

4 Wheel Properties LLC

Invasive Plant Management, Restoration

and Monitoring Plan

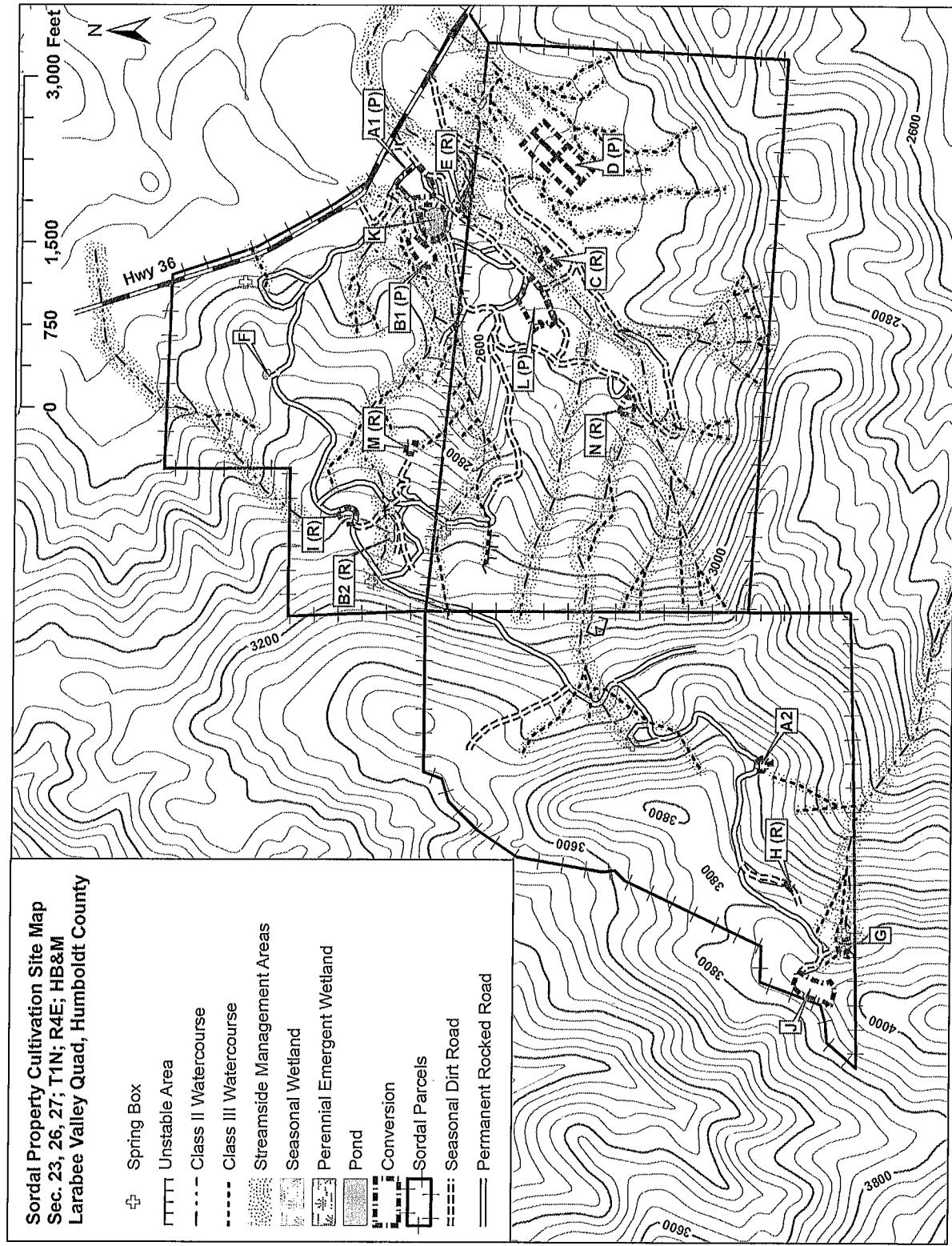
APNs #210-071-001, #210-054-008, and #210-062-007

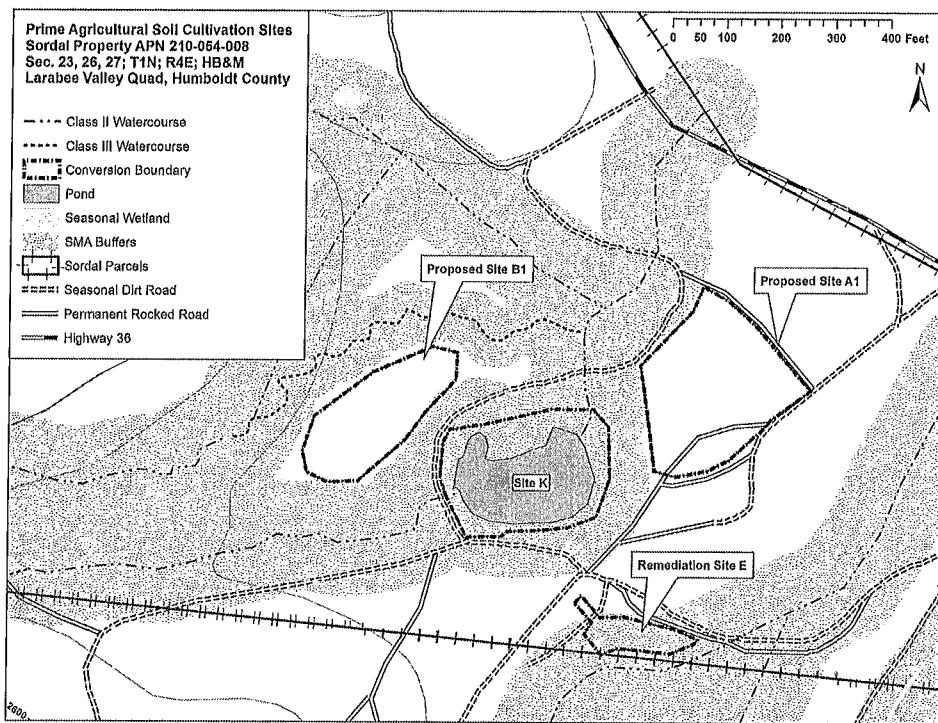
Setting

The Sordal project (a.k.a. 4-Wheel Properties) is located in Sections 23, 26 and 27, Township 1 North, Range 4 East HB&M; Humboldt County, on the Larabee Valley USGS 7.5' quadrangle. The project area consists of three assessor's parcels (APNs: 210-071-001, 210-054-008, 210-062-007), southeast of the town of Bridgeville, CA. The biogeographic region can be described using a three-tiered hierarchy of province, region and sub-region. This site lies within the California Floristic Province, Northwestern California region, and North Coast Range sub-region. Elevation ranges from approximately 2400 to 2900 feet. The area contains open grasslands and mixed coniferous forest dominated by Douglas fir (*Pseudotsuga menziesii*) and tanoak (*Notholithocarpus densiflorus*) with some oak woodland. Ponds, wetlands, and riparian areas occur on the property. Slopes on the property range from very gentle to steep, and the aspect is variable.

