hillinger	Lakeside	CA	92040
Steve	Schatz	Lakewood	CA	907152518
Katie	Spahn	Lakewood	CA	907123952
Carroll	Abshier	Lakewood	CA	907131510
Donna	Milstead	Lancaster	CA	935364330
Vicki	Gallegos	Lancaster	CA	935342238
Susan	Brisby	Lancaster	CA	935361616
Leslie	Gonzales	Lancaster	CA	935368321
Jesse	Griffin	Lancaster	CA	93536
Raymond and June	Katz	Larkspur	CA	949391009
darrell	rolstone	Larkspur	CA	949391925
Lynn	Ireland	Larkspur	CA	949771175
Chris	Malo	Larkspur	CA	949391420
Karen	Mae	Larkspur	CA	949391321
Don	Schwartz	Larkspur	CA	949391264
Antal	Kalik	Lawndale	CA	902603102
John	Hayes	Lawndale	CA	902602805



Jon	Schafer	Lawndale	CA	902602921
Irene	McLaughlin	Lawndale	CA	90260
Sharon	Paltin	Laytonville	CA	95454
Bill	Lundeen	Lee Vining	CA	935418002
Andy	Lupenko	Lemon Grove	CA	919452615
Ken	Hedges	Lemon Grove	CA	919453000
Ked	Garden	Lemon Grove	CA	919453221
Margaret	Reynoso	Lemoore	CA	93245
Sharon	Ketcherside	Lincoln	CA	956488318
Bruce	Littleton	Lincoln	CA	956488260
Joyce	Norman	Lincoln	CA	956488463
Monroe	Robinson	Little River	CA	954569654
Patricia	Turrigiano	Little River	CA	954560388
Mike L	Evans	Little River	CA	954569650
jean	King	Livermore	CA	945503414
Olive	Greene	Livermore	CA	945505735
James	Greene	Livermore	CA	945505735
Todd	Matz	Livermore	CA	945511252
Yvonne	Eder	Livermore	CA	94551
Wendy	Roberts	Livermore	CA	945505451
Paula	Cavagnaro	Livermore	CA	945503403
Laurie	Sargent	Livermore	CA	945509505
Lori	Quigley	Livermore	CA	945511784
Sally	Marone	Livermore	CA	945504638
Heather	Murphy	Livermore	CA	94550
Arthur	Krakowsky	Livermore	CA	945509615
Amanda	Parrish	Livingston	CA	953349718
Mari	Dominguez	Lodi	CA	95240
Brenda	Heinrich	Lodi	CA	952403806
James	Page	Lodi	CA	952429105
Elizabeth	Eisenbeis	Lodi	CA	952423732
Jill	Martin	Lodi	CA	95240
Patricia	Maddock	Lodi	CA	95252
Patricia	Maddock	Lodi	CA	952429522
KRIS	CORDOVA	Loma Linda	CA	923543923
Sheryl	Buccino	Loma Linda	CA	923543627
John	Martinez	Lomita	CA	907171514
Kathleen	Petty	Lompoc	CA	934366620
Mal	Gaff	Lompoc	CA	934366526
Savannah	Wong	Lompoc	CA	934364207
Harley	Price	London	CA	NW5 4AL
Diana	Parmeter	Long Beach	CA	90805-3526
Noah	Hall	Long Beach	CA	90805
Ben	Hauck	Long Beach	CA	908081634
Anthony	Castillo	Long Beach	CA	90805
Matthew	Palmer	Long Beach	CA	908082537
Mel	Marcus	Long Beach	CA	908083745

Shari	Alpern	Long Beach	CA	908153019
Gregory	Perkins	Long Beach	CA	908142237
Curtis	Barnett	Long Beach	CA	908044407
Erlinda	Cortez	Long Beach	CA	908071808
Demetrios	Rizos	Long Beach	CA	908026134
Annette	Paluska	Long Beach	CA	90803
MEGAN	SHEAHAN	Long Beach	CA	908081125
Jay	Falconer	Long Beach	CA	908064219
Heather	R	Long Beach	CA	908044914
S	STOVEKEN	Long Beach	CA	90802
Ramona	Evans	Long Beach	CA	90806
Barry	Kogen	Long Beach	CA	908083028
Tom	Workman	Long Beach	CA	908071747
Kurt	Cruger	Long Beach	CA	908045515
Brenda	Haig	Long Beach	CA	908032303
Brandyce	Howard	Long Beach	CA	908072761
Kim	Whitmyre	Long Beach	CA	90804
Melinda	Taylor	Long Beach	CA	908148130
Rocco	Orsini	Long Beach	CA	94070
Victor	Rendon	Long Beach	CA	90805-9002
Syd	Rumford	Long Beach	CA	908081025
Jana	Pendragon	Long Beach	CA	908070706
Lee	Eames	Long Beach	CA	90815
Paul	Smouse	Long Beach	CA	908151630
B E	Baldwin	Long Beach	CA	908143221
Marie	DiMassa	Long Beach	CA	908074121
David	Jolly	Long Beach	CA	908022963
William	Harte	Long Beach	CA	908142141
Barbara	Ardinger	Long Beach	CA	908027706
Darcy	Muirhead	Long Beach	CA	908034044
Gloria	Roth	Long Beach	CA	90803
ELIZABETH	Kibbey	Long Beach	CA	908036019
Robert	Richards	Long Beach	CA	908081017
Judith	Anderson	Long Beach	CA	908074209
Alan	Gonzalez	Long Beach	CA	90815-0616
Gregory	Harrison	Long Beach	CA	908134017
WILLIAM	CASTLE	Loomis	CA	956508827
Dawn	Forcier	Loomis	CA	956500204
Brianda	Puig	Los Angeles	CA	90071
Joan	Loney	Los Altos	CA	94024
James	Patton	Los Altos	CA	94024
Ru	Carley	Los Altos	CA	940222903
Tracy	Gibbons	Los Altos	CA	940246252
Francie	Curtiss	Los Altos	CA	940221157
Carol	Sidel	Los Altos	CA	940243160
Don	Weiden	Los Altos	CA	940222327
Jean	Wolman	Los Altos	CA	940246249

Jan	Letson	Los Altos	CA	940244827
Susan	Nance-Luhrs	Los Altos	CA	940247138
Georgine	Sparaco	Los Altos	CA	940245812
June	Darmanian	Los Altos	CA	940246110
David	Engstrom	Los Altos Hills	CA	94022
Pat	Lang	Los Altos Hills	CA	940224531
Valerie	Romero	Los Angeles	CA	900382770
Marc	Silverman	Los Angeles	CA	900683071
Tatjana	Grenewitz	Los Angeles	CA	900293712
Neal	Steiner	Los Angeles	CA	900341841
Ken	Stack	Los Angeles	CA	900262217
Carina	Chadwick	Los Angeles	CA	900193900
Nicole	Corleone	Los Angeles	CA	95131
Krister	Olsson	Los Angeles	CA	900132298
Jon	Benneian	Los Angeles	CA	900265011
George	Grace	Los Angeles	CA	900274720
Leslie	Klein	Los Angeles	CA	900273480
casee	maxfield	Los Angeles	CA	900288674
AIXA	FIELDER	Los Angeles	CA	900285764
John	Sinner	Los Angeles	CA	900489553
Kathy	Bilicke	Los Angeles	CA	900691344
Candace	Rocha	Los Angeles	CA	90032-1308
Candace	Rocha	Los Angeles	CA	90032-1308
Julie	Slater-Giglioli	Los Angeles	CA	900466608
Yvonne	Westbrook	Los Angeles	CA	900681923
Nick	McNaughton	Los Angeles	CA	900274193
Carol	Gordon	Los Angeles	CA	900271118
Leslie	Silton	Los Angeles	CA	900275920
Joshua	Stamberg	Los Angeles	CA	900393049
Nina	Greenberg	Los Angeles	CA	90039
Heather	Frederick	Los Angeles	CA	900264317
Erica	Munn	Los Angeles	CA	900288804
Ruth	Sugerman	Los Angeles	CA	900041030
maureen	mcdonald	Los Angeles	CA	900682334
Dan	Lawler	Los Angeles	CA	900284773
Laura	Larson	Los Angeles	CA	90046
Kelly	Wightman	Los Angeles	CA	90029
Lara	Sinkovich	Los Angeles	CA	900421996
Daniel	Streeter Jr	Los Angeles	CA	90004
Mariam	Shah-Rais	Los Angeles	CA	900352645
eva	dayan	Los Angeles	CA	900363011
Rebecca	Harper	Los Angeles	CA	900491220
Avie	Hern	Los Angeles	CA	900491634
Kaija	Keel	Los Angeles	CA	900493446
Joseph	Dadgari	Los Angeles	CA	900498205
Valerie	Henderson	Los Angeles	CA	900772301
Janet	Maker	Los Angeles	CA	900243113

Dolores	Athuil	Los Angeles	CA	900484510
Jason	Perlman	Los Angeles	CA	900343513
Jeff	Fromberg	Los Angeles	CA	900245707
Mark	Reback	Los Angeles	CA	900393944
Suzy	Katsuda	Los Angeles	CA	900311441
Jeff	Dorer	Los Angeles	CA	900571826
ADAM	BERNSTEIN	Los Angeles	CA	900122542
ed	palacio	Los Angeles	CA	900650791
Scott	Rubel	Los Angeles	CA	900311633
Grant	Lupher	Los Angeles	CA	900061169
Alexandra	Grossi	Los Angeles	CA	900411940
Carolyn N	Rosenstein	Los Angeles	CA	900673502
Susan	Grant	Los Angeles	CA	900103816
Dori	Peck	Los Angeles	CA	900255925
Dorine	Kramer	Los Angeles	CA	900644838
Sandra	Zaninovich	Los Angeles	CA	900245892
Jennifer	Berman	Los Angeles	CA	900661744
Laura	Strom	Los Angeles	CA	900344653
Damon	Brown	Los Angeles	CA	900165229
Lynne	Weiske	Los Angeles	CA	900485106
Steve	Graff	Los Angeles	CA	900254732
Patti	Pimento	Los Angeles	CA	900663018
G.	S.	Los Angeles	CA	900256306
Alan P	Socol	Los Angeles	CA	900193331
Melissa	Atkinson	Los Angeles	CA	900643208
Gail	Farina	Los Angeles	CA	900663027
Stacey	Sklute	Los Angeles	CA	900343409
Myron	Meisel	Los Angeles	CA	900643444
Simone	Sello	Los Angeles	CA	900351825
bruce	hirayama	Los Angeles	CA	900347005
Joan	Murray	Los Angeles	CA	900661935
Jonathan	Tachibana	Los Angeles	CA	900255904
Margaret	Shekell	Los Angeles	CA	900346041
Karen	Hellwig	Los Angeles	CA	900561737
Donna	Tate	Los Angeles	CA	900435117
Amy	Sullivan	Los Angeles	CA	90066
Frank	Ortiz	Los Angeles	CA	900224018
Graciela	Huth	Los Angeles	CA	900453707
Antonia	Raikes	Los Angeles	CA	900666112
Victor	Flores	Los Angeles	CA	900033461
Sam	Butler	Los Angeles	CA	900452753
Terri	Gedo	Los Angeles	CA	900451037
Chris	Curtis	Los Angeles	CA	900263118
GAIA	MEMMO	Los Angeles	CA	900184252
Roshan	Reporter	Los Angeles	CA	900392638
Marisa	Davis	Los Angeles	CA	900412418
Kuniko	Vroman	Los Angeles	CA	900411436

Anet	Ranaldo	Los Angeles	CA	900682852
Lara	Ingraham	Los Angeles	CA	900383531
Troy	Barrett	Los Angeles	CA	900322656
Henriette	Brouwers	Los Angeles	CA	90026
Caleb	Ellis	Los Angeles	CA	900462828
John	Palafoutas	Los Angeles	CA	900385001
steven	keyes	Los Angeles	CA	900483407
Craig	Kleber	Los Angeles	CA	900493805
Susan	Chung	Los Angeles	CA	900321814
Beth	Stein	Los Angeles	CA	900663134
Devon	Harty	Los Angeles	CA	900347900
Deborah	Quayle	Los Angeles	CA	90019
Melissa	Ochoa	Los Angeles	CA	90061
katie	Rampen	Los Angeles	CA	900452545
Sylvia	Lew	Los Angeles	CA	900343979
Erika	Brunson	Los Angeles	CA	90077
Teresa	English	Los Angeles	CA	900682425
Pauline	Brooks	Los Angeles	CA	90039
BRANDON	TORRES	Los Angeles	CA	900231051
Sam	Fargnoli	Los Angeles	CA	900643919
Steven	Fielding	Los Angeles	CA	900492933
TOM	MCCOWN	Los Angeles	CA	900345316
Diane	Lamont	Los Angeles	CA	900641129
Brian	Pope	Los Angeles	CA	900483620
Barbara	Bersell	Los Angeles	CA	900643128
Chuck	Mason	Los Angeles	CA	900662253
Schuyler	Kent	Los Angeles	CA	900204731
Andrew	Altamirano	Los Angeles	CA	900263127
Sheila	Willens	Los Angeles	CA	900461235
Grace	Bell	Los Angeles	CA	900341937
Tony	Grutman	Los Angeles	CA	90036
Joseph	Rinaldo	Los Angeles	CA	900292172
Ashley	Wren	Los Angeles	CA	900345369
Raymond	Vaczek	Los Angeles	CA	900231370
Carol	Horowitz	Los Angeles	CA	900252891
schani	nuripour	Los Angeles	CA	900275504
Terrie	Barna	Los Angeles	CA	900494333
Leslie	McDowell	Los Angeles	CA	900354106
barbara	heitz	Los Angeles	CA	900494011
Val	Longo	Los Angeles	CA	900213057
Melissa	Adams	Los Angeles	CA	900195302
FLORA	ROSAS	Los Angeles	CA	900381458
Keith	Hendriks	Los Angeles	CA	900496905
kim	lindsey	Los Angeles	CA	90019
Homi	Hormasji	Los Angeles	CA	90025
Alexandria	Luostari	Los Angeles	CA	900643413
Stevie	Weinstein-Foner	Los Angeles	CA	90042

Gail	McMullen	Los Angeles	CA	900273722
Stan	Yogi	Los Angeles	CA	900174651
Jennifer	Walls	Los Angeles	CA	90004
Ann	Bein	Los Angeles	CA	900642026
Barbara	King	Los Angeles	CA	900290448
DIONNE	NEISH	Los Angeles	CA	900467564
Daniel	Tiarks	Los Angeles	CA	900467127
Dr. Mha Atma S	Khalsa	Los Angeles	CA	900353314
Francine	Kubrin	Los Angeles	CA	900494611
Harriet	Belkin	Los Angeles	CA	90048
Pamela	Magathan	Los Angeles	CA	900682713
Polly	O'Malley	Los Angeles	CA	900253916
Marion	Schulman	Los Angeles	CA	900341044
Marlyn	Gibson	Los Angeles	CA	90045
Saran	Kirschbaum	Los Angeles	CA	900354110
Susan	Sloan	Los Angeles	CA	900642679
Clinton	Burdette	Los Angeles	CA	900665720
Carla	Holguin	Los Angeles	CA	90027
O	Lewis	Los Angeles	CA	900097075
Howard H.	Holmes	Los Angeles	CA	900691621
Lisa	Laureta	Los Angeles	CA	900293785
Anna	Buenrostro	Los Angeles	CA	900111836
John	DesJardin	Los Angeles	CA	90034
Christine	Cardone	Los Angeles	CA	900275521
Elin	Guthrie	Los Angeles	CA	900192838
Harriet	Natsuyama	Los Angeles	CA	900661042
Jennifer	Cunningham	Los Angeles	CA	900254972
Alison	Peper	Los Angeles	CA	90069
Laura	Dutton	Los Angeles	CA	900043720
Charlotte	Vrooman	Los Angeles	CA	900342412
Alicia	Salazar	Los Angeles	CA	900321505
Eva	Cisneros	Los Angeles	CA	900261025
Tom	Sanchez	Los Angeles	CA	900311127
L.L.	Dored	Los Angeles	CA	90046
Will	B	Los Angeles	CA	900273956
Patricia	Gavigan	Los Angeles	CA	900365217
Louis	Cangemi	Los Angeles	CA	900666012
Amber	Valletta	Los Angeles	CA	900460609
Bettina	Staib	Los Angeles	CA	900196713
Mia	Strauss	Los Angeles	CA	900253425
David	Marsh	Los Angeles	CA	900655036
Colleen	McCaskey	Los Angeles	CA	900664743
Tania	Bride	Los Angeles	CA	900464028
Valerie	Vinnard	Los Angeles	CA	900193842
Ken	Windrum	Los Angeles	CA	900044921
Yolanda	Acevedo	Los Angeles	CA	900653819
David	Berry	Los Angeles	CA	900245756

Lucila	Lopez	Los Angeles	CA	90032
Sheila	Davis	Los Angeles	CA	900664291
Fred	Tashima	Los Angeles	CA	900664914
Mila	Siric	Los Angeles	CA	900391521
Dennis	Landi	Los Angeles	CA	900032821
Janna	Gelfand	Los Angeles	CA	900495665
Emily	Schoales	Los Angeles	CA	900392381
Lyda	Eddington	Los Angeles	CA	900454328
Tammis	Chandler	Los Angeles	CA	90066
Aaron	L	Los Angeles	CA	900664202
Stephanie	vovas	Los Angeles	CA	900261564
Nicholas	Rulli	Los Angeles	CA	900265644
Issie	Sired-Cook	LOS ANGELES	CA	RH6 8PF
Ross	Young	Los Angeles	CA	900262106
Adara	Shilling	Los Angeles	CA	900272206
Kiran	Annavarapu	Los Angeles	CA	900660235
Kenneth	Lapointe	Los Angeles	CA	900313022
Rafik Jac	Roy	LOS ANGELES	CA	90017
Valerie	Garrett	Los Angeles	CA	900461712
Emmanuel	Ross Hartway	Los Angeles	CA	900292503
Ivy	Tran	Los Angeles	CA	900072104
Patricia	Hammons-Lewis	Los Angeles	CA	900346053
liz	Larner	Los Angeles	CA	900653203
Parviz	Khazaei	Los Angeles	CA	900143002
Jonah	Wood	Los Angeles	CA	900244577
Shelby	Holmes	Los Angeles	CA	V3B 1J2
Ben	Zuckerman	Los Angeles	CA	900243316
hania	accary	Los Angeles	CA	900172216
Myles	McLane	Los Angeles	CA	90078-3715
Emma	Ward	Los Angeles	CA	900195731
Jennie	Webb	Los Angeles	CA	900413014
Beverly	Carman	Los Angeles	CA	900644530
Lance	Vilter	Los Angeles	CA	900262208
John	Patches	Los Angeles	CA	900422515
Jack	Hermann	Los Angeles	CA	900461249
Stephen	Markel	Los Angeles	CA	900665416
Antonio	Grijalva	Los Angeles	CA	900681438
Birgitta	Martinez	Los Angeles	CA	900413144
Susan	High	Los Angeles	CA	900125485
Yuko	Conniff	Los Angeles	CA	900364020
Sheila	Sperber	Los Angeles	CA	900255722
S	R	Los Angeles	CA	900255331
Lisabeth	Ryder	Los Angeles	CA	900343001
David	Kurz	Los Angeles	CA	900196674
Lana	Simon	Los Angeles	CA	900121834
John	Crahan	Los Angeles	CA	90045
Rina	Rubenstein	Los Angeles	CA	900181718

Parviz	Khazaei	Los Angeles	CA	900143002
Parviz	Khazaei	Los Angeles	CA	900143002
Dina	Miller	Los Angeles	CA	900352503
Laurel	Blossom	Los Angeles	CA	900243168
Alicia	Garbett	Los Angeles	CA	900682316
N N	Day	Los Angeles	CA	900491707
Charles	Degelman	Los Angeles	CA	900683406
Norelyn	Escobar	Los Angeles	CA	900081941
Jack	Salem	Los Angeles	CA	900491331
Donna	Falcone	Los Angeles	CA	900492000
Jared	Underwood	Los Angeles	CA	900691329
Carl	Chao	Los Angeles	CA	900422619
Anna	Grahams	Los Angeles	CA	900651817
Celeste	Hong	Los Angeles	CA	900271144
Anna	Czosnyka	Los Angeles	CA	900412963
Lynne	Weiske	Los Angeles	CA	90048
Marta	Maldonado	Los Angeles	CA	900162805
Justin	Boone	Los Angeles	CA	900661718
Jonci	Aguillard	Los Angeles	CA	900452476
Michelle	Hochstein	Los Angeles	CA	900204196
Meghan	D'Zmura	Los Angeles	CA	900045461
Anne	Lee	Los Angeles	CA	900340015
Scott	Coahran	Los Banos	CA	936354055
Stanley	Peterson	Los Banos	CA	93635
Kim	Forrest	Los Banos	CA	936355161
Eddie	Gutierrez	Los Banos	CA	93635
Rea	Freedom	Los Gatos	CA	950338840
Lisa	Gherardi	Los Gatos	CA	950325422
Marilyn	Fuller	Los Gatos	CA	950339537
Dana	Thompson	Los Gatos	CA	950327391
Giada	Gattoni Gricourt	Los Gatos	CA	950306330
Ada	Meltzer	Los Gatos	CA	950325629
Lisa	Winningham	Los Gatos	CA	950323839
Steven	Hayashi	Los Gatos	CA	950321140
Brian	Boortz	Los Gatos	CA	950303327
Andrew	Melnick	Los Gatos	CA	95032
Brian	Boortz	Los Gatos	CA	950303327
Sandra	ZWEMKE	Los Gatos	CA	950338514
George	Lewis	Los Osos	CA	934022704
Watson	Gooch	Los Osos	CA	93402
leslie	spoon	Los Osos	CA	934021863
Kamela	Proulx	Los Osos	CA	934022516
Gail	Brooks	Los Osos	CA	934022432
Lynn	Morales	Los Osos	CA	934021422
Timothy	Wands	Los Osos	CA	934023620
Damyone	Lorge	Los Osos	CA	934022427
Katie	Franklin	Los Osos	CA	934022107



Thomas M	Fichter	Los Osos	CA	934021256
Kevin	Branstetter	Lotus	CA	956510521
Beverly	Poncia	Lower Lake	CA	954570971
Yves	Decargouet	Lucerne	CA	95458
Emily	Lee	Madera	CA	936376511
arthur	trejo	Madera	CA	936368527
Ruthie	Aldrich	Magalia	CA	95954
Carla	Fowler	Magalia	CA	959549608
Karen	Searson	Magalia	CA	959549594
RENATE	DOLIN	Malibu	CA	902655347
Stevie	Sugarman	Malibu	CA	902650923
Nancy	Smith	Malibu	CA	90265
Thomas	Tataranowicz	Malibu	CA	902653041
Talia	Rodriguez	Malibu	CA	902653135
Susie	Duff	Malibu	CA	902646314
Rob	Seltzer	Malibu	CA	902655630
Jason	LaBerge	Malibu	CA	902658115
Deborah	Collodel	Malibu	CA	902654625
Jill	Simons	Malibu	CA	902653813
Louis	Spirito	Malibu	CA	902654461
Patricia	Savage	Mammoth Lakes	CA	935460100
D.G.	Sifuentes	Mammoth Lakes	CA	93546
Dee	Sifuentes	Mammoth Lakes	CA	935466025
Daniel	Lowman	Mammoth Lakes	CA	935463634
Bob	Stevens	Manhattan Beach	CA	90277
Kathleen	Cafiero	Manhattan Beach	CA	902665707
Dan	Esposito	Manhattan Beach	CA	902664082
Dalia	Gilbertson	Manhattan Beach	CA	902666339
Colleen	Hinz	Manhattan Beach	CA	90266
Nathan	Frye	Manhattan Beach	CA	902662323
Kathy	Fujimoto	Manhattan Beach	CA	902664956
Lois	Feuer	Manhattan Beach	CA	902667021
Yolanda	Danon	Manhattan Beach	CA	902670313
Kini	Adler	Manteca	CA	953379009
Jim	Spooner	Manteca	CA	953378248
MaryAnn	Bomarito	Marina	CA	939333059
Debbie	Sturt	Marina	CA	939333503
Sue	Hecht	Marina	CA	939330584
greta	langmead	Marina Del Rey	CA	902929238
Gabriele	Schnack	Marina Del Rey	CA	902925512
Keiko	Cronin	Marina Del Rey	CA	902926355
Renee	Klein	Marina Del Rey	CA	902927026
tracy	leshay	Marina Del Rey	CA	902927309
Renee	Klein	Marina Del Rey	CA	902927026
Richard	Blakemore	Mariposa	CA	953389688
Patricia	Elka	Mariposa	CA	953382424
brian	quinn	Mariposa	CA	953389744

Kathy	Silvey	Martinez	CA	945535344
Anne	Gomer	Martinez	CA	945532712
Maryann	Finegan	Martinez	CA	945532725
Joan	cominos	Martinez	CA	945536407
Lindsey	Kirk	Martinez	CA	945532641
Carol	Rawlinson	Marysville	CA	959013541
Rosemary	Noellert	Mckinleyville	CA	955196409
Denise	Comiskey	Mckinleyville	CA	955193383
Robin	Hamlin	Mckinleyville	CA	955199463
Soirsette	Lazare	Mckinleyville	CA	955197917
Hayley	Connors-Keith	Mckinleyville	CA	955197704
Annie	Eicher	Mckinleyville	CA	95519
Vicki	Silkiss	Mckinleyville	CA	955198115
Susan	McKenzie	Meadow Vista	CA	957229558
Greg	Bernardo	Meadow Vista	CA	957221328
Sam	Waldman	Mendocino	CA	954600049
Raven	Deerwater	Mendocino	CA	954601786
Cheri	Langlois	Mendocino	CA	954601286
Jeffery	Garcia	Mendocino	CA	954601166
John	Wozniak	Mendocino	CA	954601750
Kelly	LeFavour	Mendocino	CA	954609598
Vicki	Kopinski	Menifee	CA	92584
Conrad	Melton	Menifee	CA	925862604
Maria	Neeley	Menifee	CA	92584
Michael Dean	Michel	Menifee	CA	925848008
Judith	Culp	Menifee	CA	925863847
Erin	Rupp	Menifee	CA	925848324
Michael	Braude	Menlo Park	CA	940256003
June	Cancell	Menlo Park	CA	940255250
JoAnne	Bailey	Menlo Park	CA	940251615
Marilyn	Eaton	Menlo Park	CA	940255620
Sabina	McKitterick	Menlo Park	CA	940256169
Tempe	Javitz	Menlo Park	CA	940256501
Dana A	Shields	Menlo Park	CA	940252847
Roberto	Dugnani	Menlo Park	CA	940251133
Kate	Ague	Menlo Park	CA	940253738
Gayle	Spencer	Menlo Park	CA	940256315
Paula	Berka	Menlo Park	CA	940252729
Susan	Bally	Mentone	CA	923590319
Niarja	Marchand	Merced	CA	953403961
John	Miller	Merced	CA	953481837
Janie	Anderson	Merced	CA	95341
renee	reiner	Merced	CA	953489363
Christopher	Ramirez	Merced	CA	953404603
Miyuki	Powell	Midway City	CA	926551609
roberta e.	newman	Mill Valley	CA	949415080
Warren M.	Gold	Mill Valley	CA	949415080

Linda	Remy	Mill Valley	CA	949411927
Kimberly	Hughes	Mill Valley	CA	949411001
J	D	Mill Valley	CA	94941
mary	sherman	Mill Valley	CA	949420165
M.K.	Russell	Mill Valley	CA	949412240
Alex	Levine	Mill Valley	CA	949411156
Marilyn	Price	Mill Valley	CA	949412074
Warren	Gold	Mill Valley	CA	949415080
Maria	Muldaur	Mill Valley	CA	949411927
Carol	Parr	Mill Valley	CA	949411203
Nicole	Kennedy	Mill Valley	CA	94941
M.	Canter	Mill Valley	CA	949412721
Marilyn	Anderson	Mill Valley	CA	94941
Colin	Farish	Mill Valley	CA	949414545
barbara	levinson	Mill Valley	CA	94941-2742
Steve	Walsh	Mill Valley	CA	949411803
Darla	Farr	Mill Valley	CA	94941
I Susanne	Blake	Mill Valley	CA	949412687
M. Virginia	Leslie	Milpitas	CA	950353532
Mary	Maher	Milpitas	CA	950354332
Zach	Rasmussen	Mission Hills	CA	913452950
Carolyn	Rhazi	Mission Viejo	CA	92691
Cynthia	Smith	Mission Viejo	CA	926913250
Ike	Rodman	Mission Viejo	CA	926921872
Christopher	DiFonso	Mission Viejo	CA	926924829
Alexis	Bosley	Mission Viejo	CA	92691
Mary	Driskill	Mission Viejo	CA	926921863
Merle	Sine	Mission Viejo	CA	92692
Jamie	Trask	Mission Viejo	CA	926916131
Jean	Kravitz	Mission Viejo	CA	92692
Patricia	Harp	Modesto	CA	953554970
Jody	McGinnis	Modesto	CA	953502432
diana	street	Modesto	CA	953554023
Claire	Bettington	Modesto	CA	953501212
Georgie	Reed	Modesto	CA	953568527
Jaime	Mendoza	Modesto	CA	953500504
Susan	Cohen	Monarch Beach	CA	926293606
Dennis and Andrea	Hopkins	Monrovia	CA	910161514
Phyllis	Frasher	Monrovia	CA	91016
GEENA	DURAN	Monrovia	CA	91016
Christy	Bolle	Monrovia	CA	910176463
Phil	Stillwell	Monrovia	CA	910164332
Jim	Reynolds	Montague	CA	96064
Tom	Key	Montague	CA	960649778
mike	stokes	Monte Rio	CA	95421
angelina	saucedo	Montebello	CA	90640
Dora	Martinez	Monterey	CA	939438685

Kristen	Beck	Monterey	CA	939402666
Jeannine	Murphy	Monterey	CA	939402546
Zoe	Edington	Monterey	CA	939401226
Jeffrey	Tischler	Monterey	CA	939403850
Jane	Wallace	Monterey Park	CA	91754
Steve	Vicuna	Monterey Park	CA	917546011
Steve	Vicuna	Monterey Park	CA	917546011
Robert	Drey	Monterey Park	CA	917544708
Karen	Berger	Montrose	CA	910201284
Karen	Drake	Montrose	CA	910201639
Jean	Davis	Montrose	CA	910201784
Thomas	Filip	Moorpark	CA	930201332
Ronald	Dow	Moorpark	CA	930211829
John	Asprey	Moraga	CA	945561583
Beatriz F Dutra	Mello	Moraga	CA	94556
Kathryn	Santana	Moraga	CA	945562712
Greg	Winton	Moreno Valley	CA	925578554
Stephen	Myers	Moreno Valley	CA	925511658
Emily	Morales	Moreno Valley	CA	925526001
ADOLF	KRUGER	Moreno Valley	CA	92557
Martin	Smallen	Morgan Hill	CA	950379135
carol	ellenberger	Morgan Hill	CA	950376821
Elizabeth	Edmonds	Morgan Hill	CA	950379473
Alice	Gutierrez	Morgan Hill	CA	950377887
Carole	Wakeford	Morgan Hill	CA	950373006
Carole	Wakeford	Morgan Hill	CA	95037
Michelle	Mitchell	Morgan Hill	CA	950375346
betty	winholtz	Morro Bay	CA	934422703
Tina	Wener	Morro Bay	CA	934421352
Linda	Penrose	Morro Bay	CA	934421305
N. J.	Bast	Morro Bay	CA	934422611
Jim	Curland	Moss Landing	CA	950390806
Vicki	Gold	Mount Shasta	CA	960679730
Laraine;	LEWIS	Mount Shasta	CA	960671375
Lana Luisa	Navejas	Mount Shasta	CA	960670774
Gaile	Carr	Mount Shasta	CA	960679617
Stephanie	Wilder	Mount Shasta	CA	960672629
Nancie	Stotts	Mountain Center	CA	925613612
Scott	Lindsey	Mountain Center	CA	925613305
Ben	Martin	Mountain View	CA	940401483
Alice Anne	Martineau	Mountain View	CA	940412244
Marilyn	Levine	Mountain View	CA	940411640
Elizabeth	Hedrick	Mountain View	CA	940411436
Cynthia	Hanson	Mountain View	CA	940433737
Caroline	Bering	Mountain View	CA	940404565
Charlene	Miyashita	Mountain View	CA	940412330
Christopher	Cain	Mountain View	CA	940403609

