

# Buffer Enhancement & Vegetation Plan

## **Kernen Construction**

APN: 516-151-916

1760 Glendale Drive, Glendale CA 95519

*Prepared for:*

NorthPoint Consulting

1117 Samoa Blvd.

Arcata CA 95521



*Prepared by:*

Cannabis for Conservation

PO Box 34, Arcata CA 95519

November 26, 2024

## Table of Contents

<b>Project Description</b> .....	1
<b>Site Description</b> .....	1
<b>Biological Assessment &amp; Qualifications</b> .....	2
<b>Habitat Description</b> .....	3
<b>Revegetation Recommendations</b> .....	3
<b>Monitoring</b> .....	5
<b>Figure 1: Site Map</b> .....	8
<b>Figure 2.</b> Comparison of historic (left) and recent (right) satellite imagery demonstrating the increase in shrub and tree cover over time in roadside ditch along Glendale Drive on the eastern side of the parcel. ....	9
<b>References</b> .....	10

## Project Description

This Buffer Revegetation Plan is prepared for NorthPoint Consulting Group, Inc. on behalf of Kernen Construction, the Project proponent. A berm was constructed at the soil recycling site of Kernen construction to help prevent offsite run-on from Glendale Drive and potential sloughing and erosion from soil and gravel stockpiles into Noisy Creek, a Class I watercourse bordering the property near Glendale Ave, and a roadside ditch that drains to Noisy Creek. This plan involves the removal of invasive vegetation, installation of appropriate native riparian species, and monitoring for success of both activities in two areas; 1) along the distal slope of a newly constructed berm between the construction site and Glendale Drive ditch; and 2) along the distal slope of the same berm for an approximate 400-foot length along Noisy Creek at the southeastern corner of the construction area between Glendale Drive and a paved private road (Figure 1). A 2003 survey conducted by the California Department of Fish and Wildlife (CDFW)<sup>1</sup> identified 26 coho salmon (*Oncorhynchus kisutch*) and 1 steelhead rainbow trout (*O. mykiss*) in Noisy Creek directly upstream of the Project Area<sup>1</sup>. Thus, planting of native vegetation will benefit these fish species, anchoring loose soil particles and sediment as an erosion control to improve water quality. Canopy cover will be maintained as well to ensure the stream remains shaded, keeping water temperatures cool for these species. In addition to removing invasive vegetation and installing native riparian plants to enhance the suitability of habitat between the berm and the riparian zone, a goal of this revegetation plan is to also provide a vegetative sound buffer to minimize disturbance from construction activities to the surrounding neighborhood using of fast-growing and ecologically-appropriate plant species, such as willows.

## Site Description

The parcel is a highly disturbed industrial site used for gravel-crushing processing, soil stockpiling and reuse, and other industrial material processing, where heavy equipment is regularly in use. The project proponent operates the business under a Conditional Use Permit, which qualifies its activities and operations. Stormwater is treated onsite using a collection and natural drainage pond and a series of pumps, which prevents discharge into Hall Creek on the southwest side of the parcel, a direct tributary of the Mad River. Hall Creek flows northeast to southwest across the northern property boundary, while Noisy Creek borders the southwestern corner of the parcel, before flowing across the private Christy Ranch, and joining Hall Creek about 100 ft northeast of CA-299. An approximately 10-foot-wide berm borders the entire property, including on the south side of Hall Creek where it creates a buffer around the circumference of the large stormwater treatment pond on the western side of the parcel. The newly constructed berm adjacent to Glendale Ave adjoins this berm at the northeastern corner, and is set between the industrial zone, the Glendale Drive ditch, and Noisy Creek. All berms consist of raised dirt seeded with grass. The Glendale ditch, a Class IV watercourse, has been in place for at least two decades, and when compared with satellite imagery from 2003, has significantly increased in vegetation density over time (Figure 2). It was originally constructed to provide drainage for the road and hold water, which it appears to do effectively. During a site visit conducted on November 19, 2024 multiple pools of standing water were observed in the

ditch following a few days of rain, in addition to typical riparian overstory species and an abundance of non-native, invasive species. The section of Noisy Creek within the Project Area is densely vegetated by trees and shrubs, with few openings from which the moving water could be viewed. The watercourse itself was shallow but fast-moving, and had a varying channel width of ~3 feet.

