Haggerty, Nicole@Wildlife

From: Ramirez, Richard@Wildlife
Sent: Monday, March 20, 2023 11:26 AM
To: Andrew Amelung
Cc: Wildlife R2 CEQA; Sheridan, Kursten@Wildlife; Garcia, Jennifer@Wildlife; Thomas, Kevin@Wildlife; Haggerty, Nicole@Wildlife
Subject: CEQA Comments: Artemis Farms UP 20-95 (2023-0059-0000-R2)
Attachments: CEQA_2023-0059-0000_References.docx

Hello,

My name is Richard Ramirez, I am an Environmental Scientist contacting you on behalf of the California Department of Fish and Wildlife, North Central Region Cannabis Program (CDFW). CDFW received and reviewed the Initial Study (IS) from Lake County regarding the Notice of Intent (NOI) to file for a Mitigated Negative Declaration (MND) for the Artemis Farms UP 20-95 (Project). This email is in regard to the request for CEQA comments, received by CDFW Staff on March 2, 2023. The following comments have been provided:

Bat Roosting Sites

The Biological Resources Assessment (BRA) for the project appropriately recognizes the potential for the occurrence of bat species in the surrounding area. However, neither the BRA or IS disclose concern for bat roosting sites. Roosting sites for bats are considered by CDFW to be a significant biological resource. Based on review of Project materials the Project site contains potential habitat for structure and tree roosting bats. Bats are considered non-game mammals and are afforded protection by state law from take and/or harassment, (Fish & G. Code, § 4150; Cal. Code of Regs, § 251.1). CDFW recommends bat preconstruction surveys are conducted for suitable roosts (i.e. hollows or crevices) prior to any tree felling or ground disturbing activities, and incorporating a new measure to construct replacement roost structures (bat houses or other structures) if the removal of a bat roost (inactive or active) is necessary for the Project.

Pacific Fisher

Issue: The CEQA document does not adequately analyze Project impacts on Pacific fisher (*Pekania pennanti*).

Evidence impact would be significant: Consistent with CEQA Guidelines, Section 15380, the status of the Pacific fisher as a threatened species under the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*) qualifies it as an endangered, rare, or threatened species under CEQA.

The Pacific fisher declined in the early 1900s from trappers and predator control efforts as well as habitat loss from timber harvesting (CDFW 2015). Its current threats are continued habitat loss and degradation, toxicants (i.e., rodenticides), wildfires, and in the Southern Sierra Nevada ESU (Evolutionary Significant Unit), small population size (fewer than 350 individuals; CDFW 2015).

Based on the foregoing, Project impacts would potentially substantially reduce the number and/or restrict the range of Pacific fisher.

The following are potential impacts of cannabis cultivation on Pacific fisher.

Pesticides used in cannabis cultivation could impact fishers by:

- Secondary poisoning from rodenticides (Gabriel et al. 2012, 2015); female fisher survival is negatively correlated to number of cannabis cultivations sites within home ranges (Thompson et al. 2014)

- Starvation from reduced prey populations (Wengert 2015)
- Reduced litter sizes (Grue et al. 1997, Pimentel 2005)
- Alteration of ovarian development and function (Tiemann 2008)
- Decreased coordination and motor skills and slow response rates to noise (Wolansky and Harrill 2008), which may decrease hunting ability and increase vulnerability to predation
- Decreased ability to thermoregulate (Ahdaya et al. 1976, Grue et al. 1997)
- Elimination of food and cover resources (Johnson and Hansen 1969, Spencer and Barrett 1980)
- Short-term hypothermia (Grue et al. 1991, Gordon 1994)
- Decreased ability to clot properly resulting in excessive bleeding from minor wounds from prey (Townsend et al. 1984, Erickson and Urban 2004, Valchev et al. 2008)

Road construction and use could result in fisher mortality and can cause shifts in home ranges and movement (Trombulak and Frissell 2000). Carnivores have been shown to avoid roads irrespective of their volume of traffic (Baker and Leberg 2018).

Vegetation removal for cultivation sites may impact fishers as trees and dense canopy cover are an important component of their habitat, and they require forest cavities for denning (Zeiner et al. 1990). Additionally, vegetation clearing can cause fragmentation and create edge effects that permeate far beyond the cultivation site (Harris 1988, Murcia 1995). Forest conversion can also be a result of cannabis site development (NDIC 2007, Mallery 2010, Burns-Edel 2016, Wang et al. 2017), and the impacts of cannabis cultivation are often equal to or greater than those of timber harvest (Wang et al. 2017). Fishers are forest obligates are require relatively intact areas free of human disturbance (Zeiner et al. 1990).