Project Summary

The properties owned by Erik Sordal with current cultivation (APNs 210-054-008 and APN 210-062-007) contain remediation sites, including areas within Streamside Management Areas. This report documents site conditions, restoration planting plans, scheduled implementation and maintenance, performance standards, and monitoring requirements. This report also characterizes invasive plant threats and prescribes invasive plant species removal. Please see Tables 3-4 for potential and observed invasive plant species in the area. Updates are provided to the RPF conversion and restoration documents that have been prepared for each parcel. Please see the Botanical Survey Report for additional details on habitats and species occurring in the area. Restoration is recommended to minimize and mitigate impacts of the current operation on aquatic resources, protected species, and sensitive habitats. Monitoring over a five year period should inform adaptive management with continuous maintenance and replanting as needed. An annual report should be submitted showing progress toward objectives for all restoration areas by January 1 of each year.





Map 2. The proposed sites on the northeastern parcel (008) shall be set back from all stream courses and wet areas according to the proper SMA buffers.

Onstream Pond (Site K)

The on-stream pond near the residence is located in open grassland on an altered stream course. Cultivated Port Orford cedar and invasive black locust trees are planted around the pond. Some native willows are naturally recruiting to the edge of the pond, which was mostly bare, with patches of pasture grasses and pennyroyal. The culverts at the inlet and outlets on a class II watercourse are failing and must be replaced (Road Points 5 and 6). The culverts should be replaced according to specifications in the LSAA. The inlet and outlet should be rocked with 12" – 18" diameter rock. The pond shall not be stocked with fish. The pond was evaluated on 1/30/2020. The water clarity was low, but high numbers of invertebrates that indicate high water quality (caddisflies, water boatmen) were present along the edge of the pond. The pond is likely high quality habitat and potential breeding habitat for the western pond turtle and northern red legged frogs. The foothill yellow legged frog also has the potential to use this site. When surveyed under winter conditions, the pond maintained relatively low temperatures. At 11am on 1/30/20, the stream running into the pond was 49 degrees F, the pond was 50 degrees F, and the shallow water coming out of the pond outlet was elevated to 51 degrees F. With low vegetation cover, the pond has the potential to increase water temperatures substantially during the summer, which may negatively impact habitat quality for native amphibians and sensitive aquatic invertebrates found in the area.

At least 20 native riparian shade trees such as white alder, California buckeye, big leaf maple, Oregon ash, or black cottonwood should be planted around the pond edge where they may provide shaded native habitat. Invasive black locust trees on the northern pond edge are in poor health. Black locust trees have the potential to spread to the natural environment and alter native vegetation communities. The nine black locust trees should be removed and replaced with native trees such as the riparian trees listed above or Oregon white oak or Douglas fir in upland areas. Native willows (such as arroyo willow, Sitka willow, or shining Pacific willow) should also be planted in saturated soil approximately every ~6-10 feet around the edge of the pond. Some willows appeared to be naturally recruiting to the pond edge, and these should be supplemented by planting where bare areas remain. Willow cuttings may be sourced onsite or from a local nursery. Areas for recreational access to the pond may be left clear of vegetation. Willows are expected to improve water quality and habitat quality for native amphibians, western pond turtles, songbirds, and waterfowl. Willows should also be planted between the outlet culvert and road along channel leading the away from the pond to improve the quality of water flowing back into the stream channel (Photo 7). Herbaceous native wetland plants such as small-fruited bulrush or spreading rush may also be planted as desired in lieu of willows. The area should be surveyed for invasive American bullfrogs annually according to CDFW guidelines. Amphibian surveys targeting the CESA Candidate foothill yellow-legged frog and other sensitive species are recommended prior to work on the inlet and outlet.

Mitigation Measures:

- a) Cut down invasive black locust trees on the northern edge of the pond and replace them with at least 9 native trees (potential species listed in Table 1).
- b) Complete all recommended culvert replacements, earthwork, etc.
- c) Plant native willows along the saturated edge of the pond every ~6-10 feet.

d) Plant 20 native riparian trees approximately 5-20 feet back from the saturated edge of the pond.

Performance Measures:

1. No invasive black locust shall remain in the area or spread to other locations on the property.
2. All work on the pond inlet and outlet is completed.
3. Native willows take root and increase vegetative cover along the pond edge.
4. A total of at least twenty healthy native trees are shading the pond area at the end of the monitoring period (at least 60% survival).

Monitoring:

1. Document the removal of black locust trees and new plantings.
2. Document work on the pond.
3. Document survival rate and estimate percent vegetative cover of willows along the pond edge. Photo-document site.
4. Document survival rate and estimate percent cover of native trees within the fenced pond site.



Photo 3. The pond at Site K is on-stream, and native habitat enhancement is recommended.



Photo 4. Invasive black locust trees (seen here in winter) to be removed from the pond area may be identified by their cascade of white pea-like flowers and seed pods.

