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ARBORIST REPORT for 10635 TWIN CITIES ROAD

September 9, 2021

PREPARED FOR:

Wade and Beverly Hammonds

10635 Twin Cities Road

Galt, CA 95632

Phone: 916.690.7167

Email: eggshamm@hotmail.com

INTRODUCTION

This arborist report is required for the proposed subdivision of 10635 Twin Cities Road, APN 148-0730-015, owners Wade and Beverly Hammonds, into two parcels. It is for the requirements of the Sacramento County Tree Preservation Ordinance which shall be submitted to Planning and Environmental Review in order to evaluate project impacts and create appropriate mitigation pursuant to Sacramento County General Plan policies and CEQA.

The field evaluations and report were completed by William A. Hobson, M.S. Credentials listed above in header.

See attached file/document for **Statement of Qualifications**.

TREE REPORT

This report includes off-site native California trees and non-native trees, and on-site non-native trees that may be affected by the proposed subdivision.

The off-site native California trees and non-native trees are located on the adjacent property to the west and north of the proposed project at 10619 Twin Cities Road, APN 148-0730-013. There are thirteen (13) native Northern California Black Walnuts (*Juglans californica v. hindsii*) located along the neighbor's driveway along the west side of the property. These trees overhang the property line and have rootzones that extend into the proposed project. On the north side of the property line, the neighbor has thirty-four (34) non-native River Red Gum (*Eucalyptus camaldulensis*) whose canopies and root zones extend over the property line.

The on-site non-native trees are a cluster of ten (10) Green Wattle Acacia (*Acacia decurrens*) that are located in the middle of the proposed driveway entrance and require removal for the project.

See engineer's plot plan and/or aerial photo for tree locations.

**Thirteen (13) native Northern California Black Walnuts
(*Juglans californica v. hindsii*) off site**

These trees are located along the neighbor's driveway next to the west side of the property at the fence line that separates the two properties. They have canopies and root zones that extend into the proposed project, which is a flat, seldom irrigated, grassland grazing area for horses and goats. There is about a ten-foot section of flat, un-irrigated, naturalized grass area between the common wire fence and the gravel driveway that leads to a house on the north side of the project. These trees were once irrigated English Walnuts (*Juglans regia*) that died back to the Northern California Black Walnut (*Juglans californica v. hindsii*) root stock and sprouted from the roots to develop into multi-trunk trees. Trees are numbered and tagged from the south #21 to the north #33.



Picture above shows the dripline environment, as described above, the wire fence separating the two properties, and one of the larger multi-trunk trees with remnants of the English Walnut trunk. Left is a closeup of the remnants of the English Walnut trunk. The sprouts originated from below the graft. This is tree #32.



Tree #21. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with four trunks, 4.3", 3.9", 4.8' and 1.1", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 14 feet high, 21 feet wide with an asymmetry to the southeast.

RPZ or root protection zone: 21 feet wide and extends 10 feet into the project.

Tree Health: Fair condition, average foliage size, density, color and growth. 85% live wood in the canopy. Some minor wood rot decay at the base.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree.



Tree #22. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with three trunks, 2.2", 1.4" and 0.5", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 10 feet high, 9 feet wide with a slight asymmetry to the west.

RPZ or root protection zone: 9 feet wide and extends 5 feet into the project.

Tree Health: Poor condition, lack of water has stunted the tree and caused early dormancy. Poor foliage size, density, color and growth. 50% live wood in the canopy. Some dieback in canopy. Extreme drought stress.

Tree Structure: Multi-trunk tree that sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (1) Severe decline.

Recommendations: Preserve the tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree.



Tree #23. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with four trunks, 4.4", 2.3", 2.0" and 1.9", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 11 feet high, 12.5 feet wide with minor asymmetry to the west.

RPZ or root protection zone: 12.5 feet wide and extends 5 feet into the project.

Tree Health: Poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 60% live wood in the canopy. Some dieback in canopy. Extreme drought stress. Borers in the trunk. Decayed tissue in the 4.4" trunk and the two dead stubs that remain at the base.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. Decay at base weakens attachment area for multi-trunks. Prone to failure and splitting as size increases.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (2) Declining

Recommendations: Preserve the tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree. May also treat for borers and wood rot decay.



Tree #24. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with two trunks, 4.4" and 4.4", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 13 feet high, 14 feet wide with minor asymmetry to the west.