Rachel	Loui	Mountain View	CA	940401278
Steve	Chandler	Mountain View	CA	940434428
Victoria	Maxson	Mountain View	CA	940434900
Paula	Polito	Mountain View	CA	940432108
Cyril	Bouteille	Mountain View	CA	940434816
LONNA	RICHMOND	Muir Beach	CA	949659754
Pam	Kimes	Murphys	CA	952479422
H	W	Murphys	CA	952479494
Robert	Kaplan	Murrieta	CA	925635716
Janet	Wheeler	Murrieta	CA	925636445
Sondra	Bustos	Murrieta	CA	925636729
Elizabeth	Woodward	Murrieta	CA	92563
Virginia	Antonio	Murrieta	CA	925635412
Sandy	Iverson	Murrieta	CA	925626720
Wendy	Rosenfeld	N Hollywood	CA	916014472
Roslyn	Jones	N Palm Springs	CA	922580460
Karen	Nagano	Napa	CA	945584324
Wayne	Ryan	Napa	CA	945584440
Jan	Gates	Napa	CA	945599704
Steve	Whitie	Napa	CA	945589572
Christina	Blakeney	Napa	CA	945592315
Jomay	Skeoch	Napa	CA	945592051
Susan	Wheaton	Napa	CA	945585881
Kathy	Linale	Napa	CA	945586703
Jackie	Meissenhalter	Napa	CA	945583443
Barbara	Breeze	Napa	CA	945582605
Judith	Reynolds	Napa	CA	945583284
ERICA	MARTENSON	Napa	CA	945593920
Cathy	Oconnor	Napa	CA	945582262
Keiko	Barrett	National City	CA	919508229
Leslie	Tate	National City	CA	919508215
Joseph	Luke	National City	CA	919506033
Stephen	Greenberg	Nevada City	CA	959592856
Glenn	Smith	Nevada City	CA	959599428
Darrell	Robinson	Nevada City	CA	959592920
Dr. Nanci	Shandera	Nevada City	CA	959599772
Judy	Cribbins	Nevada City	CA	959599304
Doreen	McCammon	Nevada City	CA	95959
Jonathan	Hill	Nevada City	CA	95959-9226
Joan	Griffin	Nevada City	CA	95959
Barbara	Magliocca	Nevada City	CA	95959
Terry	Charonnat	Nevada City	CA	95959
Cody	Capella	Nevada City	CA	959593583
Dolores	Miele	Nevada City	CA	959598838
Gary	Naake	Nevada City	CA	959599247
Dave	Peterson	Newark	CA	945602438
Denise	Leyda	Newark	CA	945604871

Beth	Merrill	Newbury Park	CA	913204804
James	Massengale	Newbury Park	CA	913204144
Debbie	Atlas	Newbury Park	CA	91320
Paula	Willebrands	Newbury Park	CA	91320
Percy	Hicks-Severn	Newbury Park	CA	913205314
Nicole Vitale	Mikals	Newbury Park	CA	913203235
Barbara	Montejo	Newhall	CA	91321
Victor	Paglia	Newport Beach	CA	926632520
judy	carlson	Newport Beach	CA	926607359
Md	Fein	Newport Beach	CA	926595413
Thomas	Shuler	Newport Beach	CA	926604008
Larry	Lerner	Newport Beach	CA	926603500
Loretta	Caruana	Newport Beach	CA	92660
Regina	Ahlmann	Newport Coast	CA	92657
Eve	Marie	NICE	CA	6300
Nora	Lewis	Nipomo	CA	934449736
Barbara	Schader	Nipomo	CA	934446661
Robin	Down	Nipomo	CA	93444
Devon	Kerbow	Norco	CA	928602477
V.	Truong	North Fork	CA	936439662
Eileen	McLeod	North Highlands	CA	956603468
Jim	Leske	North Hills	CA	913431407
Marilyn	Dennis	North Hills	CA	913434612
Patricia	Moorehead	North Hills	CA	913434737
Cheryl	Khalid	North Hills	CA	913432812
Heidi	Miller	North Hills	CA	913433331
Stephanie	Aston	North Hills	CA	913432905
Elizabeth	Edinger	North Hollywood	CA	916013981
Natalie	Aharonian	North Hollywood	CA	916053944
Heidi	Fielding	North Hollywood	CA	916062276
Kathleen	Culp	North Hollywood	CA	916055650
Cathy	Kraus	North Hollywood	CA	916064210
Jean	Merritt	North Hollywood	CA	916013502
Grace	Silva	North Hollywood	CA	916055337
Bruce	Houghtaling	North Hollywood	CA	916054813
Jean	Merritt	North Hollywood	CA	916013502
Fred	Granlund	North Hollywood	CA	916011723
Eric	Wood	North Hollywood	CA	91607
Manuela	Rollins	North Hollywood	CA	91602
Veronica	Goode	Northridge	CA	913262023
Don	Sparks	Northridge	CA	913252049
Ann	Dorsey	Northridge	CA	913253844
phillip	shigekuni	Northridge	CA	913431721
Natasha B	Gomez	Norwalk	CA	906501947
Carol	Bostick	Novato	CA	949495046
Robert	Ortiz	Novato	CA	949452610
Marianna	Riser	Novato	CA	949496305

Aileen	Harvey	Novato	CA	94947
Sheri	Rollison	Novato	CA	94945
Shelley	Carlisle	Novato	CA	949472092
Russell	Thorp	Novato	CA	949496494
Adrian	Fried	Novato	CA	949472110
Lisa	Ridge	Novato	CA	949475261
Aaron	Brinkerhoff	Novato	CA	949474327
Richard	Park	Novato	CA	949496810
Jay	Rice	Novato	CA	949472075
Carolyn	Kintzley	Novato	CA	949474432
Arlene C.	Van Craeynest	Novato	CA	949473004
Skot	McDaniel	Novato	CA	949452437
Hillary	Davis	Novato	CA	949496694
Valerie	Kuskulis	Novato	CA	949477127
H. S	Nadler	Novato	CA	949471946
Gail	Camhi	Novato	CA	949496804
Honor	Henningsen	Novato	CA	949472076
Trese	Biagini	Novato	CA	949473769
sharyn	Kay	Novato	CA	949496129
Kathy	Brigger	Nuevo	CA	925678920
A	MOORE	Oak Park	CA	913771206
Elaine	Wilcox	Oakdale	CA	953619521
Claire	Chambers	Oakdale	CA	953618932
David	Irons	Oakdale	CA	953612524
William	Neill	Oakhurst	CA	936449021
steph	clark	Oakland	CA	946102740
benson	hausman	Oakland	CA	946116408
Sandra	Morey	Oakland	CA	946022901
Rondi	Saslow	Oakland	CA	94705
Susan	Harman	Oakland	CA	946192206
La	Haage	Oakland	CA	946181224
Amit	Shoham	Oakland	CA	946193210
Garrett	Murphy	Oakland	CA	946122443
James	TRUE	Oakland	CA	946181021
Amy	Zink	Oakland	CA	946061167
Matthew	Coleman	Oakland	CA	946115098
Clive	Chafer	Oakland	CA	946191212
Gabriel	Steinfeld	Oakland	CA	946103861
Susan	Harris	Oakland	CA	946092619
Laurie	Bramlage	Oakland	CA	94611
Robert	Cheeks	Oakland	CA	946103222
A	Gardner	Oakland	CA	946021461
Claudia	Bowman	Oakland	CA	94610
Jerri	Mariott	Oakland	CA	946112047
Lesley	Schultz	Oakland	CA	946102121
Anita	Watkins	Oakland	CA	946112404
Guy	Johnson	Oakland	CA	94611

Arlene	Purcell	Oakland	CA	94801
Janet	Parkins	Oakland	CA	946115115
Barbara	Benzwi	Oakland	CA	946182512
Cindy	Beckley	Oakland	CA	946181217
Teresa	BoggsMoura	Oakland	CA	946193350
Mary	Larsen	Oakland	CA	946103367
Paul	Koehler	Oakland	CA	94611
Michael	Blodgett	Oakland	CA	946014461
Ann	Killebrew	Oakland	CA	946102415
Gail	Weininger	Oakland	CA	946114817
Kimberly	Aikawa-Olin	Oakland	CA	946022514
Rita	Shahi	Oakland	CA	946021804
Carol	Griffin	Oakland	CA	946191605
Greg	Ratkovsky	Oakland	CA	946193111
Cynthia	Soffiotto	Oakland	CA	94619
Colin	Lynch	Oakland	CA	946081403
Jessica	Fielden MD	Oakland	CA	946111064
Patrick	Twomey	Oakland	CA	946114924
zachary	fleming	Oakland	CA	946061427
Chizu	Omori	Oakland	CA	946093238
Leslie	Smith	Oakland	CA	946111806
Nancy	Paskowitz	Oakland	CA	946091746
SHARON	HAASE	Oakland	CA	946115362
Sarah	Harvey	Oakland	CA	946063934
Mary	Lorain	Oakland	CA	946021766
Sue	Honey	Oakland	CA	946111342
Judy	Levin	Oakland	CA	946021823
Jessica	Adams	Oakland	CA	94707
Kersti	Rose	Oakland	CA	946023535
Gwen	Weil	Oakland	CA	946101138
Diane	Neophytou	Oakland	CA	946013703
Jason	Polastri	Oakland	CA	946091718
Susan	Herting	Oakland	CA	946191525
Susan	Oldershaw	Oakland	CA	946103843
David	Wasley	Oakland	CA	94618
Sally	Weare	Oakland	CA	946181901
m	Flannery	Oakland	CA	946092608
Axel	Meier	Oakland	CA	94606
Michele	Tusinac	Oakland	CA	946092763
H.	Gentry	Oakland	CA	946091346
Amy	Dewey	Oakland	CA	946103072
Catherine	Meyer	Oakland	CA	946114968
Michael	Ferraro	Oakland	CA	946015519
Nancy	Thall	Oakland	CA	946020053
Rebecca	Dixon	Oakland	CA	946021919
Alden	Jenks	Oakland	CA	946091008
Miranda	Helly	Oakland	CA	946124469



Laakea	Laano	Oakland	CA	946114862
Judith	Smith	Oakland	CA	946011320
Martha	Matsuda	Oakland	CA	94601
Patty	Garcia	Oakland	CA	946101665
Carol	Kuelper	Oakland	CA	946023909
Noah	Tenney	Oakland	CA	946061416
Alex	Libacova	Oakland	CA	946061439
Khati	Hendry	Oakland	CA	946021836
Annette	Barroso	Oakland	CA	946053538
Karin	Hansen	Oakland	CA	93720
Frank	Hale	Oakland	CA	946112129
Samia	Husain	Oakland	CA	94611
Ester	Deel	Oakland	CA	946034142
Marshall	Schwartz	Oakland	CA	946021713
Alfredo	Jimenez	Oakland	CA	946213801
Meredith	Elliott	Oakland	CA	946193315
Claudia	Wornum	Oakland	CA	946055812
William	Mitchell	Oakland	CA	94619
Mary-Anne	Manley	Oakland	CA	946062051
Elroy	Kursh	Oakland	CA	946182335
Sterling	Hollins	Oakland	CA	946211515
Maura	FitzGerald	Oakland	CA	946102535
P	M	Oakland	CA	94611
Niki	Gialis	Oakland	CA	946112232
K	m	Oakland	CA	946103157
Genevieve	Soares	Oakland	CA	94610
Amber	Le	Oakland	CA	946012028
Bethany	Gibson	Oakland	CA	946083108
Michael	Mills	Oakland	CA	94606
Margaret	Piskitel	Oakland	CA	946021932
Jan	Civil	Oakland	CA	94612
Jan	Caine	Oakland	CA	946182206
Connie	Clausen	Oakland	CA	946091853
Dana	Berry	Oakland	CA	946104762
Christine	Pagano	Oakland	CA	946112631
Kathryn	Pielage	Oakland	CA	946191643
Judy	Noddin	Oakland	CA	946051712
Richard	Behrman	Oakland	CA	946052125
Margie	Lewis	Oakland	CA	94619
Karen	Wessenberg	Oakland	CA	946111626
Mary	Luckey	Oakland	CA	946101420
Susan	Boggiano	Oakland	CA	946053044
Paul	Chin	Oakland	CA	946192512
Ben	Flint	Oakland	CA	946115860
Celeste	Corzan	Oakland	CA	946193024
Robert	Spotts	Oakley	CA	945612403
Desire	Medlen	Oakley	CA	945612300

Peter	Arneson	Oceanside	CA	920542911
Sherry	Marsh	Oceanside	CA	920565159
Diana	cole	Oceanside	CA	920571955
Rachel	Carey	Oceanside	CA	920543662
Elizabeth	Osborne	Oceanside	CA	920581740
Charlene	Kerchevall	Oceanside	CA	920544040
Elaine	Cefola	Oceanside	CA	920562325
Alexis	Grone	Oceanside	CA	920581727
Buffie	Gold	Oceanside	CA	920567226
Michael	Elkins	Oceanside	CA	920544773
cara	wicks	Oceanside	CA	920578340
Nancy	Keating	Oceanside	CA	920545703
Trish	Mckenzie	Oceanside	CA	920543642
Faith	Clark	Oceanside	CA	920577508
Sondra	Zanassi	Oceanside	CA	920580647
Christian	Dollahon	Oceanside	CA	920542518
Mary	Scott	Oceanside	CA	92057
Marylucia	Arace	Oceanside	CA	920578614
Charles	Weber	Oceanside	CA	920563933
Alessandra	Colfi	Oceanside	CA	92056
Jared	Leavitt	Oceanside	CA	920581832
HOLLY	ASAMURA	Oceanside	CA	92057
Darcy	Duval	Oceanside	CA	920542214
Ron	Drake	Oceanside	CA	92058
Norbert	Schag	Oceanside	CA	920577512
Stacy	Guillen	Oceanside	CA	920562530
Rita	Senn-Sikorski	Oceanside	CA	92054
Ursula	breuet	Oceanside	CA	920545727
John	Alexander	Oceanside	CA	920578344
anita	simons	Oceanside	CA	920565136
Wendy	Mccobb	Ojai	CA	930241123
Stephan	Foley	Ojai	CA	930233607
JANINE	COMRACK	Ojai	CA	930231553
Julie	Ismert	Ojai	CA	930235889
rose	zbyzenski	Ojai	CA	930233153
Martha	Rolls Collins	Ojai	CA	930232216
Rena	Lewis	Ojai	CA	930233830
Laurie	Hope	Ojai	CA	930234149
Sabra	Rahel	Ojai	CA	930235102
Valerie	Shideler	Olivehurst	CA	959614400
Jennie	Bloom	Ontario	CA	917624728
Dawson	Pan	Ontario	CA	91710
Kathy	Simington	Ontario	CA	917642721
Valerie	Carrick	Ontario	CA	917621839
Kelly	Ayers	Ontario	CA	91761
BJ	Lee	Orange	CA	928683907
Cheryl	Studer	Orange	CA	928662592

Gayle	Fisher	Orange	CA	928694116
Sammy	Arneson	Orange	CA	92867
Lori	Gembka	Orange	CA	928694365
Kimberly	Connell	Orange	CA	928682141
Katherine	Gramoglia	Orange	CA	928672111
GG	anson	Orange	CA	928634234
Richard	Burris	Orange	CA	928691429
Brian	Kirk	Orange	CA	92866
Sammy	Arneson	Orange	CA	92867
Samantha	Maxwell	Orangevale	CA	956622654
Nancy	Polito	Orangevale	CA	95662
Karin	Peck	Orangevale	CA	956623723
Alan	Shapiro	Orcutt	CA	934553950
Lucy	Henderson	Orinda	CA	945632025
Mark	Hurst	Orinda	CA	945633922
Carolee	Tamori	Oroville	CA	959669244
Verona	Murray	Oroville	CA	959660038
Jeannie	Pollak	Oxnard	CA	930366210
Brad	Nelson	Oxnard	CA	930354479
Maree	Penhart	Oxnard	CA	930353743
Debbie	Gregory	Oxnard	CA	930333740
Lori	Bates	Oxnard	CA	930354606
Pamela	Holley-Wilcox	Oxnard	CA	930351432
Robin	Munson	Oxnard	CA	930351442
Francisco	Orozco	Oxnard	CA	930362010
Jennifer	Johnson	Oxnard	CA	930352961
Kristina	Zweig	Pacheco	CA	945535266
Bill	Kuhns	Pacific Grove	CA	939502690
Margaret	Goodman	Pacific Grove	CA	939504250
Kelly	Waldo	Pacific Grove	CA	939503833
Paul	Hersh	Pacific Grove	CA	939503529
Tomi	Wilson	Pacific Grove	CA	939500535
Jennifer	Haydu	Pacific Grove	CA	93950
Therese	DeBing	Pacific Grove	CA	939502450
Adrienne	Jonson	Pacific Grove	CA	939502615
Melissa	Hutchinson	Pacific Grove	CA	939503146
Katherine	Maynard	Pacific Palisades	CA	902724241
Chris	Van hook	Pacific Palisades	CA	902724631
Susan	Lynch	Pacific Palisades	CA	902723909
Jane	Crist	Pacific Palisades	CA	902722425
Mary Lou	Loper	Pacific Palisades	CA	902722215
Chris	May	Pacific Palisades	CA	902723825
Elizabeth	Burgis	Pacific Palisades	CA	91403
Kathleen	Glander	Pacific Palisades	CA	902722437
sherry	grant	Pacific Palisades	CA	902723259
gregory	alper	Pacific Plsds	CA	902722830
Vera	Loewer	Pacifica	CA	940444027

Mike	Bonar	Pacifica	CA	940442002
Mary Lu	Murphy	Pacifica	CA	940442305
Frances	Larson	Pacifica	CA	940444366
Ellen	Hall	Pacifica	CA	940443343
Mary Margaret nan	Kaden matthews	Pacifica	CA	94044
Margaret	Goodale	Pacifica	CA	940444214
Jill	Slocum	Pacifica	CA	940442403
Mark	Golembiewski	Pacifica	CA	940443845
Judith	Hall	Pacifica	CA	940442148
Jeremy	Spencer	Pacifica	CA	940443318
Kathy	Bede	Pacifica	CA	940444340
Victor	Carmichael	Pacifica	CA	940441052
Jonathon	Krupp	Pacifica	CA	940443615
Joseph R	Thompson	Palm Desert	CA	922111779
Cherri	Hardy	Palm Desert	CA	92260
Sharon	MATTERN	Palm Desert	CA	922605923
Mark	Hupf	Palm Desert	CA	922111393
Rose	Coppinger	Palm Desert	CA	922117533
Richard	Clarke	Palm Desert	CA	922110905
Raphael	Stanfield	Palm Desert	CA	92211
Preston	Ellis	Palm Desert	CA	92260
Patrick	Fasca	Palm Springs	CA	922623383
Maryellen	Redish	Palm Springs	CA	922640649
Frank	Kraushar	Palm Springs	CA	922621826
Anna	Factor	Palm Springs	CA	922648430
Kim	Chasen	Palm Springs	CA	922634586
Julie	Rice	Palm Springs	CA	922622907
Kathy	Strijek	Palm Springs	CA	922621237
Sissy	Wallach	Palm Springs	CA	92263
John	Goetz	Palm Springs	CA	922644950
Michelle	Palladine	Palm Springs	CA	922626620
Francoise	May	Palm Springs	CA	922644966
Elliott	Sernel	Palm Springs	CA	922630301
Dennis	Kostyk	Palm Springs	CA	922622951
Kathleen	Taggart	Palm Springs	CA	922649415
Gary	Lee	Palm Springs	CA	922642714
Therese	Ryan	Palmdale	CA	935502569
Therese	Ryan	Palmdale	CA	935502569
Patricia	Bednash	Palmdale	CA	935913301
Mario	Magpale	Palmdale	CA	935502861
Debra	Nichols	Palmdale	CA	935513941
Jordan	Briskin	Palo Alto	CA	943062512
Stephen	Rosenblum	Palo Alto	CA	943013939
Naomi	Mindelzun	Palo Alto	CA	943033438
Rania	Bratberg	Palo Alto	CA	943061906
Edward	Cavasian	Palo Alto	CA	943033409

Marie	Anthony	Palo Alto	CA	943033924
Kim	Harvey	Palo Alto	CA	94301
Catherine	Christen	Palo Alto	CA	943033501
Jolinda	Decad	Palo Alto	CA	943014248
Julie	Spengler	Palo Alto	CA	943063126
Sheila	Gholson	Palo Alto	CA	943061252
Susan	Breitbard	Palo Alto	CA	943062712
Judith	Spirn	Palo Alto	CA	94610
Sara	Matyskiela	Palo Alto	CA	943033728
Eva	Suhr	Palo Alto	CA	943061347
Ana	Chou	Palo Alto	CA	943062944
William	Kuo	Palos Verdes Estates	CA	902742644
James	Hamilton	Palos Verdes Estates	CA	902742768
Khalia	Bonner	Palos Verdes Estates	CA	902741627
Jane	Levine	Panorama City	CA	914124512
Rosa	Lopez	Panorama City	CA	914023806
John	Peck	Paradise	CA	959672439
Brent	Spencer	Paramount	CA	907236875
Lois	Grosshans	Pasadena	CA	911031749
Susan P.	Walp	Pasadena	CA	91103-2722
Genette	Foster	Pasadena	CA	911061312
Richard	Valencia	Pasadena	CA	911051326
Nancy	Dubuc	Pasadena	CA	911042244
Linda	B.	Pasadena	CA	911075273
Beth	Herndobler	Pasadena	CA	911061319
Pepi	Feinblatt	Pasadena	CA	911043727
Mickey	Fruchter	Pasadena	CA	911042511
Linda	B.	Pasadena	CA	911075273
Mary	Hayden	Pasadena	CA	91105
Allison	Moffett	Pasadena	CA	911051404
Daniel	Roberto	Pasadena	CA	911044801
Steven	Pickering	Pasadena	CA	911074427
Nola	Nordmarken	Pasadena	CA	911011168
Joanna	Harrison	Pasadena	CA	911041704
Pat	Lebuy	Pasadena	CA	911073710
Brent	Lund	Pasadena	CA	911013117
Jamie	Scott	Pasadena	CA	911051608
Rich	Behymer	Pasadena	CA	911033856
Myrian	Monnet	Pasadena	CA	911013289
Stephanie	Shlasky	Pasadena	CA	911033823
Richard	Kornfeld	Pasadena	CA	911051922
Katherine	Poole	Pasadena	CA	911014316
James	Hilsinger	Paso Robles	CA	934462444
Margaux	Dyson	Paso Robles	CA	93446
Melissa	Davis	Paso Robles	CA	934467716
Clifford	Cross	Paso Robles	CA	934465911
Kelli	McCoy	Paso Robles	CA	934465921

Molly	Levine	Paso Robles	CA	934464166
Justin	Chernow	Paso Robles	CA	934464834
Bernard	Hochendoner	Patterson	CA	953638307
Lesle	Helgason	Pebble Beach	CA	939533043
Carole	Ehrhardt	Pebble Beach	CA	93953
Mike	Pasner	Penn Valley	CA	959469367
Gail	Eatherly	Penn Valley	CA	95946
James	Woods	Penn Valley	CA	959461837
Jamielyn	Valdes	Penngrove	CA	949519520
Armando A.	Garcia	Perris	CA	925717715
Ernesto	Marquez	Perris	CA	925704536
Michele	Taylor	Perris	CA	925713784
Jamila	Garrecht	Petaluma	CA	949524157
Bill	Vartnaw	Petaluma	CA	949522852
Annette	Raible	Petaluma	CA	949529687
Karen	Guma	Petaluma	CA	949521934
Kay	Hardy	Petaluma	CA	94952
Stacey	DeGooyer	Petaluma	CA	949522711
Ingeborg	MacKay	Petaluma	CA	949544431
Elfi	Gilford	Petaluma	CA	949523221
Tony	Fuller	Petaluma	CA	949549552
Matthew	McClure	Petaluma	CA	949524155
Cheryl	Thompson Johnstone	Petaluma	CA	949521090
Jean	O'Connor	Petaluma	CA	949522549
Krista	Mills	Petaluma	CA	949521084
Eliza	Perez	Petaluma	CA	949524930
Denise	Alvarado	Petaluma	CA	949540341
Laurel	Powers	Petaluma	CA	949528114
Howard	Belove	Petaluma	CA	949522409
Irene	Collins	Petaluma	CA	949521050
Dave	Webster	Petaluma	CA	949522740
Clare	Long	Petaluma	CA	949751574
Jarene	Bell	Petaluma	CA	94952
Janet	Bond	Petaluma	CA	949545873
Kate	Bolton	Petaluma	CA	949522921
Geraldine	Battistessa	Petaluma	CA	949524115
Claire	Pollock	Petaluma	CA	949546916
Philip	Patino	Pico Rivera	CA	906602225
Paula	Glaser	Pico Rivera	CA	906601979
Susan	Hathaway	Pico Rivera	CA	906602842
Charles	Robinson	Piedmont	CA	96161
Sharon	Bunch	Piedmont	CA	946114419
James	Hedgecock	Pine Grove	CA	956659738
Margaret	Glass	Pine Grove	CA	956659428
Carol	Oller	Pinole	CA	945641813
Linda	Mori-Roberts	Pinole	CA	945642815
Marsha	Jarvis	Pinole	CA	945642689

Daniela	Martinez	Pinon Hills	CA	923729340
Charles	Tribbey	Pismo Beach	CA	934492835
Bob	Leppo	Pismo Beach	CA	934491806
Bill	Greene	Pismo Beach	CA	934480163
Dennis	Young	Pismo Beach	CA	934492015
Julie	Magilen	Pittsburg	CA	945654344
Henry	Martinez	Pittsburg	CA	945655935
Annette	Benton	Pittsburg	CA	945657032
Carol	Watts	Placentia	CA	928706026
Denise	Price	Placentia	CA	928703516
Mike	Rolbeck	Placerville	CA	956677702
Agnes	Gillespie MD	Placerville	CA	956673114
Arthur	Molho	Placerville	CA	956673317
Jim	Wilson	Placerville	CA	956677915
Melissa	Marquez	Placerville	CA	956679301
Steven	Perry	Placerville	CA	956678144
Nolan	T'Sani	Placerville	CA	956674336
Ms. Jennifer	Yanke	Placerville	CA	956671404
George	Lloyd	Placerville	CA	956678439
Miriam	Faugno	Playa Del Rey	CA	902938310
stephanie	costi	Playa Del Rey	CA	902937668
Chris	Leverich	Playa Del Rey	CA	90293
Paulette	Doulatsgagi	Playa Del Rey	CA	902938397
Gwen	Shapiro	Playa Vista	CA	900942940
Irene	Rokaw	Playa Vista	CA	900942270
Mark	Gotvald	Pleasant Hill	CA	945232736
Peggy	Luna	Pleasant Hill	CA	945231537
Kevin	Schader	Pleasant Hill	CA	945231370
deborah	wheeler	Pleasant Hill	CA	945233522
carol	bateman	Pleasant Hill	CA	945231144
bob	nace	Pleasant Hill	CA	945234311
Joe	Santone	Pleasant Hill	CA	945234613
SHELLIE	KRICK	Pleasant Hill	CA	945232980
April	Pinheiro	Pleasanton	CA	945665438
Paulette	Salisbury	Pleasanton	CA	945665884
Stella	Kim	Pleasanton	CA	94566
Isabelle	Morales	Pleasanton	CA	945882614
Barbara	Norton	Pleasanton	CA	945883411
L	D	Pleasanton	CA	945666527
Josh	Moore	Pleasanton	CA	945883862
Hugh	Brady	Point Arena	CA	95468
Claire	Joaquin	Pollock Pines	CA	957269013
David	Soares	Pollock Pines	CA	957269424
Faye	Soares	Pollock Pines	CA	957269424
Larry	Johnson	Pomona	CA	91767
LARRY	BRANSON	Pomona	CA	917674739
Twyla	Meyer	Pomona	CA	917671830

Kristine	Neff	Pomona	CA	917691163
Naomi	Britt	Pomona	CA	917682440
Katherine	Valdez	Pomona	CA	91767
Sandra	Menjivar	Pomona	CA	917682415
Kalyn	McCloud	Port Hueneme	CA	930442244
Lisa	Allen	Port Hueneme	CA	9300413449
Donna	Passero	Port Hueneme	CA	93041
Gregory	Hubbard	Porter Ranch	CA	91326
Malcolm	Moore	Portola	CA	961228210
Heide	Hennen	Portola Valley	CA	940288009
Susanna	Cummings	Potter Valley	CA	954698762
m	alker	Potter Valley	CA	954698801
Helen	Johnson	Potter Valley	CA	954698774
Win	Carson	Poway	CA	920644839
Kimberly	Morse	Poway	CA	920646432
Sharon	Sprouse	Poway	CA	920643000
Ruben	Tamamian	Prather	CA	936510365
Susan	Chesterman	Prunedale	CA	939071385
bobbi	loeb	Pt. Reyes Sta.	CA	94956
Pamela	Overholtzer	Quail Valley	CA	925871233
Piers	Strailey	Quincy	CA	959713012
Faith	Strailey	Quincy	CA	95971
Aimee	Heaney	Quincy	CA	959719416
Monique	Mierlot	Quincy	CA	959719473
Aimee	Heaney	Quincy	CA	959719416
Alice	Thigpen	Quincy	CA	959710879
Tammy	Bullock	Ramona	CA	920652876
Laura	Bagley	Ramona	CA	920655257
Eleanore	Vann	Rancho Cordova	CA	956704320
Lydia	Good	Rancho Cordova	CA	95670-5326
Derek	White	Rancho Cordova	CA	956703803
Frederick	Hamilton	Rancho Cucamonga	CA	917391925
Jodi	Bell	Rancho Cucamonga	CA	917391740
Heidi	Palmer	Rancho Cucamonga	CA	917391701
Dianna	McNair	Rancho Cucamonga	CA	917303331
Alan	Grantham	Rancho Cucamonga	CA	917015029
Carl	Williams	Rancho Cucamonga	CA	917306678
Stephanie	Clemons	Rancho Cucamonga	CA	90807
Carolyn	Dickson	Rancho Cucamonga	CA	917306893
Savannah	Young	Rancho Cucamonga	CA	91730
Frank	Lamborn	Rancho Cucamonga	CA	917012523
Alex	Miller	RANCHO CUCAMONGA	CA	91730
Sean	Sahagun	Rancho Cucamonga	CA	91739
David	Griffith	Rancho Cucamonga	CA	917373017
Robert	Rippetoe	Rancho Mirage	CA	922704139
John	Varga	Rancho Mirage	CA	922701439
Mark	Cappetta	Rancho Mirage	CA	922705622



Marlene	Alan-Lee	Rancho Mirage	CA	922702533
Cynthia	McCarthy	Rancho Mission Viejo	CA	92694
Tona	Rose	Rancho Murieta	CA	956839562
S	Barryte	Rancho Palos Verdes	CA	902752955
Judy	Bradford	Rancho Palos Verdes	CA	902753733
Cordi	Koga	Rancho Palos Verdes	CA	90275
Christian	Edwards	Rancho Santa Margarita	CA	92688
Dana	von Hartmann	Rancho Santa Margarita	CA	926882718
Stella	Rico	Rancho Santa Margarita	CA	926881034
Kathy	Marshall	Raymond	CA	936539573
Jack	Schwartz	Receda	CA	91335
Jo Ann	Toro	Redding	CA	960018730
Terri	Decker	Redding	CA	96001
Harriet	Milker	Redding	CA	960493953
Larry	Bailey	Redding	CA	960992480
Marla	Doherty	Redding	CA	96001
Kathy	Weaver	Redding	CA	96001
nancy	blastos	Redlands	CA	923737109
Ivonne	Walters	Redlands	CA	923746259
Kathryn	Cencirulo	Redlands	CA	923737318
Suzanne	Coonradt	Redlands	CA	923737242
Eileen	Thomas	Redlands	CA	923736936
Doug	Bender	Redondo Beach	CA	902776116
Linda	Masuoka	Redondo Beach	CA	90277
Wendy	Il'Grande	Redondo Beach	CA	902775960
Laurel	Cameron	Redondo Beach	CA	902774827
F. R.	Eguren	Redondo Beach	CA	902774291
Wendy	Pratt	Redondo Beach	CA	902773009
Kimberly	Hovekamp	Redondo Beach	CA	902774162
M	Montenegro	Redondo Beach	CA	90277
LARRY	MOORE	Redondo Beach	CA	902776756
John	Stewart	Redway	CA	955600185
Kathy	OBrien	Redway	CA	955602423
Erin	Gellman	Redway	CA	95560
Williiam	Eastwood	Redway	CA	955600424
Julie	Emard	Redway	CA	955600893
Nancy	Miyamoto	Redway	CA	955602143
Stella	Morris	Redway	CA	95560
Margaret	Rogers	Redwood City	CA	940621315
Reevyn	Aronson	Redwood City	CA	940611269
Rita	Melton	Redwood City	CA	940613243
Linda	Krieg	Redwood City	CA	940612774
Carol	Irvine	Redwood City	CA	94063
Lisa	Bettendorf	Redwood City	CA	940623054
Jesse	Goldstein	Redwood City	CA	940612101
Brian	Coan	Redwood City	CA	94063
Ann Marie	Hritz	Redwood City	CA	94061

