Parks Creek Ranch

Site Plan Agreement between
Outpost MR, LLC, NOAA's National Marine Fisheries Service (NMFS), and
California Department of Fish and Wildlife (CDFW)
for the Template Safe Harbor Agreement
for Conservation of Coho Salmon in the Shasta River

A. Introduction

This Site Plan Agreement for the Template Safe Harbor Agreement for Conservation of Coho Salmon in the Shasta River (Agreement), which is intended to provide conservation benefits for the Southern Oregon and Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon (Covered Species), is between Outpost MR, LLC, (Permittee), NOAA's National Marine Fisheries Service (NMFS), and the California Department of Fish and Wildlife (CDFW).

This Site Plan Agreement, combined with the provisions of the Agreement, may serve as the basis for NMFS to issue a federal enhancement of survival permit (ESP) to the above named Permittee pursuant to section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA). The joint and respective responsibilities of NMFS, CDFW, and the Permittees are detailed in the Agreement. This Site Plan Agreement is subject to terms and conditions set forth herein and in the Agreement and ESP. The definitions included in Section 2 of the Agreement are incorporated herein by reference.

In accordance with Section 5.1 of the Agreement, this Site Plan Agreement includes the following:

- General description of the Enrolled Property, including map and water rights (Section B below);
- Description of Routine Agricultural Activities carried out on the Enrolled Property (Section C.1 below), applicable Avoidance and Minimization Measures (AMMs) (Section C.2 & G.1 below), and Beneficial Management Actions (BMAs) to be implemented by the Permittee, including a schedule and other terms and conditions for implementation (Section E below);
- Description of Baseline Conditions on the Enrolled Property (Section D below) and Actions Required to Maintain Baseline Conditions (Section E.1 below);
- Description of Elevated Baseline Conditions on the Enrolled Property if applicable (Section E.2 below) and description of Other Beneficial Management Activities on the Enrolled Property (Section E.3 below);
- Monitoring and reporting activities that the Permittee agrees to carry out (Section G below);
- Description of potential and existing funding sources and timeline for the Permittee to carry out BMAs, AMMs, and monitoring and reporting requirements (Section E, F, & G below); and
- Other information consistent with the terms and conditions of the Agreement and ESP (Section F, H & I below).

The AMMs, BMAs, and associated monitoring and reporting protocols described below derive from Appendix 2 and Appendix 3 of the Agreement. In the event there is any conflict between the AMMs, BMAs, and associated monitoring and reporting protocols as described below and as described in the appendices to the Agreement, the appendices to the Agreement control.

B. Enrolled Property – Parks Creek Ranch

B.1 General narrative and map describing the Enrolled Property

Parks Creek Ranch is owned by Outpost M R, LLC and operated by Belcampo Farms. The Enrolled Property is located within the Covered Area along Old Highway 99 and Stewart Springs Road in central Siskiyou County (41°26'54.26" N latitude, 122°27'46.39"W longitude). The Enrolled Property includes a total of 3,970± acres, with 1,480 ± acres under irrigation from Parks Creek and Spring Creek. Approximately 6.5 miles of Parks Creek flows through the Enrolled Property within the reach designated as the Upper Parks Creek Reach of the Covered Area. Existing conditions are described in Appendix 2 of the Template Safe Harbor Agreement. The approximate property boundaries and general location of the Enrolled Property within the Covered Area is shown in Figure 1.

Parks Creek flows through the Enrolled Property within the Covered Area and are irrigated by Parks Creek water rights as detailed in Section B3. Spring Creek is a tributary to Parks Creek, which is actually a system of small diffuse springs originating just west of Parks Creek. Operations have historically focused on cattle production. Ownership of the Enrolled Property transferred to Outpost M R, LLC in the summer of 2017. The new ownership of the Enrolled Property is analyzing and evaluating future management of the property and may implement more diverse and intensive management compared to previous ownership, dependent on further analysis and assessment. However, the focus will remain on pasture, crop and livestock production.

B.2 Legal Description of Property Boundary

The Enrolled Property consists of the following APNs:

APN: List APNs:

022-300-180	020-300-140
020-090-090	020-160-140
020-160-050	020-160-030
020-150-030	020-160-020
020-160-181	029-090-170

020-150-021	020-150-091
020-150-100	020-160-160
020-150-011	020-160-171
020-160-190	020-160-200
020-340-130	020-150-080
020-100-240	020-090-150
020-090-130	020-090-600
020-090-520	020-090-510
020-080-230	020-090-430
020-090-230	020-090-360
020-090-260	020-090-630
020-090-620	

The Legal Descriptions of the Enrolled Property are from the Landowner Deeds and are included as **Appendix A**.