RPZ or root protection zone: 14 feet wide and extends 4 feet into the project.

Tree Health: Poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 60% live wood in the canopy. Some dieback in canopy. Extreme drought stress. Borers in dead wood and along the trunk.

Tree Structure: Twin or bifurcated trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. Bifurcated trunk prone to splitting as size increases. Minimize excessive end weight.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (2) Declining

Recommendations: Preserve the tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree. May also treat for borers and wood rot decay.



Tree #25. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a single-trunk tree that is 2.8" in diameter measured at 24 inches above grade, due to its size and multiple branches above this point. It is 8 feet high, 6 feet wide with minor asymmetry to the west.

RPZ or root protection zone: 6 feet wide and extends 3 feet into the project.

Tree Health: Very poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 30-40% live wood in the canopy. Dieback and dead wood in canopy from extreme drought stress.

Tree Structure: Single trunk that branches into three scaffolds at 32 inches. Tree sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (1) Severe decline.

Recommendations: Preserve tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree.



Tree #26. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with three trunks, 4.8", 5.3" and 4.3", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 14 feet high, 16 feet wide.

RPZ or root protection zone: 16 feet wide and extends 6 feet into the project.

Tree Health: Very poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 40% live wood in the canopy. Dieback and dead wood in canopy from extreme drought stress.

Tree Structure: Multi-trunk, round-headed oval canopy. Largest trunk crosses over another trunk. This is structurally unsound and prone to splitting. Decay at base from former sucker removal. Some borer activity. Tree sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (1) Severe decline.

Recommendations: Preserve tree. This is a barely viable tree that needs deadwood removal and removal of cross over trunk. Irrigate once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree. May also treat for borers and wood rot decay.



Tree #27. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with seven trunks, 5.4", 4.1", 3.3", 2.5", 3.1", 2.1" and 3.1", measured at 24 inches above grade, due to its size and multiple branches above this point. It is 14 feet high, 15 feet wide with an asymmetry to the southeast.

RPZ or root protection zone: 15 feet wide and extends 7.5 feet into the project.

Tree Health: Fair condition, average foliage size, density, color and growth. 70% live wood in the canopy. Three of the seven trunks have decay and borer activity.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. The four live trunks have solid decay free attachments at the base.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree. May also treat for borers and wood rot decay.



Tree #28. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree that has three trunks 4.1", 2.0" and 1.1" in diameter measured at 24 inches above grade, due to its size and multiple branches above this point. It is 11 feet high, 10 feet wide with minor asymmetry to the southeast.

RPZ or root protection zone: 10 feet wide and extends 6 feet into the project.

Tree Health: Very poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 40% live wood in the canopy. Dieback and dead wood in canopy from extreme drought stress. Two of the three trunks are dead with wood rot decay and borers, and decay at base.

Tree Structure: Multi-trunk, somewhat round-headed tree. Tree sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (1) Severe decline.

Recommendations: Preserve tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree. May also treat for borers and wood rot decay.



Tree #29. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with five trunks, 6.4", 2.3", 4.6", 4.3" and 6.5", measured at 24 inches above grade, due to its size and multiple branches above this point. It is 14 feet high, 15.5 feet wide with an asymmetry to the southeast.

RPZ or root protection zone: 15.5 feet wide and extends 9 feet into the project.

Tree Health: Fair condition, average foliage size, density, color and growth. 80% live wood in the canopy. The base is solid except for one dead and decayed trunk (6.5") with borer activity. Also, some decay and borer activity in the canopy. Some of the wire fence has girdled the trunk.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. The four live trunks have solid decay free attachments at the base.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree. May also treat for borers and wood rot decay.



Tree #30. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with three trunks, 6.5", 5.7" and 8.8", measured at 24 inches above grade, due to its size and multiple branches above this point. It is 14 feet high, 20 feet wide and wider along the driveway than into the pasture or driveway.

RPZ or root protection zone: 20 feet wide and extends 8 feet into the project.

Tree Health: Fair condition, average to poor foliage size, density, color and growth. 60-70% live wood in the canopy. Some decay and borer activity in the canopy. Decay between the trunks.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. Included bark, cavity and decay at base. Potential to split at base. Multiple attachments in upper part of one trunk are also prone to splitting in the future.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree. May also treat for borers and wood rot decay.



