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**Baker Creek Joint Timber Management Plan Prepared for
County of Humboldt and Lost Coast Forestlands LLC**

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Date

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Timber Management Guide

1. Current Property Owner

Lost Coast Forestlands LLC

2229 SAN FELIPE STREET SUITE 1150
HOUSTON TX 77019

2. Project description

Lost Coast Forestlands (LCF) is proposing a lot line adjustment which would reallocate portions from several parcels on its Baker Creek Tract to form three new parcels. See Figure 1 for the location of Baker Creek within the vicinity of Whitethorn in the Southern Humboldt/Northern Mendocino area. The primary intent is to create a parcel that would contain the entirety of a quarry, which currently has infrastructure spread across multiple parcels. The quarry parcel (2B) and the two associated parcels (2A and 6A) would still be suitable for timber production (Figure 4). California Government Section 51119.5 specifies that parcels zoned as TPZ may not be divided into parcels containing less than 160 acres unless the original owner prepares a joint timber management plan (JTMP) prepared or approved as to content by a registered professional forester (RPF) for the parcels to be created. Per California Government Code Section 511014(i) "Parcel" means that portion of an assessor's parcel that is timberland. This plan proposes lot line adjustments to currently substandard TPZ parcels which would result in several parcels that would contain less than 160 acres of land zoned as Timber Production Zone (TPZ) each. This plan has been prepared to demonstrate the viability of successful timber management for each new parcel.

The parcels to be split and merged are in LCF's Baker Creek Tract. Currently Parcel 6 (Lot 58) spans APN 215-232-002-000 and APN 215-192-005-000, while Parcel 2 (Lot 54) is located at APN 215-192-018-000. Parcel 6 is 160 acres and is zoned as TPZ; adjacent Parcel 2 is 40 acres and is zoned as TPZ land. Parcel 5 (Lot 57) is 20 acres and is zoned as TPZ land on APN 215-232-001-000. Parcels 2 and 5 are currently substandard TPZ parcels in terms of acreage. See Figure 2 and Figure 3 for a map of the current parcel and APN configurations.

This plan would consolidate most of the western half of Parcel 6, the SW ¼ of Parcel 2 and the entirety of Parcel 5, resulting in a new Parcel 2B (Depicted in LACO LLA as Parcel B) containing 90 total acres and the entirety of the quarry. The northern acreage from Parcel 6 will be merged with the remaining ¾s of Parcel 2 to form a new Parcel 2A (Depicted in LACO LLA as Parcel A) containing 50 acres. The remaining acreage of Parcel 6 would become its own Parcel 6A (Depicted in LACO LLA as Parcel C) with 80 acres of land. Parcel 2B will contain the entirety of the quarry on LCF land which will ease mining operations. This will improve the viability of timber management for Parcel 2B by increasing the acreage of timber relative to mining land, as well as allow an easier sale of the new parcel containing said mine if desired. See Figure 4 and Figure 5 for a map of the proposed parcel configurations and Assessor Parcels.

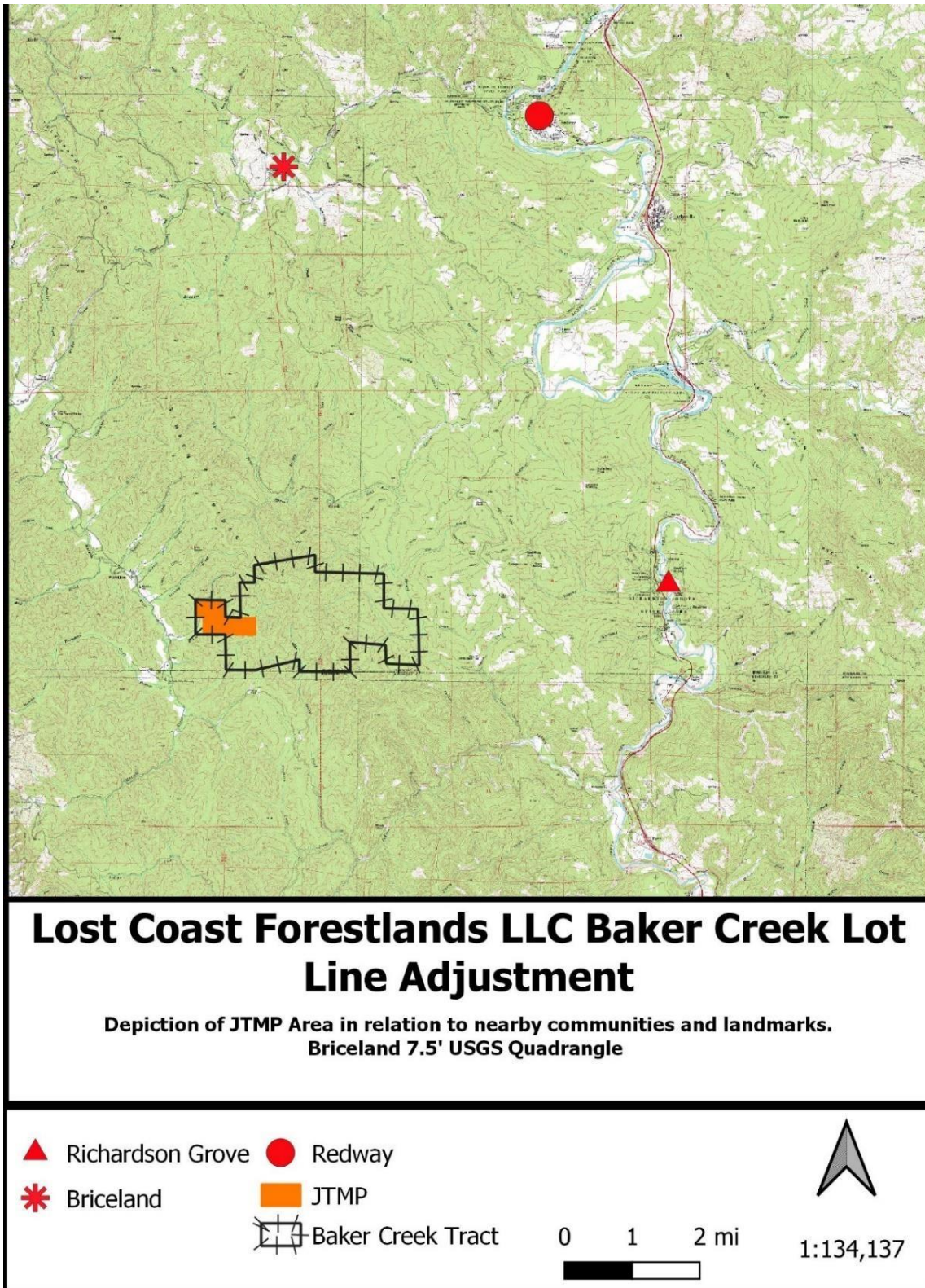


Figure 1. Vicinity Map of Baker Creek Tract.

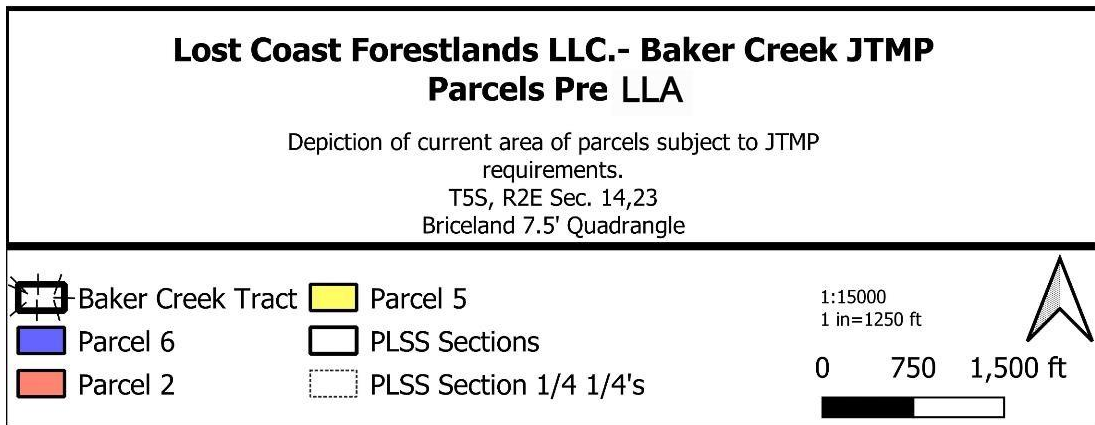
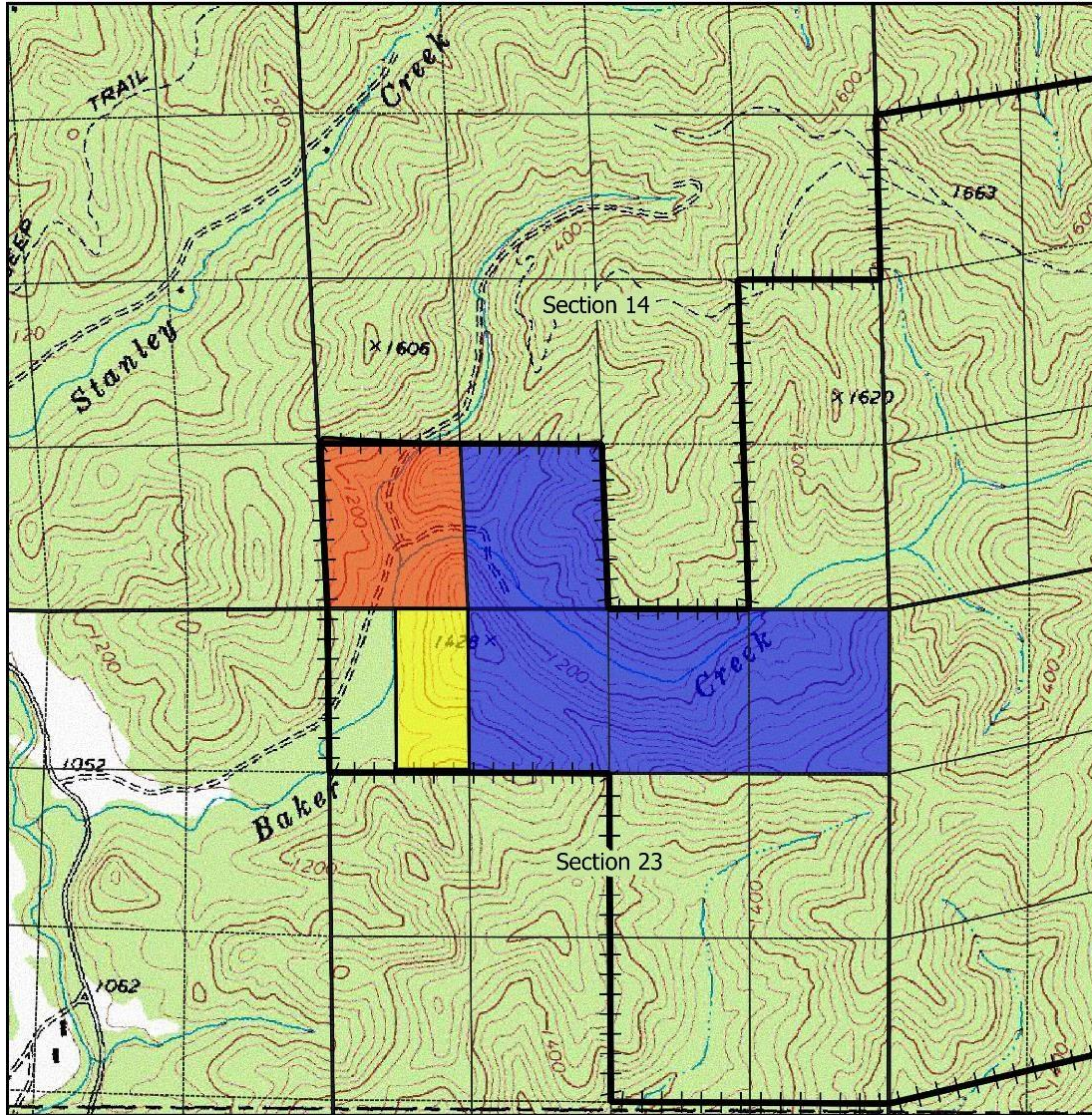


Figure 2. Current Lot Line Configuration.

