

# MEMO

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From:

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Date:

April 29, 2016

Arcadis Project No.:

B0066142.2016

Subject:

Rare Plant Survey in OU-E Soil and Sediment Removal Work Areas

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Joshua Tallis, an Arcadis botanist (resume attached as Appendix A), conducted desktop, field and reference surveys for special status plant species (rare plants) at the Former Georgia-Pacific Wood Products Facility located at 90 West Redwood Avenue, Fort Bragg, Mendocino County, California (site). The rare plant survey was focused on areas of Operational Unit E (OU-E) on the site where soil and sediment removal activities are currently being proposed for implementation in 2016. The rare plant survey area (survey area) is depicted on Figure 1.

## Survey Methods

On April 14, 2016, Arcadis performed a desktop review that included a search of special status plant species in the California Natural Diversity Database (CNDDDB) and a review of past botanical surveys at the site (Sholars 2005a and 2005b, WRA 2014). Table 1 lists the special status species that were included in this rare plant survey, as derived from the CNDDDB search and other botanical surveys.

On April 19, 2016, Arcadis conducted reference surveys at Pomo Bluffs Park and Noyo Headlands Park, which are immediately south and north of the site, respectively. Special status species observed flowering in the reference locations included Whitney's farewell-to-spring (*Clarkia amoena* ssp. *whitneyi*), Menzies' wallflower (*Erysimum menziesii*), Mendocino coast paintbrush (*Castilleja mendocinensis*), and purple-stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*). Other special status species were not blooming but could be easily recognized, such as short-leaved evax (*Hesperrevax sparsiflora* var.

*brevifolia*), Blasdale's bent grass (*Agrostis blasdalei*), and perennial goldfields (*Lasthenia californica* ssp. *macrantha*).

On April 20, 2016, Arcadis performed a site survey which involved visual observation of areas that could be safely accessed within the plant survey area (Figure 1). Within the survey area, transects were walked every 20 feet so that locations could be observed from no further than 10 feet away. In addition, closer inspection was conducted in areas with high likelihood of containing special status species such as barren soil or rock areas that could contain species such as short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) or Howell's spineflower (*Chorizanthe howellii*) and emergent wetlands that could contain native *Carex* sp., *Juncus* sp., or similar hydrophytic species. Binoculars were used to observed unsafe steep slopes or aquatic areas of the ponds that could not be safely accessed.

Species identification was confirmed using The Jepson Manual, Vascular Plants of California, Second edition (Baldwin 2012) and visual confirmation where needed using Calflora ([www.calflora.org](http://www.calflora.org)).

### Survey Results

No special status plant species were identified in the survey area.

Vegetative communities that would likely qualify as environmentally sensitive habitat areas (ESHAs) under the California Coastal Act (CCA) were not identified in the survey area. Small stands of Vancouver wild rye (*Elymus x vancouverensis*) have been previously identified in and adjacent to portions of the survey area (WRA 2014). During the April 20, 2016 survey no stands of Vancouver wild rye were observed. Instances of a native grass with similar morphological characteristics (i.e., meadow barley [*Hordeum brachyantherum*]) were observed in wet meadow portions of the survey area. However, these were not stands of meadow barley with community level integrity, rather they were fragmented instances of occurrence in highly weedy and disturbed areas.

Furthermore, in accordance with guidance from the California Coastal Commission (CCC; Dixon 2003 and CCC 2013), Arcadis evaluated the areas of Vancouver wild rye previously identified as unlikely to be ESHAs for the following reasons:

- Sensitive species were not identified in the Vancouver wild rye stands.
  - No species listed as rare, threatened, or endangered by the California Endangered Species Act, or candidates for such listing, were identified in the Vancouver wild rye stands. Additionally, no species identified by the California Native Plant Society with ranking of 1A, 1B, 2A, or 2B were identified in the Vancouver wild rye stands.
  - Vancouver wild rye stands are not recognized in the California Department of Fish and Wildlife (CDFW) List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (CDFW 2010).
- The stands of Vancouver wild rye previously identified in or adjacent to the survey area are unlikely to qualify as “especially valuable” under the CCA because they do not represent areas of community level integrity. This lack of community level integrity results from the areas being highly fragmented, of very small size (i.e., less than 0.1 acres in size), present in areas with substantial historical anthropogenic disturbance, and would be intermixed with a high percentage of weedy, nonnative, and/or invasive species.

