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November 19, 2019

Natural Wellness, Inc 728 4<sup>th</sup> Street Eureka, CA 95501

> Re: APN 210-191-058 PLN-11222-CUP

The following is an evaluation of potential timberland conversion on cannabis cultivation sites and associated areas for APN 210-191-058. Please accept this letter as the RPF's written report required by Humboldt County Code, Ordinance No. 2559 (Commercial Medical Marijuana Land Use), Section 55.4.10 (j), sited below.

"Alternately, for existing operations occupying sites created through prior unauthorized conversion of timberland, if the landowner has not completed a civil or criminal process and/or entered into a negotiated settlement with CALFIRE, the applicant shall secure the services of a registered professional forester (RPF) to evaluate site conditions and conversion history for the property and provide a written report to the Planning Division containing the RPF's recommendation as to remedial actions necessary to bring the conversion area into compliance with provisions of the Forest Practices Act. The Planning Division shall provide CAL-FIRE written Notice of Availability of the RPF's report. If CAL-FIRE takes no action within ten (10) days of the notice of availability, the report recommendations shall become final."

This report also addresses Humboldt County Planning Department's concern with the post-2016 timberland conversion that occurred on the subject property in 2017 in association with cannabis cultivation relocation to an environmentally superior location. Section 55.4.6.4.2 of the CMMMLU clearly prohibits timberland conversion. Humboldt County Planning Department wants the Conversion Evaluation Report to identify the total square footage of canopy, number of trees removed and evaluate an equivalent square footage of mitigation. They suggested:

- 1. Thinning/clearing of a portion of the existing forested area to bring it into compliance with modern forestry practices if it was over-stocked.
- 2. Re-planting an open portion of the property with equivalent future square footage of canopy.
- 3. Any other alternatives you may come up with to mitigate the impact of the project.

Timberland Resource Consultants (TRC) inspected and evaluated the cultivation site contained within the application on September 17, 2019. The RPF exercised due diligence in reviewing all sites and available resources to fully assess potential timberland conversion and compliance with the Forest Practice Act and Rules. This report evaluates the cultivation sites for timber operations only. The scope of this report does not include: all other land alteration (such as grading, construction, and other permit-regulated activities), all property features and sites unrelated to cultivation activities, or any proposed, planned, or absent cultivation-related project sites. All findings are summarized in the report below.

## **Project Location**

APN: <u>210-191-058</u> Acreage: <u>60 acres</u>

Legal Description: SW 1/4 of Section 7,

Township 1 North, Range 5 East,

Humboldt Base & Meridian, Humboldt County

Located on USGS 7.5' Quadrangle: <u>Larabee Valley</u> Humboldt County Zoning: <u>Forest Recreation</u>
Site Address: <u>40111 State Highway 36</u>, <u>Bridgeville</u>
Landowner/Timber Owner: Gary and Mary Livick

The project is located at 40111 State Highway 36, which is approximately 3 miles west-southwest of Dinsmore.

## Parcel Description & Timber Harvest History

Note: The property background has been summarized using personal accounts of the current landowner, digital orthographic quadrangle (DOQ) imagery, Humboldt County Web GIS, CAL FIRE Watershed Mapper v2, and Historic Aerials. To avoid speculation and maintain relevancy, the property background focuses mainly on the past 10-15 years.

The portion of the property where the project is located is between the Little Van Duzen River and Highway 36. The cover type consists of a large grassy opening, which transitions into oak woodland (California black oak and Oregon white oak) and ultimately into a stand of 40-50-year old Douglas-fir with a minor component of Oregon white oak and black oak. The Douglas-fir stands are fully-stocked with basal area ranging from 150-250+ ft², and diameters ranging from 12-24+ inches dbh. Review of 1947 aerial imagery revealed that the lower elevations of the property along the Little Van Duzen River were dominated by old growth Douglas-fir, while the upper elevations contained oak woodland and natural grasslands. Timber harvesting of the old growth Douglas-fir occurred between 1947 and 1972. The Douglas-fir stands surrounding the cultivation site and developed areas appear to have encroached into the oak woodlands, with few to no old growth Douglas-fir stumps. There is no evidence to suggest that the Douglas-fir were regenerated from a past timber harvest or fire. However, there is evidence of widescale harvesting of black and white oak trees, which appears to date back 40-50+ years ago between Highway 36 and the developed areas. No commercial timber harvesting appears to have occurred within the last 20+ years per Cal Fire's Watershed Mapper (<a href="http://egis.fire.ca.gov/watershed\_mapper/">http://egis.fire.ca.gov/watershed\_mapper/</a>).