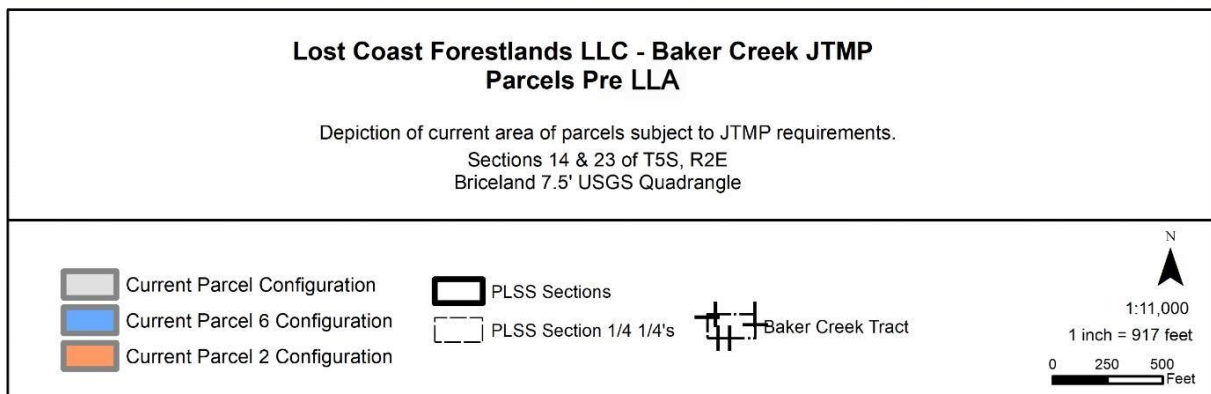
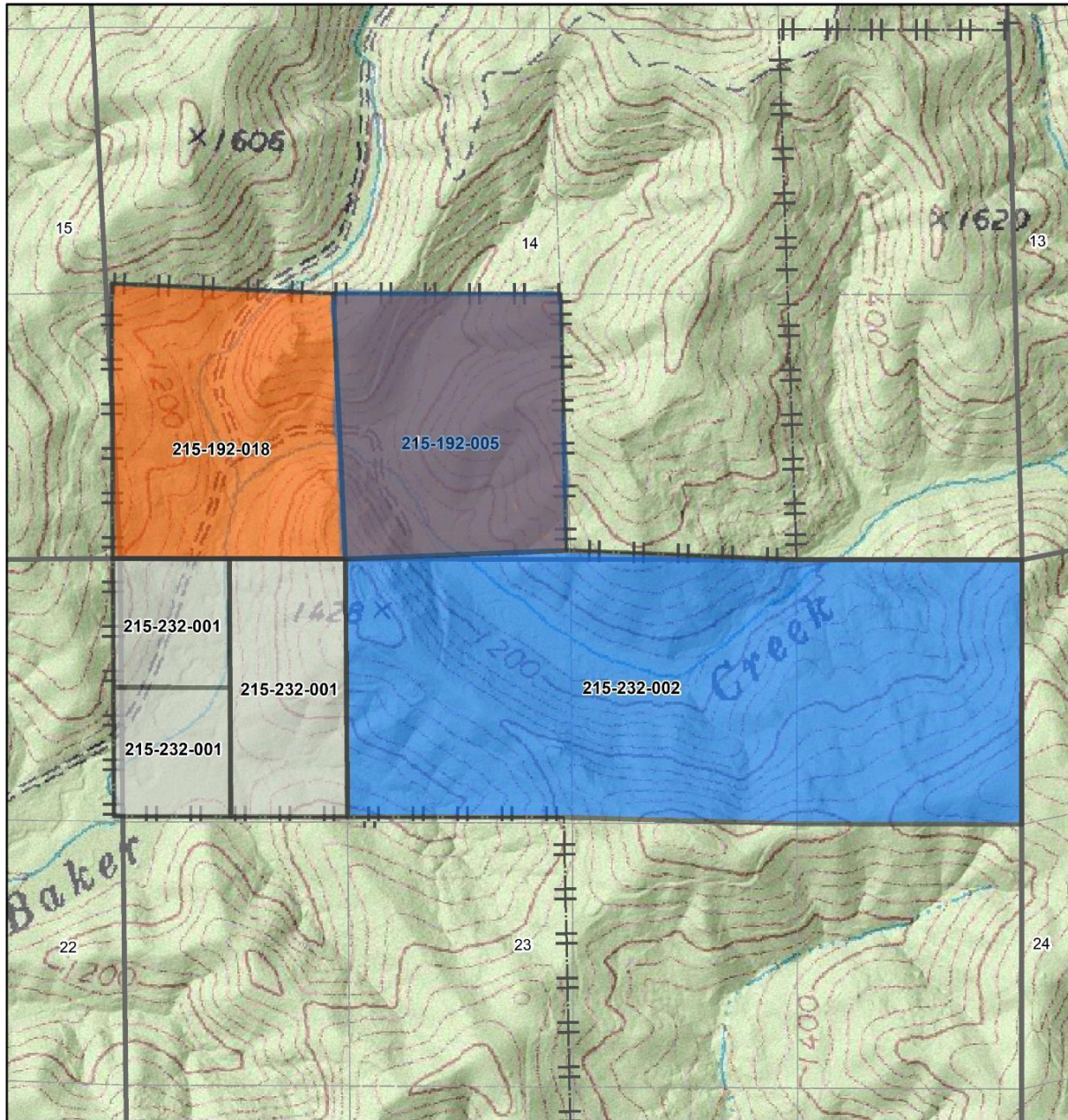


Figure 3. Map of Assessor Parcels in current configuration.

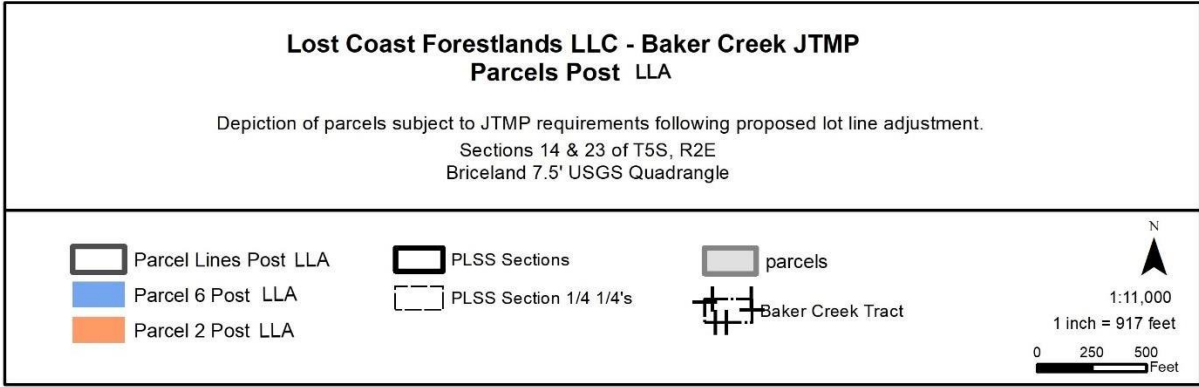
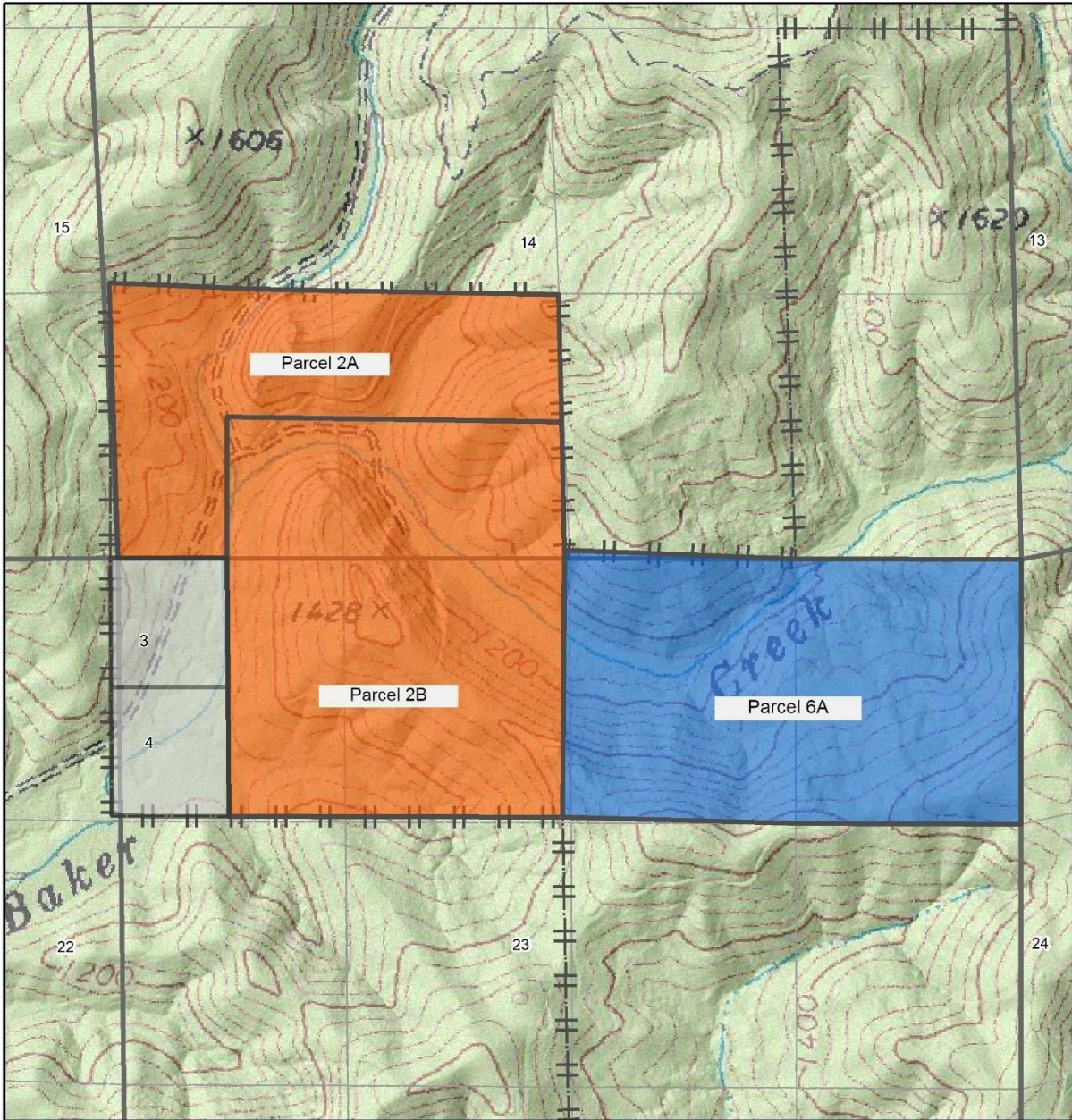


Figure 4. Map of Proposed Parcels after Lot Line Adjustment.

Legal Description

The current deed (Pre LLA) describes each JTMP Parcel as follows:

Parcel 6 (Lot 58) is defined as the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of section 14. And the Northeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ and the North $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of Section 23 all in Township 5 South, Range 2 East, Humboldt Meridian (Figure 2). It currently contains APN 215-232-002-000 and APN 215-192-005-000, both of which are fully zoned as TPZ (Figure 3). Total area is 160 acres.

Parcel 2 (Lot 54) is defined as the Southwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 14 and the Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 23. And the Southwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 23. All within Township 5 South, Range 2 East, Humboldt Meridian (Figure 2). It contains the entirety of APN 215-192-18-000 and is zoned as TPZ. See Figure 3 for Assessor Parcels within Ownership Parcels 2 and 6. Total area is 40 acres.

Parcel 5 (Lot 57) is defined as the East $\frac{1}{2}$ of the Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 23 in Township 5 South, Range 2 East, Humboldt Meridian (Figure 2). It contains APN 215-232-001-000 and is zoned as TPZ (Figure 3). Total area is 20 acres.

The proposed legal descriptions for the Post LLA parcels are as follows:

Parcel 2A (A) is defined as the West $\frac{1}{2}$ and the Northeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 14 and the North $\frac{1}{2}$ of the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 14 all in Township 5 South, Range 2 East, Humboldt Meridian. Total area is 50 acres.

Parcel 2B (B) is defined as the East $\frac{1}{2}$ of the Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ and the Northeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 23 and the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ and the South $\frac{1}{2}$ of the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 14 in Township 5 South, Range 2 East, Humboldt Meridian. Total area is 90 acres.

Parcel 6A (C) is defined as the North $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of Section 23 in Township 5 South, Range 2 East, Humboldt Meridian. Total area is 80 acres.

3. Location and Access

The JTMP area is located near Whitethorn south of the unincorporated community of Briceland and southeast of the town of Redway. Richardson Grove is due East of the JTMP area (Figure 1). After the proposed lot line adjustment, Parcel 2A will be accessed by Baker Creek road, a rock surfaced road which connects to the Briceland Road, a paved county road. While Baker Creek Road is blocked by a locked gate, access can be acquired by contacting GR Wilcox Enterprises Incorporated.

Figure 6 depicts access roads and parcels which require Easements for access. Baker Creek Road passes through neighboring parcels before reaching Parcel 2A or 2B again in the southeastern portion of Parcel 2A, necessitating a new right-of-way to pass through Parcels 3 and 4 in order to comply with JTMP requirements. An "Easement Grant Deed" has been filed with the County of Humboldt to accomplish this access requirement (see Appendix A).

Parcel 6A and 2B will be accessed via a rock-surfaced spur road which will need to be resurfaced and brushed to accommodate log trucks. While a rock-surfaced road connects Proposed Parcel 6A to Baker Creek Road, a right of way must be obtained to pass through

nearby parcels 2A, 2B, 3, and 4. An “Easement Grant Deed” has been filed with the County of Humboldt to accomplish this access requirement (see Appendix A).

Much of the logging in Parcel 2B will require cable logging to accommodate the large proportion of very steep (>65%) slopes in this unit. The existing road that accesses the parcel and quarry will be sufficient for logging access. Depending on LCF’s preference, tractor logging may be implemented on the Southwestern slope of the ridge that runs through Parcel 2B. Skid trails in this parcel are limited, necessitating new trail construction if said portion of Parcel 2B is harvested using tractor logging.

Parcel 2A may be harvested using a mix of tractor and cable logging. Logging in tractor areas will require new skid trail construction. A rock surfaced road passes through this parcel and will likely need improvements before any harvesting or silvicultural operations can be conducted. Cable logging in this parcel may be accomplished using Baker Creek Road or obtaining right-of-way access from the adjacent parcel to the north.

Parcel 6A would be accessed via a rock-surfaced spur road which will need to be resurfaced and brushed to accommodate log trucks. While a rock-surfaced road connects Proposed Parcel 6A to Baker Creek Road, a right of way must be obtained to pass through nearby parcels 2A, 2B, 3, and 4 (Figure 6). An “Easement Grant Deed” has been filed with the County of Humboldt to accomplish this access requirement (see Appendix A).

Due to the steep slopes on the southwestern portion of Parcel 6A, cable yarding will likely be the only available option. Cable logging will require new road construction or right-of-way access to the southern adjacent Parcel 7 to Parcel 6A to yard logs up the nearest ridge. The eastern half of Parcel 6A may be harvested using ground-based tractors. Existing skid trails may be reused in some cases, as the land was previously tractor logged. The western half of Parcel 6A must be logged using cable yarders due to the large proportion of slopes >65%. In addition, backside yarding would allow retrieval of timber from the north side of Baker Creek. Right-of-way access through Parcel 7 would be necessary to accomplish either of these goals. An “Easement Grant Deed” has been filed with the County of Humboldt to accomplish this access requirement (see Appendix A). See Figure 10 for areas in which tractor or cable logging can be implemented.