Tree #31. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a single-trunk tree that is 5.0" in diameter measured at 24 inches above grade, due to its size and multiple branches above this point. It is 10 feet high, 12 feet wide with minor asymmetry to the southeast.

RPZ or root protection zone: 12 feet wide and extends 7 feet into the project.

Tree Health: Very poor condition, lack of water has stunted the tree. Poor foliage size, density, color and growth. 30-40% live wood in the canopy. Dieback and dead wood in canopy from extreme drought stress.

Tree Structure: Single trunk, round-headed tree with low branches. Tree sprouted from the rootstock of a once healthy English Walnut.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (1) Severe decline.

Recommendations: Preserve tree. This is a barely viable tree that needs deadwood removal and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health and save this native riparian tree.



Tree #32. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with four trunks, 4.1", 3.2", 8.8" and 9.6", measured at 24 inches above grade, due to its size and multiple branches above this point. It is 12 feet high, 17.5 feet wide with minor asymmetry to the southeast.

RPZ or root protection zone: 17.5 feet wide and extends 9 feet into the project.

Tree Health: Fair condition, average to poor foliage size, density, color and growth. 60-70% live wood in the canopy. Some decay and borer activity in the canopy. The dead, decaying and borer infested English Walnut trunk is the 9.6" trunk. Decay between the trunks.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. Included bark at the base for the two smaller trunks, and decayed remnant of the English Walnut trunk is in the center of the multi-stem attachment. cavity and decay at base. Potential to split at base.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree. May also treat for borers and wood rot decay.



Tree #33. Northern California Black Walnut (*Juglans californica v. hindsii*)

Size: This is a multi-trunk tree with two trunks, 4.9" and 7.3", measured at DSH (diameter at shoulder height or 54 inches above grade). It is 15 feet high, 17 feet wide with minor asymmetry to the southeast.

RPZ or root protection zone: 17 feet wide and extends 9 feet into the project.

Tree Health: Fair condition, average to poor foliage size, density, color and growth. 60-70% live wood in the canopy. Some decay and borer activity in the canopy. Small cavity and holes in one trunk.

Tree Structure: Multi-trunk, round-headed tree that sprouted from the rootstock of a once healthy English Walnut. Attachment starts at ground level and one trunk has some decay. Bifurcated or twin trunk is prone to splitting with excessive end weight.

Dripline Environment: flat, unirrigated grassland.

Overall Tree Condition: (3) Fair

Recommendations: Preserve the tree. This is a viable tree that needs deadwood removal and minor reshaping, and irrigation once or twice a month in the dry season. Mulch to insulate and conserve soil moisture. This will improve the health of this native riparian tree. May also treat for borers and wood rot decay.

Thirty-four (34) non-native River Red Gum (*Eucalyptus camaldulensis*) off site



Along the 273-foot northern fence line are located off-site, thirty-four (34) non-native River Red Gum (*Eucalyptus camaldulensis*) whose canopies and root zones extend over the property line. These provide a large screen between the properties and they are located within 40 feet of the house at 10619 Twin Cities Road, APN 148-0730-013. They range in size from 4" to 22" DSH and from 18 to 75 feet in height.

Canopy Size:

The canopies extend from zero (0) to 30 feet into the proposed project. The canopies average extent into the project zone is estimated to be 20 feet. Therefore, 20 feet times 273 feet equals 5460 square feet of canopy or half the canopy over the project. The total canopy of this group of trees would be estimated at double this or 10,920 square feet of canopy. These trees are located in a flat, non-irrigated, grassland.

Tree Health:

Most of these trees are single trunk, straight, upright, and solid with a good structure. They have good to average foliage size, density, color and growth. 90% live wood in the canopy. Some have low branches that extend into the project area, as seen in the picture to the left. There are many younger smaller trees that were probably seedlings from the first ones planted. Four larger multi-trunk trees have fallen over, were cut back to the

trunks and allowed to resprout. These are lower in height and not well structured. Overall, there are 19 trees rated as (4) good, with a 5 trees rated as (5) excellent and a 10 trees rated as (3) fair.

No tags were put on these trees due to the property owner's hesitancy for this report and access to his property.

The Root Protection Zone or RPZ should extend to the outermost extent of the canopies into the project area. No significant trenching or structures should be installed in this zone. These trees are established, drought tolerant and healthy. Any loss of roots underneath their canopies may trigger stress reactions, such as dead tissue, and/or insect and disease infestations. Trenching and equipment may also introduce unwanted pathogens into the root zone.