RPF Chris Carroll prepared a Cal Fire Less Than 3-Acre Conversion Exemption in 2015, which included the present cultivation site, which was cleared in 2017. The purpose of the conversion exemption was to develop an area for cannabis cultivation relocation due to a CDFW 1600 violation and concerns over the original site's proximity to a Class II and III watercourse. TRC submitted the Cal Fire Less Than 3-Acre Conversion Exemption to the County on November 24, 2015 to confirm conformance with the County's Grading and Open Space Ordinance requirements for Less Than 3-Acre Conversion Exemptions. This is required per Forest Practice Rule 14CCR 1104.1(a)(1)(d), which requires "incorporation of a signed and dated statement from the authorized designee of the County Board of Supervisors stating that the conversion is in conformance with all county regulatory requirements, including county public notice requirements.". The 3-Acre Conversion Exemption was never "signed-off" by the county and thus the Applicant was never able to submit the 3-Acre Conversion Exemption to Cal Fire.

## **Project Description**

One cultivation site was inspected during the field assessment within APN 210-191-058. The following table lists the inspected site and its acreage; see detailed site descriptions below.

Cultivation Site/Associated Area	Total Acreage	Converted?	Converted Acreage
Cultivation Site	0.79	Yes	0.79
TOTAL	0.79		0.79

## **Project Description (Cont.)**

#### **Cultivation Site**

Per Terra Server imagery, the cultivation site was developed between 3-12-2017 and 12-21-2017. Trees were harvested but no stumps removed and no grading occurred. The greenhouses and wooden plantar beds are placed on the native slopes surrounded by scattered stumps. Review of historic aerial imagery dating back to 1947 suggests the conversion area was formerly a mixture of oak woodland and grassland. The oaks were harvested and/or cleared-off in the late 1960's/ early 1970's in association with the initial development of the property, which included the construction of the residence, out buildings, and other improvements. Remnant infrastructure such as old fence posts, water trough, and barb wire suggests that the cultivation site was cleared for grazing and/or agriculture in the late 1960's/ early 1970's. Subsequent imagery from 1998 to 2016 shows this grassy opening incrementally filling in with Douglas-fir encroachment. The RPF first visited the site in 2015 in association with the preparation of a Cal Fire Less Than 3-Acre Conversion Exemption as described above. In 2015, the site contained scattered open-grown Douglas-fir trees clearly indicative of encroachment, and a younger age class of Douglas-fir poles that were dead, dying, and diseased for unknown reasons. The site also contained scattered California black oak and Oregon white oak stumps, which were harvested 40-50+ years old. The RPF observed the same conditions on the neighboring property (Ronald R & Angela Mattson) during preparation of their Cal Fire Less Than 3-Acre Conversion Exemption (1-15EX-145 HUM). Because of this encroaching Douglas-fir, the cultivation activities observed at this site impede the use of this space for current timber growth and harvesting, and the landowner has effectively converted the single use of this space from timber production to cannabis cultivation.

Based upon my recollection of the site in 2015 during layout of the Cal Fire Less Than 3-Acre Conversion Exemption; the total number of trees harvested in 2017 is estimated to be approximately 10-20 2<sup>nd</sup> growth Douglas-fir, 5-10 Oregon white oak saplings, and an unknown number of non-merchantable Douglas-fir seedlings/saplings. Stand density was relatively low for Site Class III timberlands.

## Limitations and Considerations for Timberland Conversion Activities

#### Watercourses and Water Resources

14CCR 1104.1(a)(2)(F): "No timber operations are allowed within a watercourse and lake protection zone unless specifically approved by local permit (e.g., county, city)."

No timberland conversion occurred within a WLPZ. The Applicant/landowner developed the present cultivation site within the boundaries of a proposed conversion exemption prepared by RPF Chris Carroll in 2015. The conversion boundaries were flagged to avoid the Class II WLPZ and Class III ELZ.

#### **Cultural Resources**

14 CCR 1104.1 (2)(I): "No timber operations are allowed on significant historical or archeological sites."

The RPF surveyed the site in 2015 in association with the Cal Fire Less Than 3-Acre Conversion Exemption and no archeological sites were observed. The project area has been surveyed by a professional archeologist and no sites were observed. See *A Cultural Resources Investigation for The Livick Commercial Cannabis Cultivation, Humboldt County, California.* 

#### **Biological Resources and Forest Stand Health**

A query of the California Natural Diversity Database (CNDDB) on September 20, 2019 revealed two observations of sensitive, rare, threatened, or endangered species or species of special concern within a 1.3-mile radius biological assessment area (BAA) surrounding the property. The North Central Coast Summer Steelhead and Western pond turtle were observed within the BAA. Both species were detected 5,000+ feet from the cultivation site. No sensitive, rare, threatened, or endangered species or species of special concern were observed during the TRC field assessment of the project area. During preparation of the conversion exemption in 2015, the RPF observed the two nearby ponds and was aware of the Western pond turtle breeding habitat. This species would not have required protection via the Forest Practice Rules

## Limitations and Considerations for Timberland Conversion Activities (Cont.)

and Act. Had the Cal Fire Less Than 3-Acre Conversion Exemption been submitted to Cal Fire, CDFW would have been able to review and provide comments. Please note that no comments or concerns from CDFW occurred during the review of Conversion Exemption 1-15EX-145 HUM, which was located adjacent to the subject cultivation site.