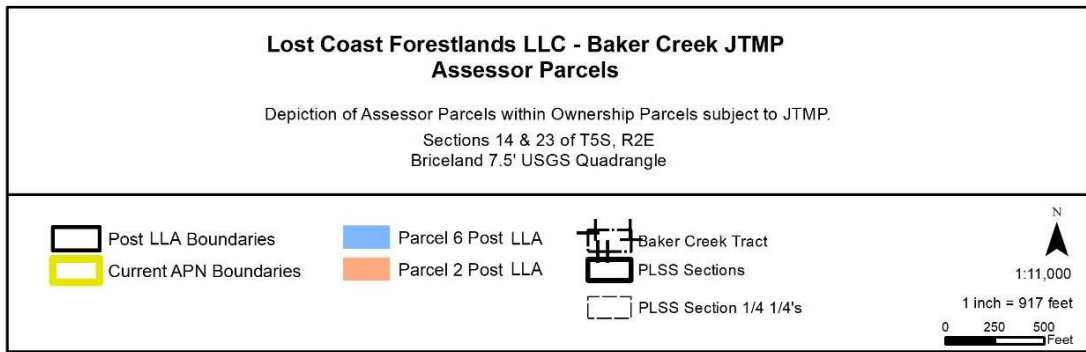
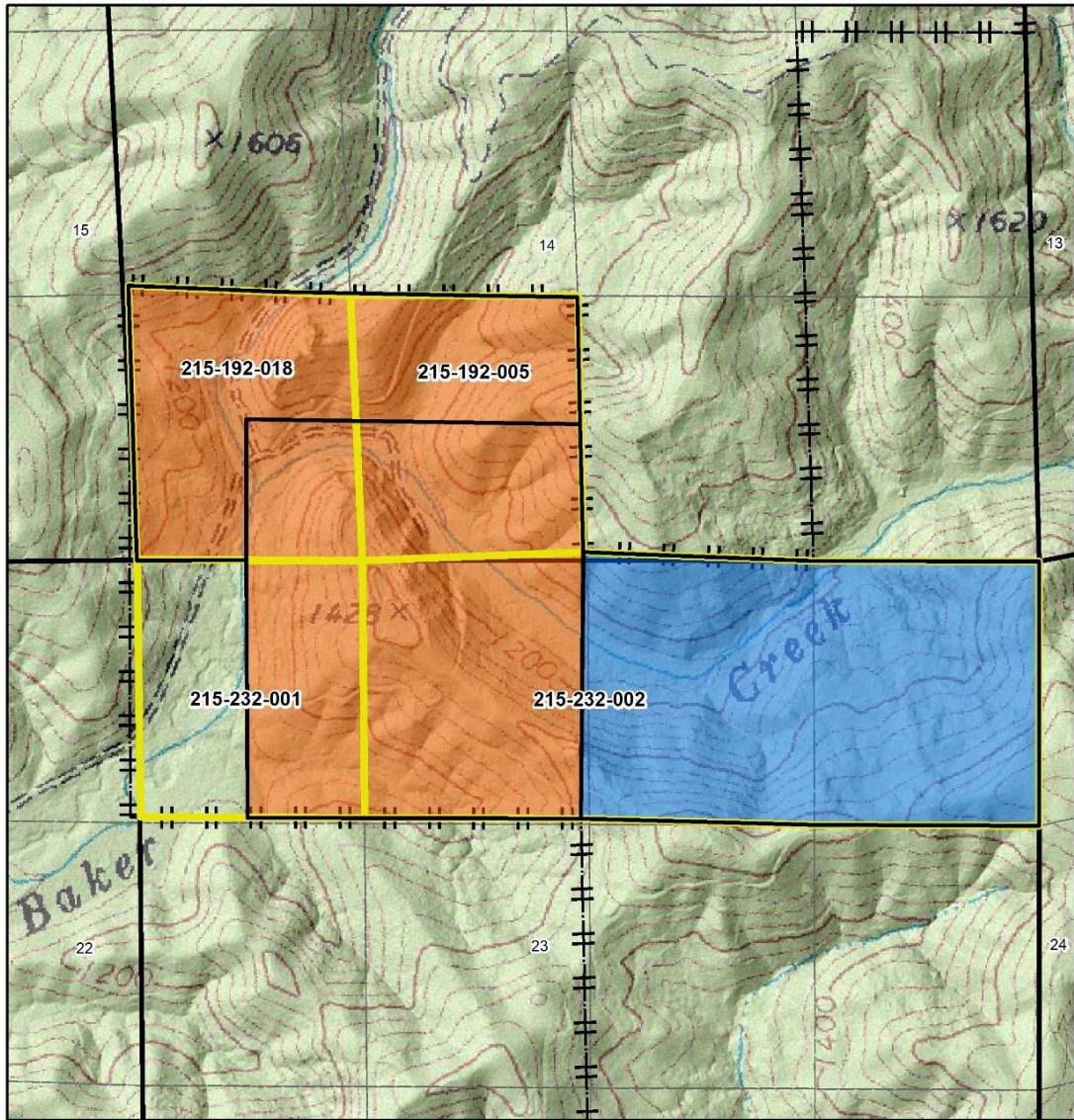


Figure 5. Assessor Parcels within JTMP Area

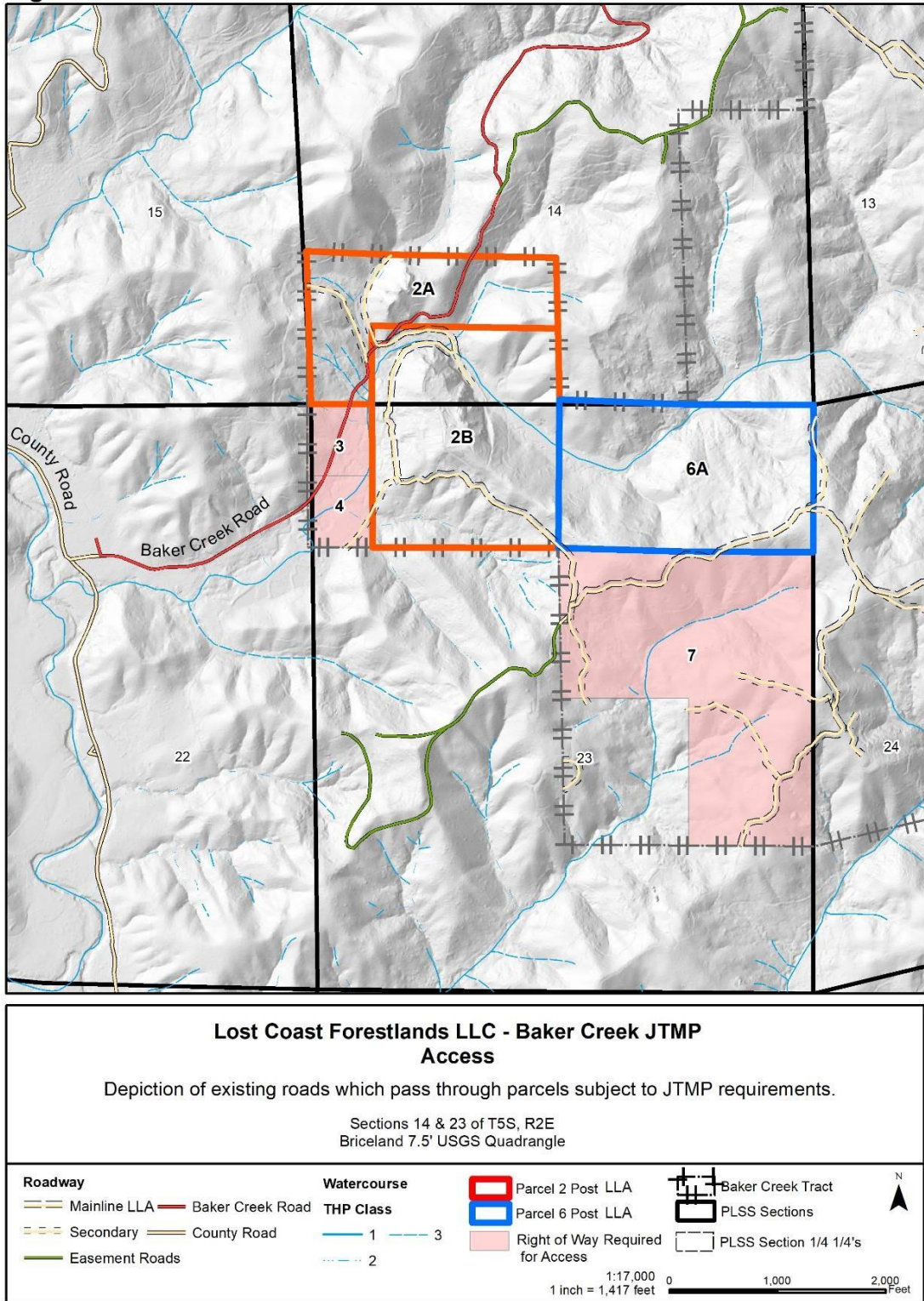
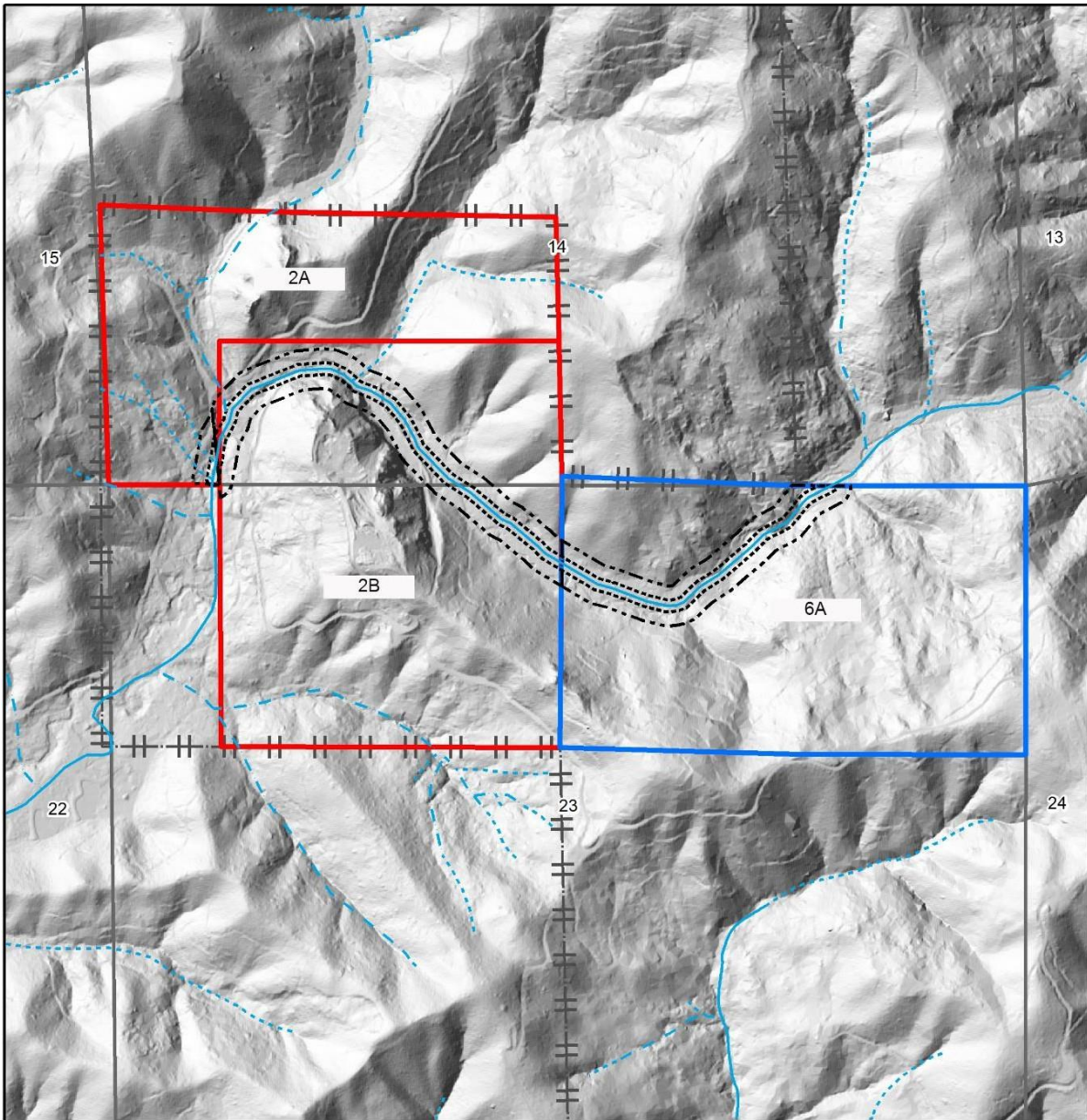


Figure 6. Access and Roads

4. Physical Description

Baker Creek, a Class I fish-bearing stream, runs through each parcel subject to JTMP requirement in addition to several Class IIs and IIIs. Baker requires a 100-ft wide Watercourse and Lake Protection Zone (WLPZ) buffer for any cable logging operations and is subject to harvesting and silvicultural restrictions described in forest practice rules. See Figure 7 for watercourse distribution and Baker Creek's required buffer. Logging near the watercourse will likely require cable yarding due to topographical restrictions; see Section 8 for restrictions on logging methods.



**Lost Coast Forestlands LLC - Baker Creek JTMP
Watercourse by THP Class**

Depiction of watercourses within parcels subject to JTMP by THP Class.

Sections 14 & 23 of T5S, R2E
Briceland 7.5' USGS Quadrangle

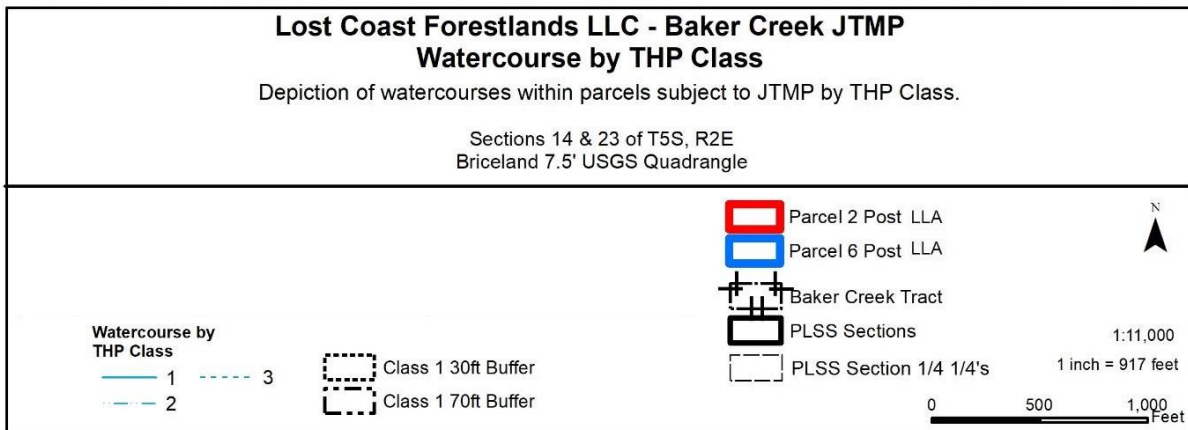


Figure 7. Watercourse distribution on Baker Creek Tract.

Parcels subject to JTMP requirements contain soil map units 579, 182, 576, and 578 and are distributed as shown in Figure 8.

“182 - Gschwend-Frenchman complex, 0 to 9 percent slopes: “The Gschwend component makes up 50 percent of the map unit. Slopes are 0 to 9 percent. This component is on stream terraces, mountain river valleys. The parent material consists of alluvium derived from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon, the organic matter content is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.”