William	Romfh	Redwood City	CA	940634307
nina	mcnitzky	Redwood City	CA	940651326
Norma	Ortez	Redwood City	CA	94063
Nancy	Nanna	Redwood Valley	CA	954709694
Deborah L	Stamp	Redwood Valley	CA	954706149
Joe	Weis	Reedley	CA	93654
JL	Angell	Rescue	CA	956729411
Deana	Shelby	Rescue	CA	956729539
Carlos	Nunez	Reseda	CA	913356421
Amy	Young	Reseda	CA	913351337
Carlos	Nunez	Reseda	CA	91335
Ezekiel	Ragsdale	Reseda	CA	913351244
Tracy	Gilbert	Rialto	CA	923778831
Robert	Sila	Rialto	CA	923774428
Jay	Mayer	Richmond	CA	948047487
Barbara	Lovejoy	Richmond	CA	948044555
Paula	DeFelice	Richmond	CA	948032749
Terry	Campbell	Richmond	CA	948032433
Christine	Swenning	Richmond	CA	948050329
Paul	Lifton	Richmond	CA	948051150
Jonathan	Rousell	Richmond	CA	948041534
B	Sandow	Richmond	CA	948041520
Ann	Wizer	Richmond	CA	948013701
Anne	Oklan	Richmond	CA	948014177
Michael	Eichenholtz	Richmond	CA	948045125
Daphne	Tooke	Richmond	CA	948047459
Gianna	Abondolo	Richmond	CA	948045200
Joel	Eisenberg	Richmond	CA	948051135
Elizabeth	Watts	Richmond	CA	948045236
Kris Johnson	Michiels	Richmond	CA	948045237
Kenneth	Washburn	Richmond	CA	94801
Mary E	Breitlow	Richmond	CA	948051934
Douglas	Lowe	Richmond	CA	948051400
Terry	Mitchell	Ridgecrest	CA	935553174
Rayline	Dean	Ridgecrest	CA	935553622
Valerie	Lane	Ridgecrest	CA	93555
Tina	Arnold	Rio Vista	CA	945712124
Bonnie	Arbuckle	Riverbank	CA	953679608
Abraham	Oboruemuh	Riverside	CA	925053344
Pamela	Mcdonald	Riverside	CA	925052221
Kathleen	Tyson	Riverside	CA	925012861
Vicki	Perizzolo	Riverside	CA	92507
Shannon	Patty	Riverside	CA	925096334
Rena	Warren	Riverside	CA	925061563
Susan	Watts	Riverside	CA	925065843
Lawrence	Fait	Riverside	CA	925046074
Mike	Acosta	Riverside	CA	925043935

Karl	Fromuth	Riverside	CA	925035586
Carolann	Johnson	Riverside	CA	925066200
Daniel	Goldberg	Riverside	CA	925064734
Ingrid	Tegner	Riverside	CA	925061084
Clarissa	Manges	Riverside	CA	92506
Donna	Douglas	Riverside	CA	92506
Sherry	Fatzinger	Riverside	CA	925032157
Ronald	Kraft	Riverside	CA	92506
Nadine	Fahlbusch	Riverside	CA	925065763
Thomas	McVay	Rmv	CA	92694-1810
Natacha	Lascano	Rocklin	CA	957655480
Preston	Johnson	Rocklin	CA	95765
Daniel	McKeighen	Rocklin	CA	95765
Diana	Stokes	Rocklin	CA	957654927
Vincent	Brady	Rocklin	CA	957654184
Anna	Clayton	Rocklin	CA	957654344
Mindy	Hoburg	Rocklin	CA	957654987
C	G	Rocklin	CA	957654772
Leticia	Andreas	Rodeo	CA	945721531
Ithzel	Rodriguez	Rodeo	CA	945721616
virginia r	rush	Rohnert Park	CA	949281951
Aaron	Draper	Rohnert Park	CA	94928-3380
Shannon	Montoya	Rohnert Park	CA	94928
Tom	Nash	Rohnert Park	CA	949281550
Daniel	Lucchesi	Rohnert Park	CA	949281585
Barbara	Adler	Rolling Hills Estates	CA	902744214
Dan	Morgan	Rosamond	CA	935606804
Carolyn	Conti	Rosamond	CA	935600657
Danuta	Stachowiak	Rosamond	CA	935601058
Lawrence	Joe	Rosemead	CA	91770
Tanya	Salof	Rosemead	CA	917703020
Jessie	Diep	Rosemead	CA	91770
Glen	Taysom	Roseville	CA	957475824
Ann	Wasgatt	Roseville	CA	956781702
Will	H	Roseville	CA	956615170
Bob	McCleary	Roseville	CA	957478072
Anthony	Jammal	Roseville	CA	956615968
Pat	Thompson	Roseville	CA	956782207
Malcolm	Perry	Roseville	CA	956786743
Joan	Sitnick	Roseville	CA	95747
Walter C.	Brown	Roseville	CA	956614806
Sandra	Thompson	Roseville	CA	956786437
Debra	Rybak	Roseville	CA	956784024
Pat	Thompson	Roseville	CA	956782207
David	Guggenhime	Ross	CA	94957
Allyson	Finkel	Rsm	CA	926881012
LuAnn	Tauchman	Running Springs	CA	923820056

Shalomar	Loving	Running Springs	CA	923820926
L.	Harris	Rutherford	CA	945730088
PHIL	herr	SA DIEGO	CA	92110
Gloria	Chertock	Sa Rafael	CA	94901
Susan	Maletsky	Sacramento	CA	958286258
Sharon	Nicodemus	Sacramento	CA	958215642
Kari	Millette	Sacramento	CA	95831
Shirley	Craine	Sacramento	CA	95818
Ralph	Catlin	Sacramento	CA	95820
Barbara	Frazer	Sacramento	CA	958163937
Eva	Grey	Sacramento	CA	958383946
Michelle	Dziamba	Sacramento	CA	958313263
Jana	Perinchief	Sacramento	CA	958213402
Ketsa	Osborne	Sacramento	CA	958183053
Theresa	Corrigan	Sacramento	CA	958204148
Tami	Trearse	Sacramento	CA	958203321
Sherry	Macias	Sacramento	CA	958256610
Terry	Lones	Sacramento	CA	958384638
Macrina	Rodriguez	Sacramento	CA	958181807
Lynda	Harrison	Sacramento	CA	958251009
Wayne	Anderson	Sacramento	CA	958183509
Carol	Moss	Sacramento	CA	958165626
Rod	Cornelius	Sacramento	CA	958331816
Virginia	Volk-Anderson	Sacramento	CA	95864
Clifford	Anderson	Sacramento	CA	958643035
Alice	johnson	Sacramento	CA	958414713
Linda	Courter	Sacramento	CA	958278004
Deborah	Cosentino	Sacramento	CA	958640728
Cynthia	Ferguson	Sacramento	CA	958273275
Cynthia	Kirschling	Sacramento	CA	958271969
Paula	Milan	Sacramento	CA	958203429
Karl	Pierce	Sacramento	CA	95829
Barbara	Gunn	Sacramento	CA	958194011
Penny	Redman	Sacramento	CA	958146342
Cynthia	Neuman	Sacramento	CA	958182938
Sandy	Commons	Sacramento	CA	958215254
Barbara	Brooks	Sacramento	CA	958264050
Jennifer	Bair	Sacramento	CA	958182115
Judith	Poxon	Sacramento	CA	958165250
Trudy	Jacobs	Sacramento	CA	958351303
Heidi	Nurse	Sacramento	CA	95819
K	G	Sacramento	CA	958193552
Stephanie	Vienna	Sacramento	CA	958235983
Jana	Boccalon	Sacramento	CA	95831
Karen	Blackstone	Sacramento	CA	958271032
Jack	Branson	Sacramento	CA	958184309
Lora	Pierce	Sacramento	CA	958351936

Mei	Eston	Sacramento	CA	958352195
M	DuPree	Sacramento	CA	958202308
Melissa	Williams	Sacramento	CA	958236948
LeAne	Rutherford	Sacramento	CA	958163929
Christine	Minnich	Sacramento	CA	958349622
Henry	LAUCOURNET	Sacramento	CA	942400001
Cathy	Holden	Sacramento	CA	958654733
Susan	Hood	Sacramento	CA	958215277
Earnestine	Hicks	Sacramento	CA	958660184
Marcus	Maloney	Sacramento	CA	958413215
Lynn	Franks	Sacramento	CA	958183553
Gail	Ryall	Sacramento	CA	958331110
MaryAnn	Hamilton	Sacramento	CA	958264025
Pat	Taylor	Sacramento	CA	958145628
Elta	Hutson	Sacramento	CA	958172610
Kimberly	Carona	Sacramento	CA	95822
Linda	Prandi	Sacramento	CA	958347519
Megan	Wright	Sacramento	CA	958351378
Brendan	Chan	Sacramento	CA	958315547
Gailen	Goldstein	Sacramento	CA	958183049
LuAnn	Glatzmaier	Sacramento	CA	958262069
Gina	Savala	Sacramento	CA	95834
Trent	Hensley	Sacramento	CA	958352625
Katrina	Katrina Duncan	Sacramento	CA	95838
Annette	Oleykowski	Sacramento	CA	958215265
Jaclyn	Garcia	Sacramento	CA	958291475
Thomas	David	Sacramento	CA	95827
D.	Yamamoto	SACRAMENTO	CA	95831
Maria	Pinto	Sacramento	CA	958215242
Jillian	Unger	Sacramento	CA	95820
Deanne	Quinn	Sacramento	CA	958215434
Cornelius	Harris	Sacramento	CA	958205139
Blake	Dahlinger	Sacramento	CA	95811
Kara	Peragine	Sacramento	CA	95826
Okiyo	Ososaka	Sacramento	CA	958351780
Barbara	Stannard	Sacramento	CA	958351238
james	ashcraft	Sacramento	CA	958250235
Robert	Sullivan	Sacramento	CA	958163426
Jan	Rein	Sacramento	CA	958163222
JoEllen	Arnold	Sacramento	CA	958163022
Savannah	Downey	Sacramento	CA	958333324
Maria	Fagundes	Sacramento	CA	95826
Ross	Allen	Saint Helena	CA	945741056
Rex	BACKUS	Saint Helena	CA	94574
Michael and Jeanine	Clarke	Salida	CA	953688142
Peter M.	Sommer	Salida	CA	953689029
Merlin	Wilson	Salinas	CA	939064974

Gail	Lack	Salinas	CA	93906
Richard	Lee	Salinas	CA	939078739
Tisa	Roland	Salinas	CA	939089103
Dana	Oholorogg	Salinas	CA	939062604
Alfred	Gonzales	Salinas	CA	939013109
Carol	Tao	Salinas	CA	939012570
Sandy	Hunter	Salinas	CA	939089461
Wendy	Ledner	Salinas	CA	939088508
Kristin	Womack	San Anselmo	CA	949601639
Danielle	Machotka	San Anselmo	CA	949601809
Catherine	Loudis	San Anselmo	CA	949601242
Ashley	Lewis	San Anselmo	CA	949602260
Loren	Carjulia	San Anselmo	CA	949602233
Zoe	Harris	San Anselmo	CA	94979
Susan	Gill	San Anselmo	CA	949602812
Nicole	Heslip	San Anselmo	CA	949601245
Donna	Leach	San Anselmo	CA	949601824
Susanna	Murphy	San Anselmo	CA	949601867
Connie	clark	san anselmo	CA	94947
Janene	Frahm	San Anselmo	CA	949792243
Brian	Weissbuch	san anselmo	CA	94960
c	leonard	San Bernardino	CA	924042919
Pamela	Roger	San Bernardino	CA	92404
Susan	Wayne	San Bernardino	CA	92354
Rosalind	Bresnahan	San Bernardino	CA	924052318
Luci	Evanston	San Bruno	CA	940663706
Erich	Rex	San Bruno	CA	940661913
Lorrie	Gafford	San Bruno	CA	940661657
Rebecca	Erickson	San Bruno	CA	940662082
Vanessa	Ipsen	San Carlos	CA	940704827
George	Ruiz	San Carlos	CA	940702220
Tarra	Symons	San Carlos	CA	940701517
Elisse	De Sio	San Carlos	CA	94070-5009
Joyce	Carlson	San Carlos	CA	940702948
Jeffrey	Barile	San Carlos	CA	940704433
Arthur	Manoogian	San Clemente	CA	926724615
Beth	Rumph	San Clemente	CA	926733739
Kurt	Speidel	San Clemente	CA	926732717
Vicki	Wiker	San Clemente	CA	926723471
Matt	Reola	San Clemente	CA	926724133
Robin	Cheney	San Clemente	CA	926724058
suzanne	narducy	San Clemente	CA	926733101
Lee	Ramdhani	San Clemente	CA	92673
allie	palmer	San Clemente	CA	926725140
Randall	Hartman	San Clemente	CA	926733047
Daryl	Klein	San Clemente	CA	92673
Jennifer	Cartwright	San Clemente	CA	926733532

Sandra	Case	San Clemente	CA	926733105
Greta	Meyerhof	San Clemente	CA	926723419
bernard	mcgrane	san clemente	CA	92673
K.	HAFER	San Clemente	CA	926725285
Mrs. Tabor-Beck	Tabor-Beck	San Diego	CA	921175642
Kristina	Bennett	San Diego	CA	921071114
E.	S.	San Diego	CA	921242448
Michael	Curtis	San Diego	CA	921034054
Britt	Colton	San Diego	CA	921161646
Eve-Marie	Lucerne	San Diego	CA	921265765
Aileen	Emer	San Diego	CA	921061207
Chingyi	Lin	San Diego	CA	921306606
Alan	Haggard	San Diego	CA	921055104
George	Schneider	San Diego	CA	921055153
Dawn	Dulac	San Diego	CA	92114
David	Haskins	San Diego	CA	92105
Karylee	Feldman	San Diego	CA	921053133
Erin	Millikin	San Diego	CA	921544858
Susan	Randerson	San Diego	CA	921062914
B.	Chan	San Diego	CA	92131
Jimmie	Lunsford	San Diego	CA	921766642
C	S	San Diego	CA	921072336
Peter	Kuhn	San Diego	CA	921175746
Diane	Pitzel	San Diego	CA	92109-3763
Richard	Klune	San Diego	CA	921242451
Randy	Salazar	San Diego	CA	921062285
Josie	Hill	San Diego	CA	921174704
John	Astaunda	San Diego	CA	921293016
Shari	Galve	San Diego	CA	921094828
Diane	Krell-Bates	San Diego	CA	921224617
ROBERT	GATES	San Diego	CA	92117
Billy	Steele	San Diego	CA	921033243
Ellen	Wade	San Diego	CA	921073432
Heike	Behl	San Diego	CA	92109
Ronald	Jones	San Diego	CA	921073712
Lucia	Hall	San Diego	CA	921171640
Mike	Kelly	San Diego	CA	921175859
Michael A.	Johnston	San Diego	CA	921766321
Janice	Brown	San Diego	CA	92122
Joann	Lapolla	San Diego	CA	921223826
Celia	Conover	San Diego	CA	921162317
Michele	Davison	San Diego	CA	921022007
Joanne	Snyder	San Diego	CA	921233619
Joseph	Shulman	San Diego	CA	921156932
Suzanne	Bickley	San Diego	CA	921163520
KELLY	RIDIO	San Diego	CA	92108
Diana	Blanks	San Diego	CA	921161712

Lacey	Levitt	San Diego	CA	921202717
Priscilla	Lane	San Diego	CA	921155444
Timothy	Stoesz	San Diego	CA	921045102
Mika	Menasco	San Diego	CA	921142810
linda	redenbaugh	San Diego	CA	921044113
david	wasserman	San Diego	CA	921153625
Mark	Schulze	San Diego	CA	92119
Guy	Cargulia	San Diego	CA	921092347
Steven	Bal	San Diego	CA	921081131
rosemary	silva	San Diego	CA	921053508
Deborah	Salazar Shapiro	San Diego	CA	921302451
Sandra	Dawes	San Diego	CA	921264708
Amber	Heard	San Diego	CA	921072007
Pam	Montroy	San Diego	CA	92115
Sandra	Long	San Diego	CA	921202610
Janis	Andersen	San Diego	CA	921105839
Tansy	Woods	San Diego	CA	921011674
Nicole	Gage	San Diego	CA	921306868
Christopher	Vecchio	San Diego	CA	921043219
Jacqueline	McVicar	San Diego	CA	921156538
Ian	Cano	San Diego	CA	921101725
stephen	Wallis	San Diego	CA	921082600
Naomi	Sobo	San Diego	CA	921092347
Anderson	John	San Diego	CA	921031981
Susan	Bourrillion	San Diego	CA	921232729
Noel	Lande	San Diego	CA	921204803
Margarita	Haugaard	San Diego	CA	921037500
Brigitte	Gibbs	San Diego	CA	921095614
K	G	San Diego	CA	921014720
Jane	Levin	San Diego	CA	921175046
Andrew	McGranahan	San Diego	CA	921041720
David	Peterson	San Diego	CA	921164841
Dorothy	Vieira	San Diego	CA	921191639
Rochelle	La Frinere	SAN DIEGO	CA	92114-6723
Sly	Oliver	San Diego	CA	921123026
Wesley	Hudson	San Diego	CA	921045215
June	Abner	San Diego	CA	921036802
Virginie	Bonett Boisseranc	SAN DIEGO	CA	92150
Elliot	Jones	San Diego	CA	921071119
Deb	Malcarne	San Diego	CA	921094355
Emily	Lin	San Diego	CA	921236428
Cheryl	Berkey	San Diego	CA	92129
CANDY	MUNSON	San Diego	CA	921161353
Shelly	Burrola	San Diego	CA	921153732
Erin	Roedeinger	San Diego	CA	921071153
Ronni	Rosenfeld	San Diego	CA	921072332
Summer	Morse	San Diego	CA	921045713



April	Wheeler	San Diego	CA	921172507
Sharon	Essey	San Diego	CA	921311927
Richard	Kasbo	San Diego	CA	921044611
Tim	Boelke	San Diego	CA	921174624
Anthony	Filippone II	San Diego	CA	921223921
Craig	Chambers	San Diego	CA	921041320
Edward	Green	San Diego	CA	921072520
CHRIS	OMALLEY	San Diego	CA	921692902
Rosewind	Veilove	San Diego	CA	921191725
Nancy	Abrams	San Diego	CA	921036063
Alison	Glennon	San Diego	CA	921071611
Mary-Carol	Madison	San Diego	CA	921072331
Vicki & Rod	Kastlie	San Diego	CA	921072310
Allan	Glick	San Diego	CA	921282356
norberto	chiodini	San Diego	CA	921033217
Kris	Boggis	San Diego	CA	921156841
Anne	Corrigan	San Diego	CA	921045747
Monica	Mayes	San Diego	CA	921278822
ĐjĐμÑ€Đ³ĐμĐ¹ Đ²Đ½ÑĐ Đ Đ³¼Đ¼Đ°Đ½Đ³¼Đ² Đ		San Diego	CA	921305207
Shawn	Vasich	San Diego	CA	921072870
Michael	Barnes	San Diego	CA	921035114
Brian	Still	San Diego	CA	921032127
Avi	Shaprut	San Diego	CA	921301846
Michelle	Abramson	San Diego	CA	92129
Alison	Knowles	San Diego	CA	92103
Carole	Porter	San Diego	CA	921233806
Betty	Owen	San Diego	CA	921161577
KariLorraine	Scott	San Diego	CA	921164510
Margarito	Vargas	San Diego	CA	92102
Victor	Flake	San Diego	CA	92104
Colleen	Lobel	San Diego	CA	921263121
Kathleen	Ervin	San Diego	CA	921173751
Dale	Haas	San Diego	CA	921152202
Heather	Oricchio	San Diego	CA	921166016
Judy	Shively	San Diego	CA	921017520
Genevieve	Riber	San Diego	CA	921031636
Robin	Reinhart	San Diego	CA	921044907
Graciela	Barajas	San Diego	CA	921021441
D R	Spencer	San Diego	CA	921044645
Shirley	Klein	San Diego	CA	921221130
Theresa	Tourigny	San Diego	CA	921282839
Akiko	Tamano	San Diego	CA	921293574
Bill	Brothers	San Diego	CA	921201744
Pamela	Amundson	San Diego	CA	921031131
Melissa	Behar	San Diego	CA	921173029
Doug	Bell	San Diego	CA	92129
Roseanne	Hovey	San Diego	CA	92117

Andrea	Casero	San Diego	CA	921155571
Ayse	Batova	San Diego	CA	92124
Brian	Ritter	San Diego	CA	92117
Steve	Liebling	San Diego	CA	921034523
Stacy	Hall	San Diego	CA	921042926
Scott	Martin	San Diego	CA	921095379
angela	bourne	San Diego	CA	92111
Scott	Albanese	San Diego	CA	92104
Teirab	AshShareef	San Diego	CA	92117
Rev. Maria	Riter Wilson	San Dimas	CA	917734043
Lillian	Howard	San Dimas	CA	91773
Kylie	Cobb	San Francisco	CA	94117
Birgit	Hermann	San Francisco	CA	941172553
Glen	Risdon	San Francisco	CA	94112
Joseph	Illick	San Francisco	CA	941102930
Wilson	Ross	San Francisco	CA	941183929
Lisa	Kellman	San Francisco	CA	941312229
dale	riehart	San Francisco	CA	941071807
Julie	Kramer	San Francisco	CA	941143918
Lisa	Patton	San Francisco	CA	941153234
Rev. and Mrs.	Colvin	San Francisco	CA	941052245
Desiree	Mitchell	San Francisco	CA	941021502
Nathan	Vogel	San Francisco	CA	941173110
r	g	San Francisco	CA	941211004
Janie	Lucas	San Francisco	CA	941103224
Robert	Thomas	San Francisco	CA	94114
Timothy	Larkin	San Francisco	CA	941095337
Peter	Hemenway	San Francisco	CA	941271723
Dave	Hermeyer	San Francisco	CA	941172240
Elizabeth	Ingalls	San Francisco	CA	941151828
Daniel	Slade	San Francisco	CA	941021102
David	Varnum	San Francisco	CA	941171006
Jennifer	Harrison	San Francisco	CA	941312054
Annalee	Pineda	San Francisco	CA	941095838
Matthew	Rogers	San Francisco	CA	941103433
David	Doering	San Francisco	CA	941093607
S	Wheeler	San Francisco	CA	94123
Pauline	Kahney	San Francisco	CA	941024122
Linda	Sherwood	San Francisco	CA	941213015
JOHN	CERVANTES	San Francisco	CA	941212843
Diane	Serafini	San Francisco	CA	941312356
Susan	Powers	San Francisco	CA	941224147
Margery	Gray	San Francisco	CA	941161829
Maria	Rivero	San Francisco	CA	94110
RoseMarie	Shishkin	San Francisco	CA	941211410
Francesca	Prada	San Francisco	CA	941143715
Martha	Goldin	San Francisco	CA	941183912

Margery	Berkson	San Francisco	CA	941232500
Monica	DuClaud	San Francisco	CA	941074106
Charles	Wilmoth	San Francisco	CA	941241017
Jhene	Canody	San Francisco	CA	941212909
J	Davis	San Francisco	CA	941024000
Judy	Schultz	San Francisco	CA	941152927
Constance	Walker	San Francisco	CA	84117
Ronald	Domin	San Francisco	CA	941470506
Virginia	Sturken	San Francisco	CA	941162942
Martha	Larsen	San Francisco	CA	941213522
Josephine	Bellacomo	San Francisco	CA	941105235
Elizabeth	Larson	San Francisco	CA	941096040
Jean	Lee	San Francisco	CA	94122-2506
EDward	Sullivan	San Francisco	CA	941213670
Keiko	M.	San Francisco	CA	941182729
Geoffrey	Gallegos	San Francisco	CA	941312808
Joseph	Blum	San Francisco	CA	941105209
M. Louise	Mann	San Francisco	CA	941093854
Megan	Pruiett	San Francisco	CA	941211129
Betty	Kissilove	San Francisco	CA	941223644
Armagh	Cassil	San Francisco	CA	94117
mary	oconnell	San Francisco	CA	941233440
Eric	Hall	San Francisco	CA	941172907
Michael	Tomczyszyn	San Francisco	CA	941323140
Jara	Sunshine	San Francisco	CA	94132
Sara	Templeton	San Francisco	CA	941121345
Carolyn	Shuman	San Francisco	CA	94127
Janet	Monfredini	San Francisco	CA	941271540
Maria	Nowicki	San Francisco	CA	94116
Martin	Bloom	San Francisco	CA	941322233
roger	woodward	San Francisco	CA	941322135
ANN	CAREY	San Francisco	CA	941322814
Elizabeth	Carey	San Francisco	CA	941322814
Anne	Farwell	San Francisco	CA	941124532
Gerald	Moore	San Francisco	CA	941313016
Dana	Landis	San Francisco	CA	941025022
Elisabeta	Revencu	San Francisco	CA	941312430
Tiziana	Perinotti	San Francisco	CA	941094223
Natasha	Saravanja	San Francisco	CA	941312013
Marguerite	Etemad	San Francisco	CA	941154422
Lynne	Vanne	San Francisco	CA	941171125
Gavrilah	Wells	San Francisco	CA	941143640
Audrey	ValÃ's	San Francisco	CA	941291781
Lucy	Kelly	San Francisco	CA	941142102
Lisa	Hieronymus	San Francisco	CA	941331
David	Beauvais	San Francisco	CA	941221547
Mary	English	San Francisco	CA	941311228

Diane	Carr	San Francisco	CA	941312220
Thomas	Yaussy	San Francisco	CA	941141763
Sandra	Lloyd	San Francisco	CA	941152538
Carey	Suckow	San Francisco	CA	941141618
Mary	Claugus	San Francisco	CA	941153277
Julie	Binkley	San Francisco	CA	941102708
Mitchell	Bonner	San Francisco	CA	94108
Iris	Vaughan	San Francisco	CA	941026224
Roger.	Meehan	San Francisco	CA	941172929
Saroyan	Humphrey	San Francisco	CA	941172617
Howard	Fernandez	San Francisco	CA	94118
Erik	Ulman	San Francisco	CA	941174027
Jane	Ross	San Francisco	CA	941581529
Terence	McNamee	San Francisco	CA	941153888
John	Steponaitis	San Francisco	CA	941099000
Richard	Hughes	San Francisco	CA	941122036
Todd	Snyder	San Francisco	CA	94115
Gina	Borrelli	San Francisco	CA	941151580
Penny	Porter	San Francisco	CA	941093242
Tem	Narvios	San Francisco	CA	941342756
Guy	Miller	San Francisco	CA	941112332
Peter	Rockwell	San Francisco	CA	941271643
Verna	Moser	San Francisco	CA	941123224
John	Engell	San Francisco	CA	941023253
Donald	Andreini	SAN FRANCISCO	CA	94114
B	F	San Francisco	CA	941151240
Gudrun	Kuehn	San Francisco	CA	941102414
a.somerset	lokken	San Francisco	CA	941152915
L.	Diaz	San Francisco	CA	941102815
Barbara	Wirth	San Francisco	CA	94109
Birgit	Hermann	San Francisco	CA	941172553
Ramona	Draeger	San Francisco	CA	941171864
Raquel	Narvios	San Francisco	CA	941342756
Meg	Buckwalter	San Francisco	CA	941222505
frances	swanstrom	San Francisco	CA	941173917
Alice	Polesky	San Francisco	CA	941072644
Justin	Truong	San Francisco	CA	941123245
Revel	Paul	San Francisco	CA	941162510
Sharon	Handa	San Francisco	CA	941311034
Stephanie	Rexing	San Francisco	CA	941101780
Len	Carella	San Francisco	CA	941181626
Susan	Manning	San Francisco	CA	941095048
Charles	Ray	San Francisco	CA	941031165
Phyllis	chu	San Francisco	CA	941342157
judith	sandoval	San Francisco	CA	941295274
Stacy	Templeton	San Francisco	CA	94110
Kat	Gelles	San Francisco	CA	941161710

Anna	Yang	San Francisco	CA	941184010
Diann	Rose	San Francisco	CA	941096061
Linda	Ramey	San Francisco	CA	941105655
Mike	Arago	San Francisco	CA	941093875
Dan	Richman	San Francisco	CA	941142721
Carol	Bettencourt	San Francisco	CA	94109
Lincoln	Fong	San Francisco	CA	941223206
Kat	Clavell-Bate	San Francisco	CA	94118
leire	herboso	San Francisco	CA	941582281
Stephen	McCallion	San Francisco	CA	941321334
Jerry	Singer	San Francisco	CA	941142325
Adrienne	Fong	San Francisco	CA	941152945
Lynne	Preston	San Francisco	CA	941105813
Jenny	Stanley	San Francisco	CA	941172025
Charles	Calhoun	San Francisco	CA	941153310
Donna	Sharee	San Francisco	CA	941122829
Mariano	Marquez III	San Francisco	CA	941242206
Martin	Horwitz	San Francisco	CA	941221608
Peter	Jardine	San Francisco	CA	941152512
John	Thomson	San Francisco	CA	941142512
Linda	Hegenbarth	San Francisco	CA	941022808
Iu	carpenter	San Francisco	CA	941311021
Kathy	Bouvier	San Francisco	CA	941141113
Theresa	Horrigan	San Francisco	CA	94108
Henning	Bauer	San Francisco	CA	94132
Mary	Fryer	San Francisco	CA	941222637
Shannon	Mccarthy	San Francisco	CA	941332503
Dina	Lisha	San Francisco	CA	941223608
Marvis J.	Phillips	San Francisco	CA	941026526
Hille	Novak	San Francisco	CA	941211659
Maxine	Zylberberg	San Francisco	CA	941101109
Rene	McIntyre	San Francisco	CA	941022874
Margaret	Vickers	San Francisco	CA	941162146
Vicky	Donnelly	San Francisco	CA	941022803
Robert	Stine	San Francisco	CA	941174353
Leah	Freiwald	San Francisco	CA	941091518
John	Kibre	San Francisco	CA	94110
Ruben	Canonizado	San Francisco	CA	941124026
Josh	Shaeffer	San Francisco	CA	941033916
C.	Liang	San Francisco	CA	941025209
Margaret	Ghuman	San Francisco	CA	941223121
Peter	Lee	San Francisco	CA	941183548
Maria	Schoettler	San Francisco	CA	941184242
Beverly	Lehr	San Francisco	CA	941224404
ann	rovere	San Francisco	CA	941122009
Karen	Goldstein	San Francisco	CA	941095157
J.B.	Picot	San Francisco	CA	941033487

Julie	Lindow	San Francisco	CA	941025025
Yefim	Maizel	San Francisco	CA	941311621
Jamie	Chow	San Francisco	CA	94117
Leo	Buckley	San Francisco	CA	941101222
Bryan	Suggitt	San Francisco	CA	941312415
Nancy	Wecker	San Francisco	CA	94110
zed	millette	San Francisco	CA	941184008
Victoria	Bruckner	San Francisco	CA	941102559
Andrea	Graff	San Francisco	CA	941312421
Cornelia	Twitchell	San Francisco	CA	941073286
Molly	Morabito	San Francisco	CA	94110
Tessa	Rife	San Francisco	CA	941162003
AG	Callan	San Francisco	CA	941222008
Kim	Russo	San Francisco	CA	941222923
Elise	Kroeber	San Francisco	CA	94117
Sean	San JosÃ©	San Francisco	CA	941123543
Gabriella	Seatris	San Francisco	CA	94118
M	G	San Francisco	CA	941331949
Beverly	Rockabrand	San Francisco	CA	941095376
Janice	Kursky	San Francisco	CA	941111170
stef	b	San Francisco	CA	94114
Adore	Davidson	San Francisco	CA	941271737
Christine	Peterson	San Francisco	CA	941640241
Charlie	Bergstedt	San Francisco	CA	941331966
Genevieve	Yuen	San Francisco	CA	941312739
Janeyce	Ouellette	San Francisco	CA	941161145
Marie	Gaillac	San Francisco	CA	94134
Karen	Pugay	San Francisco	CA	941211629
Harriet	Leff	San Francisco	CA	941081011
Joseph	Zakrzewski	San Francisco	CA	941154603
WILLIAM	WERLE	San Francisco	CA	941222932
Ron	Nieberding	San Francisco	CA	941097704
Meg	Sabatino	San Francisco	CA	941114624
Alta	Lowe	San Francisco	CA	94112
Arlene	Sen	San Francisco	CA	94117
Julie	Gengo	San Francisco	CA	941312908
Robert	Aston	San Francisco	CA	941181325
Joyce	Calagos	San Francisco	CA	941343111
Bobbie Sue	Hood	San Francisco	CA	941105606
Elizabeth	Wright	San Francisco	CA	941312766
Linda	Weiner	San Francisco	CA	941105656
Via	Liu	San Francisco	CA	94116
Michael	Kavanaugh	San Francisco	CA	941161213
Leon	Starkman	San Francisco	CA	94115
Colette	Hughes	San Francisco	CA	94110
Robert	T. Brandes	San Francisco	CA	941023200
Marlon	Perez	San Francisco	CA	94124