NSO HUM 983: The query of the CNDDB NSO Database revealed one known Northern Spotted Owl (NSO) Activity Center, HUM 983, within 1.3 miles of the property. HUM 983 is located approximately 6,500 feet south-southeast of the cultivation site. No timber operations occurred within the NSO's Core Area and the timberland conversion area is well outside of the 0.25-mile disturbance buffer. The conversion area was not functional foraging habitat pre-harvest, and therefore the conversion did not result in a net loss of functional NSO habitat within 1.3 miles of the Activity Center.

No major forest health issues were observed during the field assessment. Though the property is located within Humboldt County, a Zone of Infestation (ZOI) for Sudden Oak Death (SOD), no symptoms, signs, or evidence of oak mortality were observed (*Oak Mortality Disease Control*). According to UC Berkeley's Mobile SOD Map, no SOD infections are located within a one-mile radius of the property. No risk assessment was made at the property. The conversion activities do not appear to have impacted forest health. The conversion areas did not include late successional stands, late seral stage forests, or old growth trees. The conversion area did not include any trees that existed before 1800 A.D. and are greater than sixty (60) inches in diameter at stump height for Sierra or Coastal Redwoods, and forty-eight (48) inches in diameter at stump height for all other tree species.

### Slash, Woody Debris, and Refuse Treatment

14 CCR 914.5(b): "Non-biodegradable refuse, litter, trash, and debris resulting from timber operations, and other activity in connection with the operations shall be disposed of concurrently with the conduct of timber operations."

14CCR 1104.1(a)(2)(D) - Treatment of Slash and Woody Debris

- 1) Unless otherwise required, slash greater than one inch in diameter and greater than two feet long, and woody debris, except pine, shall receive full treatment no later than April 1 of the year following its creation, or within one year from the date of acceptance of the conversion exemption by the Director, whichever comes first.
- 2) All pine slash three inches and greater in diameter and longer than four feet must receive initial treatment if it is still on the parcel, within 7 days of its creation.
- 3) All pine woody debris longer than four feet must receive an initial treatment prior to full treatment.
- 4) Initial treatment shall include limbing woody debris and cutting slash and woody debris into lengths of less than four feet, and leaving the pieces exposed to solar radiation to aid in rapid drying.
- 5) Full treatment of all pine slash and woody debris must be completed by March 1 of the year following its creation, or within one year from the date of acceptance of the conversion exemption by the Director, whichever comes first.
- 6) Full slash and woody debris treatment may include any of the following:
  - a) Burying;
  - b) Chipping and spreading;
  - c) Piling and burning; or
  - d) Removing slash and woody debris from the site for treatment in compliance with (a)-(b). Slash and woody debris may not be burned by open outdoor fires except under permit from the appropriate fire protection agency, if required, the local air pollution control district or air quality management district. The burning must occur on the property where the slash and woody debris originated.
- 7) Slash and woody debris, except for pine, which is cut up for firewood shall be cut to lengths 24 inches or less and set aside for drying by April 1 of the year following its creation. Pine slash and woody debris which is cut up for firewood shall be cut to lengths 24 inches or less and set aside for drying within seven days of its creation.
- 8) Any treatment which involves burning of slash or woody debris shall comply with all state and local fire and air quality rules.

No untreated logging slash or woody debris was observed.

## **Timberland Productivity Discussion**

The RPF considered a range of measures to increase stand productivity consisting of: reforestation, precommercial thinning, and oak restoration. The Douglas-fir timber stands surrounding the cultivation site are extremely productive despite their origin from encroachment into former oak woodlands and natural grasslands. With regards to soil type and site quality; there are no differences between the cultivation site, adjacent understocked areas, and adjacent fully-stocked Douglas-fir timber stands. The cultivation site and adjacent understocked areas were cleared 40-50 years ago for development and agriculture, which suppressed the rate of conifer encroachment. In the absence of development, the cultivation site, understocked areas, and adjacent homesite would resemble the adjacent timber stands in terms of stand structure, stand density, and species composition.

The adjoining timber stands have a minor component of Oregon white oak and black oak, which are alive but in slow state of senescence. The Douglas-fir crowns have crowded out the oaks and their demise, albeit slow, is inevitable in the absence of fire. Reducing stand basal area via thinning to increase diameter growth on the Douglas-fir trees would likely target oak trees, which have an ecological value to wildlife via their production of mast (acorns) among other factors. The Douglas-fir stands are not "over-crowded" and manipulation of stand density is not needed at this time.

Oak restoration would involve removal of the Douglas-fir trees to release the remaining California black and Oregon white oak trees intermixed in the stand. This would require "timber operations" per The Forest Practice Rules since a majority of the Douglas-fir is merchantable. The Forest Practice Rules allows the cutting or removal of trees to restore and conserve California black or Oregon white oak woodlands and associated grasslands per 14CCR 913.4(f) and PRC 4584(k). However, treatment via these prescriptions are limited to stands in which Oregon white oak and/or California black oak meet or exceed, preharvest, an average of 35 square feet of Basal Area Per Acre. California black and Oregon white oak stand density is less than 35 square feet of Basal Area Per Acre.