“The Frenchman component makes up 30 percent of the map unit. Slopes are 0 to 9 percent. This component is on mountain river valleys, stream terraces. The parent material consists of alluvium derived from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon, the organic matter content is about 2 percent.”

“576 - Gibsoncreek-Sproulish-Redwohly complex, Map unit: 30 to 50 percent slopes... The Gibsoncreek component makes up 45 percent of the map unit. Slopes are 30 to 50 percent. This component is on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon, the organic matter content is about 6 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

“The Sproulish component makes up 25 percent of the map unit. Slopes are 30 to 50 percent. This component is on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 5 percent. Non irrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface”.

“The Redwohly component makes up 15 percent of the map unit. Slopes are 30 to 50 percent. This component is on mountains, convex positions on mountain slopes. The parent material consists of residuum weathered from sandstone. Depth to a root restrictive layer, strongly

contrasting textural stratification, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon the organic matter content is about 4 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface”.

“579 - Sproulish-Gibsoncreek-Redwohly complex, 50 to 75 percent slopes... The Sproulish component makes up 40 percent of the map unit. Slopes are 50 to 75 percent. This component is on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon, the organic matter content is about 5 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

“The Gibsoncreek component makes up 30 percent of the map unit. Slopes are 50 to 75 percent. This component is on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

“The Redwohly component makes up 15 percent of the map unit. Slopes are 50 to 75 percent. This component is on mountains, convex positions on mountain slopes. The parent material consists of residuum weathered from sandstone. Depth to a root restrictive layer, strongly contrasting textural stratification, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon the organic matter content is about 4 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.”

“Map unit: 578 - Sproulish-Telegraph-Redwohly complex, 30 to 50 percent slopes... The Sproulish component makes up 40 percent of the map unit. Slopes are 30 to 50 percent. This component is on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is

about 5 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

The Telegraph component makes up 30 percent of the map unit. Slopes are 30 to 50 percent. This component is on linear to concave positions on mountain slopes, mountains. The parent material consists of colluvium derived from sandstone and/or residuum weathered from sandstone. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon the organic matter content is about 3 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface”

“The Redwohly component makes up 15 percent of the map unit. Slopes are 30 to 50 percent. This component is on mountains, convex positions on mountain slopes. The parent material consists of residuum weathered from sandstone. Depth to a root restrictive layer, strongly contrasting textural stratification, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface” (NRCS Websoil Survey, 2020).

Gschwend soils are very productive for timber Site Class II for both both Redwood and Douglas-fir. Frenchman soils are Site Class IV for Douglas-fir and Site Class V for redwood production. No specific site class data exist for Sproulish soils, but Douglas-fir and pacific madrone are common on these soils, as are redwoods in fewer numbers. Gibsoncreek, Telegraph, and Redwohly soils have similar profiles and timber productivity to that of the Gschwend series, naturally growing Douglas-fir and limited redwood, though specific site class data for these soil series are unavailable. All soil types in both parcels are popular in timber production. (Official Soil Series Descriptions, 202)

A breakdown of slopes in each JTMP Parcel can be seen in Figure 9. After Lot Line Adjustment, Parcel 6A consists of steep slopes in its western half, with gentler slopes in its eastern half.

Almost all slopes face north in Parcel 6A. Timber stands are distributed evenly across slopes in this parcel. Parcel 2A is divided by a gravel road seen in Figure 6, with steep slopes east of the road and gentler slopes to the west. Aspects of these slopes are varied but trend east. Timber stands are relatively evenly distributed across this parcel. The northeastern aspect of the ridge that passes through Parcel 2B is steep and rocky all the way down to Baker Creek. The opposite side of the ridge has a mixture of steep and gradual slopes. Timber stands are distributed mainly on the southwest aspect of the ridge. The end of the ridgeline has been flattened by gravel mining and has few timber stands.

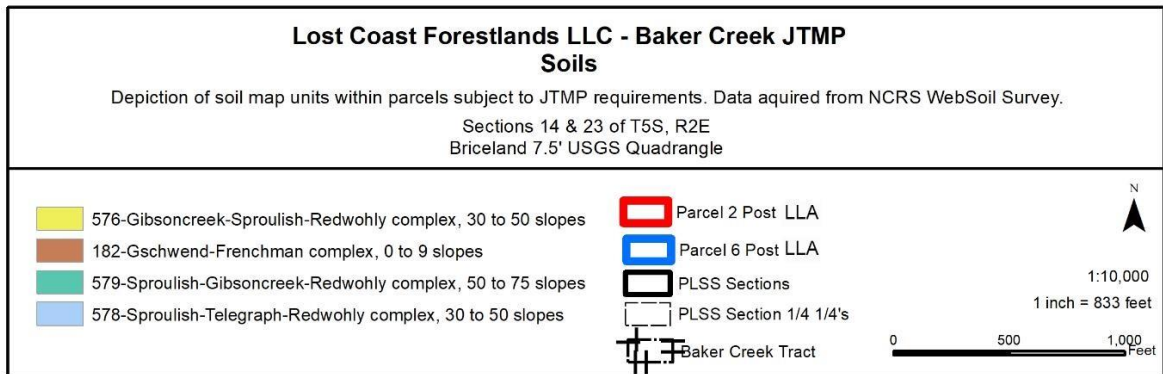
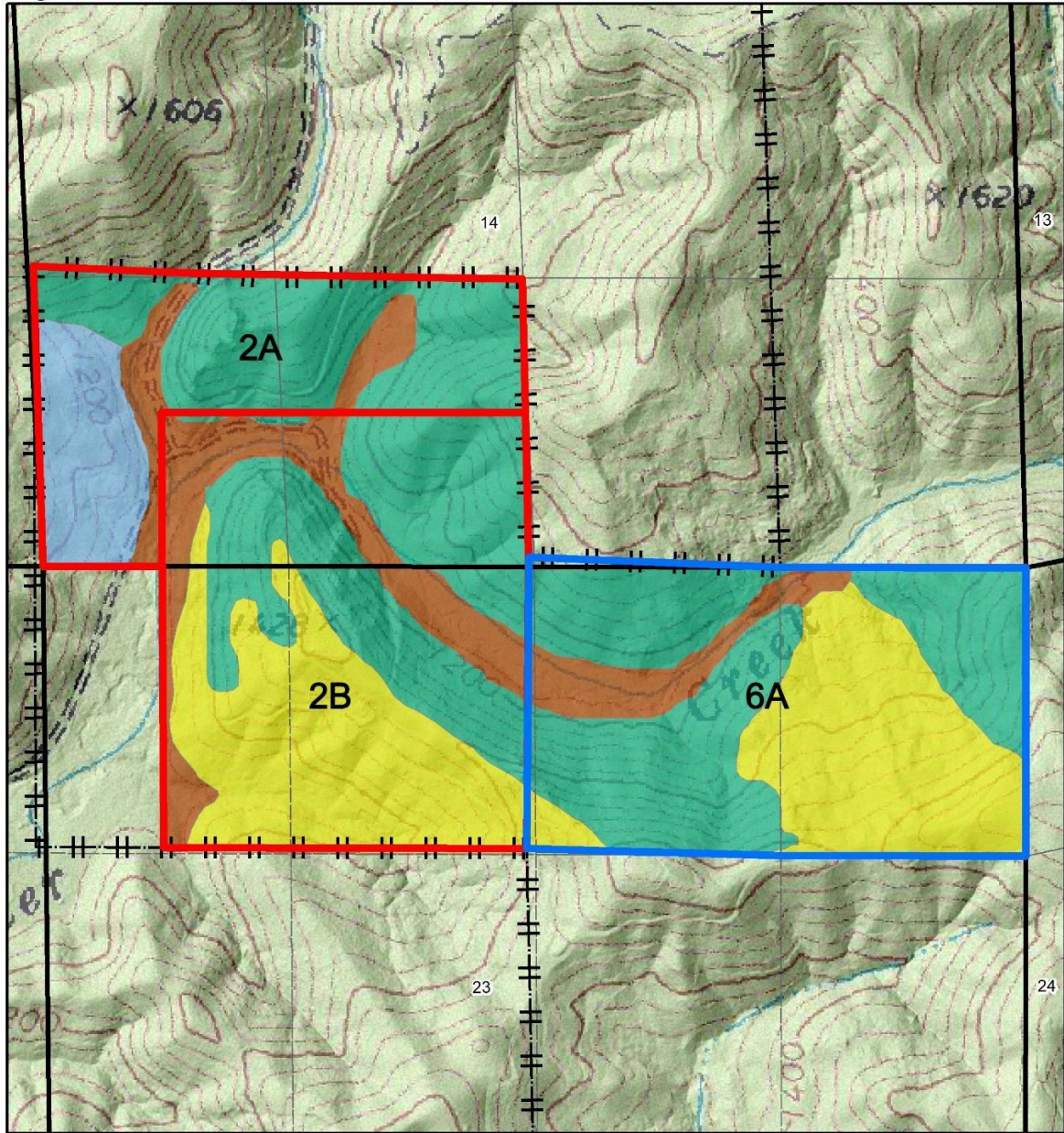


Figure 8. Mapped soil units on Baker Creek Tract.

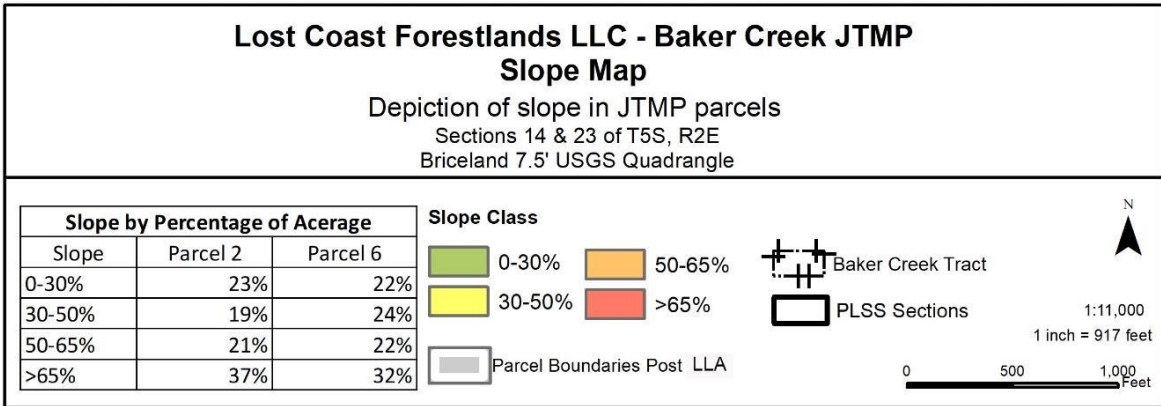
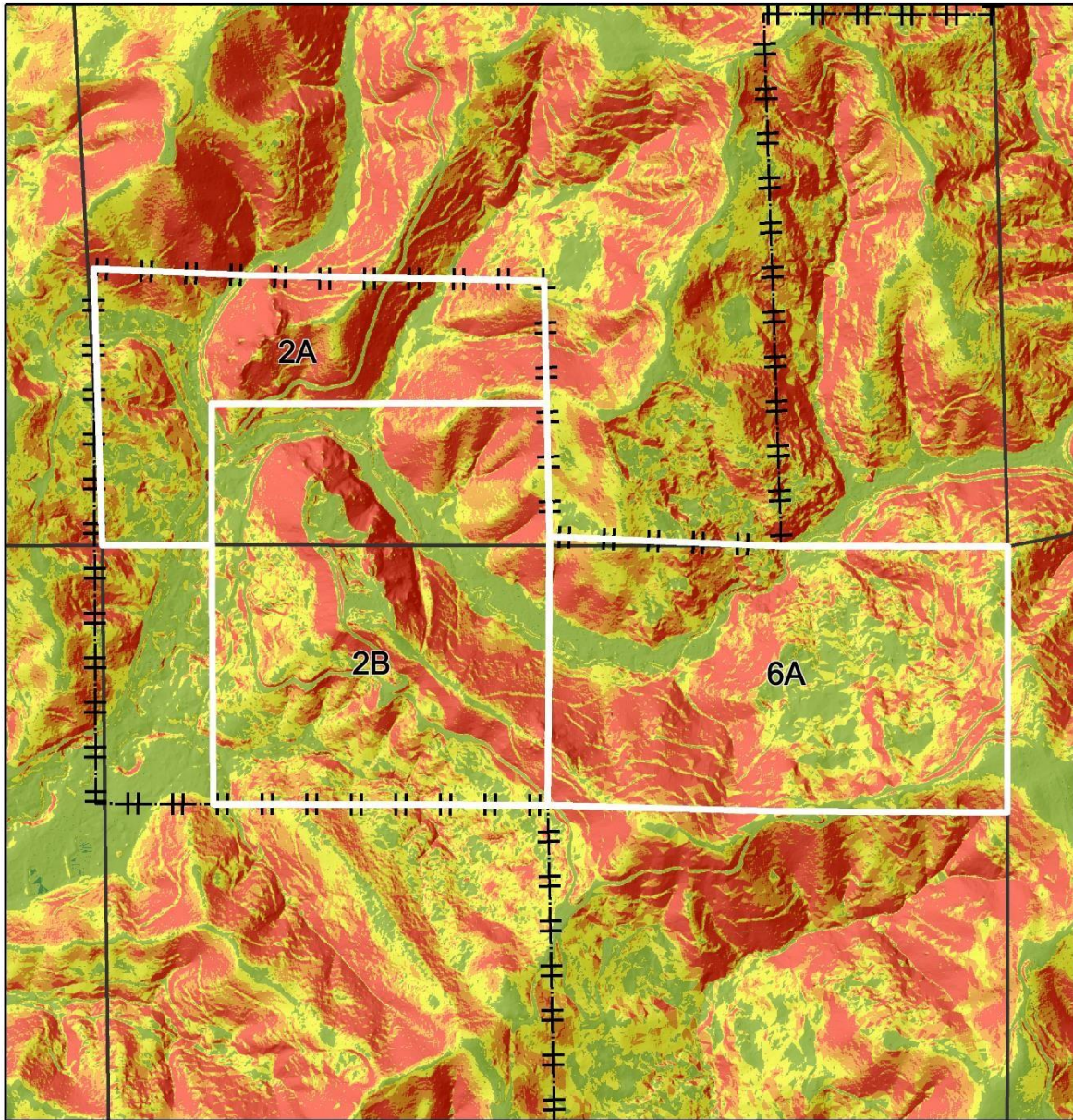


Figure 9. Slope distribution on Baker Creek Tract.