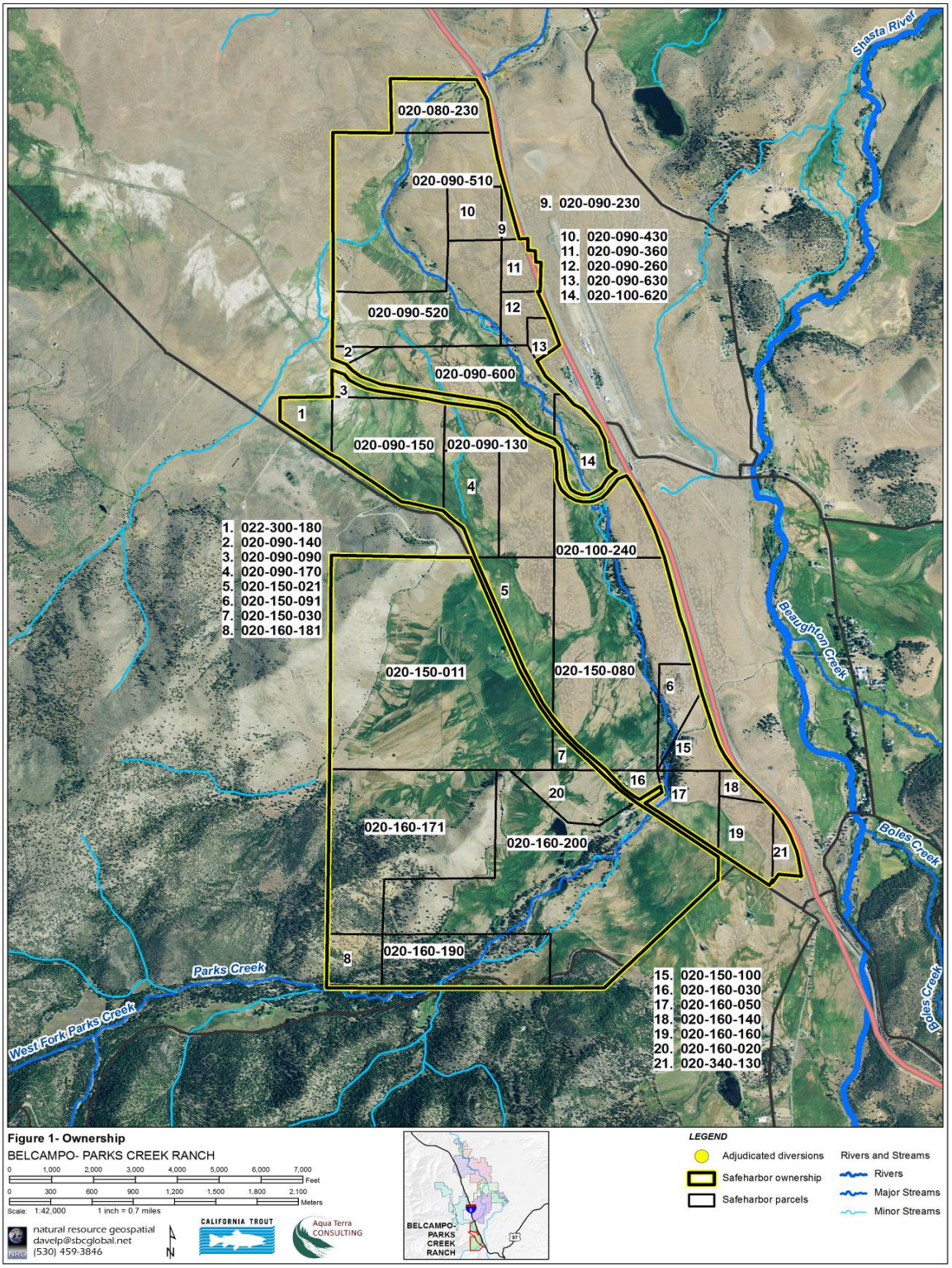

Figure 1- The Enrolled Property Boundary Map

B.3 Description of Water Rights

The Enrolled Property uses a combination of water sources for irrigation. The ranch has a total of 19 distinct water rights identified in the Shasta River Adjudication that either divert from Parks Creek or Spring Creek as shown on Table 2. Over time, points of diversion were combined into seven points of diversion on Parks Creek and two points of diversion on Spring Creek. Decreed Livestock watering (winter) rights are 5.65 cfs for Parks Creek Ranch. The Permittee is seeking inclusion of the seven active points of diversion on Parks Creek and three active points of diversion on the Spring Creek system. Specific to Parks Creek there are currently 18.65 cfs of irrigation rights from seven active points of diversion and 2.0 cfs of additional rights are identified for the two active points of diversion on Spring Creek, which were combined from eight rights identified in the Shasta River Decree.