The only remaining feasible option for increasing stand productivity is planting Douglas-fir seedlings in the understocked areas shown on the attached maps and photographs. All areas proposed for planting share the same soil type and site class as the balance of the property. Reforestation of these areas also results in other benefits to the environment. Reforestation activities promote the gradual depletion of CO2 from the atmosphere through absorption during photosynthesis. This in turn reduces its concentration in the atmosphere. The process of photosynthesis releases oxygen and therefore helps to maintain the CO2/O2 balance. Less carbon dioxide means less pollution and less global warming.

#### Recommendations

In summary, a total of 0.79 acres of unauthorized timberland conversion has occurred within APN 210-191-058. This total does not exceed the three-acre conversion exemption maximum. The conversion activities conducted on the property complies with the California Forest Practice Act and the California Forest Practice Rules.

To mitigate the loss of timber productivity in association with the un-authorized 2017 timber conversion, the RPF recommends planting two areas shown on the attached map. The total area to be planted is 0.79 acres. One of the two areas is the original cultivation site that was recently restored and planted with riparian vegetation. The riparian planting failed because the site is not riparian; its mesic. Both Reforestation Sites shall be planted with Douglas-fir seedlings per the attached Restocking Plan.

Sincerely,



Chris Carroll, RPF #2628 Timberland Resource Consultants



Picture 1: Douglas-fir timber stand located northeast of the cultivation site. This 40-50 year old stand, which is conifer encroachment into a former oak woodland/ natural grassland is very productive based upon stand density, QMD, and tree heights. Note scattered black oak trees. Photo date 9-17-2019



Picture 2: Douglas-fir timber stand located northeast of the cultivation site. This 40-50 year old stand, which is conifer encroachment into a former oak woodland/ natural grassland is very productive based upon stand density, QMD, and tree heights. Note scattered black oak trees. Photo date 9-17-2019





Picture 3 & 4: Reforestation Site 1. Photo date 9-17-2019



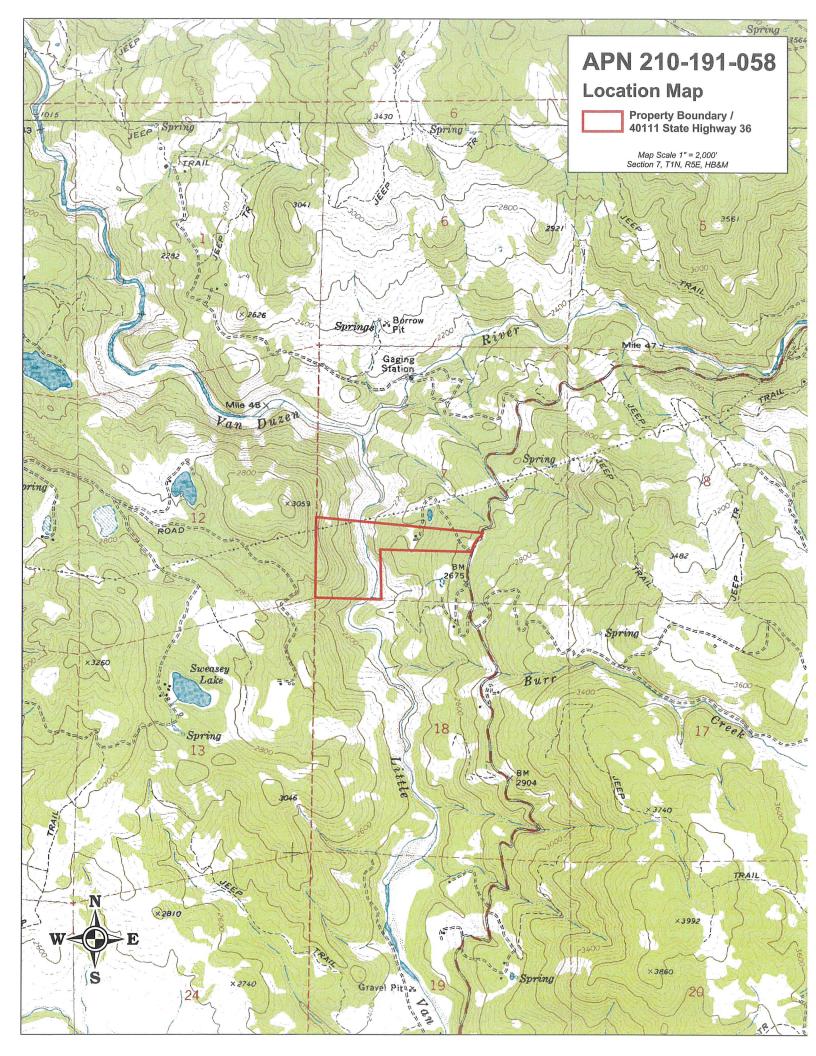
Picture 5. Reforestation Site 1. Photo date 9-17-2019