## **Biological Assessment & Qualifications**

An onsite vegetation assessment of the berm, Glendale ditch, and riparian zone surrounding the southwestern parcel area adjacent to Noisy Creek was conducted on November 19, 2024 at 10:00 AM PST by Janelle Chojnacki and Jackee Riccio, Senior Biologists with Cannabis for Conservation. The area was surveyed using pedestrian transects, with all dominant vegetation species observed and recorded.

**Janelle Chojnacki;** Grants Manager and Senior Biologist, Cannabis for Conservation  
Janelle recently obtained her MSc in Wildlife from Cal Poly Humboldt and has been working on and designing wildlife and ecological research projects for the past 15 years. Her research experience includes entomology, botany, ornithology, forestry, mammalogy, and GIS and past projects have involved monitoring species populations/demographics, behavioral studies, telemetry, and applied conservation research. She has monitored a number of threatened and endangered bird, mammal, and plant species in Northern California and abroad, and has been a field lead on projects for the past 8 years. Janelle has worked for state agencies, universities, nonprofit organizations, consulting firms, and as an independent contractor. Her knowledge of Northern California species and ecological communities is extensive. She has several years of experience writing reports related to California and federal environmental regulations such as NEPA, CEQA, BA, BRA, BE, and Management Indicator Species (MIS) reports.

**Jackee Riccio;** Executive Director and Senior Biologist, Cannabis for Conservation  
Jackee has 13 years of experience in applied conservation and biology for a variety of North American species, including assessing and handling special-status and listed species in terrestrial, riparian and marine environments. She holds a B.S. in Wildlife Conservation & Management and Archaeology from California Polytechnic University at Humboldt, in addition to completing a one-year Honors Thesis. Jackee's expertise includes habitat assessments, enhancements, and restoration, biodiversity research, mark-recapture population studies, and disseminating ecological knowledge to the communities. She is now the Board President and Executive Director of Cannabis for Conservation, a 501(c)(3) nonprofit establishing environmental conservation and restoration programs for the cannabis industry, and liaising with regulatory agencies and farmers around the common value of conservation.

## Habitat Description

The survey area included typical species associated with coastal riparian zones, but was dominated by non-native invasive species common in anthropogenically disturbed sites. The vegetation in the Glendale ditch is multi-tiered, with an overstory canopy of red alder (*Alnus rubra*) and arroyo willow (*Salix lasiolepis*), intermixed with a few young coastal redwoods (*Sequoia sempervirens*), and an understory dominated by dense thickets of invasive Himalayan blackberry (*Rubus armeniacus*) (Table 1). The vegetation in this section is best described as mid-seral, with a handful of mature alders and established willows, but generally lacking in the structure, species richness, or closed canopy overstory characteristic of late successional riparian habitat.

Along Noisy Creek, the riparian overstory species included California bay (*Umbellularia californica*), arroyo willow (*Salix lasiolepis*), and red alder (*Alnus rubra*), and an understory of shade-tolerant native and non-native species, including California wild rose (*Rosa californica*), thimbleberry (*Rubus parviflorus*), salmonberry (*Rubus spectabilis*), western sword fern (*Polystichum munitum*), California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), pampas grass (*Cortaderia jubata*), English ivy (*Hedera helix*), and giant horsetails (*Equisetum telmateia*). This area did exhibit characteristics of a mature, Class I riparian habitat, with a relatively closed canopy shading the watercourse and banks, and a more speciose understory.

## Buffer Enhancement and Vegetation Plan Recommendations

### *Removal of invasive species*

The first phase of this buffer enhancement and vegetation plan consists of removing invasive species with species-specific methodologies, each taken from the California Invasive Plant Council Weed Control Handbook.<sup>2</sup> Effective removal strategies for each of these species are detailed below:

Himalayan blackberry: This thorny climbing shrub is fast-growing, and can blanket existing vegetation densely, forming nearly impenetrable thickets and prohibiting growth of other plants and, in creekside habitats, making the stream inaccessible to wildlife. Hand pulling with shovels and pulaskis by removing roots and root crowns is an effective method for removing small populations, such as those present in the Glendale ditch and the small section of creek included in this plan. Removing only the above-ground material, e.g. using a weedwhacker, can result in stimulating growth so that approach is strongly discouraged. Monitoring for Himalayan blackberry regrowth or reinfestation will need to be quarterly or bi-annually continuously; while the longevity of seeds in the soil is likely only a few years, seed deposition by birds is assumed to be continuous and growth from neighboring areas will likely be a continued concern for this highly disturbed

area. Removal of young plants, however, is much easier than removal of established thickets.