Parks Creek is a snowmelt system and typically has a prolonged low flow condition (from 7/15-10/1) where available flow does not fulfill the identified water rights. In fact, the base flow condition typically cannot meet the Enrolled Property's first priority right of 6.00 cfs, for approximately 90 days from late July through September, regardless of water year type.

Table 1a- Enrolled Property's diversion and irrigation information

Diversion #/Water Source	Permit/ Adjudicated/ Filed Water Use Statement Amounts (cfs)	Description	Season Duration	Acreage Irrigated with Diversion	Decreed Days per Season Diverted
Summer Rights					
182=PCR #1/ 188,189,190,192,194 =PCR#2	6.0	PCR-1 and/or PCR-2	3/1-10/31	324.2	244
183 #Edson-Foulke	5.3* * 1.2 cfs of 2nd priority, 4.1 cfs of 23rd priority	Edson-Foulke (Parks Diversion)		488.1	
193,195,196,197,201,202,204,205	2.00	Spring Ck. System		139.4	
206,208,209,210,212 #3	4.00	PCR 3-3		175.1	
211 #4	.25	PCR-4		5.5	
213 #5	.25	PCR-5		8.0	
219,220 #6	0.85	PCT-6		25.0	
Total Parks Cr **Total Spring Creek**	**16.65 cfs** **2.0 cfs**			**1,165.3**	

* Per language from Decree Table DWR regarding "Wells Agreement" for Edson-Foulke right. "Tract 87 can use the Yreka Ditch (Diversion #183) to convey 1.00 of 1.20 cfs 2nd priority and 4.10 of 4.10 cfs 23rd priority summer period water rights until July 10th only. Tract 87 can use the Yreka Ditch the entire year to convey 0.20 cfs. See "Wells Agreement" dated 11/7/1905, recorded in Siskiyou County Book of Deeds, Volume 71, and Page 529."

Table 1b- Water Right Summary, Irrigation Season: 3/1-10/31

Parks Creek Water Rights 3/1-10/31								
Current Diversion Location	**PCR #1/#2**	**Edson-Foulke**	**PCR #3**	**PCR #4**	**PCR #5**	**PCR #6**	**Total CFS**	**Acres Irrigated**
182	6.00						6.00	324.20
183		5.30					5.30	488.10
206			0.70				0.70	30.80
208			0.80				0.80	37.60
209			1.05				1.05	41.80
210			0.75				0.75	33.30
211				0.25			0.25	5.50
212			0.70				0.70	31.60
213					0.25		0.25	8.00
219						0.60	0.60	22.10
220						0.25	0.25	2.90
Total	6.00	5.30	4.00	0.25	0.25	0.85	16.65	1,025.90

Spring Creek Water Rights - 3/1-10/31 Irrigation, 11/1-2/28 Winter Stock Water		
Diversions#193,195,196,197, 201,202,204, 205	2.00 CFS 3/1-10/31	139.4 Acres Irrigated
Diversion 195	0.15 CFS 11/1 - 2/28	Stock water

Winter Water Rights 11/1-2/28

Current Diversion Location	PCR #1/#2	Edson-Foulke	PCR #3	PCR #4	PCR #5	PCR #6	Total CFS
182 -Parks Ck	1.00						1.00
183		2.05					2.05
208			0.75				0.75
209			0.25				0.25
210				0.25			0.25
211				0.25			0.25
212			0.25				0.25
213					0.35		0.35
Total	1.00	2.05	1.25	0.50	0.35	0.00	5.15