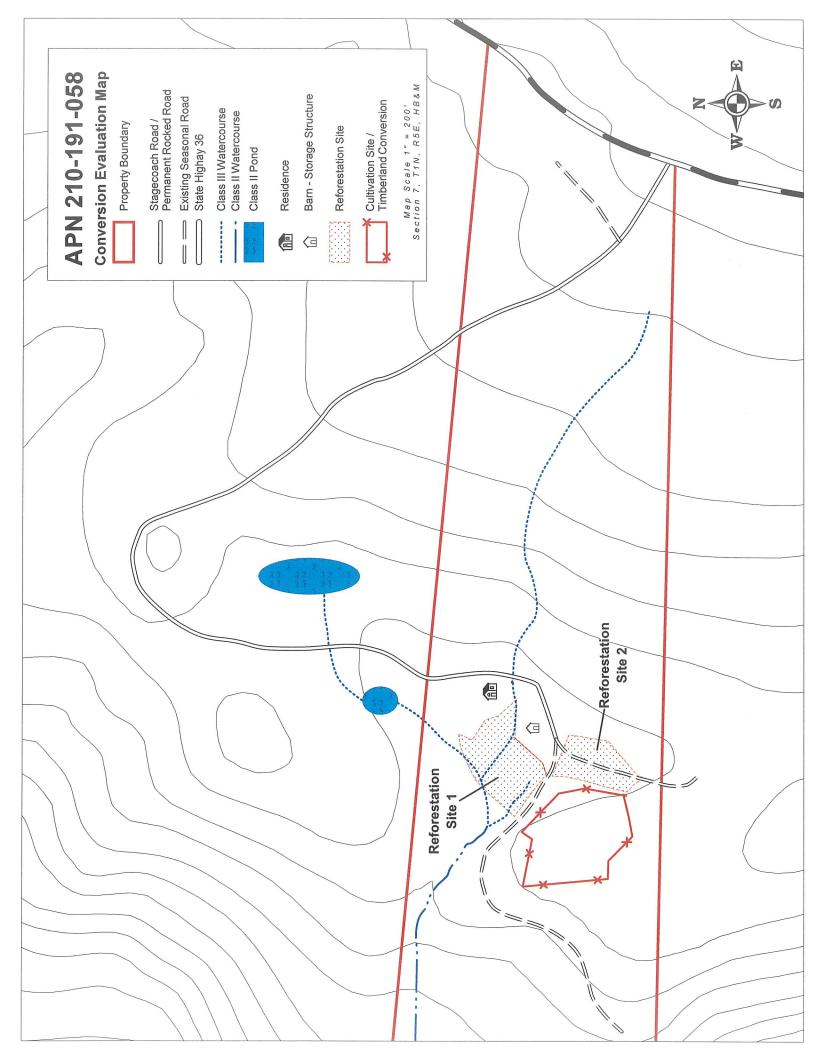


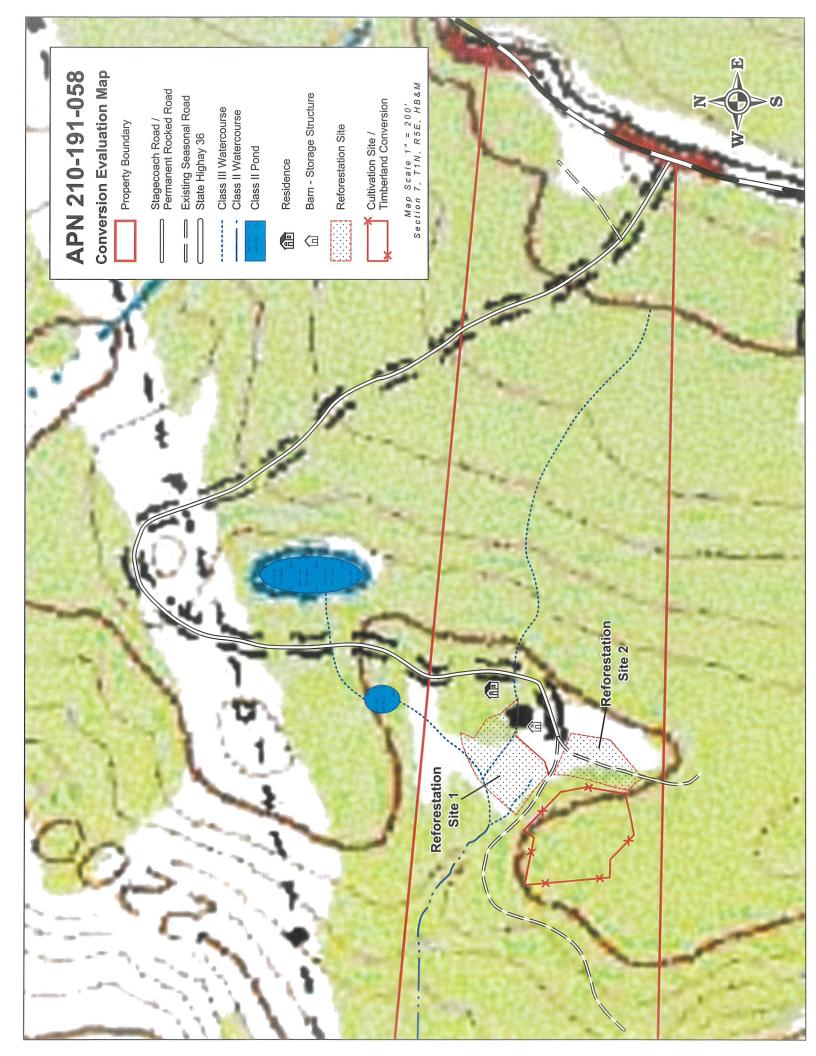
Picture 7: Reforestation Site 2. Photo date 9-17-2019