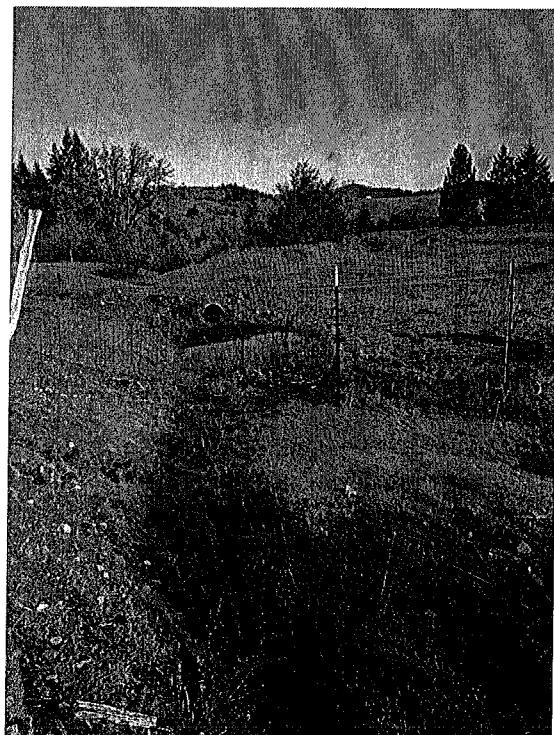
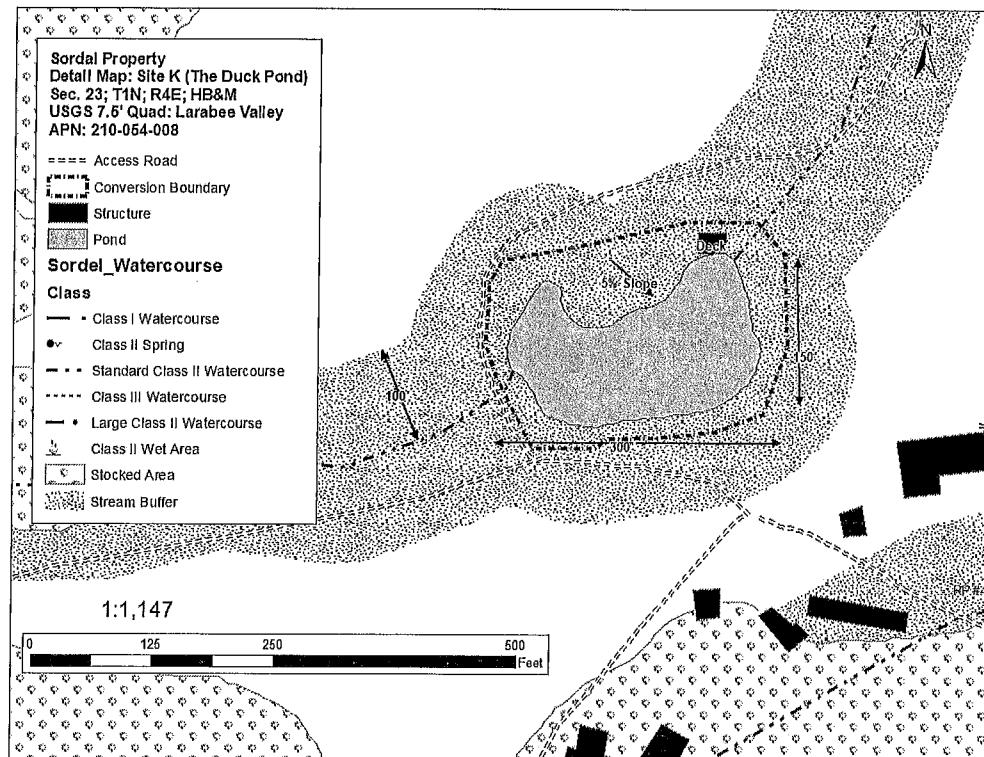


Photo 5. The outlet channel should be rocked and revegetated with native willows.



Map 4. The on-stream pond needs work on the inlet and outlet. Native habitat enhancement by planting native trees and willows is recommended.

Existing Site I (The Greenhouses)

The pre-existing and cultivation site is located on an upland slope within mixed coniferous forest. This 130' x 170' site was converted for cannabis cultivation by 2012. The site is currently occupied by 4 greenhouses. Surrounding vegetation includes Douglas fir and black oak, with a minor amount of other hardwoods. It is recommended that the cultivation is relocated from the steep forested slope to the open flat grassland closer to Hwy 36. All cultivation materials should be removed. It is recommended that a portion of the site is rocked to be used as an emergency access vehicle turnaround. The rest of the site should be planted with Douglas fir or other upland tree species found in the area.

Recommended mitigation for Site I:

- Remove green houses and all cultivation related materials from the site.
- Rock an emergency access turnaround, ~50' x 50'
- Maintain all existing vegetation in the surrounding area. No grading required.
Maintain outsloped log landing.
- Straw mulch all bare soil within 100 feet created from the removal process

e) Slash piles and woody debris piles present on site may be loped and scattered across the site.

Performance Measures:

1. All cultivation materials shall be removed.
2. The area will have a rocked safety turnaround area.

Monitoring:

1. Document the removal of the cultivation materials and the rocked emergency turnaround.
2. Document the and estimate percent vegetative cover at the site.