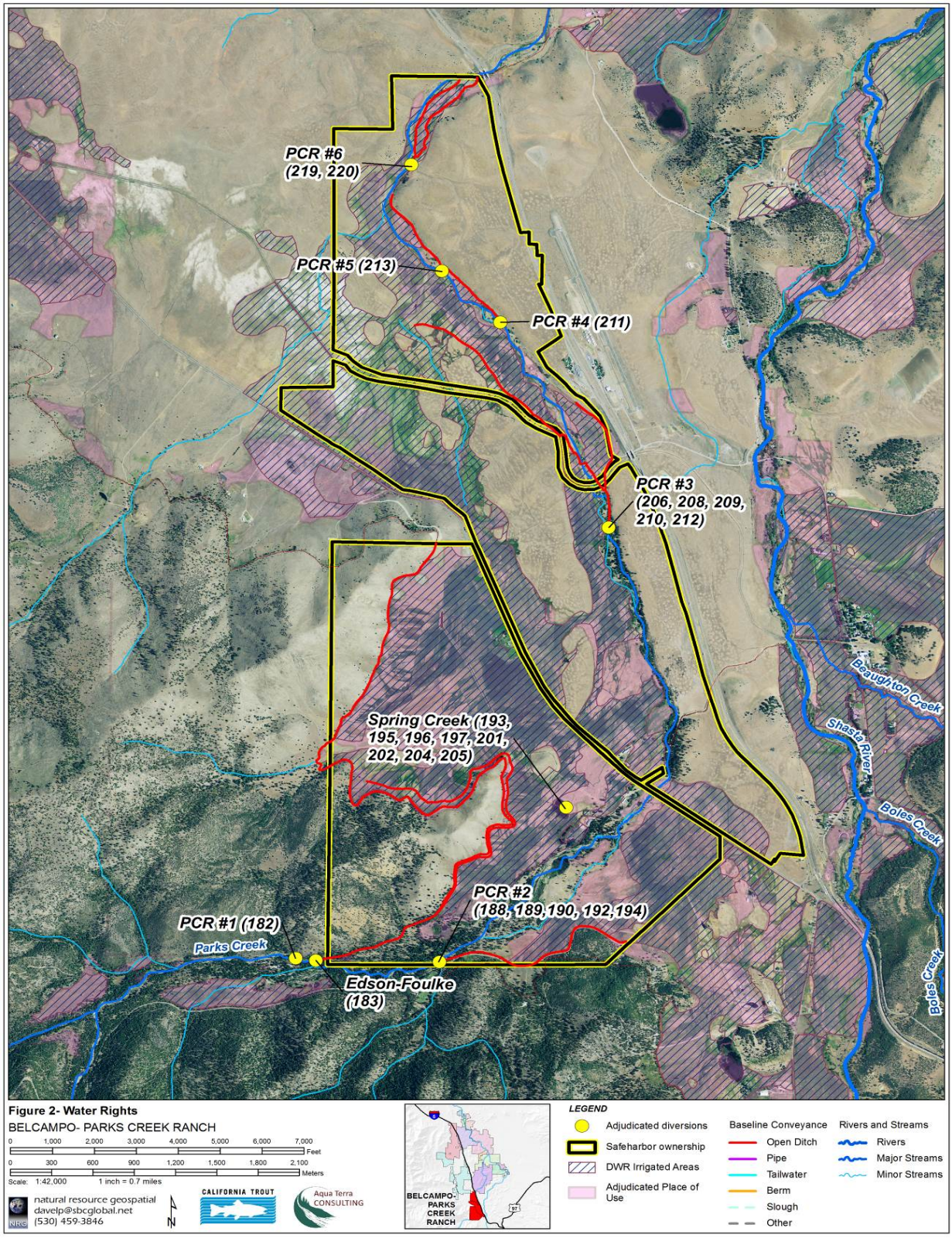

Figure 2- The Enrolled Property Place of Use and Irrigated Acreage Map.

C. Routine Agricultural Activities

C.1 Present Routine Agricultural Activities

The Enrolled Property consists of approximately 3,970 acres, with an estimated 1,700 +/- acres under irrigation for livestock grass production. All of the 1,480+/- acres are considered grass pasture and are flood irrigated. The Enrolled Property has an estimated approximately 18+ miles of open ditch to distribute irrigation and livestock water. The Enrolled Property also has several small reservoirs that are used to build volume to improve irrigation capabilities when released. Parks Creek flows through the full length of the Enrolled Property, essentially dividing the entirety of the Enrolled Property. Therefore, there are eight distinct rocked stream crossings on the Enrolled Property used as vehicle and livestock crossings. Livestock are rotated through large fields on a grazing plan.

Irrigation Management

Water is diverted from seven current locations on Parks Creek, through DWR approved head gates. All diversion points have functioning measuring weirs with the exception of diversions #4 and #5 where diversion infrastructure has been damaged from high flow events in 2016 and 2017. Spring Creek is a diffuse spring system that is tributary to Parks Creek. The system does not have a defined channel but is a series of small diffuse springs where water is collected and distributed with ditches for irrigation. Spring Creek system has 7 small rights identified on the Shasta River Decree. Three diversion points remain but the primary active diversion point is identified as diversion #202. Flow from Spring Creek system does connect to Parks Creek when not diverted.