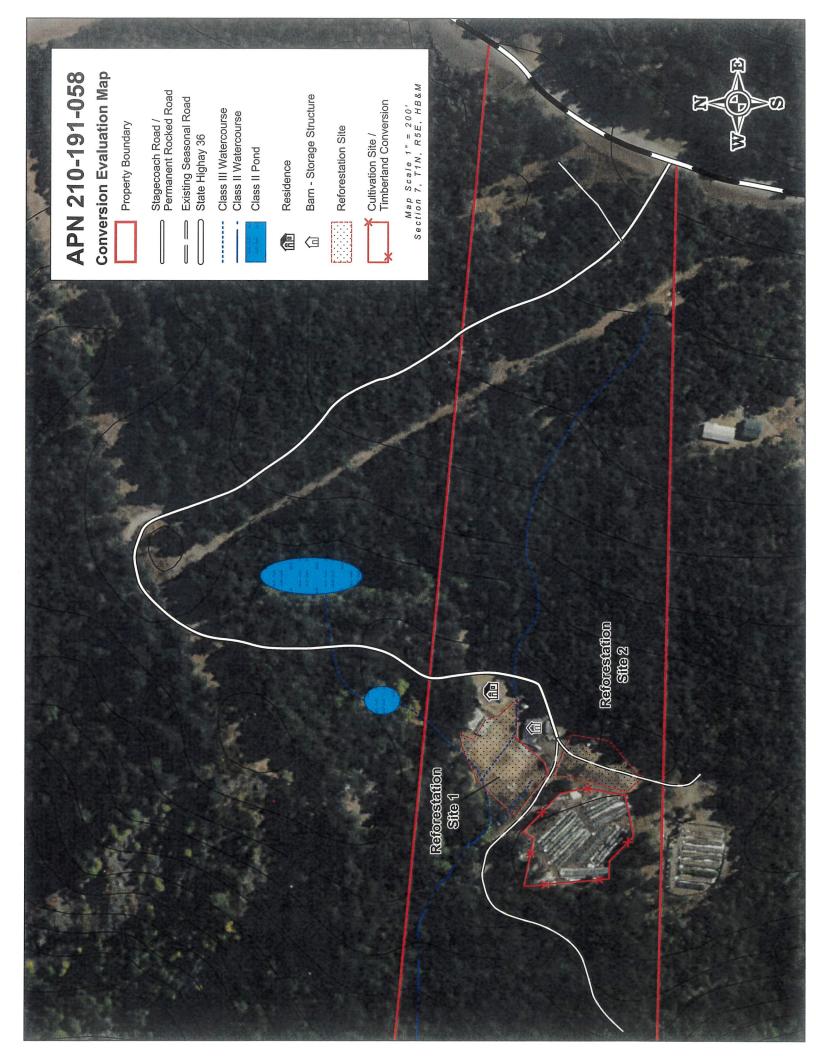


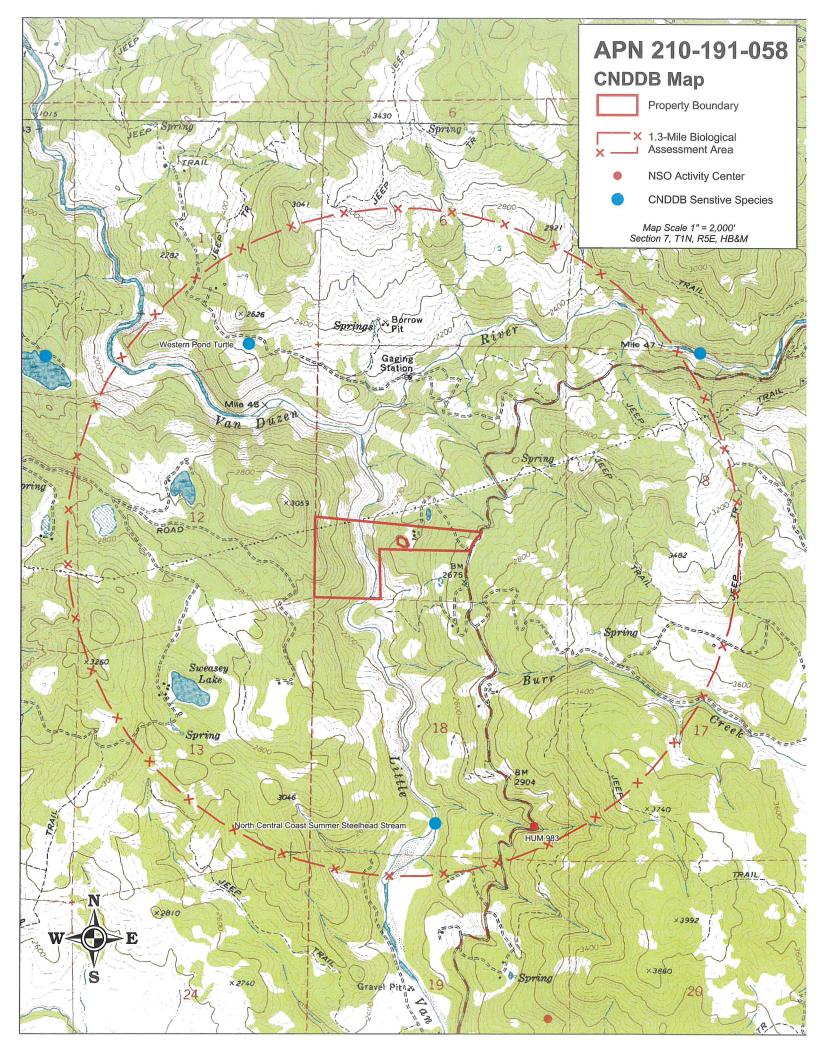
Picture 8: Cultivation Site. Site in background is neighboring property. Photo date 9-17-2019













# FOR APN 210-191-058

November 19, 2019

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## Regeneration Plan

Site to Planted		Acreage	Acreage # Trees to be Planted	
Reforestation Site 1		0.30	131	
Reforestation Site 2		0.49	213	
	TOTAL	0.79	344	

Site Preparation: Site preparation is commonly utilized to facilitate timber stand establishment. The primary objective of this practice is to create an area suitable for planting seedlings and establishing a new stand of trees. Site preparation activities remove or reduce competing vegetation, reduce or remove unwanted trees and logging debris, and prepare the soil to ultimately promote the growth and survival of desired tree species. There are many methods of site preparation that fall under either chemical or mechanical site preparation. Subsoiling/ripping is a mechanical site prep method for heavy soils on cutover timberlands or agricultural lands that have a compacted layer at or below the soil surface that limits root growth and development. Subsoiling/ripping increases aeration and water-holding capacity of compacted soils and breaks up root restricting hardpans and/or traffic pans. Chemical preparation includes broadcast and directed herbicide application.

Recommendation: No mechanical site preparation via heavy equipment is necessary. However, the RPF recommends manual scalping. Scalping is the removal of the sod layer to a depth of one – three inches, in strips or patches of at least one foot wide. Trees are planted in the middle of the scalped area. Scalping can be accomplished manually with a planting shovel or a heavy hoe.