Roger	Levin	San Francisco	CA	941183715
Inga	Frolova	San Francisco	CA	95666
Charles	Forester	San Francisco	CA	941171508
Audrey	Ng	San Francisco	CA	941212915
Jamie	S.	San Francisco	CA	941213013
Jesse	DeRose	San Francisco	CA	941142008
Rev. Richard	Lyons	San Francisco	CA	941023778
Sarah	M	San Francisco	CA	941161349
Jeanne	Angier	San Francisco	CA	941181013
Karel	Kretzschmar	San Francisco	CA	941181845
Mariko	Saito	San Francisco	CA	94116
Catherine	Burke	San Gabriel	CA	917763517
Ira	Hurvitz	San Gabriel	CA	91775
Claudia	MartÃ-nez	San Gabriel	CA	917751308
Nina	Wong	San Gabriel	CA	917764106
Teresa	Lee	San Gabriel	CA	91775
Sylvia	Stachura	San Gabriel	CA	917761232
Toshio	Ozawa	San Gabriel	CA	917752808
Michele	Massey	San Jacinto	CA	925823879
Grace	Mason	San Jacinto	CA	925836562
Ronald	Cheng	San Jose	CA	951123668
Ronald	Cheng	San Jose	CA	951123668
Allan	Campbell	San Jose	CA	951321920
Andrea	Whitson	San Jose	CA	951181705
Nolan	Turner	San Jose	CA	951233938
Patricia	Blevins	San Jose	CA	951181808
Aleena	Watson	San Jose	CA	951264331
Randall	Herz	San Jose	CA	951172312
Nancy	Fomenko	San Jose	CA	951352102
christopher	flynn	San Jose	CA	951272877
joseph	rodriguez	San Jose	CA	951211535
Susan	Trivisonno	San Jose	CA	95135
Ted	Fishman	San Jose	CA	951232639
Tim	Barrington	San Jose	CA	951125237
Jim	P	San Jose	CA	951252952
Lyn	Younger	San Jose	CA	95111
Robert	Applebaum	San Jose	CA	951351424
John	Rodriguez	San Jose	CA	951272045
Ted	Fishman	San Jose	CA	951232639
John	Bertaina	San Jose	CA	951391501
Benjamin	Bingaman	San Jose	CA	951382600
Xuan Mai	Pham	San Jose	CA	95122
Jay-R	Hipol	San Jose	CA	95127
Karen	Stewart	San Jose	CA	951201781
Karen	Stephenson	San Jose	CA	951281144
Virginie	Mitchem	San Jose	CA	95132
Courtney	Christoffer	San Jose	CA	951256602

Cecille	OBrien Greenleaf VMI	San Jose	CA	951292147
Dotti	King	San Jose	CA	951281236
alice	nguyen	San Jose	CA	95136
Lu	Shoberg	San Jose	CA	951161526
Thomas	Arnold	SAN JOSE	CA	95111
Shari	Baker	San Jose	CA	951261153
Kristine	Talamante	San Jose	CA	951251650
VINU	ARUMUGHAM	SAN JOSE	CA	95111
Teresa	Stahl	San Jose	CA	951252508
Don	Meehan	San Jose	CA	951245939
Valerie	Wiliams	San Jose	CA	951263313
Annette	Roca	San Jose	CA	951313574
Jimmie	Yonemoto	San Jose	CA	951264544
Teresa	Awtrey	San Jose	CA	95129
Carlin	Black	San Jose	CA	951293062
William	Henzel	San Jose	CA	951271246
Loretta	Marchetti	San Jose	CA	951241539
Nona	Weiner	San Jose	CA	951271433
David	Marancik	San Jose	CA	951254067
Mary	Fedullo	San Jose	CA	951235001
Denise	Mayosky	San Jose	CA	951322012
Bert	Greenberg	San Jose	CA	951351428
Mark	Zeljak	San Jose	CA	951182126
John	Foster	San Jose	CA	951243333
Betty	Dickey	San Jose	CA	95124
Lori	Vadnais	San Jose	CA	951242805
Kara	Mandujano	San Jose	CA	95125
Lawrence	Deng	San Jose	CA	95120
Greg	Dunnington	San Jose	CA	951331762
Michelle	Mcnerney	San Jose	CA	951242382
Helen	Lund	San Jose	CA	951271228
Chuck	Hammerstad	San Jose	CA	951203334
Connelee	Shaw	San Jose	CA	95112
Sidney	Ellison	San Jose	CA	951331115
Liana	Krause	San Jose	CA	951481228
Rashmika	Kommidi	San Jose	CA	95135
Michael	Hazelton	San Jose	CA	951127438
Harry	Oberhelman	San Jose	CA	95120
Conor	McKeown	San Jose	CA	951341406
Marion	Farber	San Jose	CA	95120
Myrna	Cohen	San Jose	CA	951242831
Geraldine	Thompson	San Jose	CA	951241903
Wanda	Waldera	San Jose	CA	951123030
Margaret	P	San Jose	CA	951252952
Harold	Tipping	San Jose	CA	951212640
John	Petrak	San Jose	CA	951391162
J.T.	Averre	San Jose	CA	951241442



Kimo	Pamintuan	San Jose	CA	95121
Nakai	Miles	San Jose	CA	951231358
Marjorie	Martin	San Jose	CA	95132
Lucille	Robustelli	San Juan Capistrano	CA	926755050
Carol	Caddes	San Juan Capistrano	CA	926753823
Philip	Fraser	San Juan Capistrano	CA	92693
Terri	Trammell	San Juan Capistrano	CA	926754601
Leslie	Wood	San Juan Capistrano	CA	92675
Claire	Flewitt	San Leandro	CA	945791472
Dj	Fura	San Leandro	CA	945774522
Roberta	LaFrance	San Leandro	CA	945791958
Kay	L.	San Leandro	CA	945774838
Wendy	Sachs	San Leandro	CA	945776546
Sharon	Morris	San Leandro	CA	945771831
K	R	San Leandro	CA	945792796
maureen	berndt	San Leandro	CA	945773759
Harry	Santi	San Leandro	CA	945791239
Joy	Humeny	San Leandro	CA	945791008
Carol	Vallejo	San Leandro	CA	945775035
Meredith	Asher	San Leandro	CA	945783506
John	Payne	San Lorenzo	CA	945803521
Joseph	Boone	San Luis Obispo	CA	934012606
Kathryn	Atkins	San Luis Obispo	CA	934016935
Elaine	Holder	San Luis Obispo	CA	934051134
Larry	Barnes	San Luis Obispo	CA	93401
Cheryl	Lewis	San Luis Obispo	CA	934017816
Maryan	Infield	San Luis Obispo	CA	934015822
Nancy	Walter	San Luis Obispo	CA	934051077
Jerry	Soxman	San Luis Obispo	CA	934014124
D.D.	Trent	San Luis Obispo	CA	93405
Judith	Anderson	San Luis Obispo	CA	934017997
Brennan	Nerhus	San Luis Obispo	CA	934017117
Duane	Wall	San Luis Obispo	CA	93401
Monica	Barricarte	San Luis Obispo	CA	934016698
Peggy	Sharpe	San Luis Obispo	CA	93401
Fred	Brown	San Marcos	CA	920784520
liona	shareing	San Marcos	CA	920783938
Joan	Pradetto	San Marcos	CA	920696051
Joan	Bartolo	San Marcos	CA	920692149
Rosalia	Aiello	San Marcos	CA	920783766
Krista	Sexton	San Marcos	CA	920782306
Annette	Skelley	San Marcos	CA	920693325
miracle	kelly	San Marcos	CA	920786148
Diana	Wright	San Marcos	CA	92069
Randy	Gray	San Marcos	CA	920786312
Andy	Tomsky	San Marcos	CA	920790683
Clarisa	Ru	San Marino	CA	911082640

Jo	Ray	San Martin	CA	950460656
Leslee	McPherson	San Mateo	CA	944033827
Mark	Salamon	San Mateo	CA	94403
Amy	Wilson	San Mateo	CA	944011213
Carol	Cook	San Mateo	CA	944035015
cheryl	kozanitas	San Mateo	CA	944031240
Vonya	Morris	San Mateo	CA	944021203
Lisa	Rizzo	San Mateo	CA	944012324
Susan	Barrett	San Mateo	CA	944022008
Stephen	Andersen	San Mateo	CA	944042052
Audrey	Quintero	San Mateo	CA	944034306
Laura	Nardozza	San Mateo	CA	944013105
Scott	Grinthal	San Mateo	CA	944023924
Linda	Johnston	San Mateo	CA	944032217
Robert	Georges	San Mateo	CA	944032162
Mimi	Salili	San Pablo	CA	948065051
Richard	Wright	San Pablo	CA	948065243
Nancy	Weber	San Pablo	CA	948064032
Carol	Schaffer	San Pablo	CA	948061648
Ronda	Swerer	San Pablo	CA	948061020
Sharon	Caserma	San Pedro	CA	90732
Suzanne	Licht	San Pedro	CA	907317027
Susan	Bogdanovich	San Pedro	CA	907323313
Gail	Angevine	San Pedro	CA	907325100
Karen	Ornelas	San Pedro	CA	907312424
Kathy	Popoff	San Pedro	CA	907325015
Linda	Finley	San Pedro	CA	90731
Jen	Grasso	San Pedro	CA	907316026
Ryan	White	San Pedro	CA	907323607
Dennis	Dougherty	San Rafael	CA	949033095
Linda	Toy	San Rafael	CA	949011406
Christopher	Panny	San Rafael	CA	949013729
Chris	Pincetich	San Rafael	CA	949033238
Robert	Cook	San Rafael	CA	949015140
Linda	Oqvist	San Rafael	CA	949033040
Jeff	krupnick	San Rafael	CA	949032917
Corey	Barnes	San Rafael	CA	94903
Chelsea	Stafford	San Rafael	CA	949015222
David	Holloway	San Rafael	CA	949011117
PETER	RING-REVOTSKIE	San Rafael	CA	949014417
Linda	Higgins	San Rafael	CA	949012108
Lora	Newton	San Rafael	CA	949014467
Beth	Zamichow	San Rafael	CA	94903
Stephanie	Hausle	San Rafael	CA	94901-2502
Ellen	Thomas	San Rafael	CA	949150806
Alexander	Vollmer	San Rafael	CA	949014476
Dianne	Morrison	San Rafael	CA	949012007

Weegie	Mcadams	San Rafael	CA	949011001
Anne	Barker	San Rafael	CA	949032446
Sheila	Carnegie	San Rafael	CA	949012127
Sandra	Levine MD	San Rafael	CA	949031130
Charlotte	Meloney	San Rafael	CA	949035510
Philip	Simon	San Rafael	CA	949129473
Laura	Kritchever	San Rafael	CA	949014462
mary ann	soltis	San Rafael	CA	94903
Fermain	Lahorgue	San Rafael	CA	949031117
Mary	Poor	San Rafael	CA	949033242
Patricia	Shelley	San Rafael	CA	949013617
Helene	Turcotte	San Rafael	CA	94901
Michael	Harris	San Rafael	CA	949031605
Roy	Berces	San Rafael	CA	949011351
Corey	Barnes	San Rafael	CA	94903
monica	kohs	San Rafael	CA	949030094
Jane	Dumont	San Rafael	CA	94903
Carole	Cassidy	San Rafael	CA	94903
Halima	Afi	San Rafael	CA	949033709
Joe	Buhowsky	San Ramon	CA	945824865
Chuck	Wieland	San Ramon	CA	945831683
Joanne	Anderson	San Ramon	CA	945832850
Jessica	Palmer	San Ramon	CA	945824233
Heng	Liu	San Ramon	CA	945825649
Lisa	Hatchett	San Ramon	CA	945825013
Abigail	Bareiss	San Ramon	CA	945825059
joan	rose	San Ramon	CA	94583
Makayla	Koholua	San Ramon	CA	945825738
Dennis	Bicker	San Ramon	CA	945822183
Patrick	Farrell	San Ysidro	CA	921733150
Laura	Morales	San Ysidro	CA	921732444
Richard	Yasuda	San Ysidro	CA	921733144
Jacquie	Hicks	Santa Ana	CA	927043037
Colleen	Bergh	Santa Ana	CA	927046720
carol	yastrov	Santa Ana	CA	927052030
Beatriz	Pallanes	Santa Ana	CA	927043131
Lama	Lane	Santa Ana	CA	927046205
Nanook	Papp	Santa Ana	CA	927051921
Maria	M	Santa Ana	CA	927070255
Toni	Kimball	Santa Ana	CA	927061612
Mike	Honda	Santa Ana	CA	927061114
cherie	garrett	Santa Barbara	CA	93103
Gina	Comin	Santa Barbara	CA	931020746
Susan	West	Santa Barbara	CA	931111128
carla	rosin	Santa Barbara	CA	931202624
Camille	Gilbert	Santa Barbara	CA	931014045
Sally & Don	Webb	Santa Barbara	CA	931081801

Roberta	Weissglass	Santa Barbara	CA	931601654
Lisa Ann	Kelly and Family	Santa Barbara	CA	931011021
Bob	Cunningham	Santa Barbara	CA	931011621
Carole Ann	Cole	Santa Barbara	CA	931032135
T	B	Santa Barbara	CA	931011816
PENNY	LUCE	Santa Barbara	CA	931111830
David	Echols	Santa Barbara	CA	931600109
wendy	santizo	Santa Barbara	CA	931012548
BENITA	SACHS	Santa Barbara	CA	93105
Aileen	Boyce	Santa Barbara	CA	931052662
Pat	Sweem	Santa Barbara	CA	93108
DONNA	SUNDAY	Santa Barbara	CA	931104417
Debby	Anderson	Santa Barbara	CA	931092079
Michelle	Co	Santa Barbara	CA	931020003
John	Kirk	Santa Barbara	CA	931091978
Leslie	Roche	Santa Barbara	CA	931053461
Mary	Hoffman	Santa Barbara	CA	931053277
Ron	Riskin	Santa Barbara	CA	931032131
Isabella	Chubb	Santa Barbara	CA	93108
Charles	Tetoni	Santa Barbara	CA	931032214
Marla	Feierabend	Santa Barbara	CA	931091835
Dennis	Allen	Santa Barbara	CA	93101
Beverly	Steinfeld	Santa Barbara	CA	931011409
James	Wiggins	Santa Barbara	CA	931102024
Richard	Dovgin	Santa Barbara	CA	931053048
Greg	LeRoy	Santa Barbara	CA	931032238
Pearl	Zalon	Santa Barbara	CA	931102426
Sandra	Blodorn	Santa Barbara	CA	931014325
Stu	Sherman	Santa Barbara	CA	931051958
Susan	Dempsay	Santa Barbara	CA	93109
Wendy	Kanter	Santa Barbara	CA	93101
Kris	Listoe	Santa Barbara	CA	931102079
Marc	McGinnes	Santa Barbara	CA	931012228
ramon	hooper	Santa Barbara	CA	931054242
Heather	Brophy	Santa Barbara	CA	931091313
Martha	Aubin	Santa Barbara	CA	931091223
Chris	Seaton	Santa Barbara	CA	931014651
Barbara	Forester	Santa Barbara	CA	931055505
Elizabeth	Longmire	Santa Barbara	CA	931054607
Amanda	Frost	Santa Barbara	CA	931052965
Laura	Wilkinson	Santa Barbara	CA	931052108
Eric	Schwartz	Santa Barbara	CA	93103
Mary Kay	Fry	Santa Barbara	CA	931013407
Marla	Feierabend	Santa Barbara	CA	931091835
Judy	Stewart	Santa Barbara	CA	931081524
Adriene	Forester	Santa Barbara	CA	931055505
Steven	Morgan	Santa Barbara	CA	931011203

Connie	Marquez	Santa Barbara	CA	93110-1015
Joan	Ariel	Santa Barbara	CA	931053731
Nisreen	Zeidan	Santa Clara	CA	950505054
Deanna	Knickerbocker	Santa Clara	CA	950505572
Audra	Siu	Santa Clara	CA	950516426
Mushtaq	Syed	Santa Clara	CA	950504630
Pilu	Perrot	Santa Clara	CA	950512591
patricia	cachopo	Santa Clara	CA	950504416
Sarah	Kim	Santa Clara	CA	950510968
Dhru	Silencieux	Santa Clara	CA	950542573
Anita	Wisch	Santa Clarita	CA	913553814
Eric	Bergman	Santa Clarita	CA	913511272
Martin	Tripp	Santa Clarita	CA	913903100
Lynda	Cook	Santa Clarita	CA	913516937
James	McKelvey	Santa Clarita	CA	91350
scott	milrod	Santa Cruz	CA	950609754
Sylvia	Vairo	Santa Cruz	CA	950624416
Jane	Forbes	Santa Cruz	CA	950609776
Ed	Rivera	Santa Cruz	CA	950621834
Kokyo	Henkel	Santa Cruz	CA	950603725
Beverly	Jennings	Santa Cruz	CA	950603646
Bruce	Grobman	Santa Cruz	CA	950624301
Richard	Gallo	Santa Cruz	CA	950623561
Jan	Salas	Santa Cruz	CA	950624069
Matthew	Thompson	Santa Cruz	CA	950624036
Russell	Weisz	Santa Cruz	CA	950606109
Ted	Cheeseman	Santa Cruz	CA	950606016
Mike	Abler	Santa Cruz	CA	950623436
Pela	Tomasello	Santa Cruz	CA	950622543
Andrew	Mittelman	Santa Cruz	CA	950659660
Martha	ZÃ±iga	Santa Cruz	CA	950641064
Lizann	Keyes	Santa Cruz	CA	950622948
Gail	Blumberg	Santa Cruz	CA	950604214
Katherine	Butler	Santa Cruz	CA	950659686
C	Ayotte	Santa Cruz	CA	950622412
Karen	Hildebrand	Santa Cruz	CA	950607164
Barbara	Cordes	Santa Cruz	CA	950605718
Janet	De Lu	Santa Cruz	CA	950659518
Lisa	Segnitz	Santa Cruz	CA	950603433
Dennis	Morton	Santa Cruz	CA	950606121
Natasha	Varner	Santa Cruz	CA	950623144
Margaret	Morales	Santa Cruz	CA	950622952
Mary	Molseed	Santa Cruz	CA	950621321
Carrie	Staton	Santa Cruz	CA	95060
Fred	Geiger	Santa Cruz	CA	950606223
sharon	kaplan	Santa Cruz	CA	950606456
steve	merrill	Santa Cruz	CA	950602921

Candy	Frantz-Crafton	Santa Cruz	CA	950651808
Michael	Cooper	Santa Cruz	CA	950609695
Mary Jane	Cope	Santa Cruz	CA	950603115
Elizabeth	Skolnik	Santa Cruz	CA	950602014
Patrice	Wallace	Santa Cruz	CA	950605631
patricia	Eaton	Santa Cruz	CA	95060
Penny	Potter	Santa Cruz	CA	950625065
Jean	Crossley	Santa Cruz	CA	950603133
Robert	Callahan	Santa Cruz	CA	950609784
Eliza	Garcia	Santa Cruz	CA	950621826
Marion	Vittitow	Santa Cruz	CA	950603710
Tanya	Baker	Santa Cruz	CA	950659669
Gabriel	Wolff	Santa Cruz	CA	950603627
Jude	Todd	Santa Cruz	CA	950623559
Jan	Frank	Santa Cruz	CA	950602359
Rachel	Wolf	Santa Cruz	CA	950602244
Sheila	Malone	Santa Cruz	CA	950607122
Paul	Ripley	Santa Cruz	CA	950625039
Jennifer	Kelley	Santa Margarita	CA	934530689
Nancy	Heck	Santa Maria	CA	934546648
Carlos	Arnold	Santa Maria	CA	934552329
michelle	allison	Santa Maria	CA	934547649
Anthony	Montapert	Santa Maria	CA	934552383
Jerid	Anderson	Santa Maria	CA	93455
Barbara	Starno	Santa Maria	CA	934542427
Rich	Bailey	Santa Maria	CA	934581021
Nancy	Miller	Santa Maria	CA	934554201
Patricia	A Facciani	Santa Maria	CA	93455
Mary	Romanek	Santa Monica	CA	904041215
David	Saperia	Santa Monica	CA	904032972
Janet	Heinle	Santa Monica	CA	904034066
MARY	ROJESKI	Santa Monica	CA	904054130
Brian	Yu	Santa Monica	CA	904042692
Anne	Munitz	Santa Monica	CA	904022921
kat	burgess	Santa Monica	CA	904047121
Gloria	Albert	Santa Monica	CA	904036609
Vance	Arquilla	Santa Monica	CA	904055311
Kathryn	Paddock	Santa Monica	CA	93023
Ruth	Olafsdottir	Santa Monica	CA	904032653
Richard	Parr	Santa Monica	CA	904022219
Patti	Davis	Santa Monica	CA	904035406
Alexandra	Nicole	Santa Monica	CA	904041825
Myra	Schegloff	Santa Monica	CA	904052852
Phyllis	Chavez	Santa Monica	CA	904055021
Mary	de la Pena	Santa Monica	CA	904042541
D.	Rowe	Santa Monica	CA	904035704
David	Weinstein	Santa Monica	CA	90403

Phyllis	Chavez	Santa Monica	CA	904055021
Jennifer	weyman	Santa Monica	CA	904022701
Jaime	Marshall	Santa Monica	CA	904041427
Shelley	Sterrett	Santa Monica	CA	904021559
Debbie	Bolsky	Santa Monica	CA	904031162
S	Dale	Santa Monica	CA	904033099
Danielle	Thomas	Santa Monica	CA	904054836
Paula	David	Santa Monica	CA	904012314
Lauren	Quain	Santa Monica	CA	904054804
Helene	Zimmerman	Santa Monica	CA	90403
Michael	Lueras	Santa Monica	CA	904013311
David	Gardner	Santa Monica	CA	904053764
James	Cohen	Santa Monica	CA	904021130
Anna	MacKenzie	Santa Monica	CA	904055015
Edward	Dollard	Santa Monica	CA	904052320
Karen	McChrystal	Santa Monica	CA	904031241
Michael	Russell	Santa Paula	CA	930601302
Joyce	Johnson	Santa Rosa	CA	954044553
Mark	Feldman	Santa Rosa	CA	954019137
Bob	Miller	Santa Rosa	CA	954043427
Steve	Bush	Santa Rosa	CA	954042443
Molly	Huddleston	Santa Rosa	CA	954021119
Douglas	Thayer	Santa Rosa	CA	954039498
Daniel	Podell	Santa Rosa	CA	954042225
Martha	Calvinperez	Santa Rosa	CA	954092856
John	Wendell	Santa Rosa	CA	954015739
Dorothy	Weicker	Santa Rosa	CA	954096326
Robert	Lopez	Santa Rosa	CA	95404
Michael	Sheffield	Santa Rosa	CA	954094421
Jana Mariposa	Muhar	Santa Rosa	CA	954015539
Bruce	Reinik	Santa Rosa	CA	954094252
Ian	Nelson	Santa Rosa	CA	954042141
Bernard	Lefson	Santa Rosa	CA	954096303
Pierre	Crist	Santa Rosa	CA	954078214
Lorrel	Hovland	Santa Rosa	CA	954014522
Clay	Martinek	Santa Rosa	CA	954045103
Marilynn	Russell	Santa Rosa	CA	954077335
nancy	higham	Santa Rosa	CA	954041610
Gary	HANSFORD	Santa Rosa	CA	954015012
Donna	Forst	Santa Rosa	CA	954096390
Gail	Outlaw	Santa Rosa	CA	95404
Eileen	Bill	Santa Rosa	CA	954054755
Diane	Schulz	Santa Rosa	CA	954043853
Nicholas	Lenchner	Santa Rosa	CA	954031543
Joe	Salazar	Santa Rosa	CA	954077514
marilyn	watkins	Santa Rosa	CA	954043629
Rev. Allan B.	Jones	Santa Rosa	CA	954047400

Sheila	Messer	Santa Rosa	CA	954015835
James	Blair	Santa Rosa	CA	954077157
Lorilie	Morey	Santa Rosa	CA	954014780
Anne	Jacopetti	Santa Rosa	CA	954031403
Anne	Watts	Santa Rosa	CA	954014911
Donna	Campbell	Santa Rosa	CA	954094144
Wendy	Walsh	Santa Rosa	CA	954042940
Ryan	Olson	Santa Rosa	CA	95403
Lynn	Ice-Krushinsky	Santa Rosa	CA	95404
Wendy	Behrbaum	Santa Rosa	CA	954043416
Aidan	O'Reilly	Santa Rosa	CA	954016005
Joyce	Bianchi	Santa Rosa	CA	954050791
April	Ochoa	Santa Rosa	CA	95403
Laurence	Thomas	Santa Rosa	CA	954094412
Gordon	Beebe	Santa Rosa	CA	954013741
George	Hernandez	Santa Rosa	CA	954014560
Dawn	Petersson	Santa Rosa	CA	954047764
Linda	Carroll	Santa Rosa	CA	954049570
Gloria	DeSalvo	Santa Rosa	CA	954038066
Darrell	Gauff	Santa Rosa	CA	954054753
Naneene	Van Gelder	Santa Rosa	CA	954042535
Nancy	Borelli	Santa Rosa Va	CA	930129387
Jerami	Prendiville	Santa Rosa Valley	CA	93012
Catherine	Dishion	Santa Ynez	CA	934609604
Matt	L	Santa Ynez	CA	934608703
Gary	Beckerman	Santa Ynez	CA	934609615
Paul	Ramos	Santa Ynez	CA	934600728
Diane	Martin	Santee	CA	92071
Rob	Roberto	Santee	CA	920711291
Paul	Hunrichs	Santee	CA	920712206
Sebastian	Allinder	Santee	CA	920711546
Michael	Sixtus	Santee	CA	920712252
Emily	Rutti	Saratoga	CA	95070
Aileen	Carissimi	Saratoga	CA	950706901
Benjamin	Wade	Saratoga	CA	950703427
Evan Jane	Kriss	Sausalito	CA	949652066
Alison	Johnston	Sausalito	CA	949651333
Sallie	Rowe	Sausalito	CA	949651557
Louise	Savage	Sausalito	CA	949651963
Heidi	Schmitz	Sausalito	CA	949652547
Adrianna	Dinihanian	Sausalito	CA	949651746
Neil	Illiano	Sausalito	CA	949651315
Eddie	Schuhl	Scotts Valley	CA	950676413
Sa	Re	Seal Beach	CA	82601
Melanie	H	Seal Beach	CA	90740
Julie	Ford	Seal Beach	CA	907404072
Joe	LeBlanc	Sebastopol	CA	954723146



Barrie	Stebbing	Sebastopol	CA	95473
mark	Hargraves	Sebastopol	CA	954729602
Sharon	Kocher	Sebastopol	CA	95472
Colin	Ramsay	Sebastopol	CA	954723736
David	Warrender	Sebastopol	CA	954729184
Patrice	Ryan	Sebastopol	CA	954729659
Amanda	Zangara	Sebastopol	CA	954723146
Tara	Crane	Sebastopol	CA	954723407
Jory	Adamson	Sebastopol	CA	954722246
Janette	shablow	Sebastopol	CA	954731007
Susan	Stover	Sebastopol	CA	954729358
Sherry	Gibson	Sebastopol	CA	954724812
Nancy	Fleming	Sebastopol	CA	954724333
Debbie	Stoner	Sebastopol	CA	954724021
Sylvia	Ren	Sebastopol	CA	954723745
Karen	Felker	Sebastopol	CA	954723619
Pat	C	Sebastopol	CA	954723570
Sherry	Pribyl	Sebastopol	CA	954724704
Elaine	St John	Sebastopol	CA	954725717
katharine	kehr	Sebastopol	CA	954723739
Andrea Peri	Rosenfield	Sebastopol	CA	954729416
Melanie	Corrigan	Sebastopol	CA	95472
Paula	Kursh	Sebastopol	CA	954725152
Margaret	Graham	SF	CA	94109
Bryant	Wisheropp	Shafter	CA	93263
Gary	Connaught	Shasta Lake	CA	960199718
Georgia	Brewer	Sherman Oaks	CA	914015228
Gaia-Terza	Tessel	Sherman Oaks	CA	914113506
Jeffrey	Jones	Sherman Oaks	CA	914232973
michele	Smolen	Sherman Oaks	CA	91423
Mary	Beckman-Woolley	Sherman Oaks	CA	914033478
Carol	Becker	Sherman Oaks	CA	914234017
Kim	Krupinski	Sherman Oaks	CA	914014937
Glenn	GARLAND	Sherman Oaks	CA	91403
Monique	Ussini	Sherman Oaks	CA	914234938
Lori	Stayton	Sherman Oaks	CA	914034112
Hope	Jessup	Sherman Oaks	CA	91401
Susan	Guild	Sherman Oaks	CA	914113346
William	Slavin	Sherman Oaks	CA	914231410
Sharon	Cagey	Sherman Oaks	CA	914114311
John	Soltero	Sherman Oaks	CA	914231743
Laura	Schuman	Sherman Oaks	CA	914034239
Laura	Deibel	Sherman Oaks	CA	914234920
Priscilla	Klemic	Sherman Oaks	CA	914015223
Carolina	Goodman	Sherman Oaks	CA	914015741
Patricia	Ritter	Sherman Oaks	CA	914234227
Janet	Miller	Sherman Oaks	CA	914233948

Brooke	McGowen	Shingletown	CA	960889644
Linda	Pankonin	Shingletown	CA	960889432
John	Lamb	Sierra Madre	CA	91024
Renee	Cossutta	Sierra Madre	CA	910241439
Marguerite	Shuster	Sierra Madre	CA	91024
Lynne	Bergeron	Sierra Madre	CA	910241881
Ed	Rowe	Signal Hill	CA	907555975
Penelope	Prochazka	Simi Valley	CA	930631408
William	Hewes	Simi Valley	CA	93063
Deborah	Nelson	Simi Valley	CA	930654217
David	Swire	Simi Valley	CA	93063-5394
Jim	Panagos	Simi Valley	CA	93065
Ambrosia	Lefton	Simi Valley	CA	93063
christina	ciesla	Simi Valley	CA	930630214
Patrick	Bon	Simi Valley	CA	930633566
Gulshan	Oomerjee	Simi Valley	CA	930654514
Pamela	Morarre	Simi Valley	CA	930654226
Tom	McLain	Simi Valley	CA	93063
April	Amante	Simi Valley	CA	930632632
April	Amante	Simi Valley	CA	930632632
kimble	darlington	Smith River	CA	955679536
Eric	Piccolo	Solana Beach	CA	920752331
Erin	McCarty	Solana Beach	CA	920752301
Michelle	Sparks-Gillis	Solvang	CA	934633031
Andrew	Philpot	Solvang	CA	934632784
James	Cooper	Solvang	CA	934633024
Elaine	Larson	Sonoma	CA	954765102
Karen	Pedersen	Sonoma	CA	954767109
Michael	R. Watson	Sonoma	CA	954763938
Jeanne	Nourse	Sonoma	CA	95487
Cathy	Carr	Sonoma	CA	954764224
Robert	Cherwink	Sonoma	CA	954766233
Steve	Shapiro	Sonoma	CA	954767570
Suzanne	Graves	Sonoma	CA	954766218
Karen	Hall	Sonoma	CA	954766239
Janet	Aviles	Sonoma	CA	954763451
Leslie	Mercer	Sonoma	CA	95476
Pegalee	Benda	Sonoma	CA	954765407
Leslie	Mercer	Sonoma	CA	95476
Pamela	Holloway	Sonora	CA	953705724
carol	gottlieb	Sonora	CA	95372
Barbara	Conley	Sonora	CA	953707810
Michael	Holstrom	Sonora	CA	953708246
Marc	Gordon	Sonora	CA	953707518
Sue	Phalen	Sonora	CA	953705263
Dana	Bachman	Sonora	CA	95370
Paula	Krejcik	Sonora	CA	95370