When flows reduce after spring snowmelt, some diversions on Parks Creek require construction of small impoundments that are typically accomplished with hand tools, while diversions #1 and #2 require use of heavy equipment to annually to construct impoundments to allow for diversion of water rights. Volume of material required to be moved is less than 5 cubic yards at sites #1 and #2. Fish passage is always maintained so long as flow is present. All irrigation water is conveyed through numerous open ditches, canals, and capture ponds using flood irrigation on pasture.

The irrigation season begins on March 1 and continues through October 31. As described above, Parks Creek is a snowmelt driven stream with peak sustained flows occurring during the snowmelt period of April and May. Natural flow levels in Parks Creek typically begin to decline as snow fields at higher elevations melt in later May through June. As snowmelt driven flows tail off, natural flow levels in Parks Creek during this period are typically less than the total volumes of water currently adjudicated for beneficial agricultural uses along upper Parks Creek.

Water year types vary significantly dependent upon winter precipitation volume, snowpack conditions and snow-melt variability. Snow melt duration is variable dependent upon ambient temperatures and precipitation events during April and May. Regardless, a long period of base flows typically occurs in the upper reaches of Parks

Creek from late-July until October. Therefore, the Enrolled Property operates under deficit irrigation conditions for several months including reducing the volume of acreage irrigated.

Late August-early September base flow conditions in Parks Creek reduce to approximately 3-4 cfs (normal water year) entering the upper boundary of the Enrolled Property. Parks Creek often disconnects through an alluvial fan reach located above Old Hwy 99. Continuous and varied small accretions occur below Hwy 99 where four of the seven diversions on Parks Creek are located.

The Enrolled Property's average annual irrigation application rate is approximately 3.0 acre feet of water applied per acre largely due to unavailable flows during the summer months on much of the irrigated property. The Enrolled Property has no alternative water sources such as groundwater to replace its dependency on Parks Creek. Therefore, the Enrolled Property manages for full irrigation application during the spring to maximize production, especially on its seasonally irrigated fields that experience deficit irrigation conditions throughout the peak summer months.

As flows decline and adjudicated diversion volumes are no longer available, the Scott and Shasta Watermaster District implements a water rights priority system identified in the Shasta River Decree under authority of the Superior Court of Siskiyou County. Lower priority water rights are curtailed to assure delivery to higher priority rights. As the season progresses, the Enrolled Property reduces the number of operating diversions to just 2-3 active diversions during base flows (typically diversions #1, #3 and #6), with diversion #1 being the highest priority right in Parks Creek and most important point of diversion related to irrigation value.

Parks Creek flow volumes of less than 10 cfs enter the Enrolled Property's upstream boundary for prolonged periods during the summer and early fall. Regardless of water year type, flow volumes, less than 6.0 cfs exist for approximately 80-100 days. Flow conditions typically increase slowly during the month of October. The Enrolled Property currently uses the increased flows to expand irrigation areas for a final irrigation set until the irrigation season ends on October 31, or earlier if cold weather ends the growing season. The Enrolled Property typically increases diversion volumes as instream flows increase at diversions #1 and #3 during October or until the growing season ends due to temperature (mid-October).

Stockwater/Winter Rights

The Enrolled Property has a winter right to divert 5.65 cfs from Parks Creek to water livestock between November 1 and February 28. This coincides with the Enrolled Property management objective of expanding livestock access to all reaches of the Enrolled Property to encourage livestock consumption of available dry feed. Therefore, access and distribution of livestock water also expands to allow livestock to feed off the standing dry feed throughout the Enrolled Property.

Irrigation Maintenance

Ditch cleaning

The open irrigation ditches are prone to vegetation growth, which slows the conveyance of water and clogs the buried mainlines. The ditches need to be mechanically cleaned at least yearly to remove vegetation and repair breaches, by using a backhoe. Irrigation ditch maintenance cleaning is required annually, at a minimum, and as needed throughout the irrigation season.

Diversion Structure

Annual diversion dam construction: Permittee diverts water using hand piled cobble or gravel push-up dams to annually construct diversion impoundments to increase water surface elevation to allow for diversion. Enrolled Property's diversions #1 and #2 typically require use of a back-hoe to construct impoundments that begin initial impoundment work as flows reduce during late spring. The impoundment at #1 is extended across a portion of the wetted channel as flows decline through the summer.