Noise from generators or other equipment used at cultivation sites can decrease the hunting ability of fishers by limiting their ability to hear their prey or by decreasing the activity of their prey (Francis and Barber 2013).

Exposure to artificial light often used at cultivation sites has been shown to suppress the immune response in mammals resulting in increased pathogen and parasite infections (Navara and Nelson 2007, Bedrosian et al. 2011). Additionally, artificial light may decrease the activity of rodents and other small mammals, the primary prey for fishers (Zeiner et al. 1990, Navara and Nelson 2007).

Site use may also result in increased risk of disease transmission from domestic animals (Brown et al. 2008). The presence of people and land clearing equipment has also been associated with increased risk of wildfire ignitions (Syphard et al. 2007).

Therefore, Project impacts on Pacific fisher would be **potentially significant**.

Humboldt Marten

Issue: The CEQA document does not adequately analyze Project impacts on Humboldt (coastal) marten (*Martes caurina humboldtensis*).

Evidence impact would be significant: Consistent with CEQA Guidelines, Section 15380, the status of the Humboldt marten as an endangered species under the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*) qualifies it as an endangered, rare, or threatened species under CEQA.

The Humboldt marten was common and relatively widespread in the coastal forests from central California to Oregon in the early 1900s, but it declined considerably as a result of fur trapping and forest conversion from logging. It was considered extirpated until it was re-discovered in Six Rivers National Forest in northern California in 1996. The current population in California is fewer than 200. Threats to the Humboldt marten include habitat loss from logging and urbanization, wildfires, cannabis cultivation, and risks associated with a small population (CDFW 2018).

Based on the foregoing, Project impacts would potentially substantially reduce the number and restrict the range of Humboldt marten.

The following are potential impacts of cannabis cultivation on Humboldt marten. Remove those impacts that are not relevant to the current Project.

Pesticides used in cannabis cultivation could impact marten by:

- Secondary poisoning from rodenticides (Gabriel et al. 2012)
- Starvation from reduced prey populations (Wengert 2015)
- Reduced litter sizes (Grue et al. 1997, Pimentel 2005)
- Alteration of ovarian development and function (Tiemann 2008)
- Decreased coordination and motor skills and slow response rates to noise (Wolansky and Harrill 2008), which may decrease hunting ability and increase vulnerability to predation
- Decreased ability to thermoregulate (Ahdaya et al. 1976, Grue et al. 1997)
- Elimination of food and cover resources (Johnson and Hansen 1969, Spencer and Barrett 1980)
- Short-term hypothermia (Grue et al. 1991, Gordon 1994)
- Decreased ability to clot properly resulting in excessive bleeding from minor wounds from prey (Townsend et al. 1984, Erickson and Urban 2004, Valchev et al. 2008)

Road construction and use could result in marten mortality and can cause shifts in home ranges and movement (Trombulak and Frissell 2000, CDFW 2018). Carnivores have been shown to avoid roads irrespective of their volume of traffic (Baker and Leberg 2018).

Vegetation removal for cultivation sites may impact marten as trees are an important component of their habitat, and they require forest cavities for denning (Zeiner et al. 1990). Additionally, vegetation clearing can cause fragmentation and create edge effects that permeate far beyond the cultivation site (Harris 1988, Murcia 1995). Forest conversion can also be a result of cannabis site development (NDIC 2007, Mallery 2010, Burns-Edel 2016, Wang et al. 2017), and the impacts of cannabis cultivation are often equal to or greater than those of timber harvest (Wang et al. 2017). Humboldt martens are forest obligates are require relatively intact areas free of human disturbance that include dense shrub cover from predators and for hunting (Zeiner et al. 1990, CDFW 2018).

Noise from generators or other equipment used at cultivation sites can decrease the hunting ability of martens by limiting their ability to hear their prey or by decreasing the activity of their prey (Francis and Barber 2013). Martens are particularly sensitive to human disturbance and prefer areas with low levels of disturbance (Zeiner et al. 1990).

Exposure to artificial light often used at cultivation sites has been shown to suppress the immune response in mammals resulting in increased pathogen and parasite infections (Navara and Nelson 2007, Bedrosian et al. 2011). Additionally, artificial light may decrease the activity of rodents and other small mammals, the primary prey for martens (Zeiner et al. 1990, Navara and Nelson 2007).

Site use may also result in increased risk of disease transmission from domestic animals (Brown et al. 2008). The presence of people and land clearing equipment has also been associated with increased risk of wildfire ignitions (Syphard et al. 2007).

Therefore, Project impacts on Humboldt marten would be **potentially significant**.

Tricolored Blackbird

Issue: The CEQA document does not adequately analyze Project impacts on tricolored blackbird (*Agelaius tricolor*).