5. Timber Stand Description and Stocking

Table 1 describes timber stocking by observed strata and merchantable/nonmerchantable species in JTMP parcels using boundaries which would result from the proposed Lot Line Adjustment. Parcels 2B and 6A both have over 1 million MBF of merchantable conifer timber, while Parcel 2A has approximately 617 MBF of merchantable conifer timber. Methods for data collection and processing can be found in Section 6.

As can be inferred by the high number of trees per acre and the small average diameter for all species found in these parcels, stands in all JTMP parcels are relatively young. While all parcels currently meet minimum stocking standards, they have low stocking in terms of conifer basal area with Parcel 2A reporting 110 ft² per acre, Parcel 2B at 115 ft² per acre, and Parcel 6A at 130 ft². Douglas-fir and redwood make up the entirety of viable timber species with Douglas-fir appearing much more frequently than redwood. Much of the acreage of all parcels is dominated by densely packed young hardwoods consisting mostly of tanoak and madrone. Parcel 2B contains a wide segment of road to accommodate gravel trucks as well as a rocky cliff face, both of which have been stratified as non-forested areas. All parcels contain three strata determined during the carbon cruise described in Section 6. Stratum C2 is dominated by young hardwoods, mostly pacific madrone and tanoak, with relatively few young conifers mixed in. Parcels 2A and 2B would consist mostly of this stratum. Stratum C4 contains the oldest stands and therefore shows the greatest spacing and least competition between merchantable conifers and the younger hardwoods. This stratum makes up a small acreage of each adjusted parcel. The “Plant(ation)” Stratum consists of plantations of densely packed Doug-fir, with small tanoaks making up the majority of the understory. These plantations make up a majority of Parcel 6A, but a small fraction of Parcels 2A and 2B.

Table 1. Stratified stocking data in parcels subject to JTMP requirements based on adjusted Lot Lines.

Parcel	Strata	Species	TPA	Basal Area/acre	Avg. Diameter	Gross BF/acre	Acres	Total Gross BF
2A	C2	DF	180	63	8.1	7,372	29.0	213,923.2
2A	C2	RW	22	10	9.0	738	29.0	21,420.6
2A	C2	Hardwoods	502	121	6.6	7,722	29.0	224,071.7
2A	C2	Totals	703	194	7.1	15,833		459,415.5
2A	C4	DF	290	198	11.2	34,033	9.5	323,487.0
2A	C4	RW	17	17	13.6	1,843	9.5	17,520.9
2A	C4	Hardwoods	137	83	10.5	7,054	9.5	67,045.9
2A	C4	Totals	443	298	11.1	42,930		408,053.74
2A	Plant	DF	291	95	7.7	6,548	5.5	36,012.4
2A	Plant	RW	168	30	5.7	1,024	5.5	5,629.5
2A	Plant	Hardwoods	483	33	3.5	474	5.5	2,604.4
2A	Plant	Totals	942	157	5.5	8,045		44,246.4
2A	Total Conifer							617,993.6
Parcel	Strata	Species	TPA	Basal Area/acre	Avg. Diameter	Gross BF/acre	Acres	Total Gross BF
2B	C2	DF	180	63	8.1	7,372	44.0	324,328.9
2B	C2	RW	22	10	9.0	738	44.0	32,475.8
2B	C2	Hardwoods	502	121	6.6	7,722	44.0	339,715.1
2B	C2	Totals	703	194	7.1	15,833		696,519.8
2B	C4	DF	290	198	11.2	34,033	17.9	607,581.5
2B	C4	RW	17	17	13.6	1,843	17.9	32,908.1
2B	C4	Hardwoods	137	83	10.5	7,054	17.9	125,927.4
2B	C4	Totals	443	298	11.1	42,930		766,417.02
2B	Plant	DF	291	95	7.7	6,548	5.0	32,623.3
2B	Plant	RW	168	30	5.7	1,024	5.0	5,099.7
2B	Plant	Hardwoods	483	33	3.5	474	5.0	2,359.3
2B	Plant	Totals	942	157	5.5	8,045		40,082.3
2B	Total Conifer							1,035,017.3
Parcel	Strata	Species	TPA	Basal Area/acre	Avg. Diameter	Gross BF/acre	Acres	Total Gross BF
6A	C2	DF	180	63	8.1	7,372	18.6	137,127.4
6A	C2	RW	22	10	9.0	738	18.6	13,730.9
6A	C2	Hardwoods	502	121	6.6	7,722	18.6	143,632.7
6A	C2	Totals	703	194	7.1	15,833		294,491.0
6A	C4	DF	290	198	11.2	34,033	15.4	524,113.3
6A	C4	RW	17	17	13.6	1,843	15.4	28,387.3
6A	C4	Hardwoods	137	83	10.5	7,054	15.4	108,627.8
6A	C4	Totals	443	298	11.1	42,930		661,128.31
6A	Plant	DF	291	95	7.7	6,548	39.7	259,950.0
6A	Plant	RW	168	30	5.7	1,024	39.7	40,635.7
6A	Plant	Hardwoods	483	33	3.5	474	39.7	18,799.5
6A	Plant	Totals	942	157	5.5	8,045		319,385.3
6A	Total Conifer							1,003,944.6

6. Cruise Methods and Volume Determination

Data described in Table 1 were collected during a recent carbon inventory encompassing much of LCF's land holdings, including Baker Creek Tract. Cruisers collected timber data during carbon cruising lasting from late 2018 to early 2021. Cruisers collected diameter, length, and species for all trees greater than five inches in diameter on 1/20th acre fixed radius plots. Similar regeneration data were collected for all trees less than five inches and greater than one inch in diameter in a 1/200th acre microplot. Cruisers applied the walkthrough method to data from plots which fell along project boundary lines (Ducey et al., 2004). A more detailed description of field inventory methods is included in Appendix 1. Collected data were fed into the FORSEE¹ computer growth and yield program and stratified by stand type. Using the resulting strata and their geographic boundaries, analysts extrapolated timber stocking by acre to Parcels 2 and 6.

7. Management Objectives

Goals

- A. Grow larger, older, conifer dominated forests that improve ecological, economic, and social functionality compared to current condition. The future desired forest condition for this property is a mature uneven-aged forest with a high, variable canopy of large redwood, Douglas-fir, tanoak, and Pacific madrone.

Objectives The overall goal will be achieved through the following objectives:

- 1) Grow and maintain habitat elements common in mature forests (e.g., snags, trees with large limbs, large diameter trees (>30 inches DBH), down wood, etc.)
- 2) Increase the area of conifer dominated forest types.
- 3) Where they exist, manage conifer dominated forests to increase volume and size of conifer trees over time.
- 4) Manage vegetation to reduce risk of stand replacing wildfire.
- 5) Minimize sediment production and delivery to watercourses.
- 6) Protect productive timberland from conversion to non-timber use.
- 7) Maintain a working forest that supports timber-related jobs and economic productivity.
- 8) Produce a consistent supply of marketable forest products in perpetuity, balancing timber harvest and growth.
- 9) Protect the health of the forest ecosystem, specifically through maintaining the integrity of the watershed, wildlife, fisheries and plant resources, their relationships and the processes through which they interact with their environment.

8. Harvest Methods

As described in Section 4, reciprocal access to adjacent parcels owned by LCF (2A, 2B, 6A and 7) must be obtained via right-of-way for essentially any cable logging. Due to the steep slopes, a significant portion of each parcel would necessitate cable logging after the proposed lot line adjustment. However, opportunities for tractor logging operations exist in each new parcel. Figure 10 shows a detailed breakdown of suitable harvest methods. Slopes are gentle enough in the western portion of Parcel 2A and eastern half of Parcel 6A to allow for tractor logging. The northeastern half of Parcel 2B will require cable logging due to its steep slopes. The southwestern half of Parcel 2B may be harvested using ground-based tractors. Existing skid trails may be reused in some cases, as the land was previously tractor logged. The western half of

Parcel 6A must be logged using cable yarders due to the large proportion of slopes >65%. In addition, backside yarding would allow retrieval of timber from the north side of Baker Creek without needing a new right-of-way or stream crossing.

Logging in Parcel 2A would be most feasible if there were access from the non-LCF owned parcel to the north. However, this situation will not be affected by the proposed lot line adjustment.

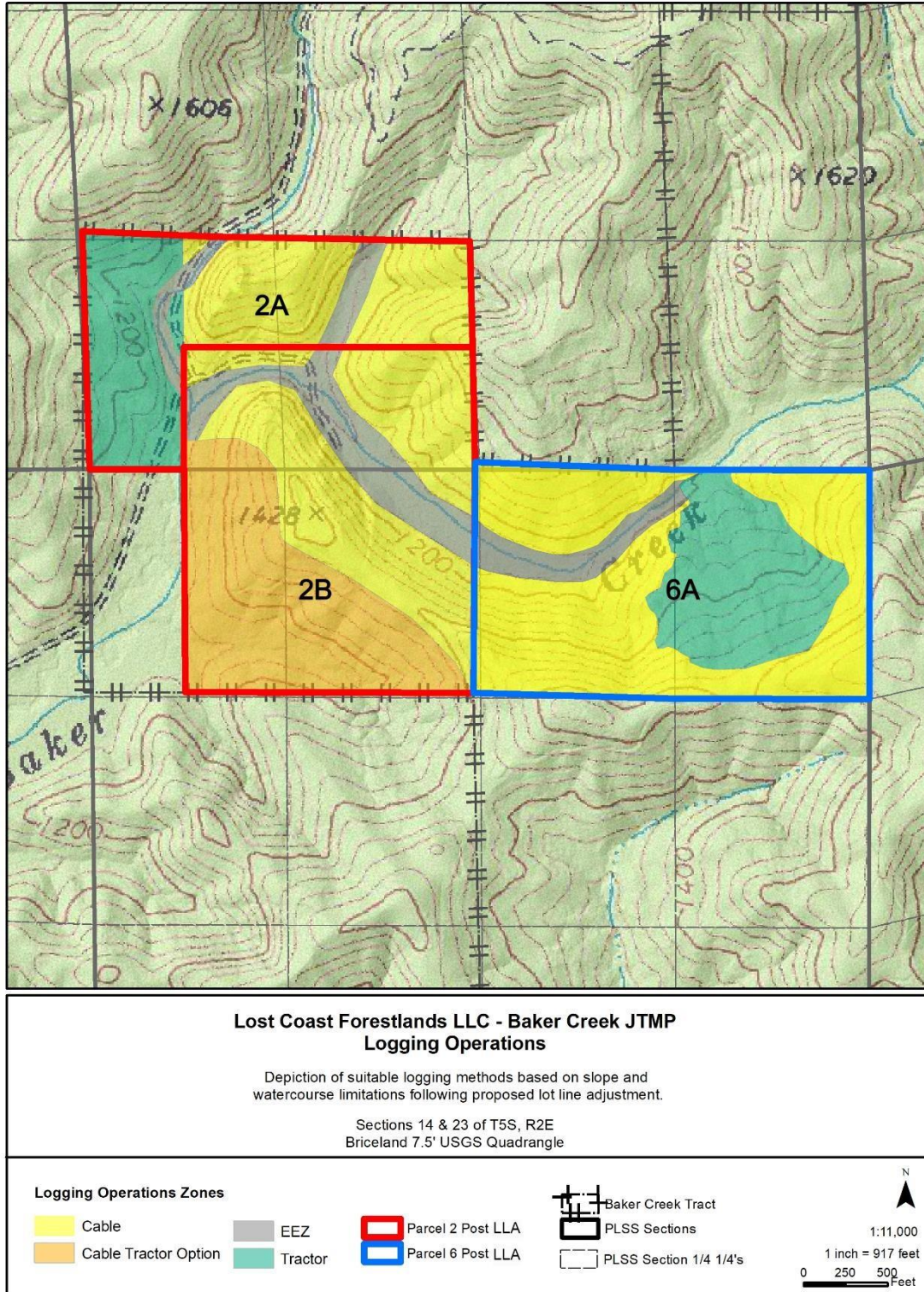


Figure 10. Logging methods for Baker Creek Tract.

9. Timber Harvest History

Before acquisition by LCF, the Baker Creek tract was thoroughly high-graded for valuable and merchantable conifers throughout the 1950s and 1960s. Most recently, Barnum Timber Co. used Rehabilitation silviculture in 1995 and replanted with Douglas-fir.

10. Growth and Yield

The electronic growth and yield model known as FORSEE (CAGYM 2011) was used to predict the volume of timber that will be present in each parcel over time in the absence of harvest. The projection period was 55 years. At the strata level FORSEE predicted that average annual growth (scribner gross) was approximately 751 board feet/year for the C2 strata, 991 bf/year for the C3 strata and 1,347 bf/year for the Plant strata. The predicted timber volumes during the 2022-2077 time period for each parcel are shown in Table 2, Table 3, and Table 4 below.

Table 2. Predicted growth over 55 years of conifer timber for Parcel 2A on Baker Creek Tract.

Parcel	strata	acres	strata	acres	strata	acres	
2A	C2	29	C3	9.5	Plant	5.5	
year	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	total conifer volume (mbf gross)
2022	8.1	234.9	35.8	340.1	7.6	41.6	616.6
2027	9.7	281.1	40.4	384.0	8.3	45.8	710.9
2032	12.4	359.5	45.0	427.4	13.8	75.7	862.7
2037	15.6	451.6	49.5	470.2	20.1	110.3	1,032.1
2042	19.0	551.9	54.4	516.4	27.4	150.7	1,218.9
2047	23.0	667.9	59.4	563.9	34.9	191.8	1,423.6
2052	27.0	783.2	64.5	612.4	42.3	232.6	1,628.2
2057	31.3	906.9	70.0	664.6	49.9	274.5	1,846.0
2062	35.7	1,035.3	75.3	715.0	57.5	316.3	2,066.6
2067	40.6	1,177.1	80.4	763.6	65.7	361.3	2,302.0
2072	45.0	1,304.4	85.2	809.1	73.7	405.4	2,519.0
2077	49.4	1,433.0	90.3	857.9	81.7	449.3	2,740.2

Table 3. Predicted growth over 55 years of conifer timber for Parcel 2B on Baker Creek Tract.

Parcel	strata	acres	strata	acres	strata	acres	
2B	C2	44	C3	17.9	Plant	5	
year	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	total conifer volume (mbf gross)
2022	8.1	356.4	35.8	640.8	7.6	38.0	1,035.2
2027	9.7	426.4	40.4	723.6	8.3	41.6	1,191.7
2032	12.4	545.5	45.0	805.4	13.8	68.8	1,419.7
2037	15.6	685.2	49.5	885.9	20.1	100.3	1,671.4
2042	19.0	837.3	54.4	972.9	27.4	137.0	1,947.2
2047	23.0	1,013.4	59.4	1,062.5	34.9	174.3	2,250.2
2052	27.0	1,188.4	64.5	1,153.8	42.3	211.5	2,553.6
2057	31.3	1,376.0	70.0	1,252.3	49.9	249.5	2,877.8
2062	35.7	1,570.8	75.3	1,347.2	57.5	287.5	3,205.5
2067	40.6	1,786.0	80.4	1,438.8	65.7	328.4	3,553.2
2072	45.0	1,979.1	85.2	1,524.5	73.7	368.6	3,872.2
2077	49.4	2,174.1	90.3	1,616.5	81.7	408.5	4,199.1

Table 4. Predicted growth over 55 years of conifer timber for Parcel 6A on Baker Creek Tract.