Carolyn	Stallard	Soquel	CA	950739707
Donald	Dufford	Soquel	CA	950732768
Sarah	Rabkin	Soquel	CA	950733004
Gary	Landgrebe	Soquel	CA	950732523
Amber	Sumrall	Soquel	CA	950739778
Sonia	King	Soquel	CA	950732779
Judy	Fishman	Soquel	CA	950732918
Stephen	Foltz	Soquel	CA	950732052
Christianna	Hunnicutt	Soquel	CA	950739405
Michelle	Nihonyanagi	Soulsbyville	CA	953729774
Hunter	Wallop	Soulsbyville	CA	953729744
Yessenia	Quintero	South Gate	CA	902802431
Patrick	Bonner	South Gate	CA	90280
Jana	Menard	South Lake Tahoe	CA	961506149
Peggy	Cooley	South Lake Tahoe	CA	961504231
Susan	Chandler	South Lake Tahoe	CA	961506610
Letitia	Carper Long	South Lake Tahoe	CA	961518516
Arturo	Beyeler	South Lake Tahoe	CA	961506404
Nancy	Curtiss	South Lake Tahoe	CA	961503212
Patti	Romnes	South Lake Tahoe	CA	961507446
Thomas	Lorioux	South Pasadena	CA	910303941
Judith D.	Radovsky	South Pasadena	CA	91030-4346
Carol	Schneider	South Pasadena	CA	910302254
Wayne	Jones	South Pasadena	CA	910303139
kathleen	edmundson	South Pasadena	CA	910303639
Aida	Marina	South Pasadena	CA	910302370
Miranda	Duran	South San Francisco	CA	940805310
Nicole	Ortega	South San Francisco	CA	940801049
Juanita	Mangan VanHam	Spring Valley	CA	919772001
Jennifer	Bradford	Spring Valley	CA	91977
John	Charbonneau	Spring Valley	CA	91977
Toni	Watson	Spring Valley	CA	919774053
Victoria	Bennett	Spring Valley	CA	919776533
Carol	Phillips	Spring Valley	CA	919772001
Jennifer	AllenPrather	Spring Valley	CA	919773713
Patricia	Twyman	Spring Valley	CA	919775810
Tara	Duke	Spring Valley	CA	91978
joyce	kolasa	Springville	CA	932659735
Valerie	Tan	Squaw Valley	CA	936759675
Deepak	Vohra	Stanton	CA	906803161
Linda	Davis-Lane	Stanton	CA	906802954
Richard	Nuno	Stevenson Ranch	CA	913811526
Michael	Sarabia	Stockton	CA	95207
Claudia	Mackey	Stockton	CA	952091508
Katherine	Andrews, PhD	Stockton	CA	952194625
Phillip	Nisperos	Stockton	CA	952044237
Janice	Beyer	Stockton	CA	952031629

Lori	Welchoff	Stockton	CA	952044953
Christine	Kroger	Stockton	CA	95204
Dennis	Alsop	Stockton	CA	952044903
Patricia	Borges	Stockton	CA	952092002
Julie	Devincenzi	Stockton	CA	952032105
Michelle	Montano	Stockton	CA	95212
Jillana	Laufer	Studio City	CA	91604
Mark	Holdom	Studio City	CA	91604
nomi	lyonns	Studio City	CA	916043785
sara	cairns	Studio City	CA	916043045
Christine	Goodstein	Studio City	CA	916042406
marcia	sewelson	Studio City	CA	916043712
daniela	ganoza	Studio City	CA	916041206
Shan	Albert	Studio City	CA	916041302
Carmen	Carrasco	Studio City	CA	916041137
Natalia	Spornik	Studio City	CA	916042837
Alejandra	Cejudo	Studio City	CA	916044531
Cindy	MacDonald	Suisun City	CA	945853013
Dyiamond	Bolden	Suisun City	CA	945851774
Carlos Gogo	Gomez	Suisun City	CA	945852609
Robin	Van Tassell	Summerland	CA	930670641
Michele	Tornabene	Summerland	CA	930671483
Sets	Furuike	Summerland	CA	930670153
sara	blunt	Summerland	CA	930670455
Judy	Guffey	Sun City	CA	925862890
Misty	Patton-Stephenson	Sun City	CA	925853154
Christophe	Jonatowski	Sun Valley	CA	913521127
marc	scapa	Sun Valley	CA	913522085
JERI	PETERSEN	Sun Valley	CA	913521333
Thomas	Schwartz	Sunland	CA	910403039
Katharine	Warner	Sunland	CA	910402625
Gail	Wilke	Sunland	CA	910401356
Michele	Bain	Sunland	CA	910401250
Mia	Moore	Sunland	CA	91040
Earl	Shimaoka	Sunnyvale	CA	940864911
sarosh	patel	Sunnyvale	CA	940874610
Edwin and Jean	Aiken	Sunnyvale	CA	940872445
Ernest	Boyd	Sunnyvale	CA	940872747
Susan	Croce	Sunnyvale	CA	940872873
Krista	Dana	Sunnyvale	CA	940872241
Karen	Warren	Sunnyvale	CA	940892523
William	Kwok	Sunnyvale	CA	940869150
Kevin	Connell	Sunnyvale	CA	940874444
Gerhard	Hahne	Sunnyvale	CA	940872855
John	Harris	Sunnyvale	CA	940891837
Marcia	Sherman	SUNNYVALE	CA	94085
Bruce	Coston	Sunnyvale	CA	940871749

Deborah	Macias	Sunnyvale	CA	94089
Liana	Laskin	Sunnyvale	CA	940875476
Megan	Penland	Sunnyvale	CA	940866745
Barbara	Patton	Sunnyvale	CA	940874928
Vira	Confectioner	Sunol	CA	945860374
Melissa	Berman	Susanville	CA	961303648
Anna	Caldwell	Sutter	CA	959822302
Fiona	Priskich	Swan View	CA	90210
Daisy	Medina	Sylmar	CA	913427268
Jerry	Oliver	Sylmar	CA	913425503
Robert	Lentz	Sylmar	CA	913421929
Chad	Johnson	Sylmar	CA	913425162
Diane	Boucher	Sylmar	CA	913427588
Margarita	Gonzalez	Sylmar	CA	91342
Lindal	Pilon	Sylmar	CA	913426425
Cynthia Barr	Goldberg	Talmage	CA	954810520
madonna	fowler	Tarzana	CA	913561878
Nilofar	Amier	Tarzana	CA	913561004
Louise	Bianco	Tarzana	CA	913561012
Charles	B.	Tarzana	CA	913561959
Vikki	Helperin	Tarzana	CA	913564514
Jon	Newman	Tarzana	CA	913565504
Susan	Goran	Tarzana	CA	913564918
Judith	Barnett	TARZANA	CA	91356
Bret	Polish	Tarzana	CA	913357301
m	freedman	Tarzana	CA	913561709
Chris	Pett	Tarzana	CA	91356
ELLEN	BLUM	Tarzana	CA	913564519
Emily	Shepard	Tarzana	CA	913561023
Bob	Kull	Taylorville	CA	95983
Gail	Roberts	Tecate	CA	919800656
Jacquelyn	Roberts	Tehachapi	CA	93561
Jacqui	Bradshaw	Tehachapi	CA	935612306
Ana Maria	Demirdjian	Tehachapi	CA	935611331
Diane	Rymer	Tehachapi	CA	935612105
Louise	Zimmer	Temecula	CA	925928267
Janet	Rhodes	Temecula	CA	925924901
ken	parsons	Temecula	CA	925926351
Holly	Hall	Temecula	CA	925926484
Brian	Jeffery	Temecula	CA	925929602
sofia	okolowicz	Temecula	CA	925929686
John	Peterson	Temecula	CA	925923203
Richard	Blain	Temecula	CA	925923805
Connie	French	Temecula	CA	925926478
Theresa	Tafoya	Temecula	CA	925915928
alena	Jorgensen	Temple City	CA	917801651
Linda	Skorheim	Temple City	CA	917802451

cindy	lewis	Templeton	CA	934658363
Sheila	Butler	Templeton	CA	934659091
Cassie A.	Murphy	Templeton	CA	93465-4501
Harper	Smith	The Sea Ranch	CA	95497
Barbara	Croner	The Sea Ranch	CA	954970301
Michele	Melio	The Sea Ranch	CA	95497
Marjorie	Hoskinson	Thousand Oaks	CA	913604937
Joanne	Sulkoske	Thousand Oaks	CA	913601749
dawn	kuznkowski	Thousand Oaks	CA	91360
Victoria	Behar	Thousand Oaks	CA	913607038
Mark	Chotiner	Thousand Oaks	CA	913611326
Tina	Frugoli	Thousand Oaks	CA	913622630
Lawrence	Spinner	Thousand Oaks	CA	913603003
Cindy	Stein	Thousand Oaks	CA	913601522
Stacey	McDonald	Thousand Oaks	CA	913615004
Susan	Taylor	Thousand Oaks	CA	913603221
Annie	Winsor	Thousand Oaks	CA	913622727
Britt	Lind	Thousand Oaks	CA	91360
Bitia	Rezvani	Thousand Oaks	CA	91360
Sylvia	Lewis Gunning	Thousand Oaks	CA	913204111
Glyol	Pannbechi	Thousand Oaks	CA	913623225
Wendy	Simpson	Thousand Palms	CA	922764126
Rhiannon	Archer	THOUSAND PALMS	CA	92276
Jean	Utlej	Thousand Palms	CA	92276
Kathie	Boley	Three Rivers	CA	932711089
Margaret	Tavares	Tiburon	CA	949202248
Pamela	Sieck	Tiburon	CA	949201452
Katherine	Martinez	Tiburon	CA	949202053
Laura	LaRocca	Toluca Lake	CA	91602
Ellen	Segal	Toluca Lake	CA	916022403
Don	Yorkshire	Toluca Lake	CA	916022929
Kim	Nicholson	Toluca Lake	CA	916021592
Rick	Sparks	Toluca Lake	CA	916021002
Lynn	Hall	Toluca Lake	CA	916021540
Charleen	Steeves	Topanga	CA	902904466
Robyn	Sharp	Topanga	CA	90290
Pamela	McBride	Topanga	CA	902903348
Kelly	Lowry	Topanga	CA	902903268
Jane	August	Topanga	CA	902900666
Bill	Blischke	Torrance	CA	905052801
Rachael	Jett	Torrance	CA	905016730
Pamela	Merten	Torrance	CA	905052621
Kathy	Cullen	Torrance	CA	90503
Joe	Wetherall	Torrance	CA	905013027
Donna	Shellabarger	Torrance	CA	90505
Billie Lee	Langley	Torrance	CA	905013529
Sherrie	King	Torrance	CA	905013801

Diane	Reeves	Torrance	CA	905012048
Thomas	Fukuman	Torrance	CA	905042833
Dawn	Amano	Torrance	CA	905035327
Beverly	Lindbergh	Torrance	CA	905036038
Mario E	Martinez	Torrance	CA	905045632
Gloria	Sefton	Trabuco Canyon	CA	92678
C.	Scelsi	Trabuco Canyon	CA	926780053
Angela	Tran	Trabuco Canyon	CA	926794131
Douglas	McCormick	Trabuco Canyon	CA	926794123
Marilyn	Shepherd	Trinidad	CA	955700715
Lore	Snell	Trinidad	CA	955700037
Deborah	Frame	Trinidad	CA	95570
jeannette	gavin	trinidad	CA	95570
karen	jernberg	Truckee	CA	961613187
M.A.	Steinberger	Tujunga	CA	910422017
Michael	Ash	Tujunga	CA	91042
David	Rubin	Tujunga	CA	910422869
Gayaneh	Movsisyan	Tujunga	CA	910422084
Simone	Boudriot	Tujunga	CA	910422601
Probyn	Gregory	Tujunga	CA	910421449
Beverly	Flint	Turlock	CA	953802759
Mohan	Sakhrani	Turlock	CA	953829403
Beth	Clary	Tustin	CA	927802012
Perry	Gx	Tustin	CA	927807011
Rick	Davison	Tustin	CA	92781
Jessica M	Saavedra	Tustin	CA	927805877
Stephen	Bohac	Twain Harte	CA	953831730
Jerry	Gahan	Twentynine Palms	CA	922770533
Daniel	Leonidas	Twentynine Palms	CA	922773497
Linc	Conard	Uden	CA	90210
Jorge	De Cecco	Ukiah	CA	954823407
Nadia	Gulledge	Ukiah	CA	954820975
Katherine	Patterson	Ukiah	CA	954824678
Jane	Biggins Esq	Ukiah	CA	95482
Eileen	Mitro	Ukiah	CA	954829200
Thomas	Force	Ukiah	CA	95482
Gudrun	Allenstein	Ukiah	CA	954824338
Nancy	Luis	Ukiah	CA	954823384
Katherine	Patterson	Ukiah	CA	954824678
henry	biggins	Ukiah	CA	95482
Leslie	West	Ukiah	CA	954827555
Marcela	Ries	Ukiah	CA	954823933
Cynthia	Hernandez	Ukiah	CA	954826526
Lacey	Hicks	Union City	CA	945874583
DENNIS	DELATORRE	Union City	CA	945872333
Shelley	Abbate	Union City	CA	94587
Christine	Hayes	Upland	CA	91786

Sandra	Haney	Upland	CA	91786
Vincent	Young	Upland	CA	917867831
Michael	Callaway	Upland	CA	917865409
Pat	Magrath	Upland	CA	917841674
Robert	Kolesnik	Upland	CA	91784
Shirley	Harris	Upland	CA	917842006
Michele	Pacheco	Upland	CA	917841565
Michelle	Davis	Vacaville	CA	956880100
Gida	Naser	Vacaville	CA	956875704
Carol	Dalton	Vacaville	CA	95687
Christina	LaRocca	Vacaville	CA	956875993
Victoria	Loch	Vacaville	CA	956879422
Penelope	Strohl	Vacaville	CA	956876420
Adrienne	Micco	Vacaville	CA	956875730
Daurese	Rene	Valencia	CA	913553312
Jessica	Paolini	Valencia	CA	913554961
Anita	Wisch	Valencia	CA	91355
Pamela	Reed	Vallejo	CA	945904731
Jenny	Smith	Vallejo	CA	945917512
Linda	Kade	Vallejo	CA	945905712
Mya	Shone	Vallejo	CA	945914110
Don	Parish	Vallejo	CA	945902985
Geoff	Goins	Vallejo	CA	945903547
Elizabeth	Clapp	Vallejo	CA	945918419
Barry	Zakar	Vallejo	CA	945916415
Sharon	Stoepler	VALLEJO	CA	94590
Jon	Bazinet	Vallejo	CA	945917259
Lana	Touchstone	Vallejo	CA	945915738
Meg	Smolich	Vallejo	CA	945905718
Robert	Wilkinson	Valley Center	CA	920824704
Dan	Matthews	Valley Center	CA	920827029
Florence	Litton	Valley Center	CA	920827317
Carolyn	De Mirjian	Valley Glen	CA	914013032
Aaron	Miller	Valley Glen	CA	914014423
Suzanne	Alon	Valley Glen	CA	914012910
Diana	Dee	Valley Glen	CA	914013032
Dudley & Candace	Campbell	Valley Glen	CA	914011329
Sami	Mzali	Valley Village	CA	916071182
Kent	Karlsson	Valley Village	CA	916074031
Jeff	Levicke	Valley Village	CA	916071612
JerriLyn	Miller	Valley Village	CA	916071512
Ree	Whitford	Valley Village	CA	916073052
Jennifer	Wilson	Valley Village	CA	916072890
James	Brisson	Valley Village	CA	916073217
Maureen	O'Connell	Valley Village	CA	91607
darynne	jessler	Valley Village	CA	916074115
Joy	Fox	Valley Village	CA	916075014



Teresa	Contenta	Valley Village	CA	91607
Holly	Burgin	Van Nuys	CA	914051435
Stephanie	Nunez	Van Nuys	CA	914053142
Janet	Laur	Van Nuys	CA	91411
Ofra	Peters	Van Nuys	CA	99037
Melissa	Selzer	Van Nuys	CA	914012143
Zachariah	Love	Van Nuys	CA	914016700
Sharon	Bills	Van Nuys	CA	914063615
Bruce	Fleming	Van Nuys	CA	914052934
Susan	Toy	Van Nuys	CA	914013029
Russel	Sher	Van Nuys	CA	914014347
Lise	Hartill	Van Nuys	CA	91406
Wesley	DeGracia	Van Nuys	CA	914061129
Sakura	Jimenez	Van Nuys	CA	914053331
Terrence	Butler	Van Nuys	CA	914052309
Socorro	Cooke	Van Nuys	CA	914054172
William	Breidenbach	Van Nuys	CA	91401
Aura	Meza	Van Nuys	CA	914053560
Richard	Cox	Venice	CA	902914517
jesse	croxton	Venice	CA	902912806
John	Howard	Venice	CA	902915020
Claudia	Foster	Venice	CA	902913901
Richard	Horne	Venice	CA	902914934
Antonia	Powell	Venice	CA	90291-3641
Brendan	Miller	Venice	CA	902919003
Casey	Danson	Venice	CA	902912835
Joanna	Puglisi	VENICE	CA	90291
Jim	O'Brien	Venice	CA	902915302
JULIE	PEPPARD	Venice	CA	902913523
Lanya	Bingo	Venice	CA	902913388
David	Cotner	Ventura	CA	930019998
Barbara	Whyman	Ventura	CA	930012064
George	Vye	Ventura	CA	93004-2498
Ms	Lilith	Ventura	CA	930034929
Kathy	Yeomans	Ventura	CA	930011445
Nikki	Alexander	Ventura	CA	930031506
Kathy	Kelly	Ventura	CA	930033003
LINDA	FISHER	Ventura	CA	930014046
Melissa	Vasconcellos	Ventura	CA	930067564
Ann	Dobroth	Ventura	CA	930032328
Sharon	Ruiz	Ventura	CA	93003
Mary	Stanistreet	Ventura	CA	930033728
David	Harris	Ventura	CA	930031906
Judith	Duckhorn	Ventura	CA	930011010
Linda	Charter	Ventura	CA	930031719
Rafael	Canton	Ventura	CA	930036200
Jamie	Green	Ventura	CA	930042884

Doreen	Vignassa	Ventura	CA	930012360
Marty	Otero	Ventura	CA	930037501
Lucy	Nichols	Ventura	CA	93004
brian	girard	Ventura	CA	930042454
Theressa	Moraitis	Ventura	CA	930014401
Thomas	Triggs	Ventura	CA	930031830
Gaby	Navarrete	Veracruz	CA	94280
Tracy	Hageman	Victorville	CA	923930862
Robert	Rauh	Victorville	CA	923958320
Carol	Wiley	Victorville	CA	923941383
Simone	fonseca	Victorville	CA	923940834
Karen	McCaw	View Park	CA	900432012
Patti	Fiormonti	Visalia	CA	932915264
George	Beasley	Visalia	CA	932919218
R. Lei Lani	Johnson	Visalia	CA	932776717
Paula	Colby	Vista	CA	92084
Diana	Cowan	Vista	CA	920847279
Jim	Parks	Vista	CA	920819042
Gloria	Johnson	VISTA	CA	92084
George	Ludwig	Vista	CA	920844208
Glen	Brandenburg	Vista	CA	92084
Brandon	Wheelock	Vista	CA	920816829
Melanie	Fontana	Vista	CA	920843445
Stephanie	Jackel	Vista	CA	920818740
Heather	Isaac	Vista	CA	920847229
Richard	Galiguis	Vista	CA	920834718
Kathy	Pellizzeri	Vista	CA	920835650
CARL	LUHRING	Vista	CA	920834804
Elena	Knox	Volcano	CA	5689
Melanie	Corrigall	Walnut	CA	917891357
AG	Gilmore	Walnut	CA	917892706
Erfin	Hartojo	Walnut	CA	917894104
Rita	Thio	Walnut	CA	917894104
Jackie	Samallo	Walnut	CA	91789
Sandra	Hartojo	Walnut	CA	91789
Melissa	Chandra	Walnut	CA	91789
Liana	Kornfield	Walnut Creek	CA	945955928
Isabel	Leonard	Walnut Creek	CA	945951853
Kathy	Bungarz	Walnut Creek	CA	945989227
Janet	Bindas	Walnut Creek	CA	945983844
Julia	Fuller	Walnut Creek	CA	945984709
Errol	Simpson	Walnut Creek	CA	945972118
MaryJane	Ryan	Walnut Creek	CA	945951337
David	Wendt	Walnut Creek	CA	945963384
Leslie	Anderson	Walnut Creek	CA	94596
Colleena	Brazen	Walnut Creek	CA	945981728
johanna	mcshane	Walnut Creek	CA	945984850

A.R.	Puccio	Walnut Creek	CA	945961332
Mary	Fenelon	Walnut Creek	CA	945964368
Adam	Goldman	Walnut Creek	CA	945952462
Dale	Drouin	Walnut Creek	CA	945963326
Joel	Sokolsky	Walnut Creek	CA	945952310
Diana	Marota	Walnut Creek	CA	945972238
Judith	Gordon	Walnut Creek	CA	945951938
Douglas	Walker	Walnut Creek	CA	945951617
Judy	Chalifour	Walnut Creek	CA	94598
Frank	Ackerman	Walnut Creek	CA	945952935
Ruth	Felix	Walnut Creek	CA	945973925
Martha	McNamee	Walnut Creek	CA	945951367
Ann	Barnhart	Walnut Creek	CA	94595
stacey	landfield	Warner Springs	CA	920869206
Henry	White	Waterford Ca	CA	95386
Valerie	Justus-Rusconi	Watsonville	CA	950760129
Mary	Doane	Watsonville	CA	950760320
Paul	Cheney	Watsonville	CA	950764223
Michael	Craib	Watsonville	CA	95076
Rose K	Murphy	Watsonville	CA	950763069
Susan	Von Schmacht	Watsonville	CA	950761047
Kevin	Markoe	Watsonville	CA	950762223
Barbara	Anders	Watsonville	CA	950761403
Daniel	Williams	Wawona	CA	95389
Shireen	Nickel	Weed	CA	960942582
William	Russell	Weed	CA	960949489
Carolyn	Spier	Weimar	CA	957361029
Ara	Marderosian	Weldon	CA	932830988
Ron	Hansel	West Covina	CA	917901802
Jeanne	Schuster	West Covina	CA	917913531
briana	salas	West Covina	CA	917921459
Raymond	Plasse	West Hills	CA	913073431
SHARI	BECKER	West Hills	CA	913071333
Hollace	Wood	West Hills	CA	913072356
Eric	Mattei	West Hills	CA	913043643
Katy	Jafari	West Hills	CA	913043869
MaryAnn	Choy	West Hills	CA	913072708
Christa	Neuber	West Hollywood	CA	900695525
Andrea	Kraus	West Hollywood	CA	900692703
Barbara	Mesa	West Hollywood	CA	900696424
Abbie	Bernstein	West Hollywood	CA	900692821
agnew	wilson	West Hollywood	CA	900694917
David	Aronovitch	West Hollywood	CA	900481919
Christina	Babst	West Hollywood	CA	900695525
Bonnie	Karrin	West Hollywood	CA	900465705
Ronald	Weber	West Hollywood	CA	90069
Dawn	Robinson	West Hollywood	CA	900692763

Joan	English	West Hollywood	CA	90069
Susan	Mathison	West Hollywood	CA	900692446
L	R	West Hollywood	CA	900695101
Erwin	Pearlman	West Hollywood	CA	900467323
Signe	Wetteland	West Sacramento	CA	956914611
Bridget	Mabunga	West Sacramento	CA	956915276
Kelly	Inglett	West Sacramento	CA	956913137
Janice	Nakamura	West Sacramento	CA	956051951
Sarah	Baker	West Sacramento	CA	95691
Rhoda	Reiner	West;ale Village	CA	91361
Lorry	Goldman	WestHollywood	CA	90069
Andrew	Sutphin	Westlake Village	CA	91362
Elaine	Edell	Westlake Village	CA	913624742
Michael	Malone	Westlake Village	CA	913613712
Rosemary	Shiolas	Westlake Village	CA	913613615
BETTY	EISEMAN	Westlake Village	CA	913611753
marwan	ramadan	Westlake Village	CA	913624351
Susan	Stewart	Westlake Village	CA	913613306
Beth	Willer	Westlake Village	CA	913611742
John	James	Westminster	CA	926835497
Joan	Velvick	Westminster	CA	926837647
John	Kelly	Westminster	CA	926838681
Terry	Holmes	Westminster	CA	92683
Gary	Talanov	Westwood	CA	961379426
Tina	Colafranceschi	Whitethorn	CA	955890201
Jeanne	France	Whitmore	CA	960960219
Joshua	Wines	Whittier	CA	906063232
Christianne	Fong	Whittier	CA	906033212
Johnny	Sauter	Whittier	CA	906012408
John	Hoffman	Whittier	CA	90602-3102
Joni	Trujillo	Whittier	CA	906062017
Narcissa	Enzmann	Whittier	CA	906012248
Jose	Rodriguez	Whittier	CA	906043854
Susana	Garcia	Willits	CA	954903414
Lynn	Davis	Willits	CA	954909585
Deirdre	Santaniello	Willits	CA	954908901
Sherri	Berglund	Willows	CA	959889779
Daniel	Medrano	Wilmington	CA	907441902
D.	Beck	Wilton	CA	956930969
Veronica	DeCicco	Windsor	CA	954926666
Alys	Hay	Windsor	CA	954926890
Dan	McAllister	Windsor	CA	954928820
Doriana	Lehner	Winnetka	CA	913061545
Kevin	Le	Winnetka	CA	913063035
Hollie	Malamud	Winters	CA	956942133
Jeff	Zagray	Winters	CA	956949022
Dorothea	Stephan	Winzer	CA	94577

katy	r.	withheld	CA	95472
B.	E.	WLV	CA	91361-4500
Ray	Rodney	Woodacre	CA	949730184
TRACY	Ginsberg	Woodacre	CA	949730440
Steven	Dungan	Woodbridge	CA	952589124
Darlene	Ross	Woodbridge	CA	952588900
Robin	Wohlgemuth	Woodland	CA	957764919
Nancy	Boyd	Woodland	CA	956955444
Marjie	Echols	Woodland	CA	95695
Abby	Hamilton	Woodland	CA	956953026
Erik	Shank	Woodland	CA	95695
Anne	Kuzel	Woodland	CA	956952770
Shea	Rowan	Woodland Hills	CA	913645004
Richard	Campbell	Woodland Hills	CA	91367
Linda	Howie	Woodland Hills	CA	913674329
Iris	Edinger	Woodland Hills	CA	913674048
Stephanie	Larro	Woodland Hills	CA	913676048
Mark	Giordani	Woodland Hills	CA	913033065
Eliot	Kaplan	Woodland Hills	CA	91364
Sharon	Carlson	Woodland Hills	CA	913644902
Jason	Pritchard	Woodland Hills	CA	913675824
Grace	Bell	Woodland Hills	CA	91367
Jan	Harrell	Woodland Hills	CA	913671055
Cody	W	Woodland Hills	CA	913641019
Sarah	Daniel	Woodland Hills	CA	913672723
Judith	Chance	Woodland Hills	CA	913671779
Eva	Thomas	Woodside	CA	940624307
Jim	Szewczak	Woodside	CA	940620313
Tim	Martin	Woodside	CA	940622514
Sheridan	Rice	Wrightwood	CA	92397
Peggie	Kirkpatrick	Yorba Linda	CA	928864529
Elizabeth	Hecker	Yorba Linda	CA	928866833
Sandra	Parker	Yorkville	CA	95494
Jeffrey	Stone	Yreka	CA	960979030
Linda	Baxter	Yreka	CA	96097
Charles	Heinrichs	Yreka	CA	960972650
Linda	Freeman	Yuba City	CA	959918866
Norm	Wilmes	Yuba City	CA	959916506
freddie	sumilhig	Yuba City	CA	95991
Deborah Lee	Chill	Yucaipa	CA	923995351
Elizabeth	Kaulbach	Yucaipa	CA	923992579
Sheila	Malone	Yucaipa	CA	923993410
Dawna	Werner	Yucaipa	CA	923999758
Lee	Stevens	Yucaipa	CA	923995374
Benjamin	Barajas Jr	Yucaipa	CA	92399
Karen and Allen	Perry	Yucca Valley	CA	922841703
Licia	P.	Yucca Valley	CA	922845936

Jade	Meeker	Yucca Valley	CA	922846183
Craig	Nelson	Yucca Valley	CA	922843102
Ronald	Bach	Zeewolde	CA	95616
Ardelle	Symonds		CA	94605
alice	Matzkin		CA	93023
Patricia	Rains		CA	92111
Rod	Taylor		CA	98368
Gillian	Cornelius		CA	91604
Simon	Bates		CA	90211
Chanda	Unmack		CA	95050
Susan	Landphere		CA	91344
elizabeth	shirley		CA	91001
Robin	Rogers		CA	92314
Kathleen	Franks		CA	94561
Rey	Aquino		CA	90744
A	Anonymous		CA	95628
Dorothy	Edwards		CA	92637
Fredrik	Larsson		CA	75444
Raymond	Capezzuto		CA	92009
sharon	bambridge		CA	0
Milford	Brown		CA	94530
Richard	Jordan		CA	93953
Tanya	Del Gado		CA	92220
Mike	Fanning		CA	94107
Eva	Cicoria		CA	90275
Linda	Stinger		CA	95062
M	Pelfrey		CA	92804
Linh	Pham		CA	92704-5504
Nadine	Piche		CA	93003
Sylvia	Pay		CA	91505
Sabrina	Jensen		CA	93063
Gail	Krieger		CA	95252
Dita	Å kaliÄ		CA	92260
John	Bredehoft		CA	95490
Frank	Lee		CA	90034
Kelly	Brannigan		CA	92056
Charmian	Redwood		CA	93033
Carla	Durkin		CA	94110
Bob	Wandle		CA	90210
Mary	Rogers		CA	92868
Sam	NEUWIRTH		CA	95524
Steve	Tavares		CA	94920
Marilyn	Imes		CA	94608
Laurie	Lippin		CA	95446
Katherine	Gramoglia		CA	92867
Jo Ann	eannareno		CA	92867
Avis	Adams		CA	92119

rolf  
Alistair

ridge  
Lizaranzu

CA  
CA

93950  
94956

Humboldt County Planning and Building Dept.

DATE: July 1, 2021

3015 H St.

Eureka, CA 95501

Attn: Alyssa Suarez, Planner I

Re: Nordic Aquafarms NOP, EIR at 364 Vance St., APN  
401-112-021

Humboldt County Planning Dept.: "Submitted by email" to [asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)  
The Nordic Aquafarms project EIR should include all of the items raised in my previous letter of comment (May 21<sup>st</sup>) on the Nordic Aquafarms Initial Study and Mitigated Negative Declaration.

More specifically and additionally, I request that a "robust alternatives analysis" include the following;

1. Consideration of sourcing salt water from the Pacific ocean in a location that will not have the adverse impacts of entrainment of marine organisms. The shallow waters of Humboldt Bay should not be used as the primary water source.
2. Consider using a "closed loop" water recycling system as described by Nordic Aquafarms representative, Mr. Erik Heim at the first public presentation to the Humboldt Bay Harbor, Recreation, and Conservation Commission. A high technology filtration and recycling water system could reduce salt water demand.
3. Consider the use of seasonal variations in water intake/use, or variation in the water intake volume to protect marine life, especially spawning fish, and crabs.
4. Provide specific information on the water intake fish screen design to accomplish a complete review of potential adverse environmental impacts.
5. Mr. Heim also indicated at the first public meeting that Nordic would give consideration to producing Pacific steelhead trout. Include the highly desirable alternative to produce a native species of trout or salmon.
6. Describe effective methods of reducing air pollution from the significant increase in passenger and commercial truck traffic that this project will generate.
7. Describe the specific sources and environmental impacts of the food sources planned to be used. If it is possible to use food sources from plants or insects that do not deplete existing marine food chains, this should be required. The adverse impacts of use of fish meal sourced from Pacific ocean waters on both avian and marine species should be considered.
8. Evaluate the cumulative impacts of additional salt water intake uses and users. The EIR should describe the new water intake facilities, including screens, and stop describing "existing" sea chests which are nonoperational to avoid creating confusion.
9. Cumulative impacts of the planned shoreline development for a new marine shipping terminal on 168 acres adjacent to the Nordic site must be addressed.