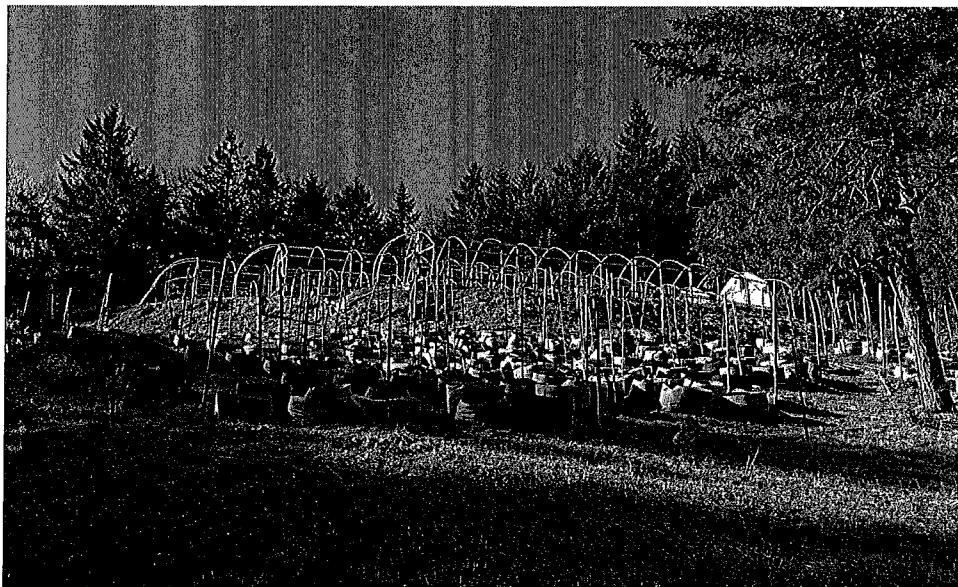
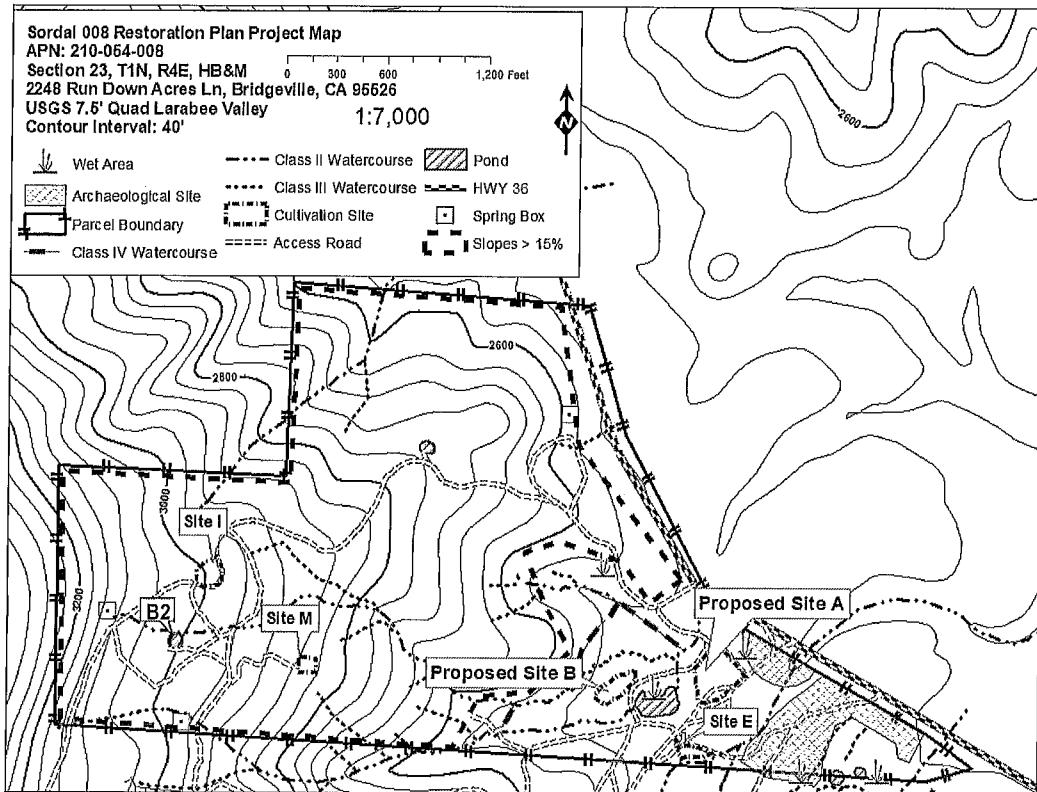


Photo 6. Site I includes greenhouses on the graded landing and outdoor cultivation on the surrounding slope. This shall be replaced with an emergency access turnaround and planting Douglas fir on the slope.



Map 5. The northeastern parcel contains current sites on >15% slopes to be relocated.

Existing Site M (The Mid-Slope Garden)

The mid-slope site is located on >15% slope with poor access trails. This 86' x 100' site was first converted for cannabis cultivation around 2012 when aerial imagery shows that an outdoor garden was planted. It is recommended that this site be relocated out of the TPZ to the AG field proposed. Several greenhouses have occupied the site over the years, but currently no greenhouse is present. The site is located on the edge of oak woodland and a grassy meadow with some serpentine soils. Serpentine soils should be left undisturbed in the remediation process. Surrounding vegetation includes Douglas-fir, and mixed oak woodlands. It is estimated that ~3-6 oaks and other hardwoods were removed from the area between 2010 and 2012. The road system is primarily a skid trail and can only be used seasonally. It is recommended that the site be removed and the planted with oak, and/or other native upland trees listed in Table 1. The road should be decommissioned and all cultivation materials should be removed from the slope.

Recommended mitigation for Site M:

- Remove green houses and all cultivation related materials from the site.
- Maintain all existing vegetation. No grading required. Maintain outsloped flat.
- Straw mulch all disturbed bare soil within 100 feet and seed with a native grass seed mix such as Pacific Coast Seed Native Erosion Control Mix.

d) At least 10 native tree species shall be planted the first winter following completion of the earth work.

Performance Measures:

1. All cultivation materials will be removed.
2. Bare earth will be revegetated with at least 6 healthy native trees (at least 60% survival) and grass by the end of the monitoring period.

Monitoring:

1. Document removal of cultivation materials and revegetation area.
2. Document survival rate of plantings and estimate vegetative cover in the cultivation area.