Species of Seedlings: Harvested and/or understocked timberlands should be artificially regenerated with naturally-occurring conifer species and cultivars well-adapted to the timber stand's specific climate, elevation, and other environmental conditions. Planting seedlings from appropriate seed zones and elevation ranges ensures better seedling success and, eventually, a more resilient timber stand. Specifically, timberland within the property is characterized by Douglas-fir-dominated stands with minor a component of black oak and Oregon white oak. The sites to be planted occur within California Seed Zone 303 or 340 from 2,400 to 2,600 feet in elevation.

Recommendation: The Applicant/landowner shall plant <u>Douglas-fir seedlings</u> (best suited for Seed Zone 303 or 340 at 2,400- to 2,600-foot elevation) at a uniform spacing no less than 10-feet by 10-feet, or 435 trees per acre. If deer browsing is expected (based on landowner's local knowledge), then the density can be slightly increased (8-feet by 8-feet) to account for potential mortality and/or damage.

**Types of Seedlings**: Most conifer seedlings that come from nurseries are available in two forms: bareroot seedlings and containerized seedlings. Bareroot seedlings are essentially stock whose roots are exposed at the time of planting. Bareroot seedlings are grown in nursery seedbeds and lifted from the soil in which they are grown to be planted in the field. Containerized seedlings are grown individually in a variety of hardwalled vessels or in peat pots from seed. They're typically more expensive than bareroots but usually have a higher survival rate after planting due to their well-formed root system.

Recommendation: Given the conditions of the site and the higher survival rate associated with containerized stock, use <u>containerized seedlings</u> if available.

Seedling Care: Seedling care and handling is extremely important to ensure post planting survival.