Evidence impact would be significant: Consistent with CEQA Guidelines, Section 15380, the status of the tricolored blackbird as a threatened species under the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*) qualifies it as an endangered, rare, or threatened species under CEQA.

Tricolored blackbird populations, which once numbered in the millions in California, have declined significantly in recent years according to state censuses (CDFW 2018). The long-term decline is primarily related to habitat loss and degradation (including both the nesting vegetation and the larger foraging landscape) from urbanization and conversion to agriculture, particularly in the Central Valley (Beedy et al. 2017). Tricolored Blackbirds require three resources for successful nesting: 1) secure nesting vegetation, 2) a source of water, and 3) foraging habitat (usually much larger in extent than the nesting vegetation) that provides sufficient insect food resources. Loss of any of these habitat components can result in an area becoming unsuitable for breeding. Additional known or suspected threats to the tricolored blackbird include destruction of breeding colonies when nesting vegetation is harvested, high levels of predation by native and nonnative predators, direct and indirect (food resources) effects of pesticides, killing as an agricultural pest through shooting or poisoning, drought, and climate change. The species' colonial breeding nature puts them at increased risk to many of these threats (CDFW 2018).

Based on the foregoing, Project impacts would potentially substantially reduce the number and restrict the range of tricolored blackbirds.

The following are potential impacts of cannabis cultivation on tricolored blackbirds.

Pesticides used at cannabis cultivation sites may impact tricolored blackbirds by:

- Poisoning (Fleischli et al. 2004, Pimentel 2005, Mineau and Palmer 2013)
- Starvation or reductions in reproductive success from decreased prey availability (Goulson 2014, Hallmann et al. 2014, Forister et al. 2016)
- Alterations of the thyroid gland that negatively impacts thyroid homeostasis and metabolism (Pandey and Mohanty 2015)
- Impaired immune function (Gibbons et al. 2015)
- Reduction in reproductive capacity, including declines in egg production and reduced clutch sizes (Beedy and Hayworth 1992, Pimentel 2005, Berny 2007, Gibbons et al. 2015)
- Decreased ability to thermoregulate and short-term hypothermia (Grue et al. 1997)
- Declines in fat stores and body mass (Gibbons et al. 2015, Eng et al. 2017)
- Disorientation which may inhibit regular behavior and movement

Pesticides and fertilizers can also run-off into watersheds polluting them and degrading habitat quality (Bauer et al. 2015, Carah et al. 2015). Fertilizer run-off has also been shown to cause algae outbreaks in wetlands.

Vegetation removal for cultivation sites may impact tricolored blackbirds as they require sufficient vegetation to provide cover for the nest (Beedy 2008). This is especially true at sites where Tricolored Blackbird colonies have bred in the past, or when the vegetation removed includes plant species that provide high quality nesting habitat (e.g. emergent wetland plants, Himalayan blackberry, thistles, nettles, and certain agricultural grain fields). Vegetation removal can also reduce the extent of available foraging habitat, which is critical for successful nesting by Tricolored Blackbird colonies. Additionally, vegetation clearing can cause fragmentation and create edge effects that permeate far beyond the cultivation site (Harris 1988, Murcia 1995).

Invasive plant species may also reduce habitat quality for tricolored blackbirds, and many activities involved in cannabis cultivation can exacerbate this issue. Imported soils used on many cultivation sites can often contain invasives (Butsic and Brenner 2016), and road use can increase the spread of invasive plant species (Brothers and Spingarn 1992, Greenberg et al. 1997). Areas where greenhouses are constructed also often become degraded and are prone to establishment of invasives as are areas where vegetation removal is taking place (Mallery 2010).

Noise from road use, generators, and other equipment may disrupt tricolored blackbird mating calls or songs which could impact their reproductive success (Patricelli and Blickley 2006, Halfwerk et al. 2011). Noise has been shown to reduce the density of nesting birds (Francis et al. 2009). Bayne et al. (2008) found that songbird abundance and density was significantly reduced in areas with high levels of noise.

Artificial light may attract or disorient tricolored blackbirds, disrupting their navigation (Ogden 1996, Longcore and Rich 2004, 2016). It can also suppress the immune system of birds (Moore and Siopes 2000). Additionally, songbirds that live in areas with artificial lights often begin morning choruses during night hours (Derrickson 1988, Miller 2006, Fuller et al. 2007).

Therefore, Project impacts on tricolored blackbirds would be **potentially significant**.

Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the proposed project. Written notifications shall be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670 or emailed to R2CEQA@wildlife.ca.gov.

CDFW appreciates the opportunity to comment on the Project to assist in identifying and mitigating Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Please direct any questions or action items to my email or phone number, provided below.

Thank You,

Richard Ramirez, Environmental Scientist

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