English ivy: This evergreen woody vine is quick-growing and can blanket trees and carpet understory vegetation, shading out and killing native species as well as preventing new growth. English ivy is present in the relatively small patch of creekside habitat, and for this area the most effective removal technique would be hand-pulling from the roots and quarterly to bi-annual monitoring to remove new growth from missed or broken shoots. Regrowth can result from broken stems, so removal of roots and all plant parts is essential, as is continued monitoring for new growth.

Removal of invasive species will occur in early spring each year or in late fall; either before or after the nesting bird season to avoid disturbing nesting species. Additionally, this will ensure removal activities avoid spreading the seeds of invasive species as seeds will have either not yet developed (early spring) or already dropped (late fall). No native vegetation will be removed unless absolutely necessary, and all downed wood will be left in place to avoid disrupting amphibians, invertebrates, and fungal communities. Vehicles will not be allowed in the Project Area and will be excluded from this area after project activities are completed. Removed invasive plant materials will either be kept in a staging area onsite and allowed to dry out sufficiently during the hottest/driest time of the year, or it will be moved offsite to an appropriate facility for disposal. If the planting of native plants does not occur immediately after invasive species are removed, wattles and sand bags will be used as-needed to ensure any sediment resulting from removal activities does not enter the creek.

#### *Planting native species*

The native species recommended for use in this area mostly include species which are already present around the Project Area (Table 1) and thus are most likely to have high rates of survival and successful establishment after being planted. The intent of planting native species is to recolonize the newly available habitat after removal of the invasive plants to: 1) prevent regrowth of invasive species; 2) provide additional habitat and forage for native birds and invertebrate species; 3) to provide additional sound buffering between the construction activities and neighboring areas; and finally to 4) be visually appealing to passersby. The native plant species selected for this project are listed in Table 2. Native plants will be planted according to the following guidelines:

- Invasive species shall be removed from the site prior to plant installation.
- Planting shall occur in late fall or early winter after the first significant rainfall event as determined by the project manager.
- Plants shall be obtained locally, for example from Samara restoration of the local chapter of the California Native Plant Society.
- Planting holes will be at least 1.5 times the size of the plant container and holes will be dug by hand (e.g. with a shovel). When plants are removed from the pots, their roots will be gently loosened to better facilitate growth into the native ground.

- The soil level of the plant shall be equal to that of the ground after planting (e.g. plant is not below soil level, creating a dip, or above soil level, resulting in a mound).
- After planting at soil level, a slight depression of a 3" radius immediately around the plant will be made using hands.
- For any plant deemed highly susceptible to browsing by wildlife, protective fencing will be placed and maintained until the plant is established. Each plant will be marked with a labelled flag for monitoring.
- Regular monitoring will be conducted to ensure survival, proper functionality of protective fencing, etc.
- Any remaining bare ground will be seeded with ecotypic seed.

Fertilizers, pesticides, and fertilizers will not be used. To the greatest extent possible, existing duff will be left in place throughout the process of removing invasive species and planting native species. If needed to avoid bare/exposed soils, mulch or woodchips will be used to prevent erosion. A seed mix of native and annual flowers and grasses will also be used, with the exact mix and amount to be determined based on available understory area after removal of invasive plants. The revegetation will be deemed successful with a survival rate of 80%. Since the construction area is not fenced off, it is expected that deer and other herbivorous mammals will frequent the area, and result in some loss to browsing. Plant species less desirable to deer have been favored in this project plan for that reason. Additional individuals or species can be added to this plan as needed.