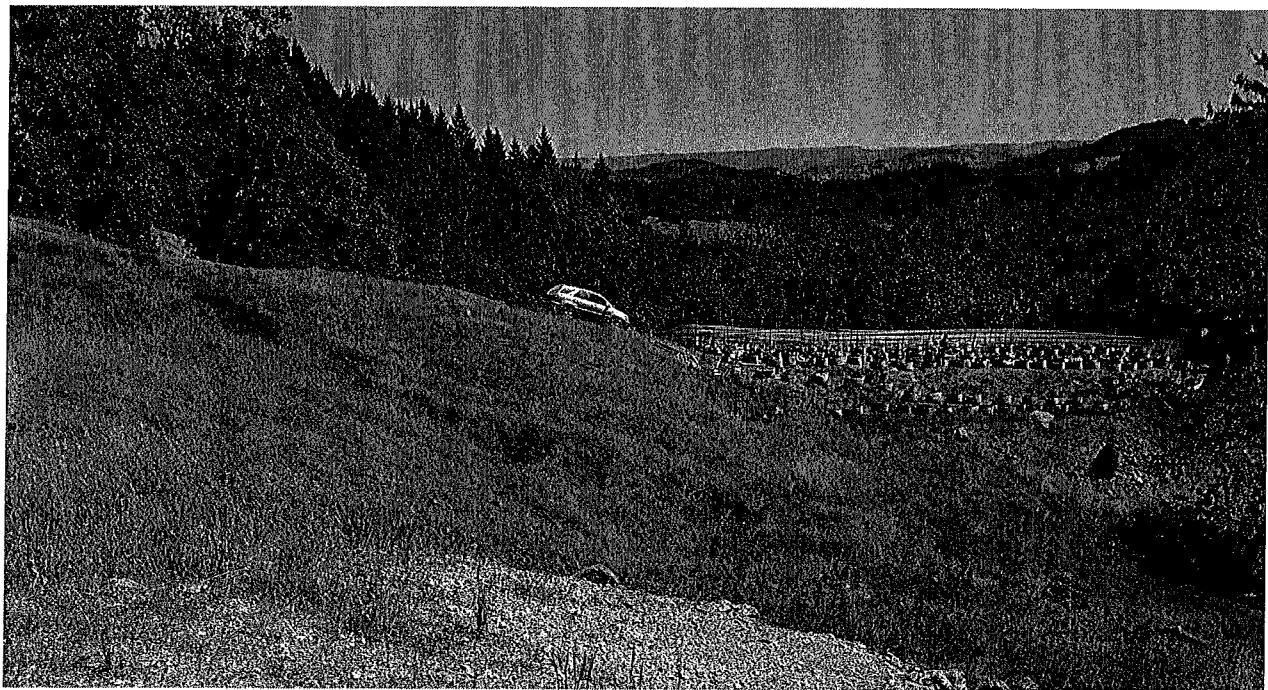
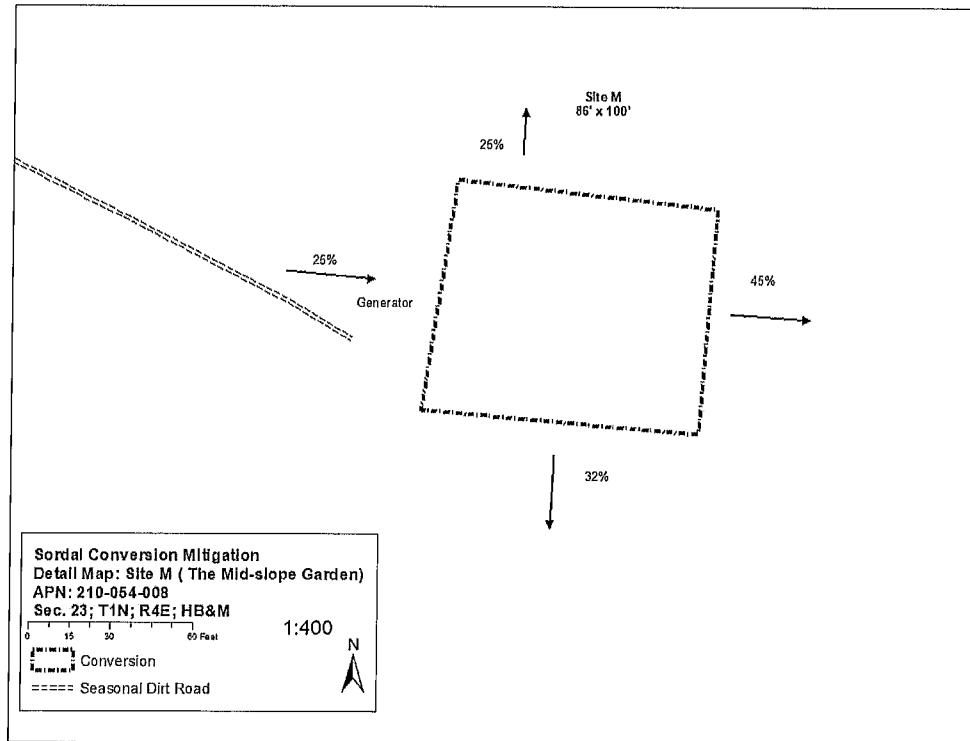


Photo 7. Site M cultivation site should be remediated and restored by planting native trees and grass. The nearby serpentine area is characterized by a blue-green tinge, and this area should be avoided.



Map 6. The outdoor cultivation site M is located on >15% slope with poor access.

Mid-Slope On-Stream Pond (Site B2)

Conversion Site B2 is an on-stream pond within the forested slope. The site was first converted for a recreational pond (90' by 62') between 2014 and 2016. Surrounding vegetation includes Douglas-fir and black oak, with a minor amount of other hardwoods. The pond and fill material to create the earthen dam expands the site to 95' x 116'. The pond is failing with the flex pipe eroding the earthen fill. The pond has been recommended to be removed, contoured and planted with trees. Work should take place during dry conditions in the summer to early fall.

Recommended mitigations for Site B2:

- Remove existing pond outlet, the earthen dam and relief culvert structures.
- Excavate and align the 90' channel to grade. Spoils from excavation shall be placed within the southern section of the pond and feathered into to the slope.
- Slope the watercourse banks back to a 1: 1.5 ratio and compact.
- Straw mulch all bare soil within 100 feet of the watercourse.
- Slash piles from past logging may be lopped and scattered across the site to reduce rill erosion.
- Restoration work shall occur on dry rainless periods between June 1st and October 15th

Performance Measures:

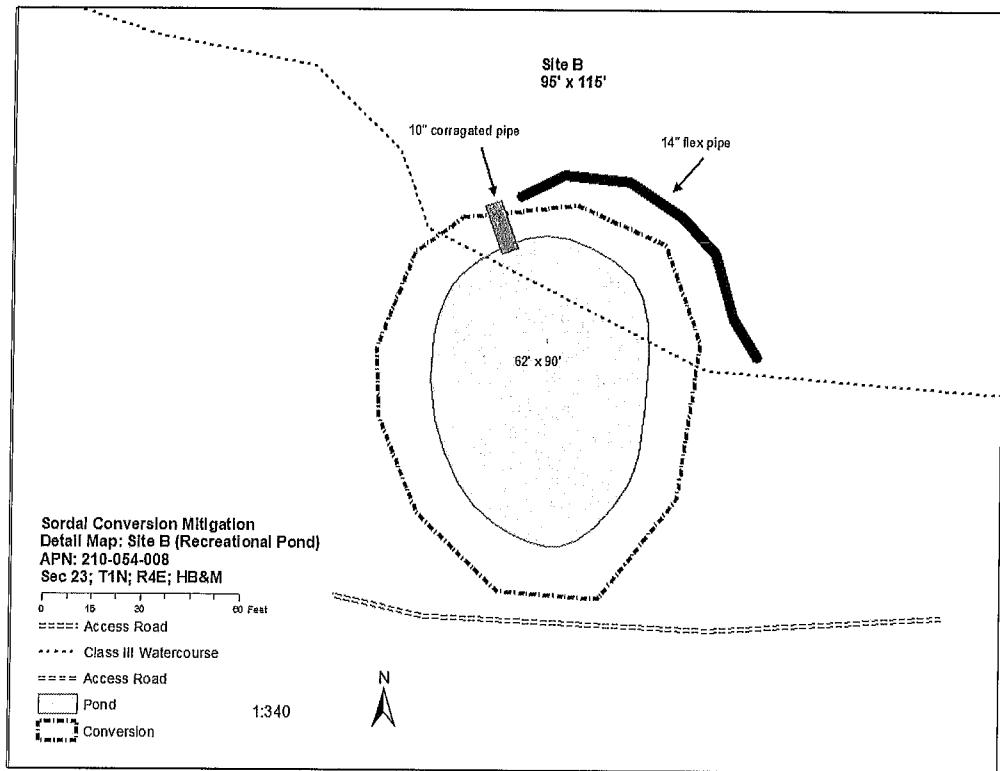
1. The pond will be removed and regraded to a natural contour.
2. At least 60 healthy Douglas fir trees will be thriving in the pond area at the end of the 5-year monitoring period.