- The stands of Vancouver wild rye previously identified in or adjacent to the survey area are unlikely to be easily disturbed or degraded by human activity and development. This is evidenced by the fact that these stands have developed despite intensive anthropogenic historical disturbance in these areas of the site. The areas where stands of Vancouver wild rye were identified in or adjacent to the survey area are located in the primary area of logging operations when the site was active.

### Survey Conclusions

During the rare plant survey activities no special status species or areas that would likely qualify as ESHAs under the CCA were observed in the survey area. The undeveloped portions of the survey area are estimated to be covered by 70-90% non-native invasive species. Native cattail (*Typha* sp.) is one of the most abundant natives and is found in the ponded habitats within the survey area.

### References

Baldwin B. et al. (ed.). 2012. The Jepson Manual, vascular Plants of California. Second Edition. University of California Press.

California Coastal Commission 2013. Local Coastal Plan Update Guide. July.

California Department of Fish and Wildlife 2010. List of California terrestrial Natural Communities Recognized by the California Natural Diversity Database. September 20120. Available online [http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_communities.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_communities.asp)

Dixon J. 2003. Designation of ESHA in the Santa Monica Mountains. Memorandum to California Coastal Commission Ventura staff. March 25, 2003.

Sholars T. 2005a. Botanical Field Survey of Some of the Areas of the Bluff Areas at the GP Mills Site. June.

\_\_\_\_\_. 2005b. Late Season Botanical Survey for the GP Mill Site Bluff 8-16-5. August.

WRA 2014. Botanical and Natural Communities ESHA Survey, Fort Bragg Coastal Trail, Georgia-Pacific Mill Site. October.

### Attachments:

Table 1. Rare Plant Species Targeted for Field Survey

Figure 1. Rare Plant Survey Area

Appendix A. Joshua Tallis Resume

Table 1  
Rare Plant Species Targeted for Field Survey  
Former Georgia-Pacific Wood Products Facility  
Fort Bragg, CA

Scientific Name	Common Name	Federal Status	California Status	Global Rank	State Rank	CNPS Rank
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	None	None	G4G5T2	S1	1B.1
<i>Agrostis blasdalei</i>	Blasdale's bent grass	None	None	G2	S2	1B.2
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	None	Endangered	G2	S2.2	1B.2
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes blennosperma	None	Rare	G4T2	S2	1B.2
<i>Campanula californica</i>	swamp harebell	None	None	G3	S3	1B.2
<i>Carex californica</i>	California sedge	None	None	G5	S2	2B.3
<i>Carex saliniformis</i>	deceiving sedge	None	None	G2	S2	1B.2
<i>Castilleja litoralis</i>	Oregon coast paintbrush	None	None	G4G5T4	S3	2B.2
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	None	None	G2	S2	1B.2
<i>Chorizanthe howellii</i>	Howell's spineflower	Endangered	Threatened	G1	S1	1B.2
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	None	None	G5T1	S1	1B.1
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	None	None	G1	S1	1B.2
<i>Cornus canadensis</i>	bunchberry	None	None	G5	S2	2B.2
<i>Cuscuta pacifica</i> var. <i>papillata</i>	Mendocino dodder	None	None	G5T1	S1	1B.2
<i>Erigeron supplex</i>	Supple daisy	None	None	G2	S2	1B.2
<i>Erysimum concinnum</i>	bluff wallflower	None	None	G3	S3	1B.2
<i>Erysimum menziesii</i>	Menzies' wallflower	Endangered	Endangered	G1	S1	1B.1
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	None	None	G5T3	S2	1B.2

Table 1  
Rare Plant Species Targeted for Field Survey  
Former Georgia-Pacific Wood Products Facility  
Fort Bragg, CA

Scientific Name	Common Name	Federal Status	California Status	Global Rank	State Rank	CNPS Rank
<i>Gilia millefoliata</i>	dark-eyed gilia	None	None	G2	S2	1B.2
<i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	None	None	G4T3	S2	1B.2
<i>Hesperocyparis pygmaea</i>	pygmy cypress	None	None	G1	S1	1B.2
<i>Horkelia marinensis</i>	Point Reyes horkelia	None	None	G2	S2	1B.2
<i>Juncus supiniformis</i>	hair-leaved rush	None	None	G5	S1	2B.2
<i>Lasthenia californica</i> ssp. <i>bakeri</i>	Baker's goldfields	None	None	G3TH	SH	1B.2
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	None	None	G3T2	S2	1B.2
<i>Lilium maritimum</i>	coast lily	None	None	G2	S2	1B.1
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	None	None	G4T4	S2S3	2B.2
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	None	None	G2T2	S2	1B.2
<i>Pinus contorta</i> ssp. <i>bolanderi</i>	Bolander's beach pine	None	None	G5T2	S2	1B.2
<i>Puccinellia pumila</i>	dwarf alkali grass	None	None	G4?	SH	2B.2
<i>Ramalina thrausta</i>	angel's hair lichen	None	None	G5	S2?	2B.1
<i>Rhynchospora alba</i>	white beaked-rush	None	None	G5	S2	2B.2
<i>Sanguisorba officinalis</i>	great burnet	None	None	G5?	S2	2B.2
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	purple-stemmed checkerbloom	None	None	G5T1	S1	1B.2
<i>Triquetrella californica</i>	coastal triquetrella	None	None	G2	S2	1B.2
<i>Viola palustris</i>	alpine marsh violet	None	None	G5	S1S2	2B.2