Thank you for the opportunity to provide these comments.

Sincerely,



Scott Frazer

P.O. Box 203

Blue Lake, CA 95525

# REDWOOD REGION AUDUBON SOCIETY

P.O. BOX 1054, EUREKA, CALIFORNIA 95502

July 3, 2021



Humboldt Co. Planning & Building Dept.  
3015 H St.  
Eureka, CA 95501  
Attn: Alyssa Suarez, Planner II  
Sent via email to [asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)

Re: Nordic Aquafarms Notice of Preparation

Dear Ms. Suarez:

Redwood Region Audubon Society is pleased to respond to the notice of preparation of an Environmental Impact Report (EIR). We submitted a letter of comment dated May 22, 2021, addressing the Initial Study (IS) and would like to suggest that all of the issues raised previously are still appropriate for consideration in the Nordic EIR.

We are especially concerned with the source and specific contents of the feed to be used by Nordic Aquafarms. Please refer to our Initial Study comments.

Additionally, we believe that there should be serious consideration given to alternative sources possible to provide the water necessary for the project. Humboldt Bay is a significant nursery for marine organisms and provides unique migratory bird habitats (again please refer to our IS comment letter). The EIR alternatives analysis should look for methods to replace the 10 million gallon per day (MGD) from Humboldt Bay with the Pacific Ocean, or other sources of water. Entrainment of important marine food sources may be less likely when deeper water sources are evaluated.

Lastly, cumulative impacts to the shallow waters and wetlands of Humboldt Bay must be fully considered. There are both current proposals for additional new projects on the Samoa peninsula, and recent oyster culture projects which may have cumulatively significant adverse impacts on birds and marine resources that depend on the globally significant resources currently available in Humboldt Bay.

Thank you for the opportunity to provide these comments.

Sincerely,

Gail Kenny, President  
Redwood Region Audubon Society



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Marine Region  
1933 Cliff Drive, Suite 9  
Santa Barbara, CA 93109  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

*GAVIN NEWSOM, Governor*  
*CHARLTON H. BONHAM, Director*



July 6, 2021

Alyssa Suárez, Planner II  
Humboldt County Planning & Building Department  
3015 H Street, Eureka, CA 95501  
707-445-7541  
[asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)

**SUBJECT: NORDIC AQUAFARMS CALIFORNIA, LLC LAND-BASED  
AQUACULTURE PROJECT  
NOTICE OF PREPARATION  
SCH# 2021040532**

Dear Ms. Suárez:

The California Department of Fish and Wildlife (Department) received the Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) from the Humboldt County Planning & Building Department for the Nordic Aquafarms California, LLC Land-based Aquaculture Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.<sup>1</sup> The Department previously submitted comments in response to the Draft Mitigated Negative Declaration (MND) on May 24, 2021 (attached).

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife resources. Likewise, we appreciate the opportunity to provide comments regarding aspects of the Project that the Department, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code (FGC).

**DEPARTMENT ROLE**

The Department is California’s Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the state (FGC §711.7, subd. (a) and §1802; Pub. Resources Code §21070; CEQA Guidelines §15386, subd. (a)). The Department, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically

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<sup>1</sup> CEQA is codified in the California Public Resources Code in §21000 et seq. The “CEQA Guidelines” are found in Title 14 of the California Code of Regulations, commencing with §15000.

Alyssa Suárez, Planner II  
Humboldt County Planning & Building Department  
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sustainable populations of those species (*Id.*, §1802). Similarly, for purposes of CEQA, the Department is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources. The Department is also responsible for marine biodiversity protection under the Marine Life Protection Act in coastal marine waters of California and ensuring fisheries are sustainably managed under the Marine Life Management Act.

Additionally, the Department oversees and manages aquaculture activities in the State under the authority provided by the FGC (§§15000-15703) and Title 14 of the California Code of Regulations (CCR). All facilities devoted to the propagation, cultivation, maintenance, and harvesting of fish, shellfish, and plants in marine, brackish, and freshwater are required to register annually with the Department (CCR §235). The Department may prohibit an aquaculture operation or the culturing of any species at any location where it is determined it would be detrimental to adjacent native wildlife (FGC §15102). State law also requires an Importation Permit from the Department to import most live aquatic plants and animals, in all forms (CCR §236). Statutory authorities for aquaculture disease and aquatic animal health management are embodied in FGC (§15500 et seq.). Regulations regarding aquaculture disease controls and responses, including a list of diseases and parasites and the aquatic plants and animals they are known to infect or parasitize, are outlined in FGC (§§15500-15516) and CCR (§245).

## PROJECT DESCRIPTION SUMMARY

**Proponent:** Humboldt County Planning & Building Department (County)

**Objective:** Nordic Aquafarms California, LLC (Nordic) proposes to develop a land-based finfish recirculating aquaculture facility on the Samoa Peninsula and intends to cultivate Atlantic Salmon (*Salmo salar*) subject to Department approval. The proposed aquaculture facility will include operations to grow-out fish from egg to harvestable size. The fish will be contained indoors in separate buildings connected by underground pipes for fish transfer. At full capacity, the facility will have an annual production of approximately 25,000-27,000 metric tons of head-on-gutted fish. The Project will require approximately 2.5 million gallons per day (MGD) of freshwater sourced from the Mad River and 10 MGD of seawater sourced from Humboldt Bay. The impacts associated with the proposed upgrades to the bay water intake system are now included in the Project description and will be evaluated in the Draft EIR. Treated wastewater (12.5 MGD) will be discharged into the Pacific Ocean utilizing the existing Redwood Marine Terminal (RMT) II ocean outfall pipe located 1.5 miles offshore of the Samoa Peninsula. A total of five buildings (intake water treatment, grow out modules, hatchery, fish processing, and wastewater treatment) will be constructed with a combined footprint of 766,530 square feet. The Project will also include ancillary support features such as

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Humboldt County Planning & Building Department  
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paved parking, fire access roads, security fencing, stormwater management features, and a fire suppression water line.

**Location:** The Project site is situated on the Samoa Peninsula, bounded on the west by dunes and the Pacific Ocean and on the east by Humboldt Bay, and located at the site of the former Samoa Pulp Mill in the unincorporated community of Samoa in Humboldt County (APN 401-112-021).

**Timeline:** Demolition and construction is anticipated to begin in 2022.

## **PREVIOUS COMMENTS AND RECOMMENDATIONS**

The Department submitted comments on the Project's Draft MND in a letter dated May 24, 2021, which included comments and recommendations regarding special status species, potential for cultured fish to escape, introduction of pathogens, wastewater discharge, seawater intakes, fish waste, dark-eyed gilia mitigation, osprey nest management plan, use of explosives and nesting birds, and cumulative impact analysis (attached). The Department's comments and recommendations identified in the May 24, 2021 comment letter remain applicable to the current Project as described in the NOP. The Department recommends the County fully address the comments and recommendations included in the May 24, 2021 letter from the Department.

## **ADDITIONAL COMMENTS AND RECOMMENDATIONS**

Pursuant to our jurisdiction and authority, the Department offers the following additional comments and recommendations to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife resources.

## **PROJECT IMPACTS**

### **Entrainment from Bay Water Intakes**

**Comments:** The Project will require 10 MGD of seawater sourced from Humboldt Bay for raising fish. However, given that Nordic proposes to use a recirculating system, it is unclear why this rate of seawater is needed on a daily basis. The two bay water intakes are located approximately one-half mile apart along the Samoa Channel at the RMT II Dock and Red Tank Dock. Nordic will be the primary user, but an additional 2 MGD of bay water will be available for other users. The Humboldt Bay Harbor, Conservation and Recreation District (Harbor District) will be responsible for permitting and upgrading the bay water intakes, but the biological impacts associated with the intake system will be evaluated in the County's Draft EIR.

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The Department is concerned the bay water intake system may cause impingement and entrainment of juvenile and larval species listed under the California Endangered Species ACT (CESA), including Longfin Smelt and Coho Salmon, in addition to other species of recreational, commercial, and biological importance. Larval, juvenile, and adult Longfin Smelt have been detected throughout Humboldt Bay (Eldridge 1970; Eldridge & Bryan 1972; Garwood 2017). Recent observations confirm the presence of adult Longfin Smelt in the Samoa Channel and larval osmerids (species unknown) in the Entrance Channel (Novotny 2020). Since Longfin Smelt juveniles are smaller and weaker swimmers than juvenile salmonids, often a main driver of intake-screening criteria, more protective fish screening criteria are required by the Department for waters where juvenile Longfin Smelt occur. However, fish screens will not prevent the entrainment of larval life stages.

The Department is also concerned that marine life mortality associated with the intakes could significantly reduce biological productivity and prey availability in Humboldt Bay. The proposed Project appears to be subject to State Water Code §13142.5(b), which “requires that for each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life”.

### **Recommendations:**

- The Department recommends the Draft EIR describe the amount of seawater that will be recycled within the facility. The Draft EIR should clarify why 10 MGD of seawater needs to be withdrawn from the Bay daily if the aquaculture facility is designed to be recirculating. The Department recommends the Project include measures to maximize seawater recycling in the facility to minimize the amount of seawater withdrawn from the Bay.
- The Department recommends the Draft EIR include the design specifications of the fish screens that will be implemented on the bay water intakes. To minimize impacts to salmonids and Longfin Smelt, all intakes shall comply with the Department’s fish screening standards and protocols (attached). Fish screen design specifications should include a pore size diameter between 1.75 – 2.38 mm depending on the configuration of pores, approach velocity of 0.2 feet per second for self-cleaning screens or 0.05 feet per second for non-self-cleaning screens, and screen porosity of at least 27%. Intakes should be kept in good repair and inspected periodically to ensure they are clean and free of settling invertebrates, accumulated algae, or other debris, which could block portions of the screen surface and increase approach velocities.
- The Department recommends the Draft EIR include an analysis of impacts from entrainment and impingement to CESA-list species (Longfin Smelt, Coho Salmon) in addition to other species of commercial, recreational, and biological importance. The

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analysis should also consider impacts to biological productivity and prey availability in Humboldt Bay. The maximum amount of water withdrawn from the Bay should be used for the impact analysis, including additional bay water provided to other users.

- The Department understands that a modeling study has been prepared to assess the potential effects of the proposed bay water intakes on entrainment of certain species (Pacific Herring, Arrow Goby, Bay Goby, and Northern Anchovy) and will be included in the Draft EIR. The Department recommends the Draft EIR also include empirical data on the concentration and composition of larvae in Humboldt Bay source water to validate model assumptions. Empirical data should capture temporal fluctuations in larval abundance.
- Given the potential for entrainment of larval and juvenile Longfin Smelt, the Department strongly recommends an Incidental Take Permit (ITP) is obtained for the seawater intake to address impacts of “take” pursuant to FGC §§2080.1 or 2081(b), and CCR §783 et seq. The ITP application should include a complete project description, as well as other required elements per CCR §783.2. The project description should be sufficient to evaluate the effects of the project on Longfin Smelt and other potential listed species and will be used to evaluate and develop species-specific minimization and mitigation measures. By law, all take of listed species must be mitigated in full and upfront.
- The Department and other regulatory agencies should be involved in the development of appropriate mitigation for any impacts associated with the operation of the two bay water intakes.

## Eelgrass Habitat

**Comments:** Native eelgrass beds, *Zostera marina*, are an important part of the Humboldt Bay ecosystem and are recognized by state and federal statutes as both highly valuable and sensitive habitats. Humboldt Bay holds approximately 31% of the known mapped eelgrass in the state (Merkel & Associates 2017). Eelgrass provides primary production and nutrients to the ecosystem along with spawning, foraging, and nursery habitat for fish and other species. Pursuant to the federal Magnuson-Stevens Fishery Conservation and Management Act, eelgrass is designated as Essential Fish Habitat for various federally managed fish species within the Pacific Coast Groundfish and Pacific Coast Salmon Fisheries Management Plans (FMP). Eelgrass is also considered a habitat area of particular concern for various species within the Pacific Coast Groundfish FMP. Eelgrass habitats are further protected under state and federal “no-net-loss” policies for wetland habitats. Additionally, the importance of eelgrass protection and restoration, as well as the ecological benefits of eelgrass, is identified in the California Public Resources Code (PRC §35630).

Continuous eelgrass habitat exists adjacent to both the RMT II and Red Tank Dock intake structures (mapped in 2009; Merkel & Associates 2017). The Department is



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Humboldt County Planning & Building Department  
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concerned with potential direct or indirect effects to eelgrass that might occur from upgrading and operating the bay water intake systems.

### **Recommendations:**

- The Department recommends the Draft EIR include a description of all construction activities that will be required to upgrade the sea chests, including any proposed in-water work (e.g., dredging), type of equipment, timing of construction, potential impacts to estuarine species or habitat during construction, and mitigation measures that will be implemented to minimize impacts to the environment.
- The Department recommends the Draft EIR analyze the potential impact to eelgrass habitat from direct and indirect Project activities. Impacts to eelgrass should be avoided and minimized to the fullest extent possible. To ensure no net loss, the Department recommends the Draft EIR include the development of an eelgrass monitoring and mitigation plan, as defined in the California Eelgrass Mitigation Policy (CEMP; NMFS, 2014). The plan should include pre- and post-construction surveys to map patchy and continuous eelgrass habitat at both intake docks. Surveys should be conducted by a qualified biologist during the high growth season (May-September) and follow the standards of the CEMP. This plan should include mitigation for any impacts to eelgrass including, but not limited to, impacts from dredging, changes in circulation, and sedimentation.

### **Ocean Outfall Wastewater Discharge**

**Comments:** The Department is concerned that the Project's discharge could result in adverse impacts to marine species and habitat due to elevated temperature, nutrient pollution, and exposure to contaminants/toxins. Nutrients discharged from anthropogenic sources, including ocean outfalls, have been shown to cause or exacerbate the development of harmful algal blooms (HABs), which can lead to domoic acid contamination, hypoxic conditions, and acidification in nearshore waters (Kessouri et al. 2021; Smith et al. 2021; Booth 2015; Howard et al. 2017; Anderson et al. 2002). Additionally, particles and associated contaminants from the discharge can accumulate in the sediment, potentially degrading sediment quality over time and impacting the benthic organisms that inhabit the vicinity of the ocean outfall discharge location. Benthic organisms are strongly affected by sediment contaminant exposure since they live in direct contact with the sediment-water interface and ingest sediment particles. Bioaccumulation of pollutants and toxins, including HAB-related toxins, can also impact fish, birds, and mammals that feed on benthic organisms (Scott 1989). The NOP does not include information related to receiving water, benthic, or biological monitoring at the ocean outfall location.



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### Recommendations:

- The Department recommends the Draft EIR analyze the spatial extent of potential nutrient dispersion from the discharge, including potential impacts to water quality within the Samoa State Marine Recreational Area and Humboldt Bay, located approximately 3 miles north and 3.5 miles south of the discharge location, respectively.
- Receiving Water Quality & Benthic Monitoring. The Department recommends the Draft EIR include monitoring at the ocean outfall to measure the effects of the Project's discharge on the receiving ocean water and benthic habitat. Receiving water and benthic monitoring in the vicinity of the ocean outfall should be designed to document conditions within the zone of initial dilution (ZID) boundary, at reference stations, and at areas beyond the ZID where discharge impacts might be reasonably expected. Water quality monitoring should be designed to assess whether the receiving water meets the California Ocean Plan water quality objectives, ensure the discharge is not contributing to HABs, and evaluate the contribution of the Project's discharge to pollution in the receiving water, including impacts from the use of chemicals and pharmaceuticals/antibiotics. The Department recommends water quality conditions, including temperature, depth, salinity, dissolved oxygen, light transmittance, chlorophyll- $\alpha$ , and pH are measured throughout the entire water column. Water quality monitoring should also measure nutrient related impacts to the phytoplankton community. The Department also recommends sediment samples are collected to assess the accumulation of contaminants, including HAB-related toxins, in the benthic environment. The Department recommends receiving water and benthic monitoring is conducted at least semi-annually to capture temporal fluctuations in ocean conditions and sediment characteristics (e.g., summer, winter). Baseline data on water quality, sediment, and algal species composition prior to discharging into the ocean outfall will be necessary to determine impacts from the Project to receiving waters, benthic habitat, and HABs.
- Biological Monitoring. To adequately assess impacts to marine resources, the Department recommends the Draft EIR include biological surveys that evaluate changes in fish and benthic invertebrate community structure in the vicinity of the ocean outfall discharge location. Baseline data collected prior to use of the ocean outfall, in addition to reference sites, will be necessary to determine if there are any impacts from the discharge. Recommended survey methods to characterize community structure include but are not limited to SCUBA surveys, remotely operated vehicles, or trawl surveys. Sediment sample collections should be used to analyze benthic infauna community structure, including species abundance and diversity. The Department also recommends tissue samples from benthic invertebrates in the vicinity of the outfall are collected to test for bioaccumulation of pollutants/contaminants. Biological monitoring should be conducted at-least semi-annually to capture temporal fluctuations in species composition (e.g., summer, winter).

Alyssa Suárez, Planner II  
Humboldt County Planning & Building Department  
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- The Department recommends that receiving water, benthic, and biological monitoring protocols are developed in consultation with the Department and other regulatory agencies. The Department also recommends the Draft EIR include a mitigation plan that will be immediately implemented should biological impacts associated with the Nordic facility's discharge occur. An annual monitoring report should be provided to the Department and other regulatory agencies that discloses the amount of wastewater discharged into the ocean, characteristics of the effluent, and results from the monitoring program.

### **Freshwater Source**

**Comments:** The Nordic facility proposes to source approximately 2.5 MGD of freshwater from the Mad River for their operations. The Department understands this freshwater will be sourced from the Humboldt Bay Municipal Water District (HBMWD). The Fish and Game Commission recently listed northern California summer steelhead as endangered pursuant to the CESA. The Draft EIR should include an analysis of potential Project-related impacts to listed salmonids and other freshwater species from the diversion of 2.5 MGD of freshwater out of the Mad River.

### **Recommendations:**

- The Department recommends the Draft EIR include an analysis of potential Project-related impacts to listed salmonids and other freshwater species from the diversion of 2.5 MGD of freshwater out of the Mad River.
- The Department further recommends the Draft EIR analyze the impacts from using more than 2.5 MGD of freshwater if Nordic anticipates potential changes in the amount of freshwater used for their operations.

### **Area of Potential Effects**

**Comments:** With the Project's addition of the bay water intakes and a fire suppression water line, the area of potential effects is now larger compared to the previously proposed Project. However, NOP Figure 2 (Proposed Site Layout) presents an area of potential effects that encompasses only the land-based aquaculture facility location. Additional biological resource impacts may potentially occur within the Project footprint as currently proposed.

### **Recommendations:**

- The Department recommends the Draft EIR analyze an area of potential effects that includes the land-based aquaculture facility as well as the bay water intakes, ocean outfall, fire suppression water line, and other proposed Project elements. The proposed fire suppression water line will cross aquatic habitat north of the

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Humboldt County Planning & Building Department  
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aquaculture facility. The proposed crossing may be subject to FGC §1602 and, as a result, a Lake and Streambed Alteration Notification to the Department may be appropriate.

### Project Alternatives

**Comments:** The NOP states that the Draft EIR will analyze the No Project Alternative, an offsite alternative, and will also identify the environmentally superior alternative.

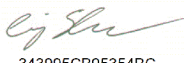
### Recommendations:

- As mentioned in the Department's MND comment letter, the Department strongly recommends that the Draft EIR identify whether environmental impacts can be reduced by farming other species. The analysis should include impacts associated with fish escaping from the facility, including the risk of competition, predation, and establishment, in addition to the introduction of pathogens to native species.
- If Nordic is considering using alternate water source scenarios, such as changes in the ratio of seawater to freshwater for their operations, an alternative analysis should be included in the Draft EIR.

### CONCLUSION

The Department appreciates the opportunity to comment on the Nordic Aquafarms California, LLC Land-based Aquaculture Project NOP to assist the County and Nordic in identifying and mitigating Project impacts on biological resources. Questions regarding this letter or further coordination should be directed to Corianna Flannery, Environmental Scientist at 707-499-0354 or [Corianna.Flannery@wildlife.ca.gov](mailto:Corianna.Flannery@wildlife.ca.gov).

Sincerely,

DocuSigned by:  
  
343995CB95354BC...

Craig Shuman, D. Env.  
Marine Regional Manager

Enclosures: CDFW Comment Letter. Draft Mitigated Negative Declaration for the Nordic Aquafarms California, LLC Land-based Aquaculture Project. May 24, 2021.

CDFW Fish Screening Criteria. June 19, 2020.

ec: Office of Planning and Research, State Clearinghouse  
[state.clearinghouse@opr.ca.gov](mailto:state.clearinghouse@opr.ca.gov)

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## REFERENCES

Anderson, D.M., Glibert, P.M. & Burkholder, J.M. 2002. Harmful algal blooms and eutrophication: Nutrient sources, composition, and consequences. *Estuaries* 25, 704–726 (2002). <https://doi.org/10.1007/BF02804901>.

Booth, A. 2015. State of the Bay Report. “Looking Ahead: Nutrients and Hypoxia”. *Urban Coast* 5(1):190-193. Available online: <http://urbancoast.org/>.

Eldridge, M. 1970. Larval fish survey of Humboldt Bay. M.S. Thesis. Humboldt State University, Arcata, California.

Eldridge, M., and F. Bryan. 1972. Larval fish survey of Humboldt Bay, California. National Oceanic Atmospheric Administration, Technical Report SSRF-665.

Garwood, R. S. 2017. Historic and contemporary distribution of Longfin Smelt (*Spirinchus thaleichthys*) along the California coast. *California Fish and Game Journal*, Vol 103, Num 3.

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Howard, M.D.A., R.M. Kudela, and K McLaughlin. 2017. New Insights into Impacts of Anthropogenic Nutrients on Urban Ecosystems on the Southern California Coastal Shelf:

Introduction and Synthesis. *Estuarine, Coastal and Shelf Science* v. 186 Part B:163-170.

<https://doi.org/10.1016/j.ecss.2016.06.028>.

Kessouri, F., McWilliams, J. C., Bianchi, D., Sutula, M., Renault, L., Deutsch, C., Feely, R. A., McLaughlin, K., Ho, M., Howard, E. M., Bednaršek, N., Damien, P., Molemaker, J., & Weisberg, S. B. 2021. Coastal eutrophication drives acidification, oxygen loss, and ecosystem change in a major oceanic upwelling system. *Proceedings of the National Academy of Sciences*, 118(21). <https://doi.org/10.1073/pnas.2018856118>.

Novotny, S., J. Staton, R. Reed, and E. Campbell. 2020b. Benthic fish and invertebrate trawl surveys of sub-tidal habitat reaches inside and outside of the federally maintained Humboldt Bay navigation channels – 2020. December 2020. Report prepared for the U.S. Army Corps of Engineers. 44 pages plus appendices.

Merkel & Associates. 2017. Humboldt Bay eelgrass comprehensive management plan. Prepared for Humboldt Bay Harbor, Recreation, and Conservation District, Eureka, California. Prepared by Merkel & Associates, Arcata, California. #14-102- 01.

NMFS. 2014. California Eelgrass Mitigation Policy, National Marine Fisheries Service, [https://archive.fisheries.noaa.gov/wcr/publications/habitat/california\\_eelgrass\\_mitigation/Final%20CEMP%20October%202014/cemp\\_oct\\_2014\\_final.pdf](https://archive.fisheries.noaa.gov/wcr/publications/habitat/california_eelgrass_mitigation/Final%20CEMP%20October%202014/cemp_oct_2014_final.pdf).

Scott, K.J., 1989. Effects of contaminated sediments on marine benthic biota and communities. *Contaminated Marine Sediments Assessment and Remediation*, pp.132-154.

Smith, J., D. Shultz, M.D.A. Howard, G. Robertson, V. Phonsiri, V. Renick, D.A. Caron, R. Kudela, and K. McLaughlin. 2021. Southern California Bight 2018 Regional Monitoring Program: Volume VIII. Harmful Algal Blooms. SCCWRP Technical Report 1170. Available at:

[https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1170\\_B18HABs.pdf](https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1170_B18HABs.pdf).

**EXHIBIT A**  
**DEPARTMENT OF FISH AND GAME**  
**FISH SCREENING CRITERIA**  
**June 19, 2000**

**1. STRUCTURE PLACEMENT**

**A. Streams And Rivers (flowing water):** The screen face shall be parallel to the flow and adjacent bankline (water's edge), with the screen face at or streamward of a line defined by the annual low-flow water's edge.

The upstream and downstream transitions to the screen structure shall be designed and constructed to match the bankline, minimizing eddies upstream of, in front of, and downstream of, the screen.

Where feasible, this "on-stream" fish screen structure placement is preferred by the California Department of Fish and Game.

**B. In Canals (flowing water):** The screen structure shall be located as close to the river source as practical, in an effort to minimize the approach channel length and the fish return bypass length. This "in canal" fish screen location shall only be used where an "on-stream" screen design is not feasible. This situation is most common at existing diversion dams with headgate structures.

The National Marine Fisheries Service - Southwest Region "Fish Screening Criteria for Anadromous Salmonids, January 1997" shall be used for these types of installations.

**C. Small Pumped Diversions:** Small pumped diversions (less than 40 cubic-feet per second) which are screened using "manufactured, self-contained" screens shall conform to the National Marine Fisheries Service - Southwest Region "Fish Screening Criteria for Anadromous Salmonids, January 1997."

**D. Non-Flowing Waters (tidal areas, lakes and reservoirs):** The preferred location for the diversion intake structure shall be offshore, in deep water, to minimize fish contact with the diversion. Other configurations will be considered as exceptions to the screening criteria as described in Section 5.F. below.

**2. APPROACH VELOCITY (Local velocity component perpendicular to the screen face)**

**A. Flow Uniformity:** The design of the screen shall distribute the approach velocity uniformly across the face of the screen. Provisions shall be made in the design of the screen to allow for adjustment of flow patterns. The intent is to ensure uniform flow distribution through the entire face of the screen as it is constructed and operated.

**B. Self-Cleaning Screens:<sup>1</sup>**

The U.S. Fish and Wildlife Service has selected a 0.2 feet per second approach velocity for use in waters where the Delta smelt is found. Thus, fish screens in the Sacramento-San Joaquin Delta and San Francisco Estuary should use this criterion for design purposes. In addition:

1. Streams and Rivers (flowing waters) - exposure to the fish screen shall not exceed fifteen minutes.

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<sup>1</sup> Approach velocities in the June 19, 2000 Fish Screening Criteria that are inapplicable if delta smelt are present are omitted.

**EXHIBIT A**  
**DEPARTMENT OF FISH AND GAME**  
**FISH SCREENING CRITERIA**

**June 19, 2000**

2. In Canals (flowing waters) - a bypass entrance shall be located every one-minute of travel time along the screen face.

3. Non-Flowing Waters (tidal areas, lakes and reservoirs) - The specific screen approach velocity shall be determined for each installation, based on the delta smelt life stage being protected. Velocities which exceed those described above will require a variance to these criteria (see Section 5.F. below).

**C. Screens Which Are Not Self-Cleaning:** The screens shall be designed with an approach velocity one-fourth that outlined in Section B. above. The screen shall be cleaned before the approach velocity exceeds the criteria described in Section B.

**D. Frequency Of Cleaning:** Fish screens shall be cleaned as frequently as necessary to prevent flow impedance and violation of the approach velocity criteria. A cleaning cycle once every 5 minutes is deemed to meet this standard.

**E. Screen Area Calculation:** The required wetted screen area (square feet), excluding the area affected by structural components (i.e., pore space or open area), is calculated by dividing the maximum diverted flow (cubic-feet per second) by the allowable approach velocity (feet per second). Example:

**1.0 cubic-feet per second / 0.2 feet per second = 5.0 square feet of pore space**

Unless otherwise specifically agreed to, this calculation shall be done at the minimum stream stage.

**3. SWEEPING VELOCITY (Velocity component parallel to screen face)**

**A. In Streams And Rivers:** The sweeping velocity should be at least two times the allowable approach velocity.

**B. In Canals:** The sweeping velocity shall exceed the allowable approach velocity. Experience has shown that sweeping velocities of 2.0 feet per second (or greater) are preferable.

**C. Design Considerations:** Screen faces shall be designed flush with any adjacent screen bay piers or walls, to allow an unimpeded flow of water parallel to the screen face.

**4. SCREEN OPENINGS**

**A. Porosity:** The screen surface shall have a minimum open area of 27 percent. We recommend the maximum possible open area consistent with the availability of appropriate material, and structural design considerations.

The use of open areas less than 40 percent shall include consideration of increasing the screen surface area, to reduce slot velocities, assisting in both fish protection and screen cleaning.

**B. Round Openings:** Round openings in the screening shall not exceed 3.96mm (5/32in). In waters where steelhead rainbow trout fry are present, this dimension shall not exceed 2.38mm (3/32in).

**C. Square Openings:** Square openings in screening shall not exceed 3.96mm (5/32in) measured diagonally. In waters where steelhead rainbow trout fry are present, this dimension shall not exceed 2.38mm (3/32in) measured diagonally.

**D. Slotted Openings:** Slotted openings shall not exceed 2.38mm (3/32in) in width. In waters where steelhead rainbow trout fry are present, this dimension shall not exceed 1.75mm (0.0689in).



**EXHIBIT A**  
**DEPARTMENT OF FISH AND GAME**  
**FISH SCREENING CRITERIA**

**June 19, 2000**

**5. SCREEN CONSTRUCTION**

**A. Material Selection:** Screens may be constructed of any rigid material, perforated, woven, or slotted that provides water passage while physically excluding fish. The largest possible screen open area which is consistent with other project requirements should be used. Reducing the screen slot velocity is desirable both to protect fish and to ease cleaning requirements. Care should be taken to avoid the use of materials with sharp edges or projections which could harm fish.

**B. Corrosion and Fouling Protection:** Stainless steel or other corrosion-resistant material is the screen material recommended to reduce clogging due to corrosion. The use of both active and passive corrosion protection systems should be considered. Consideration should be given to anti-fouling material choices, to reduce biological fouling problems. Care should be taken not to use materials deemed deleterious to fish and other wildlife.

**C. Project Review and Approval:** Plans and design calculations, which show that all the applicable screening criteria have been met, shall be provided to the Department before written approval can be granted by the Regional Manager, Bay Delta Region.

The approval shall be documented in writing to the project sponsor, with a copy to the Deputy Director, Resource Management and Policy Division. Such approval may include a requirement for post-construction evaluation, monitoring and reporting.

**D. Assurances:** All fish screens constructed after the effective date of these criteria shall be designed and constructed to satisfy the current criteria. Owners of existing screens, approved by the Department prior to the effective date of these criteria, shall not be required to upgrade their facilities to satisfy the current criteria unless:

1. The controlling screen components deteriorate and require replacement (i.e., change the opening size or opening orientation when the screen panels or rotary drum screen coverings need replacing),
2. Relocation, modification or reconstruction (i.e., a change of screen alignment or an increase in the intake size to satisfy diversion requirements) of the intake facilities, or
3. The owner proposes to increase the rate of diversion which would result in violation of the criteria without additional modifications.

**E. Supplemental Criteria:** Supplemental criteria may be issued by the Department for a project, to accommodate new fish screening technology or to address species-specific or site-specific circumstances.

**F. Variances:** Written variances to these criteria may be granted with the approval of the Regional Manager, Bay Delta Region and concurrence from the Deputy Director, Resource Management and Policy Division. At a minimum, the rationale for the variance must be described and justified in the request. Evaluation and monitoring may be required as a condition of any variance, to ensure that the requested variance does not result in a reduced level of protection for the aquatic resources.

**EXHIBIT A**  
**DEPARTMENT OF FISH AND GAME**  
**FISH SCREENING CRITERIA**

**June 19, 2000**

It is the responsibility of the project sponsor to obtain the most current version of the appropriate fish screen criteria. Project sponsors should contact the Department of Fish and Game and the U.S. Fish and Wildlife Service (for projects in anadromous and fresh waters) for guidance.

Copies of the current criteria are available from the Department of Fish and Game Bay Delta Region; 7329 Silverado Trail/P.O. Box 46, Yountville, CA 94599, (707) 944-5500.

Technical assistance can be obtained directly from the Habitat Conservation Branch; 1416 Ninth Street, Sacramento, CA 95814 - (916) 653-1070.