Parcel	strata	acres	strata	acres	strata	acres	
6A		18.6		15.4		39.7	
year	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	vol/acre (mbf gross)	vol per strata (mbf gross)	total conifer volume (mbf gross)
2022	7.5	140.0	36.4	560.5	4.9	194.7	895.3
2027	9.7	180.3	40.4	622.6	8.3	330.4	1,133.2
2032	12.4	230.6	45.0	692.9	13.8	546.3	1,469.8
2037	15.6	289.6	49.5	762.2	20.1	796.4	1,848.2
2042	19.0	354.0	54.4	837.0	27.4	1,087.7	2,278.7
2047	23.0	428.4	59.4	914.1	34.9	1,384.1	2,726.6
2052	27.0	502.4	64.5	992.7	42.3	1,678.9	3,173.9
2057	31.3	581.7	70.0	1,077.4	49.9	1,981.1	3,640.2
2062	35.7	664.0	75.3	1,159.0	57.5	2,283.0	4,106.0
2067	40.6	755.0	80.4	1,237.8	65.7	2,607.9	4,600.7
2072	45.0	836.6	85.2	1,311.6	73.7	2,926.5	5,074.7
2077	49.4	919.1	90.3	1,390.7	81.7	3,243.3	5,553.0

11. Silvicultural Recommendations

The future desired forest condition for this property is a mature uneven-aged forest with a high, variable canopy of large redwood, Douglas-fir, tanoak, and Pacific madrone. Selection and Thinning with relatively high retention are silvicultural systems that are well suited to meeting this goal. Under this system, trees are selected for harvest whose removal will increase the growth of retained trees and promote regeneration and release of conifers. The system requires a balance which maintains growing stock to provide current growth, shade, wind protection, wildlife habitat, and visual appeal, while satisfying light and spacing requirements needed to stimulate regeneration and sufficient growth of smaller trees.

After several harvesting cycles distributed across the ownership, there would be a mixture of different sized stands resulting from site-specific prescriptions. The long-term silvicultural objective is to increase structural diversity in the forest and to build volume of high-quality conifers by ensuring that growth is greater than harvest volume. There is a silvicultural focus on growing and harvesting conifers because these trees have a long track record of commercial value. Local hardwoods currently have no commercial viability.

The re-entry period or cutting cycle for conifer harvest should be 15-20 years. At each harvest one quarter to one third of the conifer volume of the stand being entered should be removed leaving a minimum stocking of at least 75 square feet of conifer basal area per acre (much more in most cases). The percentage of the stocking requirements met with other species would be no less than the percentage of the stand basal area they comprised before harvesting, and more in most cases. This means that at each harvest sufficient hardwoods would need to be cut or killed even if no market exists at the time. Harvest entries generally remove less than overall stand growth until the stocking level producing maximum periodic volume increment is attained. Subsequent harvests would cut volume growth since the last entry to maintain a sustained, even flow of logs in perpetuity.

Hardwoods should be removed to favor conifer growth, but hardwoods such as tanoak and madrone are an integral component of these stands and therefore management should not exclude these species entirely. Future harvests would entail selection across the diameter classes combined with a thinning from below to reduce competition among tanoak sprouts, encourage growth on the best stems, and generate sufficient income to satisfy landowner objectives. In addition, damaged, diseased, poorly formed, and low vigor trees would be culled from the stands. However, a portion of the larger diameter poorly formed trees with characteristics particularly well suited to wildlife use such as re-iterated tops, very large limbs, hollows, etc. will be retained. These trees are designated Legacy or Wildlife Trees and will in most cases be retained until they succumb to natural mortality.

In order to successfully implement commercially viable selection silviculture at Baker Creek, it will be necessary to work in stands where conifers are currently or are close to becoming the dominant tree species. If conifers are dominant to begin with, they can be used to maintain canopy coverage over the hardwoods and control their stocking levels. The goal is to increase the conifer percentage in each stand to 60-80% by basal area depending on micro site features and current species composition. In some hardwood dominated areas, this will inevitably be a gradual transition and may not be achieved within the planning horizon.

Not all stands have to be managed for conifer dominance, but the ones that are selected will require significant effort to maintain or increase conifer stocking. The silvicultural methods for increasing conifer dominance range from simply retaining conifers in crown positions that suppress hardwoods during Selection harvests to removal of 60-80% of the trees in a stand and re-planting the site with conifers. This latter more intensive approach will require silvicultural methods known as Transition and Variable Retention (VR).

“VR” or Variable Retention. “VR” is shorthand for a range of silvicultural treatments within the Forest Practice Rules that are a means to “start over” in a stand which has such high hardwood stocking (e.g., >60%) that there is little likelihood of achieving conifer dominance within a 50–100-year time frame by any other means. The actual silvicultural methods listed in the FPRs that encompass this technique are Transition, Variable Retention and Rehabilitation (CCR14 913.2). Intensive silvicultural methods such as these are intended to be used only once in the life of each stand to achieve the desired conifer to hardwood ratio in single operation. VR will remove most of the trees on each acre but will retain individuals and groups of the best-formed, largest trees. The goal is to implement VR within stands once and then be able to use Selection and Thinning prescriptions thereafter.

VR is not a single treatment but a highly variable approach to converting hardwood dominated stands into conifer dominated stands. The basic components include selecting suitable stands to treat, treating hardwoods, falling and logging conifers, creating planting space, re-planting conifers and tending the re-generated stands.

VR prescriptions often just break even economically after accounting for the costs of planting and maintenance of the plantation. VR is controversial because it resembles a “mangy dog” or “sloppy clear-cut” after harvest and often includes the use of herbicides.

Within the Baker Creek Tract VR should only be used in stands where no other commercially viable approach is available. VR will not be used as an opportunistic prescription to exploit stands with good conifer stocking. The goal of VR on LCF lands is restoration to a conifer dominated stand. Typically, VR will be used on stands with 25-50% conifer stocking. If a stand has less than 25% conifer stocking it is unlikely that there would be enough conifer volume to break even on the VR treatment. Stands with >75% hardwood stocking may be converted to conifer plantations, but this would not be economically viable unless a market for hardwood logs was available.

If markets are available for hardwoods, they may be cut and logged. Firewood, lumber, and biomass (chips) are typical uses of hardwoods, though prices are typically low and/or markets not available. Thus, most VR treatments leave killed (hacked) trees standing. If the landowner prefers to remove standing dead hardwoods, the cost of falling and removing (logging) a stand of tanoak trees ranges from \$1,200-2,000/acre. If markets are not available to offset this cost, hardwoods may be piled and burned on the landing or chipped - though these treatments are also costly and require over-sized landings to accommodate the material.

Management Recommendations- Silviculture

- 1. Practice selection silviculture in stands where conifer dominance is >60% by basal area.**
- 2. For stands where conifer stocking is <60%, determine suitability for silviculture that will increase conifer stocking, such as Variable Retention.**
- 3. Stands that are suitable for VR should have most of the following characteristics**
 - a. Site Class III or better**

- b. Capable of supporting redwood*
 - c. Conifer stocking of >10mbf/acre so that sufficient conifer volume is produced to offset hardwood treatment and replanting costs.*
 - d. Hardwoods predominantly 4-18" dbh.*
 - e. Ability to use herbicides to control re-sprouting of tanoak, and if possible in locations where foliar application of herbicides is allowed for plantation maintenance.*
 - f. Not in location prone to lightning strikes.*
 - g. Hardwood stocking is <70%*
- 4. Limit opening size to 2 acres, retention of 4-10 trees per acre >18" dbh where they existed prior to treatment.*
 - 5. Treatments that result in high density of dead standing trees should not be conducted within 50' of the permanent road network.*
 - 6. Treatments that utilize herbicides should not be used near a domestic water supply and will only occur on sites no less than the following distances from watercourse classifications: 75 feet from Class I, 50 feet from Class II, and 25 feet from Class III, seeps, and springs.*
 - 7. Sites with >50% cover of brush species should be treated to reduce brush cover prior to planting trees.*
 - 8. Planting density will typically be 175-250 trees per acre on open sites.*
 - 9. Investigate seedling versus clone stock sources and costs for redwood. Sequoia Orchid (Fortuna, CA) is a commercial clone source for redwood; LCF should determine the current availability and cost of clone stock, as well as the feasibility and cost to develop LCF-specific clone stock.*
 - 10. Initiate Douglas-fir and redwood seed collection efforts.*

12. Conservation and Protection Measures

Erosion Control

Resource protection is an integral part of any long-term management scenario because of the potential impacts that timber removal, the operation of heavy equipment, and ongoing homesteading activities can have on site productivity and the downstream beneficial uses of water. The state forest practice laws are largely intended to protect water quality. The main beneficial uses of water in the area include: domestic and agricultural water supplies, fish migration and spawning, and wildlife habitat. The crux of resource conservation is to keep soil in the forest for long term site productivity and prevent it from being transported downhill into the aquatic system. Since the primary continuing source of sediment transport is known to be roads and skid trails, they need to be properly maintained if in use or abandoned if no longer in use. Proper road design and maintenance are keys to watershed protection. Through careful planning and management, it is possible to minimize environmental risks.

The landowner will continue to improve upon and maintain existing erosion features on all roads, trails, and landings, including waterbars, culvert crossings, cross drains, and inside ditches. Monitoring and maintenance during the winter period is essential. All erosion control structures should be checked each year before the beginning of the rainy season and periodically throughout the winter, in particular before and after storm events.

General erosion control guidelines for the continued maintenance and improvement of the road system are as follows:

- Outslope roads wherever feasible in order to reduce long term maintenance and improve the quality of runoff water.
- Grade and install rocked, rolling dips on low gradient sections of main haul roads.
- Place rocked, critical dips over all existing and planned culverts whenever feasible to prevent channel diversions.
- Do not operate heavy equipment off roads and trails or near springs or watercourses.
- Abandon skid roads and prohibit vehicular use after forestry operations are complete.

Fish and Wildlife

It is an important goal of this plan to provide high quality wildlife habitat, particularly for species associated with undisturbed riparian areas and late-seral forest conditions. This is consistent with the silvicultural goals of creating a mature uneven-aged forest with a canopy of large Douglas-fir, redwood, tanoak, and Pacific madrone. The changes in forest composition that will result from implementing the selection system will favor species typical of uneven-aged, mid to late seral, mixed conifer/hardwood forests.

The species which have received the most attention recently due to their declining populations are the northern spotted owl, marbled murrelet, and anadromous fish in general. There are certainly other terrestrial and aquatic species as well which have suffered more quietly from a reduction in habitat. Some of the elements to consider when assessing the habitat value for these species include: the presence of snags, dens, and nest trees; levels of large woody debris in the forest and in creek zones; the amount of sediment input to streams; the size of pools and riffles for fish spawning and rearing; and water temperature in fish bearing streams and tributaries.

The intention of management is to mitigate the impacts of past logging by rehabilitating and improving habitat opportunities for native wildlife whenever possible. Even though most of the species that utilize the land either now or in the future will never be seen or measured, that does not mean they are not there. It is not practical to carry out species specific surveys in most cases, but by implementing management which retains important habitat features and protects sensitive areas such as stream zones, it is assumed that the needs of most wildlife species will be met.

To achieve these goals the following management practices should be used:

- Retain all snags unless marked as a hazard by the RPF or his designee.
- Mark Legacy or Wildlife trees for snag recruitment and to eventually become downed woody debris.
- Existing downed logs and cull logs produced during timber operations should be left in the woods for coarse woody debris recruitment wherever possible, except when utilized

for firewood or building. Some fuel modification may be necessary to reduce fire hazard.

- All logs in stream zones must be retained. Management will provide for a continuous supply of coniferous coarse woody material to improve, maintain and restore vital stream functions, including salmonid habitat structure and bank stability.
- Near-stream vegetation in tributaries should be maintained with a canopy above 80% at all times in order to safeguard against water temperature effects.
- No operation of heavy equipment within any stream zones except at prepared truck or tractor road crossings, in order to further safeguard against sediment and mass wasting effects on aquatic habitat.
- Log and rock hauling and skidding operations should cease when turbid water is flowing across the road surface or in a roadside ditch which has the ability to enter a watercourse.
- Rocked watercourse crossings whenever possible.

Fire Protection

Decades of fire suppression and logging have created a situation where the forests of the region are not able to withstand the effects of wildfires. Fire is an integral part of this forest ecosystem, but heavy concentrations of suppressed trees that would have been cleared by repeated light ground fires have now become dangerous accumulations of ladder fuels capable of carrying a ground fire into the crowns of healthy trees. Forest conditions are at a point where high fuel loads and ladder fuels make it impossible to allow natural fire to be returned to most of this forest for the foreseeable future.

Therefore, it is very important to institute a thorough and workable program for reducing the threat of catastrophic wildfire. Since the long-term reduction of the wildfire threat will require the prudent reintroduction of prescribed fire, a fuels management regime should initially focus on breaking up the fire ladder and properly treating excessive fuels buildup associated with any commercial harvests or stand improvement projects. This work will focus on the ridgetops and currently used roads first where traffic makes the likelihood of ignition high and the fire hazard most severe. Shaded fuel breaks should be created for at least 100 ft. along either side of the road, which may be done as part of a pre-commercial thinning project.

All slash from harvesting and pruning should be lopped within 24" of the ground, and locally heavy accumulations of slash in logging areas must be piled and burned during wet fall or winter weather. Within shaded fuel break areas, slash must be completely removed or piled and burned within 100 feet of either side of the road and up to 150 ft. where possible.

General fire safety recommendations are:

- Do not operate machinery or chainsaws when conditions such as wind, humidity and air temperature combine to make for "extreme" hazard.
- Ensure that in any type of logging operation during the fire season all workers conform to regulations pertaining to smoking, fire tool requirements, lunch and warming fires,

posting of fire rules, care in welding, prohibiting uncovered glass containers, caution in using chainsaws and other spark emitting equipment, and daily inspections prior to shutting down operations.