Diversion structures at diversion points # 3, #4, #5 and #6 are typically constructed by hand unless winter high flows have caused significant alterations. At times tarps are used in combination with hand constructed or equipment constructed impoundments. The timing of when the diversion work is conducted is dependent on flow volume, need for irrigation and damage resulting from high flows during the previous winter. Diversions #1 and #2 require the POD to be opened by removing some larger rock and bedload material which is placed in the head of the diversion the previous fall to prevent high flows from entering the diversion. Initial diversion typically just requires removal of material from the head of the diversion ditch rather than impounding the stream. No impoundment is necessary until typically late May. Late May is also typically when hand work is done at diversion points #3, #4, #5 and #6. Fish passage is provided using an opening at least 1.0' wide with several inches of water passing through/over the diversion structure during base flows.

Spring Creek system is primarily operated at a reservoir (diversion #202). The other diffuse sources of Spring Creek feed into established ditches and eventually drain to Parks Creek approximately .5 miles below the MWCD diversion from Parks Creek. Spring Creek system does not have a channel or annual scour but does connect to Parks Creek delivered via a grass dominated swale.

Diversion cleaning

The natural rock riffles at the diversion structures and the head gates can become clogged with debris or blackberries. They need to be periodically cleared mechanically to ensure proper operation. This entails the use of heavy equipment but typically every few years, as needed to clear large woody debris in the spring of the year prior to diversion operation. Parks Creeks is prone to flooding and has an active bed load, some diversions become washed out or buried during high water events and those diversions require repair sometimes using heavy equipment.

Fish Screen Cleaning

There are six paddle wheel operated self-cleaning fish screens on the Enrolled Property that were installed from 2003-2007. Permittee maintains and operates all of the diversion facilities and fish screens including sharing responsibility of maintaining the fish screen on Edson-Foulke Ditch. Three of the fish screens (Diversion #4, #5 and #6) were used previously in other locations and are likely not compliant with current fish screening criteria and should be evaluated if proposed to remain in operation.

Spring Creek system does not have a fish screen but because of its diffuse nature which is not possible to screen including the collection reservoir (Diversion #220). No fish are assumed present within the spring system and long series of ditches.

Pasture Grazing Management

The Enrolled Property has 12 distinct pastures where cattle graze. Cattle are rotated through the 12 pastures as part of Enrolled Property's pasture management. The cattle are rotated based upon available feed.

Riparian Grazing Management

Of the seven miles of Upper Parks Creek owned by Permittee, 4.1 miles of the riparian area has been fenced to control livestock grazing the riparian area. riparian area width ranges from 80' to approximately 650' depending on location. Permittee will continue to install riparian fencing and design riparian pastures with guidance from UC Extension Service. No unmanaged grazing of the riparian area will occur under this plan. Approximately 2.9 miles of Parks Creek remains unfenced as of January 2018.

Riparian Fence Maintenance

Permittee will maintain and repair existing riparian fencing to control riparian grazing. In the event major damage results from flood or natural disaster, Permittee will meet with NOAA/CDFW to address repair options. Permittee will not replace fencing damage greater than one cumulative mile prior to agency consultation. Permittee will also construct riparian fencing where fencing is not present to develop riparian fencing throughout the Enrolled Property on Parks Creek. In the event a natural disaster damages more than 1.0 mile/25% of the riparian fencing, Permittee will meet with agencies to determine assistance or alternatives to replacing. Approximately 2.9 stream miles of Parks Creek remains unfenced on Enrolled Property.

Road Maintenance

The main ranch road from Old Highway 99 to the residences and barn complex on Enrolled Property is aggregate base/rock. The aggregate base is maintained on an annual basis, or as needed, to minimize erosion. Other roads on the Enrolled Property are not

highly utilized by vehicle traffic and are native soils. Other than crossings over ditches, there are no culvert crossings over drainages or intermittent streams.

Crossing Maintenance

There are 8 active livestock and vehicle wet crossings. The sites are located in relatively stable stream reaches where channel elevation is stable. Approach material is composed of coarse bed load material (6" minus). Due to the alluvial gravel/cobble present around the crossings, erosion and fine sediment introduction is not a concern. Re-grading of native material for the approaches occurs after significant flood events. Native bedload material for approaches is collected outside of the wetted channel. Some work including clearing and snagging debris and black berries is required. Re-grading and shaping of approaches are required using equipment after some high flow events. The crossing material used in the bottom of the channel will be selected based on design and maintained by the Enrolled Property during low flow.