The National Marine Fisheries Service Southwest Region "Fish Screening Criteria for Anadromous Salmonids, January 1997" is available at: <http://swr.ucsd.edu/hcd/fishscrn.htm> and from their Southwest Region, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95402 - (707) 575-6050.

6 July 2021

Alyssa Suárez, Planner II Humboldt County Planning & Building Department  
3015 H Street  
Eureka, CA 95501

Re: DEIR scoping for Nordic Aquafarms California, LLC Land-based Aquaculture Project

Dear Ms. Suárez:

As an environmental scientist based on the North Coast (Humboldt County), I am writing to facilitate access to data that may improve analyses included in the Environmental Impact Report for Nordic Aquafarms' proposed facility. *This comment is neither in favor nor in opposition to the project*, but is intended help Nordic and their consultants access oceanographic data that will allow more thorough analysis of environmental impacts, particularly those related to ocean water quality.

In particular, the following sources of current data from this region may be useful for comparing with output from the three-dimensional hydrodynamic model used to project effluent plume transport and dilution:

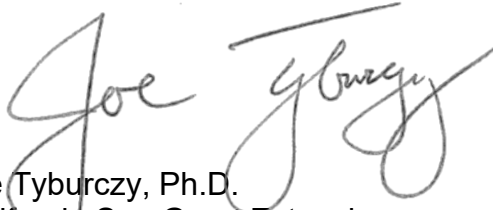
- 1) The STRATAFORM study (1996) collected current velocities ~1.4 mab at 60m and 70m depth off the Eel River. Citation:  
Wright, L. D., Kim, S.-C., & Friedrichs, C. T. (1999). Across-shelf variations in bed roughness, bed stress and sediment suspension on the northern California shelf. *Marine Geology*, 154(1), 99–115.  
[https://doi.org/10.1016/S0025-3227\(98\)00106-6](https://doi.org/10.1016/S0025-3227(98)00106-6)
- 2) The STRESS study (1990-91) deployed VACMs at 10mab in 120m, 90m, and 50m of water off the Eel River. Citation:  
C.R. Sherwood, B. Butman, D.A. Cacchione, D.E. Drake, T.F. Gross, R.W. Sternberg, P.L. Wiberg, A.J. Williams. 1994. Sediment-transport events on the northern California continental shelf during the 1990–1991 STRESS experiment. *Cont. Shelf Res.*, 14, pp. 1063-1099  
[https://doi.org/10.1016/0278-4343\(94\)90029-9](https://doi.org/10.1016/0278-4343(94)90029-9)
- 3) The Central and Northern Ocean Observing System (CeNCOOS) has collected data on offshore surface currents via high-frequency radar since 2007 (<https://hfrnet.ucsd.edu/diagnostics/?p=sta&t=0&sta=TRIN>).

As a scientist with California Sea Grant, my strategic goals include: 1) resilient coastal communities and economies, 2) sustainable fisheries and aquaculture, 3) healthy coastal ecosystems. I reiterate that *this comment is neither in support nor opposition to*

*Nordic's proposed facility*, but is intended to help ensure that the analysis of potential ecological impacts makes use of the best available science – so that they are understood with as much confidence and as little uncertainty as possible.

Thank you for taking the time to consider my comments.

Respectfully,



Joe Tyburczy, Ph.D.  
California Sea Grant Extension  
Adjunct, Humboldt State University  
Department of Fisheries Biology & Department of Biological Sciences



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*Sent via email*

July 6, 2021

Re: Nordic AquaFarms Notice of Preparation of Draft Environmental Impact Report

Dear Planning Director Ford,

On behalf of Humboldt Baykeeper, EPIC, Surfrider Foundation, and Northcoast Environmental Center, please accept this letter concerning the Nordic AquaFarms Notice of Preparation of Draft Environmental Impact Report.

To avoid needless repetition of comments already submitted, we hereby incorporate by reference our May 24, 2021 comments on Humboldt County's Initial Study/Mitigated Negative Declaration (IS/MND) for the Project, as well as those submitted by the Wiyot Tribe, California Department of Fish and Wildlife, California Coastal Commission, and others which raised concerns that we share (but will not repeat here) related to impacts on wild fish populations from pathogens, fish escape, and feed sources, recreational and coastal access, energy consumption, and other issues that were not thoroughly analyzed in the IS/MND. We expect that these inadequacies will be thoroughly assessed and addressed in the DEIR, with strategies to avoid, minimize, or mitigate the impacts to the fullest extent.

### **I. Bay intakes**

Since two intakes in Humboldt Bay would be an integral component of the project providing up to 10 MGD, the impacts of proposed use of these intakes should be analyzed and either avoided or fully mitigated in the DEIR. Such analysis must consider impacts on all life stages of protected species, forage species, and plankton that would be affected by the intakes. In addition, the DEIR should assess the potential for drawing seawater from subsurface ocean intakes on the west side of the Samoa Peninsula rather than the bay intakes to determine the best available technology to minimize the intake and mortality of all forms of marine life as required by California Water Code Section 13142.5(b).

### **II. Impacts to the Marine Environment from the Ocean Discharge**

The potential impacts to the marine environment are of concern for a wide variety of reasons, including impacts to native salmonids and other fish species; marine mammals and the seabirds that depend on them; commercial, recreational, and tribal fisheries; and the potential to exacerbate harmful algal blooms that have plagued the region in recent years.

**II.a. Additional Modeling:** To ensure that such impacts are fully analyzed and thoroughly understood, additional modeling should be conducted using the best available scientific information.

Existing nutrient data from closer to the discharge point than was used in the Numeric Modeling Study for the proposed project<sup>1</sup> should be obtained and used to further examine potential impacts of nutrients expected to be discharged in the project's effluent. According to the Central and Northern California Ocean Observation System's webpage<sup>2</sup> on Humboldt Bay, HSU and NOAA's Southwest Fisheries Science Center have collaborated since 2006 to conduct monthly hydrographic and biological surveys along the Trinidad Head Line (THL). These surveys provide the only year-round, high-frequency ship-based ocean observations in the highly dynamic, strongly forced transitional zone between Cape Blanco and Cape Mendocino. As part of a collaborative study of ocean acidification funded by the Ocean Protection Council, Dr. Jeffrey Abell (HSU) conducted additional sampling to quantify carbonate chemical parameters and oxygen concentrations along the THL, successfully documenting seasonal and interannual variability in pH, dissolved oxygen (DO), and other carbonate-system parameters along the THL. According to Dr. Abell's webpage,<sup>3</sup> one of his current research projects is Pacific Coast Ocean Observing System: *Monitoring nutrient concentration in coastal water along the Northern California shelf*.

These data are critical for assessing the potential impacts of nutrients discharged into the nearshore marine environment. Since they collect these data monthly, they may be willing and able (with funding) to add a sample site or two closer to the discharge point to begin collecting data on the baseline conditions as suggested by NMFS, as well as conducting ongoing monitoring that Nordic has agreed to do to ensure early detection of impacts.

#### **II.b. Baseline and Ongoing Monitoring Near the Outfall**

Collecting data on current (baseline) conditions near the discharge point is critical and should include levels of phytoplankton in various seasons. Ongoing monitoring should include early detection of toxic algae such as *Alexandrium*, the dinoflagellate that produces PSP toxins, and *Pseudo-nitzschia*, the diatom that produces domoic acid, which caused devastating impacts to the marine ecosystem in 2014-15, including the Dungeness crab fishery, marine mammals, and seabirds from Alaska to Southern California.

The California Harmful Algal Risk Mapping (C-HARM)<sup>4</sup> monitors ocean waters across the state for early detection of toxic algae; it may be a source of baseline conditions in

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<sup>1</sup> Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report, Rev. 1. Feb. 2021. Humboldt County Initial Study/Mitigated Negative Declaration, Appendix E. Accessed at <https://humboldt.gov/DocumentCenter/View/95070/Appendix-E---Numeric-Modelling-Report-Dilution-Study-PDF>

<sup>2</sup> Central and Northern California Ocean Observation System: Humboldt Bay. <https://www.cencoos.org/data-by-location/humboldt-bay/>

<sup>3</sup> Dr. Jeff Abell. Professor of Oceanography, Humboldt State University. Arcata, CA. <https://oceanography.humboldt.edu/people/jeffrey-abell>

<sup>4</sup> Anderson, C. R. et al. 2016. *Initial skill assessment of the California Harmful Algae Risk Mapping (C-HARM) system*. Harmful Algae 59: 1-16. Accessed at <https://www.sciencedirect.com/science/article/abs/pii/S1568988315301037>

the local nearshore environment and can provide information on the types monitoring that should be conducted to ensure early detection of toxic algae. Monitoring alone will not mitigate the impacts of a toxic algae bloom, but can help identify the problem before its impacts become widespread.

#### II.c. Adaptive Management Plan

An adaptive management plan should be adopted that sets thresholds that would trigger action to avert a toxic algae bloom once it is detected. The adoption of appropriate thresholds and implementation plan for adaptive management should include experts in detecting and managing Harmful Algal Blooms, as well as scientific experts from trustee agencies focused on protecting marine resources, including the California Coastal Commission, California Dept. of Fish & Wildlife's Marine Region, and National Marine Fisheries Service.

We suggest that the following language be adopted to implement the Science Advisory Panel:

Impacts to the ocean environment from nutrient pollution are anticipated to be below a level of significance based on modeling performed by the project proponent. If actual pollution released is above anticipated or permitted amounts or if the pollution may be a causal factor in a significant algal bloom, a Science Advisory Panel will meet to discuss the discharge and whether additional measures should be implemented to avoid significant impacts.

The Science Advisory Panel shall consist of four voting members and one non-voting member: (1) CDFW scientist with expertise in ocean ecosystems; (2) NOAA scientist with expertise in ocean ecosystems; (3) Coastal Commission scientist with expertise in ocean ecosystems; and 4) an employee of the Humboldt County Planning Department or a designated representative of the Planning Department. Nordic Aquafarms shall send a representative to the Science Advisory Panel, although this person may not vote. The Panel should strive to produce consensus decisions, although any recommendation made by a majority of its members shall be considered a binding condition on the project.

The Panel must be convened if actual discharges exceed permitted discharges or in the event of a significant algal bloom, as determined by at least one member of the Panel.

### **III. Hazardous Waste Removal and Disposal**

The DEIR should include more detail on demolition, removal, and disposal of hazardous materials than was included in the IS/MND. The structures slated for demolition include the former pulp mill smokestack, boiler buildings, five brick silos, and others. These are large structures containing a variety of contaminants that should be described in detail, along with procedures for avoiding, minimizing, or mitigating impacts to air and water quality during demolition, removal, and disposal.

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#### **IV. Contaminated Soil and Construction of New Stormwater System**

The Project's stormwater design includes a series of four bioretention and infiltration ponds combined with Low Impact Development (LID) facilities to manage stormwater generated on the Project Site. The DEIR should describe how the proposed LID facilities will avoid areas of soil and/or groundwater contamination that will remain on the Project site, thereby avoiding impacts to groundwater. Bioretention and infiltration ponds located in contaminated soil could have significant impacts to groundwater, even if the levels of contamination are below those considered acceptable for protecting human health on industrial sites.

#### **V. Consultation re: Potential Impacts to Marine Mammals**

The IS/MND proposed mitigation measures to avoid impacts to marine mammals from noise and vibration. It is not clear whether these mitigation measures were developed in consultation with National Marine Fisheries Service, which is the trustee agency responsible for protecting marine mammals. The DEIR should incorporate NMFS recommendations on avoiding, minimizing, or mitigating impacts to marine mammals.

**VI. Cumulative impacts assessment** should consider past, present, and reasonably foreseeable future projects, including the Humboldt Bay Renewable Energy Port Project, which is in the early planning stages on various parcels adjacent to the proposed Nordic AquaFarms project.

#### **VIII. Alternatives**

A range of alternatives should be considered and analyzed to evaluate potential options for minimizing impacts to the environment while achieving the Project's objectives. Such alternatives should include a Reduced Project Alternative: this would allow for many of the Project's uncertainties to be addressed in a future DEIR, including a dye test to track dispersal of the effluent in different seasons.

In closing, we appreciate your willingness to discuss this project and our concerns and we look forward to further conversation. Likewise, we have appreciated the open communication we have enjoyed with the project proponent. If you would like to discuss anything contained within this letter, please write to our organizations at the addresses below.

Sincerely,

Jennifer Kalt, Humboldt Baykeeper  
[jkalt@humboldtbaykeeper.org](mailto:jkalt@humboldtbaykeeper.org)

Jennifer Savage & Delia Bense-Kang, Surfrider Foundation  
[jsavage@surfrider.org](mailto:jsavage@surfrider.org)  
[dbense-kang@surfrider.org](mailto:dbense-kang@surfrider.org)

Larry Glass, Northcoast Environmental Center  
[larryglass71@gmail.com](mailto:larryglass71@gmail.com)

Tom Wheeler, EPIC  
[tom@wildcalifornia.org](mailto:tom@wildcalifornia.org)





County of Humboldt  
Humboldt County Planning Department  
3015 H Street  
Eureka, CA 95501  
jford@co.humboldt.ca.us

Sent via email to Alyssa Suárez, Planner II.

July 6, 2021

Re: Nordic Aquaculture Project Notice of Preparation of Draft Environmental Impact Report

Dear Director Ford,

We have several additional comments including alternatives we propose concerning issues we previously raised. We also believe vulnerability to sea-level rise was not adequately addressed in the IS/MND; nor was cumulative impact, emissions from solid wastes, or compliance with CARB and EPA refrigerants regulations.

Thank you very much for the opportunity to comment further. We also very much appreciate Nordic moving toward an EIR and their on-going transparency.

Our comments are below.

Sincerely,

A handwritten signature in black ink that reads 'Daniel Chandler'.

Daniel Chandler, Ph.D.  
Steering Committee and Chair, Legislative Committee  
350Humboldt@gmail.com



## ***VULNERABILITY TO SEA-LEVEL RISE***

In doing research on the possible vulnerability to climate-induced sea-level rise at the Nordic site, we have been impressed that there are multiple agencies involved in sea-level rise planning and risk assessment, that these agencies have issued relevant reports going back at least ten years, and that the science is highly complex. We have attempted to present some of the issues we believe the EIR should consider in assessing vulnerability, but we request that this section of the EIR be developed by specialists who are intimately familiar with the range of research, the models available, and the most up to date data. *Because of plans to use the Samoa Peninsula for other projects – including the development of offshore wind – it is especially important that the Planning Department obtain the best science possible in the sea-level rise sections of the EIR.*

The EIR must consider several factors related to sea-level rise: what is the presumed time frame for the project in relationship to guidance from the California Coastal Commission; what are the factors that must be predicted to estimate the likelihood that the facility itself, transportation arteries, and electrical, gas and water infrastructure will be inundated, and at what frequency in what time frame; what degree of risk should be tolerated in these predictions? The IS/MND used an estimate of 4.1 feet sea-level rise, but the table this figure is drawn from shows a range of from 3.0 to 17.4 feet (see footnote 4). The EIR must spell out the assumptions being made and provide the evidence needed to assess their probability of being true.

1. In 2012, the California Coastal Commission (CCC) issued Coastal Development Permits for a residence at 1397 Buhne Drive in King Salmon, facing the bay. They required the applicants to determine what would be the 100-year Base Flood Elevation. The CCC set the design life of this structure at 100 years and required that the livable floor area be above the 100-year water level with projected sea-level rise.<sup>1</sup> In 2017 these conditions were generalized.<sup>2</sup> In 2019 the CCC said, in permitting another Bay residence, “The

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<sup>1</sup> CCC staff report. <https://documents.coastal.ca.gov/reports/2012/6/F9b-6-2012.pdf> “Between 2050 and 2100, when sea-levels approach 18 to 69 inches above the present, the effects of sea-level rise alone (flooding and inundation) and the combined effects of sea-level rise and large waves (e.g., damage to coastal structures, cliff erosion, beach loss) are projected to have much greater impacts. As the design life of the proposed new structure is presumed to be 75-100 years, a minimum 55-inch rise in sea-level (state-adopted projection for the year 2100) is assumed over the life of the project. Since the finished floor elevation of the proposed structure (transient habitation unit) will be at approximately 7 feet, or approximately three feet below the projected minimum sea-level elevation in 2100, the siting and design of the proposed structure at one foot above BFE will not fully account for sea-level rise projected during the proposed residence’s economic life.”

<sup>2</sup> Humboldt County, Humboldt Bay Area Plan, Communities at Risk Sea-level Rise Vulnerability Assessment November 2018 Revised November 20, 2019. <https://humboldt.gov/DocumentCenter/View/81418/Humboldt-Bay-Area-Plan-Communities-at-Risk-SLR-Vulnerability-Assessment-12-02-2019-?bidId=>



habitable portions of the addition on the second story will be at a finished floor elevation of 18.5 feet above sea-level, which is above the estimated maximum flood elevation during the life of the structure taking into account wave uprush and sea-level rise.”<sup>3</sup> This document also references the Ocean Protection Council’s State of California Sea-Level Rise Guidance 2018 Update, which should be used in assessing the risks of sea-level rise to the Nordic site and to roads and infrastructure entering and exiting the site.<sup>4</sup> *We believe the EIR should assume the 100 year design-life of the aquaculture facility in relationship to the 100-year Base Flood Elevation and to varying scenarios of climate change.*

2. It is our understanding that the CCC has jurisdiction along the shoreline at the pulp mill site and that the remainder of the site is in the CCC appeal zone. *Therefore the EIR must request the California Coastal Commission and the Ocean Protection Council provide vulnerability assessments and project alternatives using their existing framework for assessing sea-level rise hazards.*<sup>5</sup>

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“In July 2017, Coastal Commission staff released the Draft Residential Adaptation Policy Guidance, Interpretive Guidelines for Addressing Sea-level Rise in Local Coastal Programs. The Guidelines recommend several actions to address the vulnerability of residential development in hazard areas: use the best available science, disclose risks to property owners, avoid hazards through siting and design, and regulate redevelopment. The design life of most new residential structures is 100 years. One hundred years is a recommended planning horizon to determine the range of water levels that these structures may be exposed to.... Unfortunately, this type of accommodation to sea-level rise impacts alone does not address the vulnerability of utilities and streets providing critical services (water, sewer, energy, and communications) and access to residential developments in a community at risk from sea-level rise.”

<sup>3</sup> CCC report Th9a, July 15, 2019.

<sup>4</sup> [https://www.opc.ca.gov/webmaster/ftp/pdf/agenda\\_items/20180314/Item3\\_Exhibit-A\\_OPC\\_SLR\\_Guidance-rd3.pdf](https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf) “This Guidance summarizes the best available sea-level rise science, which includes probabilistic projections, an extreme scenario, and a recognition that these projections may change in the future. Although sea-level projections may change in the future, when used as part of the risk management process outlined in this Guidance, they provide vital information for adaptation actions and hazard mitigation undertaken today. Decisions about which sea-level rise projections to select - and the necessary adaptation pathways and contingency plans to ensure resilience - will be based on factors including location, lifespan of the given project or asset, sea-level rise exposure and associated impacts, adaptive capacity, and risk tolerance/aversion.... Comparatively, after 2050, sea-level rise projections increasingly depend on the pathway of future greenhouse gas emissions. Therefore, this Guidance only includes sea-level rise projections based on a high scenario of greenhouse gas emissions (RCP 8.5; “high emissions”) through 2050, and includes projections for both the RCP 2.6 “low-emissions” scenario as well as the RCP 8.5, “high-emissions” scenario after 2050 through 2150. The Guidance also includes an extreme sea-level rise scenario, the H++ scenario, which is not tied to a specific emissions trajectory but should be considered for projects with a lifespan beyond 2050 that have a low tolerance for risk, such as large power plants, major airports and roads, wastewater treatment plants, and hazardous waste and toxic storage sites.” Projections for the North Spit in 2100 (the 100 year planning parameter), depending on climate change assumptions and risk tolerance, range from 3.0 to 17.4 feet. See chart on page 48 of the report.

<sup>5</sup> Ibid. “The State of California has undertaken significant research to understand how much sea-level rise to expect over this century and to anticipate the likely impacts of such sea-level rise. In April 2017, a working group of the Ocean Protection Council’s (OPC) Science Advisory Team released *Rising Seas in California: An Update on Sea-*



3. We understand that Friends of the Dunes and the California Department of Fish and Wildlife are currently assessing the vulnerability to sea-level rise in the area in which the Nordic facility would be situated. *We expect their findings, or interim findings, would be considered in the EIR.*
4. However, it is possible that – given the many variables to be predicted – an accurate assessment of vulnerability risks will only be possible using the US Geological Survey’s Coastal Storm Modeling System (CoSMoS).<sup>6</sup> We emailed the CoSMoS chief (Dr. Patrick Barnard, **Email:** [pbarnard@usgs.gov](mailto:pbarnard@usgs.gov) **Phone:** 831-460-7556) to ask when CoSMoS would be available to be used in modeling sea-level rise for Humboldt Bay. On June 29<sup>th</sup> 2021 he replied:

CoSMoS will cover all of the North Coast, including Humboldt Bay as a key focus area with enhanced grid resolution to support local decision making. The results for Humboldt will be available next spring, but as we further develop the model in the coming months, if there are specific applications such as you describe [Nordic and wind farm] we can ensure there is enough detail for your needs [i.e., model cumulative impacts]. Further, CoSMoS has been used extensively by the Coastal

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Level Rise Science. This report synthesizes recent evolving research on sea-level rise science, notably including a discussion of probabilistic sea-level rise projections as well as the potential for rapid ice loss leading to extreme sea-level rise. This science synthesis was integrated into the OPC State of California Sea-Level Rise Guidance 2018 Update. This Guidance document provides high-level, statewide recommendations for state agencies and other stakeholders to follow when analyzing sea-level rise. Notably, it provides a set of projections that OPC recommends using when assessing potential sea-level rise vulnerabilities for various projects. Taken together, the Rising Seas science report and updated State Guidance account for the current best available science on sea-level rise for the State of California, and these projections accordingly have been incorporated into the Coastal Commission’s Sea-level Rise Policy Guidance (2018 Science Update).”

<sup>6</sup> CoSMoS is a highly sophisticated modeling tool that permits climate change, tectonic activity, mountain building, and subsidence in predicting vulnerabilities to sea-level rise. Reports on other parts of the California coast are available at: [https://www.usgs.gov/centers/pcmssc/science/coastal-storm-modeling-system-cosmos?qt-science\\_center\\_objects=8#qt-science\\_center\\_objects](https://www.usgs.gov/centers/pcmssc/science/coastal-storm-modeling-system-cosmos?qt-science_center_objects=8#qt-science_center_objects) “While most vulnerability analyses only look at flooding directly caused by sea-level rise, this is the first study to examine a combination of the effects related to a changing climate on the California coast. The study modeled the impacts for a wide range of scenarios with sea-level rise increments from 0m to 2.0m as well as an extreme 5.0 m sea-level rise case. Those SLR values were then combined with 4 different storm scenarios (average daily conditions, annual storm, 20-year storm, 100-year storm)... The research is being used to help coastal managers prioritize planning and mitigation efforts. These include the National Park Service, Department of Defense, NOAA, Caltrans, California Department of Emergency Services and every major city and county in California.” “CoSMoS is unique because it accounts for dynamic processes that increase water levels, including breaking waves, river discharge, storm surge, seasonal variability, tides, and changes in sea-level.”



Commission, as well as other agencies like the CA Energy Commission to evaluate permit applications. However, it has not been used for engineering design, at least that I am aware of. That is, the model will produce flooding, wave heights, currents, etc. that could support engineering efforts but site design would require specialized support/expertise that USGS does not have.

*The EIR should use CoSMoS modeling to address the vulnerability and risk of the Nordic facility, transportation to it, and infrastructure. CoSMoS modeling will also be important for the cumulative impact assessment.*

### ***REQUEST FOR ADDITIONAL INFORMATION ON GREENHOUSE GAS EMISSIONS FROM ENERGY USE***

We endorse the following points made by Alison Willy of Riparian Solutions and the California Department of Fish and Wildlife in letters regarding the IS/MND:

- a) The total amount of energy to be used has not been clearly delineated. Use of the PG&E natural gas pipeline is not outlined in the project description.
- b) When compared to the smaller Nordic Maine facility, it appears the total megawatts used will be much higher than the 21 megawatts in the project description, perhaps up to 36.7 megawatts.
- c) This amount of electricity use would have significant impacts on Humboldt County's overall capacity. And it would threaten PG&E's capacity to meet its 2030 and 2045 renewable energy targets.
- d) Nordic has not committed to carbon neutrality.

We would add that they have not committed to using the renewable energy available from RCEA or, when available, from the offshore wind farm. As Willy noted, and we did previously, the solar is likely to be only 3% of total energy use.

In addition to these points, transport of "sludge" to Marysville or wherever it ends up going could produce large amounts of greenhouse gas emissions. If the sludge is used to make compost it might actually *sequester* carbon, if not it would produce large amounts of methane. These figures should be nailed down in the EIR along with alternatives. For example, if the sludge were composted that might be done in Humboldt County rather than having to transport it. Feasible designs for large scale composting using sawmill waste were developed last September by advanced engineering students at Schatz and were presented to the RCEA Community Advisory Committee. The fish sludge could fit into these designs very well.

**Energy alternatives considered in the EIR** should be *"no project," scaling the project down, delaying until the wind farm renewable energy is available, and greatly increasing solar and*



storage.<sup>7</sup> Alternative disposal sites and methods of disposal for the sludge should be included in the EIR so as to minimize emissions from transportation and decomposition.

#### **ADDITIONAL INFORMATION ON REFRIGERANTS:**

**Applicable regulations:** In December 2020 new rules were approved by CARB that require new stationary refrigeration installations to use refrigerants with a GWP of 150 or less.<sup>8</sup> In a phone conversation between 350 Humboldt's Daniel Chandler Aanchal Kohli, Ph.D. (916-323-1510) of the CARB research staff, Dr. Kohli stated that the aquaculture factory fits the criteria for low GWP refrigerant use. More specifically, she said the regulation is applicable would apply if the permit was granted after December 31, 2021 when the regulations go into effect. *However, we believe the permit should specify adherence to this regulation regardless of when it is issued because it will apply during the entire operational life of the facility.*

#### **Cooling alternatives to be considered in the EIR:**

- Alternatives to high global warming potential refrigerants/or other gases
- Alternatives using ocean or freshwater cooling rather than refrigeration

The refrigerant sector is going to be subject to increasing regulation during the life of the project. Both state and federal regulation will progressively limit the global warming potential of refrigerants used. To the extent these progressive restrictions can be anticipated (and they are already spelled out in detail over a 15 year period), the project should not be approved for use of refrigerants that will violate any of the regulations that already specify standards applicable through the life of the project. This is not only a matter of conforming to the intent and rules of CEQA but of efficiency for Nordic. It does not make economic sense to install refrigeration equipment that will be outside either state or federal regulations during the course of the project as it would require later remodeling with new equipment.

#### **CUMULATIVE IMPACT**

BOEM is now planning an auction for offshore wind permits for 1.6 gigabytes of electrical generation off of the Humboldt Coast. The offshore wind farm is anticipated to be in operation between 2026 and 2029. Plans are well-advanced for a Harbor District project which would replace the existing Redwood Marine Terminal 1 with a 7 acre dock adjacent to the Nordic factory. The dock will be used for assembling and transporting the wind turbines. \$11 million is

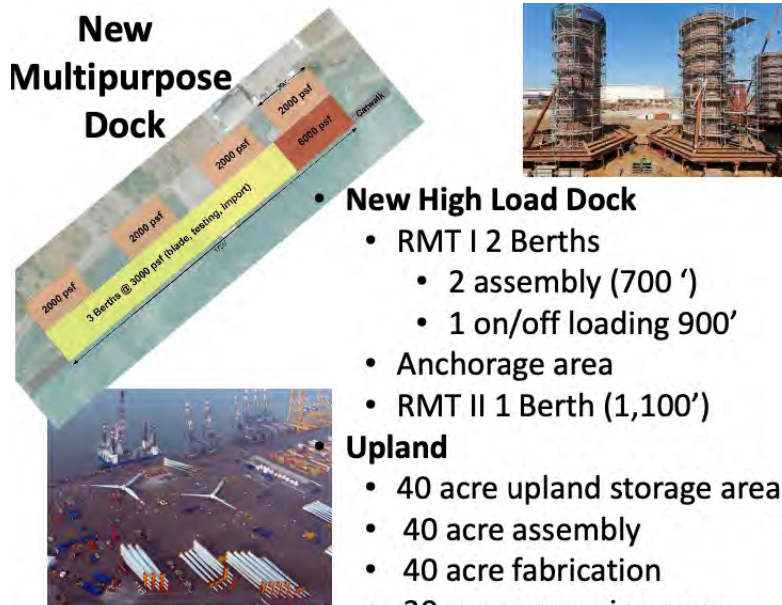
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<sup>7</sup> Solar might be constructed off site where the sun shines more often with the energy from the solar going into the RCEA system and offsetting use at the fish farm site. Right now solar is the cheapest form of energy and in California it is far cheaper, and less destructive of the climate, than natural gas.

<sup>8</sup> <https://ww3.arb.ca.gov/board/mt/2020/mt121020.pdf>



in the Governor’s budget to allow the Port of Humboldt to apply for federal funding for upgrades that will enable it to support offshore wind deployment. The EIR must include this project in a cumulative impacts analysis. Here is a graphic from a slide presentation by the Harbor Commission showing elements of the project:



**New Multipurpose Dock**

- **New High Load Dock**
  - RMT I 2 Berths
    - 2 assembly (700 ‘)
    - 1 on/off loading 900’
  - Anchorage area
  - RMT II 1 Berth (1,100’)
- **Upland**
  - 40 acre upland storage area
  - 40 acre assembly
  - 40 acre fabrication
  - 30 acre expansion area

**Humboldt Bay  
Wind Energy Port Facilities**

- Steel Fabrication
- Concrete anchors, platforms & other components
- Cable array pre-assembly
- Operation and Maintenance
- Base Port for platform blade, turbine, and other large repairs

According to the Harbor Commission CEO, there are several other developments, besides the offshore wind infrastructure, near the Nordic site. These should be assessed to determine whether they must be included in the cumulative impact analysis. These include:

- A new Samoa Peninsula Wastewater Treatment Plant
- Town of Samoa multipurpose dock
- Arcata Bay Shellfish expansion near Redwood Marine Terminal II.



- International broadband terminus for up to 4 trans-pacific Fiber Optic Lines landing a Redwood Marine Terminal II and connecting to new land based fiber optic broadband lines from the Interstate 5 corridor (funds appropriated in 2017).
- DG Fairhaven biomass power plant. It is shut down now but a local entrepreneur is planning to start it up again. It is right across from the Nordic site.
- No details are available, but there is pre-planning occurring for a wood pellet factory in the same area.
- Multiple users of the Ocean Outfall Pipe:

1 ½ mile Ocean Outfall Pipe	Current & Projected Users	Gallons Per Day
	30 million GPD capacity	DG Fairhaven
Wastewater Treatment Plant Peak		750,000
Leachfield RMT II		7,000
Nordic Aquafarms		12,500,000
Future aquaculture tenants		2,000,000
<b>Total Projected Discharge</b>		<b>15,607,000</b>

Eureka WWTP > 6 MGD Dry flow

– End –



## Suarez, Alyssa

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**From:** Mike Kansa <mikekansa@gmail.com>  
**Sent:** Tuesday, July 6, 2021 5:33 PM  
**To:** Suarez, Alyssa  
**Subject:** Fish Farm Comments

Hi Alyssa,

While there are many details to be ironed out regarding the aquaculture project, I believe these are the main points of concern for many.

1. The temperature of the water exiting the outflow pipe into the ocean is unacceptable. This will be detrimental to the adjacent aquatic ecosystems. I'm not sure if there is a way around this. This pipe is critical to the location chosen by this company. If it didn't exist already, they wouldn't be able to afford, or permit, a new one. It's legacy infrastructure that has come under scrutiny in the past.
2. The smell. Everyone here remembers what the mill(s) used to smell like. If the area is overcome with fish processing smell, that's unacceptable in every way shape and form. Can't happen.
3. Traffic. As more people flock to our empty beaches, along with the folks who will move into the new Danco project, it doesn't seem like there's going to be enough room for more trucks running every day.
4. Is there a bond in place to clean up the site if the project fails?
5. Most important of all. Earthquake. In the event these genetically engineered non native fish are released into the wild, it's game over for the wild natural genetics of the fish in our ocean and rivers. There's no solution to this. It would be one of the largest wildlife catastrophes in the history of North America.