- Keep a water truck or other water source on site when burning large piles of slash.
- Maintain a cache of fire tools such as shovels, axes, McLeods, portable backpack water tank, etc.. on site and accessible.
- Keep a list of emergency phone numbers that identifies local fire response agencies, both public and volunteer.
- Create defensible fuel breaks around structures by clearing all brush and small trees.
- Develop extra water storage facilities from springs or other sources.
- Fit all storage containers with appropriate size valves for firefighting.

Insects and Diseases

Every forest ecosystem has biological agents (animals, insects, and diseases) and physical forces (fire, wind, snow, and ice) which are destructive to living vegetation, but which are integral to the functioning of that ecosystem. These agents become a “problem” only when they adversely affect vegetation which is of particular value to the landowner or society. While an endemic level of insects and disease in a forest is natural, if these levels become epidemic, loss of timber value and fire hazard may result. In a forest being managed to meet landowner’s goals, human intervention is often called for to improve productivity or protect the investment.

The subject property presently does not exhibit any serious pest problems, but there are a few local and regional concerns that should be noted. Conk rot (*Phellinus pini*) is a commonly found pathogen in many large residual Douglas-fir. Care should be taken when operating equipment around Douglas-fir trees as they can be sensitive to compaction, which may decrease tree vigor making them more susceptible to pests. Conk rot, or Red Ring Rot, can infect the heartwood of most conifers but is primarily found in Douglas-fir. It favors cooler, moister environments and is spread by airborne spores produced by sporophores (conks) on infected trees, which enter healthy trees through dead branch stubs or open wounds. It can seriously degrade the quality and/or merchantability of a tree over its lifetime, especially if the tree is infected when young. The only practical cure for this problem is to remove infected trees from the stand to reduce spore production.

In addition, there has been a widespread increase in madrone canker (*Fusicocum sp.*) in the past decade in Humboldt county. Although this disease was not noticed on the madrones on the property, no specific search was carried out for it. The landowners should be aware of its occurrence in other areas very close by. It forms cankers on trunks and limbs and kills a pie shaped portion of the trunk, causing leaves to discolor and die. Many madrones have been observed to survive several seasons of leaf dieback, but eventually death usually results. It is believed to be triggered by warm, humid weather. Cutting out infected trees and burning affected parts and thinning and limbing trees to increase air circulation are control methods for this disease.

If insects or disease do become a significant problem, specific measures will be taken. Infestation zones may be cut to remove epidemic levels of pathogens. Chemical insecticides and herbicides will not be used in conformance with the desires of the landowner and RPF. Broadly

accepted biological controls may be utilized depending on the intensity and threat of any outbreak.

The best preventative treatment for the aforementioned insect and disease problems is to maintain a healthy, vigorous stand through timely thinning and harvesting. A healthy tree is less likely to be infested with insects or disease, or to succumb to these destructive agents if infested, than an unhealthy tree. It is expected that through the management actions prescribed in this plan, a healthier, more vigorous forest will develop, and hence be more resistant to pest outbreaks.

It is also beneficial to encourage species of birds which prey on insects which are destructive to conifers, especially bark beetles. For example, many of the birds desired for insect control require cavities in snags for nesting. This habitat need will be supplied by designating Legacy Trees for continued snag recruitment throughout the plan area and especially near riparian areas.

Sudden Oak Death

S.O.D., as it is commonly known, is known to occur in Humboldt County, and this epidemic is serious enough to warrant a special section of this plan. An extensive amount of information is available and updated regularly on the CDF website, which is the source of the bulk of the information presented here.

There is currently a dramatic and sudden dieback of tanoaks, coast live oak, and black oak trees in several areas of coastal California with tanoak being the most affected. Since 1995, trees from these species have been reported dying in large numbers in several coastal Counties. The extent of the problem is not fully known, and the problem is expected to become more extensive in upcoming years, affecting urban and wildland tanoak, coast live, black oak, as well as numerous shrub species. Such a massive dieback of tanoaks and other oaks has never been reported in California and, if it continues, there are going to be several environmental changes: (a) the loss of these highly valued trees from gardens and forests, (b) alterations to forest ecology, with unknown and possibly dramatic implications for wildlife habitat and food chain provision, and (c) serious fire hazard risk from the resulting buildup of dry fuel.

Tanoak is a very resilient tree, and yet trees of all ages are developing symptoms quickly and dying rapidly. From a distance, the first prominent symptoms in tanoak are drooped (wilted) shoots. Shoot wilting is spontaneous and occurs throughout the crown. Older leaves become pale green. Approximately two to three weeks later the foliage turns brown but remains clinging to branches, visibly announcing the death of tanoak. Chisel cuts into the inner bark and sapwood at breast height of affected trees, reveal saturated tissue that drops burgundy-red sap. In the summer, the bark splits and breaks as a result of drying. Gum often exudes from these splits, which may develop prominent clusters of black fruiting bodies. Long striations of a different tan to pinkish discoloration become visible on the bark surface. Roots of tanoaks exhibiting above ground symptoms often have a pungent alcoholic odor but appear sound. The following year after the tree dies, suckers sprout near the base. Soon their tips bend, become chlorotic and die. A very noticeable feature of the dead tanoaks is massive infestation of the whole stem with ambrosia beetles in mid-summer.

Pathologists have isolated an important causal agent - a new species of *Phytophthora* - and beetles, other fungi, and weather may be additional factors. *P. ramorum* is a fungus that appears

to enter through the bark on tree trunks and limbs, possibly after they are splashed there by raindrops. Once the trees have gone through the progressive stages of the symptoms, their vigor rapidly declines and they become vulnerable to secondary insect pests such as bark and ambrosia beetles.

13. Management Plan Updates

The following list of conditions should be considered as reasons for an update of the Forest Management Plan:

- Change in landownership of >10% of land area (acquisition, sale or re-survey)
- Major change in forested condition (10% increase or decrease) from insect, disease or wildfire
- Major change in insect or disease conditions
- New or revised inventory information that would create a major change in the growth or stocking on the property
- Major change in aquatic conditions that affects resource values
- Major change to the quality of T&E species habitat on the property (either due to forest management or other environmental change)
- Major change to archaeological resources or additional sites discovered
- Major change in the extent of noxious weeds or non-native invasive species
- Major changes in policy or regulation that could affect management on the property (e.g., a rate of harvest limitation imposed by Water Board)
- Major changes in economic conditions (e.g., closure of all mills for redwood or opening of mills/facilities for tanoak)

14. Management Cost

Costs that will be incurred for management activities could include but are not necessarily limited to the following: harvest plan development & application fees, road maintenance, road construction, surveying, tree planting, timber stand improvement, logging costs, and wildlife surveys. These costs will easily run over \$60,000 initially and will be ongoing after that. Landowners should be prepared for these costs that are necessary to maintain a productive, healthy forest ecosystem, which is capable of producing some economic return for the landowner.

15. Legal Requirements

The many laws and regulations that affect private forestland management in California are designed to protect public trust resources such as soils, water, and wildlife while permitting uses of private property. They also stipulate certain practices to assure long-term forest productivity. Private forestland ownership and the practice of forestry on private lands have been significantly influenced by state and federal laws, regulations, and court decisions.

The state laws and regulations that apply to forest management, and more specifically, timber harvesting, are founded on two principles: ensuring the long-term productivity of forestlands and preventing adverse environmental impacts. Any harvesting of logs offered for sale, barter,

exchange, or trade or harvesting done as part of the conversion of timberland to a non-timberland use requires a permit.

California Forest Practice Rules

Timber Harvest Plans or THPs are flexible, may cover large areas, and are good for 5 years, with extensions granted by CALFIRE (14CCR Sec. 1032). All silvicultural (harvest) methods are allowable in THPs. The cost to prepare a THP typically ranges from \$50,000-\$150,000. THPs are the most commonly used timber harvest permit across a wide range of ownership sizes.

In addition to permits designed for commercial timber harvest described above there are numerous options for implementing fuel hazard reduction harvests. First, there are numerous exemptions listed under section 14CCR Sec.1038 in the Forest Practice Rules that allow for limited commercial timber harvest that decreases fuel loading and or breaks up fuel continuity. The advantage of the exemptions is that permit preparation is very inexpensive; the downside is that the practices stipulated in the exemptions result in operations that may be economically marginal.

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the federal Endangered Species Act (ESA), CESA complements the ESA by prohibiting unauthorized "take" (e.g., hunt, pursue, catch, capture or kill) of birds, mammals, fish, amphibians, reptiles, and plants that are listed by the state as threatened, endangered or as a candidate for listing. CESA's definition of "take" is narrower than what is specified in ESA: it does not include the term "harm" or "harass," but it is interpreted to apply to indirect causes of death of listed species, such as through habitat modification or degradation. CAL FIRE is required to consult with the California Department of Fish and Wildlife (DFW), the US Fish and Wildlife Service (FWS), or the National Marine Fisheries Service (NMFS) to ensure that any action it undertakes is not likely to jeopardize any candidate or listed species or result in destruction or adverse modification of essential habitat. Because many threatened and endangered species are found primarily on private lands, landowners may be subject to regulation under state or federal laws. Permitting procedures exist and are usually implemented as part of other permitting activities, such as THP or NTMP approval.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the primary vehicle for implementation of California's responsibilities under the federal 1972 Clean Water Act. It grants the California State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) broad power to protect water quality. These agencies have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants.

There are nine RWQCBs throughout the state; each has a water quality plan for their region. State and regional board staff is involved in the review and approval of THPs and NTMPs. They are also involved in permitting forest management activities such as herbicide applications, and they enforce certain provisions of erosion control in watersheds subject to total maximum daily load (TMDL) restrictions. Many California streams have been listed under Section 303(d) of the Clean Water Act as impaired by pollution, even after application of pollution controls. In some instances the impairment is from nonpoint sources and has resulted in excessive sediment, temperature, or a combination of both. For those waters that are impaired, states must establish a TMDL of pollutant discharge to a watercourse to ensure attainment of water quality standards.

The Baker Creek Tract is located in the Mattole watershed which the North Coast Regional Water Quality Control board has listed as impaired under the Clean Water Act for sediment and temperature and has prepared a Total Maximum Daily Load (TMDL) report describing the sediment sources within the watersheds. To date, no TMDL implementation plan is in effect for the Mattole watershed; meaning, that no specific regulations have been developed to address water quality impacts.

However, there is still a requirement to comply with existing regulations affecting water quality for every harvest plan that is filed (THPs, NTOs, PTHPs, etc.). Generally this involves filing either a Waste Discharge Requirement (WDR) or a Waiver of Waste Discharge Requirement. In either case, the landowner is required to describe how management actions may affect water quality and specify a suite of best management practices that will prevent any impacts to water quality. Generally this means identifying sediment sources on the active or abandoned road network and describing when and how each source will be fixed. The permit fees paid to the RWQCB for submitting WDRs and Waivers have been eliminated for projects that go through CALFIRE permits.

California Environmental Quality Act

CEQA applies to any project that is undertaken by a state agency or with the support of a state agency, or when an applicant obtains a lease, permit, license, or entitlement from a state agency. It has been determined that a THP is the functional equivalent of an EIR. Consequently, as with an EIR, a THP, NTMP or any other CALFIRE permit must discuss all feasible alternatives and disclose to the public why a certain alternative is chosen.

Lake and Streambed Alteration Agreements (1600 Agreements)

The California Department of Fish and Wildlife regulates activities that may affect streams and other watercourses. The main purpose of regulation is to prevent changes to water bodies that may adversely affect habitat for aquatic wildlife. The regulation process yields what are known as "1600 agreements." These are not permits, strictly speaking, but rather agreements between DFW and landowners that serve as conditions on the proposed activity. Many forestland owners will find themselves having to obtain a 1600 agreement in order to:

“divert, obstruct, or change the natural flow of any river, stream, or lake (such as placing or replacing a culvert or repairing a road even if it is funded through a restoration grant) use materials from a streambed, such as gravel dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement into any river, stream, or lake”.

As with the RWQCB permits, the permit fees associated with 1600 permits have been waived for CALFIRE permitted operations.

Smoke Management Plans (SMP): California Air Resources Board

In addition to the required burn permits issued by CAL FIRE, California's Smoke Management Program addresses potentially harmful smoke impacts from agricultural, forest, and rangeland management burning operations.

Management Recommendation- Regulations

1) Our recommendation is to manage Baker Creek using standard THPs or Exemptions (1038) where feasible.

16. References

California growth and yield modeling cooperative [CAGYM]. 2011. FORest and Stand Evaluation Environment (FORSEE) beta version computer program. Website: <http://www.cagym.com>.

Ducey, Mark J, et al. "A Walkthrough Solution to the Boundary Overlap Problem." *Forest Science*, vol. 50, no. 4, Mar. 2004, pp. 427–435.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Accessed 07/26/2021.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Survey Area Version Date 06/01/2020. Accessed 07/26/2021.

Mayer, Kenneth E. and William F. Laudenslayer Jr. et. al., 1988. A Guide to Wildlife Habitats of California

17. Appendices

Appendix A – Easement Grant Deed

Appendix B- Map of Easement Route

RECORDING REQUESTED BY
Humboldt Land Title Company
AND WHEN RECORDED MAIL TO

Name [Lost Coast Forestlands LLC]
Address [c/o Ter Services LLC – Alice Bailey]
[2229 San Felipe St, Suite 1150]
[Houston, TX 77019]

Order# _____

SPACE ABOVE THIS LINE FOR RECORDER'S USE

EASEMENT GRANT DEED

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
City of _____
Parcel No. 215-192-018, 215-192-005, 215-232-001
215-232-002, 215-232-003

Documentary Transfer Tax is \$[_____] computed on full value of interest or property conveyed, or full value less value of liens or encumbrances remaining at the time of sale

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Lost Coast Forestlands LLC, a Delaware registered Limited Liability Company
hereby GRANT(s) to
Lost Coast Forestlands LLC, a Delaware registered Limited Liability Company, its successors and assigns
the following real property in the County of Humboldt, State of **California**: See Exhibit A attached hereto and made a part hereof

Dated: **[April 11, 2023]** _____

State of California
County of [] _____

[Alice Bailey]

On [] before me, []
a Notary Public, personally appeared []
[]
[]

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their [] authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

My commission expires: []

(This area for official notarial seal)



Exhibit A

The right to use, along with Grantor, that certain easement in gross reserved by Barnum Timber Company in that certain Grant Deed from Barnum Timber Company to Boyle Forests, LP, a California limited partnership, identified as “Exhibit C” and recorded on February 4, 2013, as Document 2013-002779-7, in the Official Records of Humboldt County, California.