Livestock utilization of these crossings is minimal and typically occurs when livestock are moved from one pasture to another or to the corrals. Livestock are expected to be moved across the steam up to 8 times during the growing season on the most active crossings. However, the crossings can also be utilized as watering lanes. The Enrolled Property is in process of installing an alternative livestock watering system which will reduce the crossing also being used as a watering lane. Duration of use for livestock and as a source for livestock watering occurs throughout the year but more so during the summer months when stocking rates are higher.

Vehicle crossings are typically limited to crossing in an ATV. Crossings below the rail road trestle are utilized more often than others, especially during irrigation season where a crossing may be utilized up to two times a day.

Herbicide/Fertilizer/Pesticide Use

Permittee reserves the right to apply herbicides or pesticides by spot application as recommended the product label. Permittee does periodically apply fertilizer to irrigated areas in very early spring months, prior to irrigation. Riparian areas are not treated with pesticides or fertilizer. Permittee reserves the right to utilize spot applications of herbicides for invasive weed control in riparian areas.

C.2 Avoidance and Minimization Measures

The Permittee has agreed to carry out and monitor AMMs that are relevant to their Routine Agricultural Activities as specified in Table G1(Section G below) and as detailed in Appendix 3 of the Agreement.

D. Description of Baseline Conditions

Baseline Conditions means the habitat conditions for the Covered Species on the Enrolled Property when NMFS approves this Site Plan Agreement. The Enrolled is within the Upper Parks Reach of the Covered Area. Baseline Conditions for the Enrolled Property are the conditions described in Appendix 2 of the Agreement for this reach.

Elevated Baseline Conditions are certain Baseline Conditions improved as a result of certain Beneficial Management Activities. Elevated Baseline for this Site Plan Agreement are the improved tail water management and flow conditions that will result from the following actions: Potential diversion combine, tailwater collection, and fencing. Table 3 (below) lists the existing instream and riparian habitat conditions that will be maintained (present baseline) and those that will be improved (elevated baseline) on the Enrolled Property as well as the Beneficial Management Activities. Section E below provides more details on the activities.

Table 2 summarizes the Beneficial Management Activities required to maintain Baseline Conditions and to achieve Elevated Baseline Conditions on the Enrolled Property for the term of the Site Plan Agreement. The Beneficial Management Activities implement habitat enhancement actions recommended in the Agreement (Appendix 2) for the Lower Parks reach. Section E describes the activities on the Enrolled Property in more detail.

Table 2 - Baseline, Elevated Baseline, and Other Beneficial Management Activities for the Enrolled Property

Habitat Parameter	Beneficial Management Activities		
	Present Baseline Conditions (Section E1-Maintain)	**Elevated Baseline Conditions (Section E2-Restore; Implement and Maintain)**	**Other Beneficial Management Activities (Section E3-Restore; Measures to Avoid and Minimize Impacts)**
Hydrology/ Water Quality	-Maintain existing tailwater collection and re-use systems as described in E.1.a1. - Continue to maintain crossings and stock watering lanes as described in Section E.1.a2.	-Tail-water collection and re-use project #1 will be constructed and maintained, to reduce/eliminate tail-water re-entering Parks Creek near the northern end of the property above diversion #6. Collected tail-water will be used in lieu of diverting stream flow at site #6. Project will eliminate up to 0.85 cfs of tail-water re-entry. E.2.a1	-Participate in a reach-wide flow management strategy as outlined in E.3a1 -Participate in diversion facilities assessment, design and implementation to combine operate and maintain diversions #1, #2 and the Parks Creek Ranch Edson-Foulke right. The project would include significant installation of pipeline and flood irrigation risers to improve irrigation delivery efficiency and irrigation efficiency to conserve water and meet the objectives of the Upper Parks Creek Flow Strategy. Site may also include Edson-Foulke Ditch Parks Creek Diversion. 2.8 cfs (1.2 cfs 1st priority, 1.6 cfs 23rd priority) would be provided for instream benefit prior to diverting the water in priority for irrigation. Diversion point combination and infrastructure is a necessary implementation component in order to verify and abide with the flow strategy and commitments of conserved water E.3.a2. Participate in diversion facilities assessment, design and implementation to combine, operate, and maintain diversions #3, #4, #5 and potentially #6 to improve irrigation delivery efficiency and irrigation efficiency to conserve water and meet the objectives of the Upper Parks Creek Flow Strategy. Likely site would be near existing diversion point of diversion PCR #3. 0.6-1.45 cfs will be provided depending on inclusion of diversion #6 (.6 cfs 9th priority, .85 cfs 18th priority).would be provided for instream benefit prior to diverting the water in priority for irrigation. Diversion point combination and infrastructure is a necessary implementation component in order to verify and abide with the flow strategy and commitments of conserved water E.3.a3. -Assess, design and if mutually agreeable, provide additional cold water (.2-.6 cfs) to the proposed over-summering reach via by-pass water from Diversion #1 or from Spring Creek. E.3.a4 -Assess, design and implement efficient alternative livestock watering system to aid adult migration and spawning by reducing diversion volume to 1.2 cfs.E.3.a5 -Soil Moisture Sensors: Install soil moisture sensors per UC Extension Service guidance to improve water efficiency resulting in instream benefit. Section E.3.a6 -E.3.a.7 Forbearance Agreement: Permittee agrees to enter into a Forbearance Agreement with SWCG members for the purpose of improving habitat for Covered Species in the Shasta River.