Ten (10) Green Wattle Acacia (*Acacia decurrens*) on-site

Picture below of ten (10) Green Wattle (*Acacia decurrens*) at the proposed driveway entrance to the project, along Twin Cities Road.





There are approximately 10 Green Wattle Acacia sprouts that have grown together in this location. There are three other stumps close by of other sprouts that were cut down or fell over and were cut down. Birds, squirrels or other rodents probably deposited the seeds here from a nearby tree located on the other side of the neighbor's driveway to the west. They range in size from 2-7" DSH and 14-25 feet high.

Canopy Size:

The canopies of these sprouts overlap and create a single oval to circular canopy that is approximately 28 feet in diameter. This calculates to 615 square feet of canopy.

Tree Health:

These trees are single trunk seedlings that have grown together in a clump. Most have a dramatic lean with excessive end weight over the base. This situation is prone to failure and falling over, as evidenced with several remaining stumps nearby. They have poor foliage size, density, color and growth. There is 40-50% live wood in

the canopy. Dieback and dead tissue are seen on all the trunks from severe drought stress and probably poor drainage. Borer activity is also noted on most trunks. This naturalized, no-irrigated clump of seedlings is in poor condition with poor structure, and it is rated (1) severe decline. Furthermore, these trees are sometimes considered invasive, nuisance and weedy tree species.

No tags were put on these trees, because they are slated for removal.

CONCLUSION

The thirteen (13) Northern California Black Walnut (*Juglans californica v. hindsii*) trees located on the neighbor's property to the west (10619 Twin Cities Road) whose canopies overhang the proposed project site, can be viable trees with proper care and irrigation. The proposed driveway on the project will be ten (10) feet from the property line, and this should be enough space for the **Root Protection Zone or RPZ** of the Black Walnuts as specified above. The Black Walnut rootstocks that sprouted from the once healthy English Walnut trees may have been another type of Black Walnut and not on Sacramento County's protected native tree list. However, according to the Fruit and Nut Research Center, UC Davis ([Walnut Rootstock & Scion Selection - Fruit & Nut Research & Information Center \(ucdavis.edu\)](http://ucdavis.edu)) the most common rootstocks for English Walnuts in California are Northern California Black Walnut (*Juglans californica v. hindsii*) and Paradox, a cross between English Walnut (*Juglans regia*) and Northern California Black Walnut (*Juglans californica v. hindsii*). Therefore, the conclusion must be drawn that the trees that sprouted from the rootstocks of a once healthy English Walnuts are indeed Northern California Black Walnuts (*Juglans californica v. hindsii*).

The thirty-four (34) non-native River Red Gum (*Eucalyptus camaldulensis*) are located within 40 feet of the house at 10619 Twin Cities Road, on the north side of the property. Their canopies and root zones extend over the property line, and provide a large screen and shade between the properties. The **Root Protection Zone or RPZ** should extend to the outermost extent of the canopies into the project area. No significant trenching or structures should be installed in this zone.

The on-site trees of concern are the ten (10) Green Wattle Acacia (*Acacia decurrens*) at the proposed driveway entrance to the project, along Twin Cities Road. These are poor quality, invasive and nuisance trees that are slated for removal for the proposed new driveway entrance.



AERIAL PHOTO of 10635 TWIN CITIES ROAD, GALT, CA95632, APN 148-0730-015.

This is an aerial photo of the Hammonds property at 10635 Twin Cities Road, Galt, CA 95632, APN 148-0730-015. This is a copy from Google Earth dated 6/04/2021. It also shows the adjacent property, 10619 Twin Cities Road, Galt, CA 95632, APN 148-0730-013, with the driveway to the west or top of picture and the house and River Red Gum (*Eucalyptus camaldulensis*) screen between the house and north property line to the right of the picture. The group of Green Wattle Acacias (*Acacia decurrens*) is visible along Twin Cities Road in the upper left-hand corner of the picture. Along the driveway are located the thirteen (13) native Northern California Black Walnuts (*Juglans californica v. hindsii*).

By William A Hobson

STATEMENT of QUALIFICATIONS

William A. Hobson – Horticultural Consultant

I have worked in the field of horticulture and natural sciences since 1967, when I first started working in retail and wholesale nurseries. Education, credentials (current and former), memberships, publications, and former jobs are listed below.

EDUCATION

M.S. Soil Science, specializing in **Pedology**, at **U.C. Davis**, March 26, 1998.