Monitoring:

1. Document the regrading of the pond area.
2. Document survival rate and percent vegetative cover at the site.



Photo 8. The onstream pond in the forested area.



Map 7. The pond at Site B2 is on-stream. The pond and all related materials shall be removed.

Compost Pile

At the end of each growing season, potting soil and other organic materials should be composted in a designated covered compost pile surrounded by a barrier to prevent erosion. During site visits, a large compost pile was observed to be supporting many weedy and invasive plants, most notably bull thistle. Nutrient-rich, disturbed bare soil can become hotspots for invasive plants and other weedy species to thrive and disperse to other areas of the property where they may degrade native habitat quality. Bull thistles should be pulled in the spring before they go to seed. The compost pile should be kept covered at all times to suppress any other invasive species and prevent nutrient-rich runoff and erosion to the surrounding area.



Photo 9. Invasive bull thistle thriving in an uncovered compost pile near Proposed Site A1.

Western Parcel (APN 210-062-007)

Remediation Site H (The Abandoned Slope Garden)

This upper site contains >30% slopes. The area should be abandoned, and the graded area should be restored to the natural contour. The water storage bladder and all cultivation materials should be removed. This 40' x 80' site was first graded for a log landing prior to 2004. The site has been graded several times since 2004. The site was converted for cannabis cultivation in 2014 and is currently abandoned. The site is located in a partially oak woodland grassy meadow.

Surrounding vegetation includes Douglas fir and black oak and tan oak, with a minor amount of other hardwoods. Fill failure is present and it is recommended that the failing material be pulled and the site planted. The road system is a dirt road and can only be used seasonally.

Recommended mitigation for Site H:

- a) Failing perched fill material (25' by 50'). Pull back fill material to 1.5:1 ratio slope to prevent further failure.
- b) Douglas-fir trees or other upland native tree species shall be planted in the disturbed area.
- c) Trees shall be planted the first winter following completion of the earth work.
- d) Remove all cultivation related materials and all other garbage.

e) Any remaining disturbed fill should be seeded with a native grass mix such as Pacific Coast Seed Erosion Control Mix prior to the Nov. 15 winterization deadline.

Performance Measures:

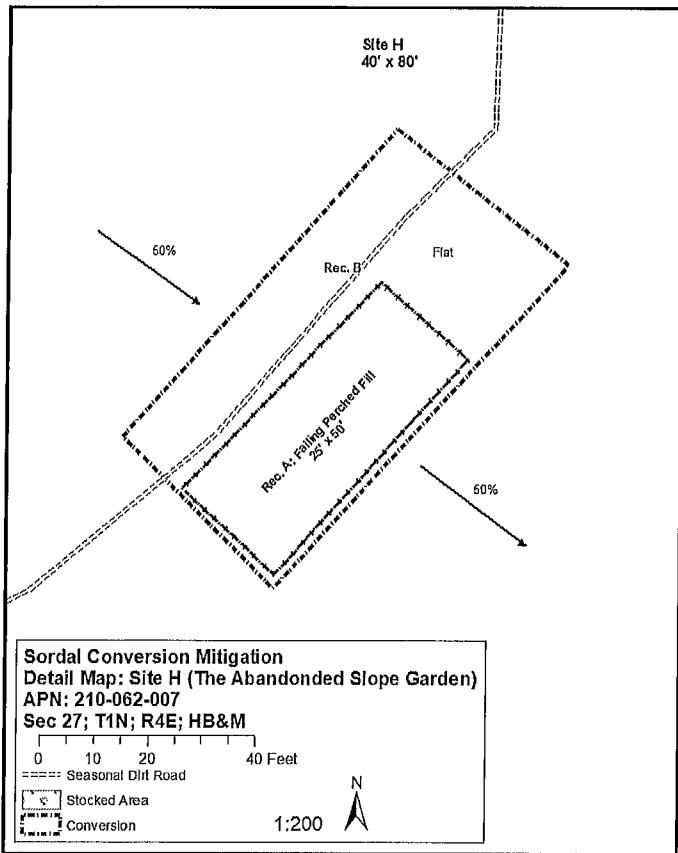
1. Perched fill will be set back and erosion will be minimized.
2. Cultivation area will be revegetated.

Monitoring:

1. Document removal of fill and tree planting.
2. Document survival rate of trees planted, estimate prevent vegetative cover in restoration area.



Photo 10. Site H was located along a seasonal road.



Map 8. Perched fill should be pulled back and the area should be stabilized with native grasses and straw mulch.

Abandoned Outdoor Cultivation Materials

Former cultivation materials scattered along the mid-slope road should be removed. All pots, potting soil, and other cultivation materials and debris must be removed from the road and properly stored or taken to the dump. Potting soil and other materials should not be left in areas not designated for cultivation.



Photo 11. Cultivation materials need to be removed from the spur road. Potting soil should be composted in a designated covered compost pile, and other materials should be stored in sheds or taken to the dump.

Implementation and Monitoring

It is recommended that other restoration plants sourced from local native plant nurseries such as Samara Restoration, the Mattole Restoration Council, or the local CNPS Nursery at Freshwater Farms. Willow cuttings for riparian restoration may be made onsite or willows may be sourced from a native plant nursery. If using willow cuttings onsite, adhere to the following USDA restoration guidelines (Hoag 2007):

- Cut stems from healthy willow plants without killing the source plant.
- Cut stems should be at least 3/4" diameter and at least 4' long.
- Cut off the upper tip of the stem and cut all side branches.
- Keep track of which side is up by using a diagonal cut on the bottom and horizontal cut on the top. They must be planted right-side-up.
- Soak the cuttings for a day prior to planting.
- Bury the lower half to two thirds of the cutting deep into saturated soil.