FORMER GEORGIA-PACIFIC WOOD PRODUCTS FACILITY  
FORT BRAGG, CALIFORNIA  
RARE PLANT SURVEY IN OUE SOIL  
AND SEDIMENT REMOVAL WORK AREAS

RARE PLANT SURVEY AREA





## Joshua T. Tallis, M.S., PWS

### Project Ecologist-Botanist

Mobile 831.747.0509  
joshua.tallis@arcadis.com

#### Education

##### MS/Plant Ecology

University of Washington,  
Seattle, 2005

##### BA/Political Science,

University of California, San  
Diego, 1993

#### Years of Experience

Total - 14

With ARCADIS – 11

#### Professional

##### Qualifications/Affiliations/ Training

-USFWS Approval to Conduct  
California Tiger Salamander  
Capture and Relocation on  
Former Fort Ord (1-8-04-F-25R)  
-Department of Pesticide  
Regulation Qualified Applicator  
Certificate (#132435).

-Society for Ecological  
Restoration International  
-California Native Plant Society

-Wetland Delineation Training;  
San Francisco State University  
(2010)  
-Advanced Wetland Delineation  
Training; San Francisco State  
University 2011.  
-MSHA Part 48 New Miner  
Training  
-HAZWOPER 40-Hr  
-OSHA Supervisor

#### Languages

Spanish – Fluent  
French – Proficient  
Bimoba – Proficient (West  
African dialect)

Mr. Tallis specializes in botany, plant ecology, habitat restoration and monitoring, and special status species protection. He has over 14 years of experience working in coastal, riparian, chaparral, forest, grassland, desert, freshwater and tidal habitats. Mr. Tallis has assisted large and small clients, both public and private sector, with Endangered Species Act, Clean Water Act, NEPA/CEQA, Migratory Bird Treaty Act, and Natural Resource Damage compliance.

### Representative Project Experience

#### Botanical Survey in San Francisco Bay Tidal Marsh

Romic, East Palo Alto, California; 2008

Authored work plan for natural resource damage assessment. Conducted field surveys for tidal marsh vegetation impacts in Laumeister and Faber Marshes with USFWS and CDFG biologists. Analyzed results and authored final report.

#### Ecological Restoration and Biological Support for Base Closure

U.S. Army, Fort Ord, Monterey, California; 2010 – Present

- **Maritime Chaparral Botanical Surveys and Vegetation Monitoring:** Conduct annual floristic surveys and vegetation growth after remediation activities.
- **Maritime Chaparral Habitat Restoration:** Co-coordinated the costing, design, permitting, implementation, monitoring and maintenance of a 14-acre maritime chaparral habitat restoration project after Munitions and Explosives of Concern remediation. Coordinated contracting and nursery monitoring to produce 65,000 native container plants of 16 species at four native plant nurseries.
- **Vernal Pool Monitoring and Restoration:** Coordinated and conducted seasonal wetland protocol surveys for California tiger salamander larvae. Conducted vernal pool restoration including seed collection, plant salvage, construction oversight, and vegetation monitoring.

#### Vegetation Monitoring in Coastal Wetland Mitigation Restoration

Discovery Builders, Berkeley, California; 2010 – Ongoing

Coordinated and conducted annual surveys of seasonal wetland vegetation, data analysis, and annual reporting. Advised client on project maintenance requirements. Conducted wetland delineation of seasonal wetland complex.