B.S. Soil and Water Science, with a **Minor in Geology**, at **U.C. Davis**, June 17, 1994.

A.A. Ornamental Horticulture, at **Merritt College**, Oakland California, June 7, 1974. Diploma of Graduation, San Leandro High School, San Leandro, California, June 1970.

Also,

Twenty hours per year continuing education in the area of pest control in order to maintain the CA State Licenses of PCA #72266 and QAL #97592 from 1976 to 2014. Ten hours per year for ISA Arborist Certification #WE-2274A.

Aquatic Weed School, October 22-23, 2002, U.C. Davis, with Joe DiTomaso.

Urban Forestry Academy, August 16-29, 1999, Certificate of Training, Urban Forest Ecosystems Institute, California Polytechnic State University, San Louis Obispo.

CREDENTIALS

CA State Contractor License C-27 #379024, Landscape Contractor continuous since 1979

Certified Arborist, International Society of Arboriculture (ISA), # WE-2274A since 1994

CA State Agricultural Pest Control Advisor License (PCA) # 72266 from 1976 to 2014

License Categories

- A. Insect. Mite and other invertebrates
- B. Plant Pathogens
- C. Nematodes
- D. Vertebrate Pests
- E. Weeds
- F. Defoliation
- G. Plant Growth Regulators

CA State Qualified Applicator License (QAL) # 97592 Categories from 1994 to 2014

License Categories

- B. Landscape Maintenance
- C. Right-of Way
- D. Plant Agriculture
- E. Forest
- F. Aquatic

MEMBERSHIPS

The National Arbor Day Foundation

International Society of Arboriculture

International Society of Arboriculture, Western Chapter

Affiliate and Charter Member of Tree Lodi – an Urban Forest Foundation

PUBLICATIONS

Gasser, U. G., Juchler, S. J., Hobson, W. A., and Stichler, H. 1995. The fate of chromium and nickel in subalpine soils derived from serpentinite. *Can. J. Soil Sci.* 75: 187-195.

Hobson, W.A. and R.A. Dahlgren. 1998. Soil forming processes in vernal pools of northern California, Chico area. *In* C. W. Witham et al (ed.) *Ecology, Conservation, and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference*. California Native Plant Society, Sacramento, CA.

Hobson, W.A. and R.A. Dahlgren. 1998. A quantitative study of pedogenesis in California vernal pool wetlands. *In* *Quantifying Soil Hydromorphology*. SSSA Special Publication no. 54. Madison, WI.

Hobson, W.A. and R.A. Dahlgren. 2001. Chapter 11B. Wetland soils of basins and depressions: case studies of vernal pools. *In* J.L. Richardson and M.J. Vepraskas (ed.) *Wetland Soils: Genesis, Hydrology, Landscape and Classification*. Lewis Publishers. Boca Raton, FL.

Coates, D.A., Hobson, W.A., McFadin, B. and Wilder, C. 2002. Mattole River Watershed, Technical Support Document for the Total Maximum Daily Loads for Sediment and Temperature. California Regional Water Quality Control Board, North Coast Region. Santa Rosa, CA.

Woodhouse, C., Hobson, W.A. and Wilder C. 2004. Upper Lost River Watershed, Technical Support Document for the Total Maximum Daily Loads for Temperature and Nutrients, California Regional Water Quality Control Board, North Coast Region. Santa Rosa, CA.

O'Geen, A.T., Hobson, W.A., Dahlgren, R.A. and Kelley, D.B. 2008. Evaluation of soil properties and hydric soil indicators for vernal pool catenas in California. *SSSAJ*: Vol.72: No.3: 727-740.

FORMER JOBS

Nurseryman – retail and wholesale – San Leandro, Fremont, Alameda

Chief Grounds Keeper – Claremont Country Club – Oakland

Landscape Gardener – East Bay Municipal Utility District – Oakland

Logger – choker setter – Cape Pole, Alaska

Landscape and Tree Contractor – San Francisco/Oakland Bay Area

Production Home Building – Fairfield, Vacaville

Research Scientist – Soil Science and Biogeochemistry- U.C. Davis

Arborist – City of Lodi

Environmental Scientist – State of California – DWR, State and Regional Water Boards

Arborist – City of Stockton

Agricultural Technician – Insect Trapping – San Joaquin County Ag. Dept.

Utility Arborist – ACRT, Inc – Central California