The right to use, along with Grantor, that certain easement in gross reserved by Grantor in that certain Grant Deed from Barnum Timber Company to Northcoast Regional Land Trust, identified as “The Reserved Baker Creek Road Easement,” recorded on September 11, 2002, as Document 2002-28898-4, in the Official Records of Humboldt County, California.

A right of way for all road purposes, 40 feet in width with additional width as necessary for existing turn outs and cuts and fills, the center line of which is the center of the existing road and is depicted on the map attached hereto as Exhibit “B” and shown as “Deeded Right of Way”.

At grantor’s election, grantors may survey the course of the easement herein reserved or any portion thereof and may record in the Official Records of the County of Humboldt one or more Records of Survey of the same. Upon recordation of any such records of survey by the grantors, the description of the easement contained shall be deemed to be the description contained in said record of survey.

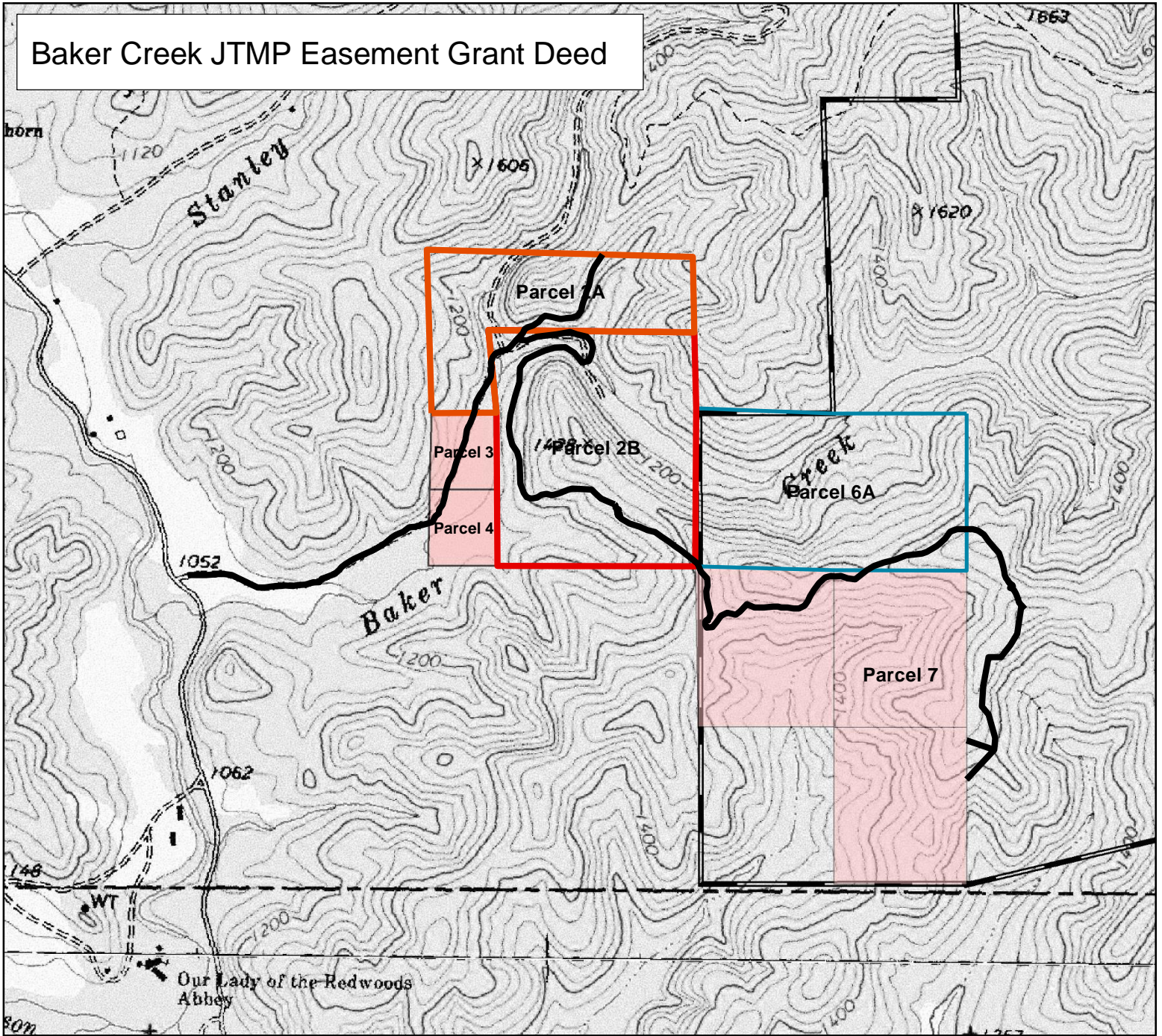
The easement herein granted shall also include the following rights:

1. The easement herein granted shall be appurtenant to the lands of the grantee or any portion thereof and regardless of the number of divisions thereof and without limit to burden and shall not be diminished, restricted or otherwise affected by the division, redivision or change in use of any dominant tenement.
2. The right to use said easement for ingress, egress and public utility purposes, including without limitation, the right to use said easement for hauling timber and all forest products, as well as the right to use said easement for any commercial use and/or highway use. The easement granted herein also includes the right to make and construct all necessary and convenient roadways, embankments, excavations, causeways, bridges, and other structures for road purposes and the right to repair, improve, replace and maintain the same.
3. In the event the use and enjoyment of any portion of the easement herein contained is substantially obstructed or curtailed, regardless of the cause of said obstruction or curtailment, and provided said obstruction or curtailment of the use and enjoyment of said portion of said easement cannot be removed in the exercise of reasonable diligence, good faith efforts, and at reasonable cost to any person having ownership interest therein, said portion of said easement may be relocated subject to the following:
 - a. In the opinion of a licensed civil engineer, knowledgeable and experienced in the construction of roads in the coastal range of Mendocino County, relocation would substantially enhance the use and enjoyment of said easement; and
 - b. Said relocation is to a site recommended by said licensed civil engineer, which site shall be the site most proximate to the previous site of said easement consistent with sound engineering practices.

This deeded right of way is intended for the benefit of and as an appurtenance to APN # 215-192-018, 215-192-005, 215-232-001, 215-232-002, 215-232-003

EXHIBIT B

Baker Creek JTMP Easement Grant Deed



Legend

Deeded Right of Way

Parcel 2A (portions 215-192-018, 215-192-005)

Parcel 2B (portions 215-232-002, 215-232-001, 215-192-018, 215-192-005)

Parcel 6A (portion 215-232-002)

Parcels 3 and 4 (portion 215-232-001)
Baker Creek JTMP

T5S R2E Sections 13, 14, 23, 24
T5S R3E Sections 18, 19, 20

0 700 1,400 2,800 Feet

Parcel 7 (215-232-003)

Lost Coast Redwoods and Salmon Initiative, Phase 3

May 09, 2023

Date Saved: 5/4/2023 5:40:44 PM

Coordinate System: NAD 1983 UTM Zone

10N Author: Restoration Forestry, Inc.

Timber Management Plan

1. Current Property Owner

Lost Coast Forestlands
2229 SAN FELIPE STREET SUITE 1150 HOUSTON TX 77019

2. Timber Management Plan Contents

The Timber Management Plan is the portion of the JTMP that identifies legal access, rights-of-way and minimum stocking standards as prescribed by the Forest Practice Rules.

3. Project Description

Lost Coast Forestlands (LCF) is proposing a lot line adjustment which would reallocate portions from several parcels on its Baker Creek Tract to form a new parcel. This parcel would then contain the entirety of a gravel mine, allowing LCF to perform its gravel mining operations separately from forest operations. All parcels are considered Timber Production Zone (TPZ) but are currently substandard in terms of acreage. This plan would result in three parcels which would contain less than 160 acres of land zoned as each. California Government Section 51119.5 specifies that parcels zoned as TPZ may not be divided into parcels containing less than 160 acres unless the original owner prepares a joint timber management plan (JTMP) prepared or approved as to content by a registered professional forester (RPF) for the parcels to be created. Per California Government Code Section 511014(i) "Parcel" means that portion of an assessor's parcel that is timberland, as defined. In accordance with the applicable California Government Code Sections, this Joint Timber Management Plan (JTMP) is being prepared for the Assessor Parcel which will contain less than 160 acres of TPZ subsequent to the subdivision described above.

4. Access, Roads and Boundary Management Areas for JTMP Management Units

The JTMP area is located east of the unincorporated community of Whitethorn and south of the town of Redway. After the proposed lot line adjustment, Parcel 2A will be accessed by Baker Creek road, a rock surfaced road which connects to the Briceland Road, a paved county road. While Baker Creek Road is blocked by a locked gate, access can be acquired by contacting GR Wilcox Enterprises Incorporated. Due to topographical limitations, a mixture of cable and tractor logging described in Section 8 of the attached timber management guide may be implemented. Necessary road and skid trail construction is contingent on management choices made by LCF.

Parcel 6A and 2B will be accessed via a rock-surfaced spur road which will need to be resurfaced and brushed to accommodate log trucks. While a rock-surfaced road connects Proposed Parcel 6A to Baker Creek Road, a right of way must be obtained to pass through nearby parcels 2A, 2B, 3, 4, 5 and 7 (Figure 6). Currently, no deeded access to Parcel 6A exists.

Internal roads in all JTMP Parcels are limited to legacy roads and skid trails, excepting the single rock-surfaced road that passes through each. Tractor logging in Parcel 6A or 2B will require addition of internal roads and skid trails. Tractor logging in parcel 6A may use existing skid trails. Any major road upgrades or new road construction should be permitted under a THP/NTMP or will be subject to the Grading Ordinance of Humboldt County. A separate permit must be obtained from the California Department of Fish and Wildlife under their 1600 program for any project that disturbs the bed or banks of a watercourse such as installing/upgrading stream crossings.

Minimum Stocking Standards

912.7, 932.7, 952.7 Resource Conservation Standards for Minimum Stocking [All Districts, note (b)(1)(D)]

The following resource conservation standards constitute minimum acceptable stocking in the Coast [Northern, Southern] Forest District after timber operations have been completed.

(a) Rock outcroppings, meadows, wet areas, or other areas not normally bearing commercial species shall not be considered as requiring stocking and are exempt from such provisions.

(b) An area on which timber operations have taken place shall be classified as acceptably stocked if either of the standards set forth in (1) or (2) below are met within five (5) years after completion of timber operations unless otherwise specified in the rules.

(1) An area contains an average point count of 300 per acre on Site I, II and III lands or 150 on site IV and V lands to be computed as follows:

(A) Each countable tree [Ref. PRC § 4528(b)] which is not more than 4 inches d.b.h. counts 1 point.

(B) Each countable tree over 4 inches and not more than 12 inches d.b.h. counts 3 points.

(C) Each countable tree over 12 inches d.b.h. counts as 6 points.

(D) [Coast] Root crown sprouts will be counted using the average stump diameter 12 inches above average ground level of the original stump from which the sprouts originate, counting one sprout for each foot of stump diameter to a maximum of 6 per stump.

(D) [Northern] Sprouts over 1 foot in height will be counted, counting one sprout for each 6 inches or part thereof of stump diameter to a maximum of 4 per stump.

(D) [Southern] Root crown sprouts over 1 foot in height will be counted, using the average stump diameter at 1 foot above the average ground level of the original stump, counting 1 sprout for each foot of stump diameter to a maximum of 6 per stump.

(2) The average residual basal area measured in stems 1 inch or larger in diameter, is at least 85 square ft. per acre on Site I lands, and 50 square ft. per acre on lands of Site II classification or lower. Site classification shall be determined by the RPF who prepared the plan.

(3) To the extent basal area standards are specified in the rules in excess of 14 CCR § 912.7(b)(2) [932.7(b)(2), 952.7(b)(2)], up to 15 square feet of basal area of those standards higher than the minimum may be met by counting snags, and decadent or deformed trees of value to wildlife in the following sizes:

(A) 30 inches or greater dbh and 50 feet or greater in height on site I and II lands;

(B) 24 inches or greater dbh and 30 feet or greater in height on site III lands; and

(C) 20 inches or greater dbh and 20 feet or greater in height on site IV and V lands.

(c) The substitution provided for in 14 CCR § 912.7(b)(3) [932.7(b)(2), 952.7(b)(2)] may only be done when the potential spread of insects and diseases will not have a significantly adverse impact on long term productivity or forest health.

(d) The resource conservation standards of the rules may be met with Group A and/or B commercial species. The percentage of the stocking requirements met with Group A species shall be no less than the percentage of the stand basal area they comprised before harvesting. The site occupancy provided by Group A species shall not be reduced relative to Group B species. When considering site occupancy, the Director shall consider the potential long term effects of relative site occupancy of Group A species versus Group B species as a result of harvest. If Group A species will likely recapture the site after harvest, Group B species do not need to be reduced. The time frames for recapturing the site shall be consistent with achieving MSP. The Director may prohibit the use of Group A and/or B commercial species which are non-indigenous or are not physiologically suited to the area involved. Exceptions may be approved by the Director if the THP provides the following information and those exceptions are agreed to by the timberland owner:

(1) Explain and justify with clear and convincing evidence how using Group A nonindigenous, or Group B species to meet the resource conservation standards will meet the intent of the Forest Practice Act as described in PRC § 4513. The discussion shall include at least:

(A) The management objectives of the post-harvest stand;

(B) A description of the current stand, including species composition and current stocking levels within the area of Group B species. The percentage can be measured by using point-count, basal area, stocked plot, or other method agreed to by the Director.

(C) The percentage of the post-harvest stocking to be met with Group B species. Post harvest percentages will be determined on the basis of stocked plots. Only the methods provided by 14 CCR §§ 1070-1075 shall be used in determining if the standards of PRC § 4561 have been met.

(D) A description of what will constitute a countable tree, as defined by PRC § 4528 for a Group B species and how such a tree will meet the management objectives of the post-harvest stand.

The Director, after an initial inspection pursuant to PRC § 4604, shall approve use of Group B species, as exceptions to the pre-harvest basal area percentage standard, if in his judgment the intent of the Act will be met, and there will not be an immediate significant and long-term harm to the natural resources of the state.

912.8 Progeny, Clonal, or Provenance Testing Stocking Standard Exemption [Coast only]

Pursuant to PRC 4561.7, the following standards shall apply to the request for an exemption from the stocking standards of the Act for Progeny, clonal, or provenance testing.

(a) Any THP submitted pursuant to Sec. 4561.7 of the PRC shall include the following information, in addition to other requirements of the rules of the Board:

(1) A specific request for an exemption from stocking standards; and

(2) A description of the testing to be conducted on the site.

(b) The exemption from stocking shall become effective upon the Director's determination that the timber harvesting plan is in conformance with the rules and regulations of the Board.