Recommendation: For long-term storage (more than 3 days), store seedlings at 33 to 36 degrees Fahrenheit. For short-term storage (several hours to less than 3 days), store below 42 degrees Fahrenheit. At the planting site, take care not to let the roots dry out and avoid exposure to the sun or warmer temperatures.

## Regeneration Plan

**Planting Instructions**: When planting seedlings, the landowner or tree planter should abide by the following:

- 1. Tree planting shall only occur in winter or early spring. Tree planting should not occur if the ground is frozen or during unusually warm periods.
- 2. Dig a hole at least one inch deeper and wider than the seedling roots. If planting from a container, dig the hole an inch deeper and wider than the container.
- 3. Place the seedling into the hole taking care not to bend the taproot, or main vertical root, and cover with soil.
- 4. Pack the soil down firmly around the seeding to remove any air pockets.
- 5. See Appendices A-D for illustrations for correct planting techniques.

**Seedling Survival**: Although a newly planted stand immediately fulfills stocking standards, the timber stand must continually contain an average density of at least 300 trees per acre (or 12-foot by 12-foot spacing) in order to comply with the California Forest Practice Rules (CFPRs). Seedling survival can vary widely depending on several factors including genetics, weather, herbivory, etc. Monitoring growth and success of planted seedlings is key to ensure a 300-point count stocking level is maintained 2-3 year after planting.

Recommendation: Monitor growth and success of planted trees one year after planting. Conduct a point count stocking sampling survey (protocol described in CFPRs 14CCR 1072). If less than 55% of the planted area meets the 300-point count minimum stocking level, repeat the replanting process. Consider consulting an RPF for continued timber management in this area.

**Stock Purchase**: Ideally, landowners should procure seedlings from sources growing local, site-specific stock. Appropriate stock is determined by stand type, seed zone, elevation, as well as other factors like soil type, site quality, and weather.

Recommendation: The RPF recommends acquiring conifer seedlings from Green Diamond Resource Company's nursery in Korbel, California. For inquiries, contact Nursery Superintendent Glen Lehar at (707) 668-4439. He will recommend the appropriate stock based on geographic area and site conditions.

Sincerely,

Chris Carroll, RPF# 2628
Timberland Resource Consultants

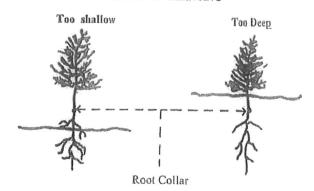
## APPENDIX A

## CORRECT METHOD OF SEEDLING PLANTING



- Soil firmly packed around roots.No air pockets.
- Roots straight with no J or L bends.
- Root collar at or slightly below ground level.
- Root not pruned.

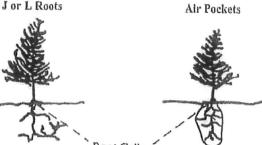
## ERROR IN PLANTING



- Hole not deep enough.
- Root collar and upper roots exposed.
- Roots dry out.

- Hole is too deep.
- Root collar buried.

J or L Roots



Hole is not deep enough — planting in rocky

Roots cannot effectively take up water. Tree not wind-firm.

- Soil not firmly packed around roots.
- Air pocket forms

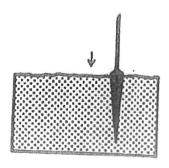
- Roots dry out.

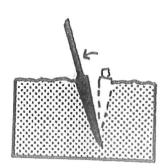
## APPENDIX B

# PLANTING WITH A FLAT BAR

I. Insert flat bar straight down.

2. Pull flat bar backward to open hole.





 Remove flat bar and place seedling at correct depth with root collar at or slightly below ground level.

## Correct



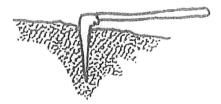
## Incorrect



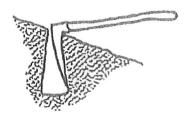
## APPENDIX C

## PLANTING WITH A HOE

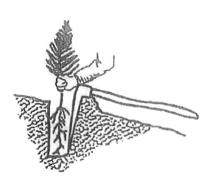
1. Swing hoe to get full penetration.



2. Lift handle and pull up to widen hole.



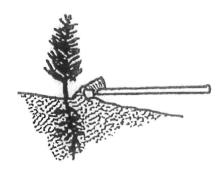
3. Place seedling while using hoe to hold back soil.



4. Use hoe to pack soil at bottom of hole.



5. Use hoe to pack soil at top hole.



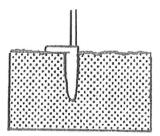
6. Firm soil around seedling with feet.



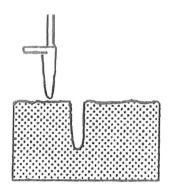
## APPENDIX D

## PUNTING WITH A PLUG BAR

 Insert plug bar straight down until plug bar footrest is level with ground.



2 Remove plug bar and place seedling in hole.





3. Firm soil around seeding with heel of boot.