Native grass seed to be used in erosion control should be locally common native species. The applicant should use the recommended Pacific Coast Seed Native Erosion Control Mix or other native grass and/or forbs mix sourced from a knowledgeable local native plant nursery. The recommended Pacific Coast Seed Native Erosion Control Mix (available to order online at www.pacificcoastseed.com) contains the following quick-growing, locally common species:

California brome (*Bromus carinatus*)
Blue wildrye (*Elymus glaucus*)
Small fescue (*Festuca microstachys*)
Tomcat clover (*Trifolium willdenovii*)

Native grass seed should be applied to areas of bare dirt in remediation sites with a weed-free straw mulch prior to the November 15th winterization deadline. The recommended rate of application for the Pacific Coast Native Erosion Control Mix is 45lbs/acre, which is approximately 1 pound/1,000 square feet. The estimated total area of disturbance that should be seeded with native grass is approximately 1 acre, so it is recommended that 45lbs of the Pacific Coast Seed Native Erosion Control Mix is purchased for the project. Additional forbs have been included in the native plant restoration palette to fill in bare areas as needed. Seeding native grass and planting other native plants is expected to help prevent invasive plant species from becoming established in disturbed areas.

Invasive plants that should be targeted for management on the property include black locust, Scotch broom, Himalayan blackberry, yellow star thistle, and bull thistle (Table 3). These plants have the potential to aggressively spread and degrade native habitat. If these plants spread into project areas, they should be pulled immediately. Black locust trees shall be removed from the Site K Pond habitat enhancement area and be replaced with native trees. Bull thistle shall be removed from the uncovered soil pile and other project areas prior to going to seed in the spring. Other invasive species observed on the property were sparsely distributed on the property and not noted within project areas. These species should be targeted for early detection and removal from project areas along with other Cal-IPC *High*-rated invasive species that could occur in the area (Table 4). Please see attached Cal-IPC Weed Alert pamphlets for identification and management information.

Maintenance and monitoring of the restoration area is recommended over a five-year period. The restoration area should be photo-documented and maintained on a monthly basis during the dry season after planting, when young plants are most vulnerable to desiccation. Plants may need to be deeply watered, weeded, and mulched during this period to enhance survival. Each fall, the restoration areas should be monitored by photo-documenting the sites, recording the survival rate of restoration plantings, and by estimating percent vegetative cover of the restoration areas. Any bare areas should be reseeded with native grass and mulched prior to November 15. The goals of the restoration project are erosion control, improved water quality, and native habitat restoration. Restoration objectives established to meet these goals include

>60% survival rates for restoration planting, stabilizing eroding banks, and providing native riparian shade and habitat by the end of the five-year monitoring period. Adaptive management should be employed throughout the monitoring period. If initial plantings are not successful and the project is not meeting performance standards, purchasing additional nursery stock and replanting may be needed. Document any new replacement plantings. Annual monitoring reports with photo-documentation, monitoring data, and progress toward restoration objectives should be provided to CDFW and Humboldt County Planning Department for review by January 1 of each year. The final monitoring report in year five should include an analysis of how project goals and objectives were or were not met.

Reporting

Submit annual reports with photo-documentation to CDFW and Humboldt County Planning Department by January 1 of 2021-2026.

Agencies to Receive Copies of Monitoring Report:

California Department of Fish and Game
619 Second St.
Eureka, CA 95501
(707) 445-6493 | FAX: (707) 445-6664

Humboldt County Planning and Building Department
3015 H St.
Eureka, CA 95501
FAX (707) 268-3792

References

Cal IPC (California Invasive Plant Council). 2019. The Cal-IPC Inventory. (online edition). Berkeley, CA. <<https://www.cal-ipc.org>>.

Hoag, Chris. 2007. How to Plant Willows and Cottonwoods for Riparian Restoration. USDA-NRCS Plant Materials Center, Aberdeen, Idaho. Plant Materials no. 23.

Humboldt County Weed Management Area. 2010. Invasive Weeds of Humboldt County: A Guide for Concerned Citizens (2nd Edition). Arcata, California.

Table 1. Native Plant Restoration Palette. This plant list was compiled based on personal observation of plants surrounding area, and referring to CNPS CalScape and Native Plants PNW. Plants may be selected as available at Riparian species should be planted along watercourses, while upland plants may be planted in drier areas. Spacing

Type	Common Name	Scientific Name	Spacing	Propagule Source	Habitat and Notes
Trees	Bigleaf maple	<i>Acer macrophyllum</i>	~16-20ft	nursery stock	Riparian to upland, moderate water requirement.
	California buckeye	<i>Aesculus californica</i>	~16-20ft	Nursery stock or Seed collection	Riparian to upland, low water requirement.
	Oregon ash	<i>Fraxinus latifolia</i>	~10-16ft	Nursery stock	Riparian, moderate water requirement.
	Oregon white oak	<i>Quercus garryana</i>	~16-20ft	Nursery stock	Upland slopes, growing in riparian areas.
	Black cottonwood	<i>Populus trichocarpa</i>	~12-16ft	Cuttings, or nursery stock	Wetland riparian, moderate water requirement.
	Douglas fir	<i>Pseudotsuga menziesii</i>	~12-14ft	Nursery stock	Upland, low water requirement.
	Shining Pacific willow	<i>Salix lasiandra</i>	~12-14ft	Willow cuttings	Wetland riparian, moderate water requirement.
Shrubs	Coyotebrush	<i>Baccharis pilularis</i>	~6-12ft	Seed collection, nursery stock	Highly tolerant of difficult conditions.
	Deer brush	<i>Ceanothus integerrimus</i>	~6-12ft	Nursery stock	Upland slopes, valuable for wildlife.
	Oceanspray	<i>Holodiscus discolor</i>	~8-16ft	Nursery stock	Upland slopes, riparian conditions. Valuable for wildlife.
	Nootka rose	<i>Rosa nutkana</i>	~6-10ft	Nursery stock	Riparian. Valuable as barrier to thicket. Germination requires scarifying.
	Thimbleberry	<i>Rubus parviflorus</i>	~6-10ft	Nursery stock	Riparian, upland slope requirement. Disturbance required for wildlife.
	Arroyo willow	<i>Salix lasiolepis</i>	~4-8ft	Willow cuttings, nursery stock	Wetland riparian, tolerate conditions.
	Sitka willow	<i>Salix sitchensis</i>	~4-8ft	Willow cuttings, nursery stock	Wetland riparian, moderate water requirement.
Herbaceous Plants	Common yarrow	<i>Achillea millefolium</i>	~2-4ft	Seed collection, division, or nursery	Valuable for erosion control of a variety of conditions.
	Spreading rush	<i>Juncus patens</i>	~3-6ft	Nursery stock	Wetland and seasonal high water requirement.
	Small-fruited bulrush	<i>Scirpus microcarpus</i>	~2-4ft	Nursery stock	Wetland areas. Fast-growing aquatic and amphibious.