Thanks for taking the time to review and compile these comments.

Cheers,

Mike Kansa

July 6, 2021  
Riparian Solutions  
9720 Buna Ct.  
Elk Grove, CA 95624

Alyssa Suárez  
Planner II  
Humboldt County Planning & Building Department  
3015 H Street Eureka, CA 95501

Submitted by email to [asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)

RE: Nordic Aquafarms Permits Scoping Comments

Dear Ms. Suárez:

Nordic Aquafarms (Nordic) plans to build a fish farm (Project) on the Samoa peninsula in Humboldt County, California. I am a private citizen who has enjoyed the beauty of Humboldt County for most of my life, especially the beaches and the wildlife. It is not just my fondness for the beauty of the north coast that has me gravely concerned about the impacts that the Project will have on local wildlife and recreation. I am a scientist with a 42-year government career in habitat conservation and restoration. Twenty-seven of those years were with the U.S. Fish and Wildlife Service specializing in policy and application of the Endangered Species Act (ESA) and 5 years were as the Modeling Coordinator for the Delta Regional Ecosystem Restoration Implementation Plan. My areas of expertise include: Juvenile salmonid habitat, ESA policy, and habitat modeling for resource management decisions. I am mystified as to why Project impacts to critical habitat and to the juvenile life stages of coho salmon, Chinook salmon, steelhead, and green sturgeon have been treated so lightly by Nordic (GHD 2020b).

Please include my earlier comments on this Project in the comment record and response for the draft Environmental Impact Report (DEIR). These are included as attachments to the email submission of this letter and consist of: my May 23, 2021, comments on the Nordic Aquafarms Initial Study/Mitigated Negative Declaration (IS/MND), my June 4, 2021, comments on the California North Coast Regional Water Quality Control Board (RWQCB) Draft National Pollutant Discharge Elimination System (NPDES) Permit (ORDER R1- 2021-0026, NPDES NO. CA1000003) for discharge from the project, and my June 23, 2021, exposure analyses for the critical habitat of five ESA-listed species that are likely to be adversely affected by Project operations and effluent.

Nordic's *Marine Resources Biological Evaluation Report Samoa Peninsula Land-based Aquaculture Project* (Biological Evaluation, GHD 2020b) appears to rely on they-will-

just-swim-away philosophy of underrepresenting Project effects. For the majority of the species addressed in the Biological Evaluation the conclusion is: "Because ... [they] are highly mobile, their exposure to the diffuser effluent is likely to be short term." Sadly, juvenile salmonids, juvenile green sturgeon, eulachon, and longfin smelt do not have the evolutionary wherewithal to swim away from toxicants and diseases. Nor do they have the ability to cope with loss of food and cover in their nursery areas.

### **Untreated Effluent Components**

The DEIR should include a comprehensive discussion of the untreated portions of Nordic's effluent stream as well as a contingency plan for when the biofilm reactors or membrane bioreactor are compromised or fail. At this scale and application, the biofilm reactors and membrane bioreactor are untried, experimental methodology. As such, system inconsistencies in fulfilling operational objectives and system failures are to be expected. This is particularly the case in the early stages of application of new technology, but could potentially occur throughout the life of the Project.

There are two effluent sources with separate effluent streams from the sludge removal process: These are backwash from the sludge separators (the biofilm reactors and membrane bioreactor), and effluvia from the fish processing area (factory floor). Factory floor waste contains industrial cleansers, antibiotics, antifungals, fish blood, and other fish fluids. These separate, untreated effluent streams are likely to be a source of diseases in wild fish and degradation of salmonid macroalgae rearing habitat and eelgrass rearing habitat.

### **Untreated Effluent Risks and Concerns**

There are both human and fisheries risks from the two untreated effluent streams generated by the Project and from any failures, tears, or degradation of the biofilters. The risk of spread of antibiotic-resistant bacteria from fish feed that includes poultry biproducts poses risk to surfers and other beachgoers, truckers hauling the sewage solids, factory workers, workers at the end-point composting facilities, commercial fishermen. Due to the fact that this is an emerging concern, rigorous monitoring is needed to ensure that local residents, workers, fishermen, and tourists will be protected from exposure. Beach closures and personal protective equipment are not typically popular forms of mitigation. However, these measures would become necessary to avoid injury, illness, and even death if antibiotic-resistant bacteria were introduced into the effluent solids and effluent stream.

Dioxins and PCBs found in fish feed and farmed fish are additional health concerns affecting the public through diet and direct exposure. Additional human health monitoring should be used to determine the amount and significance of dioxin toxic-equivalents and PCBs being discharged from the Project and entering Humboldt Bay, as well as monitoring for EthoxyQuin, PBDEs, and mercury.

Untreated effluent risk to wild salmonids is another emerging concern. In collaboration with a colleague, I am currently conducting additional analyses on the potential exposure of wild fish to untreated effluent from the fish processing area of the Project and from the backwash from the sludge removal process. Preliminary analysis suggests the risk is high to very high. At issue are exposure of wild salmonids to viruses found in Project effluent. Viruses of immediate concern are: Infectious Pancreatic Necrosis Virus (IPN), Infectious Salmon Anemia Virus (ISA), Salmonid Alphavirus (SAV), Piscine Orthoreovirus and Novel Piscine Reovirus (PRV), Novel Totivirus CLuTV), and bacterial kidney disease (*Renibacterium salmoninarum*). Each of these viruses pose a risk to juvenile salmonids growing to adulthood in the marine habitat in the area of the diffuser pipe and those exposed to effluent during tidal cycles in Humboldt Bay and other estuaries in the affected area.

Infectious Salmon Anemia virus can also be transmitted to Pacific herring, allowing for spread of the disease to wild salmonids through foraging. Humboldt Bay and its surrounding waters are known to support large populations of Pacific herring.

As discussed in my earlier letters, antifungals and oxidants that degrade salmonid macroalgae habitat pose a risk to juvenile salmonid survival. The coastal marine habitat supports macroalgae that provides both food and cover for juvenile salmonids, juvenile green sturgeon, eulachon, and longfin smelt. Exposure to antifungals and oxidants are likely to cause bleaching and senescence of macroalgae. This, in turn, removes the structure that juvenile salmonids use for cover and diminishes the invertebrate food resources for salmonids, green sturgeon, eulachon, and longfin smelt.

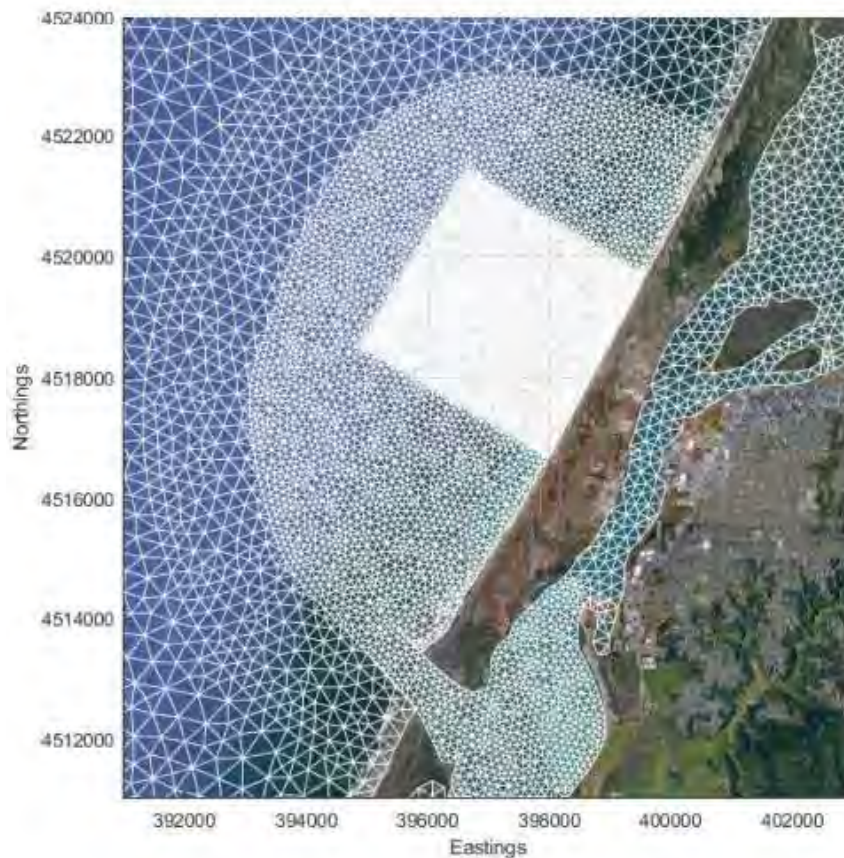
The fish treatment drugs Parasite-S, Formalin-F, and Formacide-B (Formalin) may diminish salmonid, green sturgeon, eulachon, and longfin smelt prey in the effluent stream and effluent dispersal area, harming individual fish and compromising critical habitat. The powerful fungicide Virkon (currently not permitted for use in California) may have significant adverse effects on the vulnerable macroalgae ecosystem as a whole, as well as on individual species of kelp or seagrasses that juvenile salmonids depend upon for food and cover in the nearshore marine environment.

## **Modeling Needs**

Modeling of Project effects is lacking in two areas: Mad River critical habitat reductions and the effluent dispersal area. For the Mad River, instream flow incremental methodology (IFIM) is a time-honored methodology that can be used to estimate the amount of habitat available at different flows. If IFIM data already exists for the Lower Mad River, it should be used to quantify Project effects from continuous water withdrawal during dry and very dry water years as well as episodic drought events. If IFIM data does not exist, this year's drought flows would be the ideal time to measure Mad River bathymetry and habitat parameters. An alternative bathymetry measurement technique would be the use of LiDAR (light detection and ranging), which is a remote sensing technique that is commonly used in flow studies.

If there is a low-flow event in the Mad River, such as happened in August 2008, river flows would be reduced by greater than 30 percent in the lower river and estuary. Such events prevent salmonids from accessing instream cover and result in increased water temperatures. Removal of flow from the shaded riverine edge and emergent aquatic vegetation along the Lower Mad River during dry and critically dry water years, or during an episodic drought event, could kill or injure listed species if temperature and flow-protection measures are not in place.

Considering that the Mad River is Clean Water Act Section 303(d) listed Impaired Water Body due to impairments to water quality by sediment/turbidity and high water-temperatures, it seems reasonable that Project commitments would be in place to ensure protection of critical life stages of salmonids and eulachon.



**Figure 1.** Excerpt from Figure 7 of the *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a). This preliminary modeling is only based on a 180° directional current and does not include local currents, northward flows, or marine upwelling.

The *Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report* (GHD 2020a) clearly shows that effluent from the

Project discharged into coastal marine water will enter Humboldt Bay (Figure 1). Because only a unidirectional, southbound current (*i.e.*, 180°) was used, the modeling in GHD 2020a is incomplete. In the vicinity of the outfall pipe, strong currents shift daily from a southbound current to a northbound current. The effluent dispersal modeling should be re-done to take into account local currents.

Marine upwelling was not addressed in GHD 2020a. This is a serious omission, considering that precipitated nitrogenous compounds could be released in high concentrations during upwelling events. Upwelling modeling that addresses the local vertical nitrate flux with the addition of the 298 metric tons of nitrogen loading per year in the Project effluent discharge should be conducted. The Biologically Effective Upwelling Transport Index (BEUTI) should be used to estimate upwelling and nutrient transport within the full dispersal area of Project effluent (see Jacox 2018).

### **Critical Habitat for ESA-Listed Species**

Adverse effects to critical habitat from Project water withdrawals and effluent are reasonably certain to occur. Modeling of flow reductions in the Mad River and the combined impact of effluent-laden sediments, marine upwelling, tidal surge, and daily south-north current changes will allow for a more complete exposure profile for Project effects to critical habitat for coho salmon, Chinook salmon, steelhead, green sturgeon, and eulachon. Once the effluent distribution has been fully analyzed and explained, the effects of the effluent on the primary constituent elements of critical habitat and the physical or biological features essential for conservation listed species should be determined. Preliminary analyses for exposure of critical habitat of five ESA listed-species to Project effluent is included as an attachment to the email submission of this letter (Willy Preliminary Critical Habitat Exposure Analyses 24jun2021.pdf.)

Both the primary constituent elements of critical habitat and the physical or biological features essential for conservation include water quality and food resources as essential to the survival of the coho salmon, Chinook salmon, steelhead, green sturgeon and eulachon. Baseline benthic macroinvertebrate studies and prey indices have yet to be conducted and calculated in order to quantify the food resources for listed species that are likely to be impacted by Project effluent. Baseline benthic macroinvertebrate studies and prey indices should be completed for the effluent dispersal area (identified from updated modeling that includes local currents) in the coastal marine area, Humboldt Bay, and critical habitat prior to Project operation.

A thorough analysis of how Project chemicals affect water quality, food resources, and aquatic vegetation should be conducted. Industrial cleaners (especially oxidants), antifungals, antibiotics, and other fish treatment drugs (*e.g.*, Virkon, Parasite-S, Formalin-F, and Formacide-B) all affect water quality and can diminish salmonid, green sturgeon, and eulachon cover and prey in waters affected by the effluent stream.

Of the five essential habitat types identified in the coho salmon critical habitat designation (NOAA Fisheries 1999), two are relevant to this discussion: (a) juvenile

migration corridors and (b) areas for growth and development to adulthood. These essential habitat types include estuarine and nearshore marine habitat. Within these areas, essential features of coho salmon critical habitat include adequate water quality, water temperature, cover/shelter, and food.

Critical habitat for Chinook salmon and steelhead includes estuary and nearshore marine features that are essential to the conservation of both species. Primary constituent elements #4 and # 5 of critical habitat for Chinook salmon and steelhead (NOAA Fisheries 2005, p. 52521) both include (a) water quality and quantity conditions and forage—including aquatic invertebrates and fishes supporting growth and maturation—and (b) aquatic vegetation, because: “without them juveniles cannot successfully transition from natal streams to offshore marine areas.”

In addition to the final rules listing critical habitat for these species, recent studies provide supplemental information demonstrating the importance of aquatic vegetation in the nearshore marine environment and estuarine environment for supporting juvenile salmon and their prey (Shaffer 2002, Shaffer 2004, Shaffer et al. 2019, Shaffer et al. 2020). Now is the time to take a hard look at the effect of Project effluent on these important aspects of critical habitat. Once the distribution of effluent has been determined with updated modeling and habitat mapping, impacts to primary constituent elements #4 and #5 should be addressed through consultation with NOAA fisheries.

A closer look at effluent effects is needed in Elk River, Salmon Creek, Freshwater Creek, Jacoby Creek, Mad River, and Eel River. The proximity of Elk River and Salmon Creek to the entrance of Humboldt Bay indicates that these drainages are likely to be exposed to higher concentrations of Project effluent and consequently experience greater adverse effects.

In eulachon critical habitat, the physical and biological features that are essential to the conservation of eulachon include food, cover, and water quality (NOAA Fisheries 2011). Prey items in a concentration able to support foraging leading to adequate growth and reproductive development for juveniles in the estuarine environment, and adults and juveniles in the marine environment, are necessary for eulachon survival. At a minimum, the invertebrates identified in eulachon critical habitat (copepods, euphausiids, malacostracans, cumaceans, mysids, barnacle larvae, and worm larvae) should be protected throughout the life of the Project. The water quality requirement essential for conservation of eulachon is water that is free of contaminants that may disrupt behavior, growth, and viability of eulachon and their prey. This is a high bar that may require full treatment of Project water prior to discharge in order to be met.

Tributaries to Humboldt Bay that are included in the green sturgeon critical habitat designation are: Elk River, Eureka Slough, Freshwater Creek, Freshwater Slough, Bannon Slough, Jacoby Creek, Liscom Slough, Mad River Slough, McDaniel Slough, Rocky Gulch/Washington Gulch, Salmon Creek, an unnamed tributary, and White Slough. Green sturgeon critical habitat includes those characteristics necessary for

normal behavior, growth, and viability of all life stages. Effluent exposure profiles are needed for all of these tributaries.

A risk analysis for loss of prey species, cover, and overall water quality should be conducted. This is necessary in order to determine Project effects to coho salmon, Chinook salmon, steelhead, green sturgeon, and eulachon critical habitat, as well as individual and population-level effects to these species.

### **Consultation Needs**

Take of ESA and CESA listed species, as well as mammals protected under the Marine Mammal Protection Act is reasonably certain to occur. The Biological Evaluation for the Project (GHD 2020b) summarizes take under the ESA, CESA, Marine Mammal Protection Act, and Migratory Bird Treaty Act. The Biological Evaluation made several unsupportable determinations of “Less Than Significant” effects to listed species, marine mammals, and migratory birds. In actuality, both ESA and CESA listed species are likely to be adversely affected by Project effluent and operations. The state-listed longfin smelt will be exposed to the effluent stream with every southbound longshore current and incoming tide into Humboldt Bay. Federally-listed coho salmon, Chinook salmon, steelhead, and green sturgeon juveniles will be exposed to the effluent stream. The federally-listed eulachon will be exposed to Project effluent as adult fish in the nearshore marine environment. Modeling may show that juvenile eulachon in the Mad River will also be exposed to effluent. Exposure to fish diseases, Project chemicals, and intake facilities is highly likely to harm, injure, and kill listed species and their prey. Loss of food, loss of cover, and harmful algal blooms will result in harm to fish and potentially significant shifts in population viability.

The introduction of viral and bacterial pathogens to the marine environment is one of the most significant risks of the Project to wild salmonids. For example, Piscine Orthoreovirus (a strain of PRV called PRV-1) is a highly contagious virus that is known to enter the environment from fish processing areas. PRV causes heart and skeletal muscle inflammation and is associated with kidney and liver damage in Chinook salmon. While farmed salmon show low mortality rates when infected with PRV, wild salmonids are unlikely to survive their return to spawning areas. The added strain on their physiology from migrating with compromised organs becomes too much (Miller 2017), and infected salmonids will not have the metabolic resources to meet the energetic demands of migration. Wild salmonids exposed to fish diseases from the Project are likely to be harmed, injured, or killed.

Entrainment is another significant risk. Project intakes in the Mad River and Humboldt Bay will need to be modified to reduce impingement and entrainment into intake pipes. Death and injury to listed species and their prey from entrainment and impingement at intake pipes will need to be exempted through ESA consultation with NOAA fisheries and CESA consultation with California Department of Fish and Wildlife. From Nordic “office hours” meetings, they are well aware that impingement and entrainment will kill listed species, but sought to separate their development and operations from profited



take at the intakes, shifting liability to Humboldt County. The Humboldt County Planning Department showed considerable insight in choosing to address the Project in its entirety through the CEQA process.

Knowing violations of Section 9 of the ESA come with stiff penalties. It would be wise for Humboldt County to seek incidental take exemptions for each affected federally-listed species from NOAA Fisheries prior to making a final decision on the EIR.

Although regulations under the ESA changed in 2019, an analysis of direct and indirect effects of the Project continues to be warranted under 50 CFR 402. Due to the fact that partially-treated and untreated effluent will flow directly into critical habitat and be transported into critical habitat with tidal flows, impacts to ESA-listed species and critical habitat would not occur but for the Project.

Adverse effects to ESA-listed species should be addressed through consultation with NOAA Fisheries and adverse effects to CESA-listed species should be addressed through consultation with California Department of Fish and Wildlife.

While larger marine mammals may move their young away from the effluent stream, both adults and juveniles could still be exposed to domoic acid and subsequent neurological effects if the warm and nutrient-laden effluent waters from the Project result in harmful *Pseudo-nitzschia* algal blooms leading to a proliferation of domoic acid. Sea lions and harbor seals are at the greatest risk from domoic acid poisoning, which results in lethargy, disorientation, loss of pregnancy, seizures, brain damage, and death. Although the Project is not the proximal cause of marine warming, *per se*, the enormous amount of power needed to operate the Project has a carbon footprint comparable to 10,000 new homes. When the full energy demand is finally calculated, including use of refrigerants and cooling systems, the energy demand may be considerably higher. If a marine warming event happens in the early stages of operation, the Project would be contributing to the magnitude of a harmful algal bloom. As the Project contributes significantly to the carbon emissions in Humboldt County, the magnitude and duration of marine warming events is likely to increase.

Marine warming has led to harmful algal blooms and bioaccumulation of domoic acid in the food chain along the coast of California. Additional nutrient loading and thermal pollution (9.0 to 10.9°C in winter months) from the Project effluent could extend the season for harmful algal blooms and extend exposure to marine mammals. California sea lions are particularly hard hit from domoic acid poisoning.

### **Monitoring Needs**

It has been well established that discharge from aquafarms introduces diseases to wild fish populations. The Project poses a significant risk to wild salmonids, ESA- and CESA-listed species, critical habitat for five species, and Essential Fish Habitat. Disease within salmonid populations can now be monitored in advance of high viral-loading and physiological impairment. To get ahead of disease outbreaks, Nordic

should conduct monthly salmon host transcriptional biomarkers analysis in each rearing tank and grow-out tank. The salmon host transcriptional biomarkers analysis was developed by Miller *et al.* (2017) and used by Laurin *et al.* (2019) to detect bacterial, protozoan, and parasite histopathological change. A simple explanation of the methodology and its uses can be seen in Dr. Miller's September 15, 2017, presentation to Watershed Watch <https://www.youtube.com/watch?v=qfIGzDrTtJA>. The methodology utilizes a simple gill clip and provides for rapid testing to denote overall fish health over a broad range of diseases. Host transcriptional biomarkers analysis should be used as the preliminary screening methodology to monitor genetic shifts in the captive population to indicate impairment or infection prior to obvious signs of disease. If host transcriptional biomarker analysis indicates that disease is present at the Project, direct testing for PRV, IPN, ISA, SAV, CLuTV, and bacterial kidney disease should commence immediately on all fish stock and effluent streams.

Nordic does not currently propose treatment of effluvia from the fish processing area or the backwash from the sludge separator. Without adequate treatment of effluvia, it is important to protect workers and surfers from an antibiotic-resistant biome becoming established in the facility, the surf zone, and Humboldt Bay. Nordic should conduct monthly monitoring of the sewage sludge and processing waste (*e.g.*, fish guts and carcass fluids) for known antibiotic-resistant bacteria strains such as *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus sp.*, *Campylobacter sp.*, *Vibrio vulnificus*, and *Vibrio parahaemolyticus*. If antibiotic-resistant bacteria are found in any area of the Project, Nordic should immediately work with Humboldt County public health officials to establish additional resistome-monitoring in areas where there is commercial or recreational contact with affected waters and where facility workers and truckers may be exposed.

Monitoring of changes in prey availability and cover for listed species is essential for tracking the population impacts of the Project. Monitoring protocols should be reflective of the baseline sampling methodology, in order to fairly track Project impacts to local ecosystems.

Monitoring of changes in the amounts of PCBs, dioxin equivalents, methylmercury, EthoxyQuin, PBDEs is needed in the tidal flats within Humboldt Bay at a minimum.

### **Baseline Data Needs**

Disease profiling for salmonids in Mad River (including the Mad River Fish Hatchery), Humboldt Bay and its tributaries, and the Eel River is an optimal measure to track and monitor wild fish health prior to Project operations. This baseline monitoring is essential for protecting fishery resources if fish diseases emanating from the Project begin to compromise wild and hatchery populations. At the very minimum, host transcriptional biomarker analysis should be conducted on wild salmonids, as well as direct testing for PRV, IPN, ISA, SAV, and CLuTV. Pacific herring should also be tested for ISA, because of their status as a potential disease vector.

Baseline benthic macroinvertebrate studies and sampling of water column crustaceans and forage fish are needed to establish available food resources for coho salmon, Chinook salmon, steelhead, green sturgeon, eulachon, and longfin smelt. For forage fish and water column crustaceans, prey indices should be developed in order to be able to compare pre- and post-Project prey availability.

Baseline macroalgae and eelgrass distribution within the entirety of the revised effluent dispersal area is needed. Mapping of both patch size and distribution, as well as species composition, is needed to understand the baseline cover for juvenile salmonid foraging and migration. Ideally, mapping of macroalgae from Trinidad Head to Centerville County Park would provide a good baseline. If revised modeling indicates effluent distribution has a lesser geographical extent, the revised exposure area should be where baseline mapping occurs.

The residence time of effluent within different areas of Humboldt Bay is likely to exceed the tidal cycle, depending upon tidal prism effects in each locality. Spatial analysis of the eelgrass beds in Humboldt Bay and its tributaries is needed, so that effluent residence time can be correlated with prey response, viral loading, and nutrient loading.

## **Conclusion**

Science is advancing rapidly in the area of fish disease detection, habitat monitoring, aquatic modeling, and the community and global effects of high-density aquaculture. In the meantime, so much is happening to our communities and wildlife: Fires, drought, marine warming and domoic acid proliferation, closed fisheries, fish and sea lion die-offs, viruses jumping between species, and friends or family members dying from antibiotic-resistant bacteria.

Now is the time to press pause and ask: What can we do to protect our communities? How can we support local economies that lead to stability in the future? Will this multinational aquaculture corporation take care of our community? Can we afford the energy burden of the Project? How many members of our community will lose income, tourist dollars, or their health and wellbeing as a result of the Project? Who will take the sewage sludge if it is too salty or pathogen laden to go into traditional composting facilities? Who will really fill the Project's "created" jobs? How many existing jobs will be lost as a result of Project impacts on the local fisheries and tourist trade? Is external profiteering worth the risks imposed on our community and local environment?

Now is not the time to put a heavy energy burden on the region. Rather than depend on the community to reduce its carbon footprint to make up for the Project's carbon footprint, the Project should be designed as carbon neutral. To that end, the energy demand of the Project should be determined by a third-party, and the carbon-neutral energy sources should be fully operational at the time of initiation of Project operations.

Adverse effects to local fisheries are reasonably certain to occur as a result of the Project. These adverse effects would come at a time when our fisheries and local

wildlife are already stressed from climate change, marine warming, and harmful algal blooms. Protecting the nearshore marine environment and local estuaries are a way to protect and conserve not only the environment but also the local community that depends upon a dynamic and productive fishery.

The Project site has already left a burden on the county, community, and ecosystem as an eyesore and a source of toxic contaminants. If the Project fails, a contingency plan and funding for clean-up should be in place for the purpose of remediation—guaranteeing financial protections for the county and its taxpayers. Funding for remediation should be in a non-wasting account, so that the cost of cleanup does not fall to Humboldt County or the Harbor District.

It is my hope that the unique nature and beauty of Humboldt Bay and the coastal marine ecosystems along the coast of the Samoa Peninsula are preserved for future generations. Please ensure that the Project has measures in place to protect and conserve wild fisheries, local wildlife, natural resource values, and community vibrancy.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alison Willy".

Alison Willy, M.S.

Email attachments:

Willy comment letter Nordic Aquafarms 23may2021.pdf  
Willy NPDES comment letter Nordic Aquafarms 04jun2021.pdf  
Willy Preliminary Critical Habitat Exposure Analyses 24jun2021.pdf

## References

- GHD. 2020a. Nordic Aquafarms California LLC Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report August 2020. 53pp.
- GHD. 2020b. Marine Resources Biological Evaluation Report Samoa Peninsula Land-based Aquaculture Project Prepared for Nordic Aquafarms California. August 24, 2020. 29pp.
- Dopazo, C.P., 2020. The infectious pancreatic necrosis virus (IPNV) and its virulence determinants: What is known and what should be known. *Pathogens*, 9(2), p.94.
- Jacox, M.G., Edwards, C.A., Hazen, E.L. and Bograd, S.J., 2018. Coastal upwelling revisited: Ekman, Bakun, and improved upwelling indices for the US West Coast. *Journal of Geophysical Research: Oceans*, 123(10), pp.7332-7350.
- Laurin, E., Jaramillo, D., Vanderstichel, R., Ferguson, H., Kaukinen, K.H., Schulze, A.D., Keith, I.R., Gardner, I.A. and Miller, K.M., 2019. Histopathological and novel high-throughput molecular monitoring data from farmed salmon (*Salmo salar* and *Oncorhynchus* spp.) in British Columbia, Canada, from 2011–2013. *Aquaculture*, 499, pp.220-234.
- Miller, K.M. 2017. Disease and pathogens in wild and farmed salmon. Watershed Watch presentation September 15, 2017. <https://www.youtube.com/watch?v=qfIGzDrTtJA>
- Miller, K.M., Günther, O.P., Li, S., Kaukinen, K.H. and Ming, T.J., 2017. Molecular indices of viral disease development in wild migrating salmon. *Conservation Physiology*, 5(1).
- NOAA Fisheries. 1999a. Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. May 5, 1999. Federal Register 64:24049-24062.
- NOAA Fisheries. 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. *Federal Register* 70:52487-52627.
- NOAA Fisheries. 2011. Endangered and Threatened Species: Designation of Critical Habitat for the Southern Distinct Population Segment of Eulachon. October 20, 2011 *Federal Register* 76:65324-65352.
- Nylund, A., Devold, M., Mullins, J.L. and Plarre, H., 2002. Herring (*Clupea harengus*): a host for infectious salmon anemia virus (ISAV). *Bull Eur Assoc Fish Pathol*, 22(5):311-318.
- Willy, A. *in litt.* 2021a. May 23, 2021, letter from Alison Willy of Riparian Solutions to John Ford, Director, Humboldt County Planning and Building Department, and Planning Commissioners regarding Initial Study/Mitigated Negative Declaration for Nordic Aquafarms under the California Environmental Quality Act. filename: Willy comment letter Nordic Aquafarms 23may2021.pdf. 15pp.
- Willy, A. *in litt.* 2021b. June 4, 2021, letter from Alison Willy of Riparian Solutions to the California North Coast Regional Water Quality Control Board regarding Nordic Aquafarms Draft National Pollutant Discharge Elimination System (NPDES) Permit (ORDER R1- 2021-0026, NPDES NO. CA1000003) for discharge from the proposed Nordic Aquafarms (Nordic) fish farm (Project) on the Samoa peninsula, Humboldt County, California. Filename: Willy NPDES comment letter Nordic Aquafarms 04jun2021.pdf. 16pp.
- Willy, A. 2021c. Critical Habitat Exposure Analyses. Supplemental information provided by Alison Willy to Pacific Fisheries Management Council on June 24, 2021. Filename: Willy Preliminary Critical Habitat Exposure Analyses 24jun2021.pdf. 9pp.

## Suarez, Alyssa

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**From:** Steve Rosenberg <sjreur@gmail.com>  
**Sent:** Tuesday, July 6, 2021 5:57 AM  
**To:** Suarez, Alyssa  
**Subject:** Re Nordic aquafarms EIR

Dear Ms. Suarez:

The EIR should consider the following subjects:

1. The effect of a massive cascadia subduction zone earthquake which occurs every 300 to 500 years the last occurring on January 26, 1700.
2. The effect on endangered salmonids of the Mad River from diversions of water to supply the project.
3. The effect on endangered salmonids and other marine life from possible contamination, disease and depletion from connection to bay and ocean waters.
4. The effect on migrating birds, particularly Black Brant, a species of concern, from disturbance to their movements between South and North Bay along the shipping channel by increased industrial activity there.
5. The economic effect upon commercial fishing for wild salmonids due to competition from the raising of inferior quality salmonids.
6. The risks of accidental introduction of nonnative Atlantic Salmon into the wild environment.

This is not meant to be an inclusive list but considerations additional to other concerns raised by various parties.

Respectfully submitted,

Stephen Rosenberg  
Eureka, Ca.

## Suarez, Alyssa

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**From:** Ted Romo <blackbrantsky@yahoo.com>  
**Sent:** Tuesday, July 6, 2021 8:41 AM  
**To:** Suarez, Alyssa  
**Subject:** Nordic Aquafarms NOP

Humboldt County Planning and Building Dept. DATE: July 6 , 2021

3015 H St.

Eureka, CA 95501

Attn: Alyssa Suarez, Planner

Re: Nordic Aquafarms NOP, EIR APN 401-112-021

Humboldt County Planning Commission: "Submitted by email" to [asuarez@co.humboldt.ca.us](mailto:asuarez@co.humboldt.ca.us)

The Initial Study fails to look at the adverse environmental impacts of diverting up to 10 million gallons per day of salt water from Humboldt Bay.

The waste stream being discharged into the Pacific ocean must be monitored for biological impacts into the future.

The Initial study does not mitigate the increase in traffic, fuel consumption or carbon footprint of this project. The electricity use will be extreme.

Thank you for the opportunity to submit these ideas for the Nordic Track NOP

Ted Romo

3419 Edgewood Rd

Eureka, CA

Sent from my iPad