**Joshua T. Tallis**

Project Ecologist-  
Botanist

### **Oak Woodland Habitat Restoration and Ecological Services for Site Closure Requirements**

Confidential Client, San Jose, California; 2005 - 2010

- **Rare Plant Botanical Survey:** Design, implemented, and reported a 2-year rare plant (threatened and endangered) monitoring program on serpentine soils using CNPS Rapid Assessment Protocol. Established long-term monitoring plots and completed baseline monitoring report.
- **Invasive Plant Management:** Coordinate invasive control and monitoring program in serpentine grasslands for artichoke thistle (*Cynara cardunculus*) and barb goatgrass (*Aegilops triuncialis* L.). Advised client on management of grazing in conjunction with threatened and endangered species protection.
- **Native Plant Restoration:** Oversee plant restoration design on 11 projects, including sampling reference communities, designing planting plans, collecting seeds, experimentally testing seedling protection methods and contracting the production of 10,000 seedlings.
- **Stream Restoration:** Coordinated the design and permitting of three stream restoration projects and 1 seasonal pond restoration/creation project; including 1) replace a 200 ft. culvert with a meandering step pool system, 2) replace a bridge with rock and log weirs, 3) replacing a culvert and erosion feature with a bioengineered log step system, and 4) replacing a concrete slab with a seasonal breeding pond for federally endangered California tiger salamander.

### **Plant Monitoring During Soil Remediation in a Golden Gate National Recreation Area**

Pacific, Gas & Electric, Sausalito, California; 2009

Compose biological components of work plan, permits and Health and Safety Plan for remediation of lead impacted soil associated with tower removal. Provide biological monitoring for mission blue butterfly (*Icaricia icarioides missionensis*) larval host plants. Design and oversee erosion control Best Management Practice installation.

### **Botanical Surveys and Plant Tissue Sampling during Mine Remediation**

Agrium-Georgetown Canyon Mine, Georgetown, Idaho; 2015-Ongoing

Lead field team conducting botanical surveys and tissue sampling on a former mine site.

### **Mariposa Lily Restoration during Utility Installation**

Southern California Edison-Sylmar, California; 2016-Ongoing

Coordinated rare Mariposa Lily planting, protection, monitoring, and data management as mitigation for tubular steel pole installation.

### **Wetland Delineation**

Agrium-Georgetown Canyon Mine, Georgetown, Idaho; 2015-Ongoing

Conducted 610 acre field delineation of a sub-watershed to support mine remediation. Co-authored delineation report.



**Joshua T. Tallis**Project Ecologist-  
Botanist**Utility Corridor Botanical Surveys**

Sunrise Powerlink/SDG&amp;E-San Diego &amp; Imperial Counties, CA; 2008

Conducted special status plant surveys in undeveloped mountainous arid terrain (chaparral) for placement of high-voltage power transmission line towers.

**Wetland Restoration and Vegetation Monitoring**

University of Washington, Bothell Campus, Washington; 2005-2006

Conducted compliance monitoring and adaptive management for 58-acre wetland mitigation restoration project. Conducted wetland functional assessment. Coordinated invasive plant monitoring and control program. Provided nursery and field planting oversight.

**Non-Native Plant Abundance and Distribution Survey at National Park**

National Park Service, Mt. Rainier, Washington; 2001

Directed field research teams conducting non-native plant abundance and distribution study along rivers, trails, and roads of Mt. Rainier and North Cascades National Parks. Trained team members in plant identification, sampling techniques, use of instruments and data collection. Developed GIS maps using ArcView and orthographic photos.

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**Scientific Presentations & Publications****Tallis, J.**, Carroll, M., Reimer K., Fenter, C., Fischer, D., Muir, M., Siemens, M. 2013.

Comparative approaches to establishing a difficult-to-grow shrub for restoration: A case study using shaggy-barked manzanita (*Arctostaphylos tomentosa* ssp. *tomentosa*) in California. Society for Ecological Restoration conference. Madison, WI. October.

**Tallis, J.**, Tull, J., Kautzman, N. 2011. Avoiding compensatory mitigation by maintaining, enhancing and creating habitat during industrial site demolition and remediation: A case study from San Jose, California. Society for Ecological Restoration conference. Merida, Mexico. August.

**Tallis, J.** 2011 Salvaging manzanita burls and chamise lignotubers for maritime chaparral restoration during munitions and explosives of concern (MEC) remediation. Society for Ecological Restoration World Conference. Merida, Mexico. August.

**Tallis, J.** 2007. Using Roundup® and Transline® herbicides to control invasive artichoke thistle (*Cynara Cardunculus*) growing in rare plant habitat. Joint meeting of Society for Ecological Restoration and Ecological Society of America. San Jose, CA. August.

**Tallis, J.** 2005. Restoring Mycorrhizal Fungi in degraded tropical soils. M.S. Thesis, University of Washington, College of Forest Resources. (Thesis No. 54666).