Table 2. Schedule for Implementation, Inspection, and Maintenance for Pond and Channel

Stage	Timing	Details
1. In-Stream Work	Late Summer/Fall (August-October 2020)	Channel rocking, culvert replacements and pond drawdown should occur during the dry season, after the amphibian breeding season has passed.
2. Winterization	Fall, completed by November 15	All bare earth must be seeded and mulched after work on the pond and channel is completed, before winterization deadline. Ensure that all potting soil or other organic material is in the covered compost pile or covered storage.
3. Planting Trees	Winter-Early Spring	Trees should be planted during the rainy season to prevent desiccation.
4. Willow Cuttings and Plantings	Early Spring	Cutting and planting willows in the channel should occur during the willows' winter-early spring dormant stage and while the soil is wet.
5. Dry Season Watering and Maintenance	Summer-Fall (May-September)	The restoration area should be monitored and maintained on a monthly basis during the dry season after planting.
6. Invasive Plant Monitoring and Control	Spring-Summer	Pull bull thistle and any other invasive plants occurring in restoration and cultivation areas (see Table 3).
7. Annual Monitoring and Maintenance	Fall (September-November 15) for 5 years	Each fall, the restoration area should be monitored for planting success and percent vegetative cover. Photo-document each site. Remove any remaining invasive plants. Replant, reseed grass and re-mulch bare areas as needed.
8. Annual Monitoring Report Deadline	January 1 st 2021-2026	Monitoring reports should be turned in by the end of each year, including a final report in year five on goals and objectives met.

Table 3. Invasive species observed on the parcel. Please see attached Invasive Species Alert identification information from CAL-IPC and Checklist for Invasive Species Removal and Restoration Monitoring. Invasive plants prioritized for removal are in bold.

SPECIES	COMMON NAME	FAMILY	OPPORTUNITY	CAL-IPC RATING	STATUS ON SITE
<i>Robinia pseudoacacia</i>	black locust	Fabaceae	containment	Limited	Present
<i>Cytisus scoparius</i>	Scotch broom	Fabaceae	containment	High	Present
<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	containment	High	Present
<i>Anthoxanthum odoratum</i>	sweet vernal grass	Poaceae	containment	Moderate	Present
<i>Bromus diandrus</i>	ripgut brome	Poaceae	containment	Moderate	Limited Invasion
<i>Carduus pycnocephalus</i>	Italian thistle	Asteraceae	containment	Limited	Present
<i>Centaurea solstitialis</i>	yellow star thistle	Asteraceae	containment	High	Present
<i>Cirsium vulgare</i>	bull thistle	Asteraceae	containment	Moderate	Limited Invasion
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	containment	Moderate	Present
<i>Cynosurus echinatus</i>	hedgehog dogtail grass	Poaceae	containment	Moderate	Limited Invasion
<i>Dactylis glomerata</i>	orchard grass	Poaceae	containment	Limited	Limited Invasion
<i>Dipsacus fullonum</i>	teasel	Dipsacaceae	containment	Moderate	Present
<i>Festuca arundinacea</i>	reed fescue	Poaceae	containment	Moderate	Present
<i>Holcus lanatus</i>	purple velvetgrass	Poaceae	containment	Moderate	Present
<i>Hypericum perforatum</i>	Klamathweed	Hypericaceae	containment	Moderate	Present
<i>Hypochoeris radicata</i>	hairy cat's ear	Asteraceae	containment	Moderate	Present
<i>Mentha pulegium</i>	pennyroyal	Lamiaceae	containment	Moderate	Limited Invasion
<i>Plantago lanceolata</i>	English plantain	Plantaginaceae	containment	Limited	Limited Invasion
<i>Rumex acetosella</i>	sheep sorrel	Polygonaceae	containment	Moderate	Limited Invasion
<i>Rumex crispus</i>	curly dock	Polygonaceae	containment	Limited	Limited Invasion

Table 4. Highly invasive species that may occur in inland Humboldt County habitats to be targeted for early detection. Please see attached Invasive Species Alert identification information from Cal-IPC.

SPECIES	COMMON NAME	FAMILY	OPPORTUNITY	CALIPC RATING	STATUS
<i>Aegilops triuncialis</i>	barb goatgrass	Poaceae	surveillance	High	Potential
<i>Arundo donax</i>	giant reed	Poaceae	containment	High	Potential
<i>Bromus tectorum</i>	downy brome, cheatgrass	Poaceae	containment	High	Potential
<i>Centaurea stoebe</i> ssp. <i>micrantha</i>	spotted knapweed	Asteraceae	containment	High	Potential
<i>Cortaderia jubata</i>	jubatagrass	Poaceae	containment	High	Potential
<i>Cortaderia selloana</i>	pampasgrass	Poaceae	containment	High	Potential
<i>Delairea odorata</i>	Cape-ivy	Asteraceae	containment	High	Potential
<i>Elymus caput-medusae</i>	medusahead	Poaceae	containment	High	Potential
<i>Euphorbia virgata</i>	leafy spurge	Euphorbiaceae	containment	High-Alert	Potential
<i>Foeniculum vulgare</i>	fennel	Apiaceae	containment	High	Potential
<i>Genista monspessulana</i>	French broom	Fabaceae	containment	High	Potential
<i>Hedera helix</i> and <i>H. canariensis</i>	English ivy, Algerian ivy	Araliaceae	containment	High	Potential
<i>Lepidium latifolium</i>	perennial pepperweed	Brassicaceae	containment	High	Potential
<i>Lythrum salicaria</i>	purple loosestrife	Lythraceae	containment	High	Potential
<i>Onopordum acanthium</i>	Scotch thistle	Asteraceae	eradication	High	Potential
<i>Spartium junceum</i>	Spanish broom	Fabaceae	containment	High	Potential
<i>Tamarix parviflora</i>	smallflower tamarisk	Tamaricaceae	eradication	High	Potential
<i>Tamarix ramosissima</i>	saltcedar, tamarisk	Tamaricaceae	containment	High	Potential
<i>Ulex europeus</i>	gorse	Fabaceae	containment	High	Potential