## Monitoring

At a minimum, bi-annual monitoring will be conducted as discussed below to ensure 1) invasive species do not return, and new invasive species do not become established and 2) planted native species survive and become established within the planted area. This monitoring will be conducted by a qualified biologist or botanist, and additional removal efforts or planting of native species will occur as needed. In particular, monitoring will ensure that the Project Area does not become infested with Pampas grass, which is present around the construction site but is not yet present in either the roadside ditch or along Noisy Creek. Areas where seed mix was used will be monitored for percent cover twice; once at the beginning and once at the end of the growing season in the year following seed deposition. Areas will be monitored as 1-square-meter plots and any plot with less than 75% cover will be re-seeded in the fall. After this, no further monitoring of seeded areas will occur except monitoring for and removal of invasive species.

Within Noisy Creek specifically, this project will aim to maintain or improve canopy cover directly over the water. To monitor this, canopy cover will be collected at water level using a convex densiometer from points in the middle of the creek facing in all four cardinal directions. The first collection point will be where Noisy Creek intersects Glendale Drive and points will be collected every 30 feet until the end of the Project Area, which should result in approximately 13 points. Baseline data collection will occur in mid-summer each year when vegetation should be the densest and will occur at the same time each year for three subsequent years. If canopy cover falls below baseline values, additional species will be planted where appropriate to compensate

for the respective amount of canopy cover, e.g. a decrease in 25% is large and warrants the addition of a tree, whereas a decrease of 5% would lead to a few thimbleberry plants being added.

At the end of each monitoring year a summary report will be prepared that summarizes the findings, actions, and any future recommendations as needed to ensure 1) invasive species do not return, and new invasive species do not become established and 2) planted native species survive and become established within the planted area.

<b>Table 1:</b> Plant species observed onsite during vegetation assessment on Nov. 19. 2024.
<b>Common name (<i>Scientific name</i>)</b>
Arroyo willow ( <i>Salix lasiolepis</i> )
California bay laurel ( <i>Umbellularia californica</i> )
California blackberry ( <i>Rubus ursinus</i> )
California wild rose ( <i>Rose californica</i> )
Coast redwood ( <i>Sequoia sempervirens</i> )
Coyote brush ( <i>Baccharis pilularis</i> )
English ivy ( <i>Hedera helix</i> )
Himalayan blackberry ( <i>Rubus armeniacus</i> )
Pampas grass ( <i>Cortaderia jubata</i> )
Red alder ( <i>Alnus rubra</i> )
Western sword fern ( <i>Polystichum munitum</i> )
Western thimbleberry ( <i>Rubus parviflorus</i> )



**Table 2:** Native plant selection for Buffer Enhancement and Vegetation Plan. All species listed are to be used in both the roadside ditch area, along the berm, and along the berm by Noisy Creek. In addition to each species' suitability for a wet, riparian area, the Ecological Highlights of each species detail how each plant species will contribute to the project goals outlined in Project Description as well as other useful features of each species.

Plant name ( <i>Scientific name</i> )	Estimated quantity/types, and planting distance	Ecological Highlights
Arroyo willow ( <i>Salix lasiolepis</i> )	5 cuttings from nearby plants; 8-foot centers	Fast-growing, established on site, sound reduction
California bee plant ( <i>Scrophularia californica</i> )	60 containerized plants; 20 patches of 3 plants each, most on the side of the berm, 2-foot centers	Fast growing, highly beneficial for native bees, butterflies, and hummingbirds
Creek dogwood ( <i>Cornus sericea</i> )	10 plants; 4-foot centers	Forms dense thickets, can help with noise reduction and limiting view of construction activities
Coyote brush ( <i>Baccharis pilularis</i> )	15 plants; 6-foot centers	Fast-growing, established on site, evergreen and dense which helps with sound reduction
Pacific ninebark ( <i>Physocarpus capitatus</i> )	4 plants; 6-foot centers	Visually appealing especially with fall leaf color change, densely growing
Riverbank lupine ( <i>Lupinus rivularis</i> )	10 plants; 2-foot centers	Visually appealing
Western thimbleberry ( <i>Rubus parviflorus</i> )	30 plants; 2-foot centers	Visually appealing, fruits are highly beneficial for birds

**Figure 1: Site Map**



**Figure 2.** Comparison of historic (left) and recent (right) satellite imagery demonstrating the increase in shrub and tree cover over time in roadside ditch along Glendale Drive on the eastern side of the parcel.



## References

<sup>1</sup>California Department of Fish and Wildlife. (2007). *Stream Inventory Report: Noisy Creek*.  
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=92894>

<sup>2</sup>DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.