Passage/ Migration/ Screening	-Maintain unimpeded fish passage conditions at all Enrolled Property diversions as described in Section E.1.b1 -Operate and maintain the existing panel fish screens at all of the PODs as described in Section E.1.b2	If diversion combination projects are determined infeasible, existing fish screens will be assessed for refurbishment or replacement. E.2.b1	-Allow reasonable access and amendment to easement for MWCD to reconstruct, operate, and maintain its POD on Parks Creek to allow for a compliant fish screening and passage facility as long as there is no operational impact to Enrolled Property. E.3.b1 -After review of design, allow reasonable access and amendment to easement for Edson-Foulke to reconstruct, operate, and maintain its POD on Parks Creek to allow for a compliant fish screening and passage facility as long as there is no operational impact to Enrolled Property.E.3.b2 Assess, design and if mutually agreeable, implement a channel and floodplain restoration project near the RxR crossing which appears to have created an incised channel. E.3b3
Instream Habitat Complexity			- Construct an alcove area at the existing Spring Ck. System outlet below MWCD POD to enhance over-summering and over-wintering habitat as described in Section E.3.c1 -Allow access to involved agency staff and approved contractors to implement habitat improvement projects as specified on the Habitat Improvement Map and as described in Section E.3.c2 -Implement beaver BMPs as described in E.3.c3
Riparian Condition/ Acres	-Continue to perform yearly maintenance on existing 2.5 miles of riparian fencing as described in E.1.d.	-Continue to seek funding and implement riparian fencing along the west side of Parks Creek for approx. 2.9 miles of Parks Creek that does not have riparian fencing. E.2.d1	-Work to develop and Implement the riparian grazing plan with UC Extension service.E.3.d1 -Seek funding, provide materials and assist with riparian planting from Old Hwy 99-I-5 E.3.d2
Substrate Quality	-Continue to avoid sedimentation as described in Section E.1.e.		
Pasture Management			

Assessment/ Studies			- Allow access for reasonable studies that support Agreement objectives and approved by Permittee as described in Section E.3.g1. -Allow access and support stream channel and floodplain restoration feasibility study for the RR crossing reach of Parks Creek. If feasible and mutually agreed upon, allow the project to be implemented to improve passage and channel function. E.3.g2
Supplementation			-Allow access for salmonid supplementation as described in the Agreement and conservation projects are in place. E.3.h.

E. Beneficial Management Activities

This section provides a detailed description of the Beneficial Management Activities to be implemented on the Enrolled Property for the benefit of the Covered Species.

The Enrolled Property typically has sufficient water in early spring through late spring to irrigate the Enrolled Property and provide by-pass. As the snowmelt period tails off, irrigation demand remains high as instream needs also become critical through early-mid June snow melt flows tail of into a long low flow condition that can last from late June into November. The Enrolled Property typically is diverting 3-5 cfs during base flow conditions (late July-mid October), which is a majority of the available flow.

The objective of the Enrolled Property is to develop an irrigation strategy that coincides with life stage needs for Coho salmon, to improve habitat conditions for critical life stages. This includes cooperating with other Permittees to maintain flows per life stage to improve access, distribution and habitat conditions for Coho Salmon. The largest potential to contribution to flow by Permittee will be achieved by improving irrigation and distribution efficiency yielding conserved water for instream benefit. The Enrolled Property irrigation occurs during spawning, rearing and juvenile out-migration/redistribution life stages. The proposed projects aid in reducing diversion volume and improving water quality. The Enrolled Property's contribution to the reach wide flow strategy improves consistency of flow establishes minimum flow targets per season/life stage and establishes cold water refugia reach for over-summering. The management activities proposed herein will contribute to improved habitat conditions for the Covered Species within a valuable stream reach that is expected to respond to the proposed projects resulting in habitat improvements over time that will contribute to recovery of coho salmon populations.

E.1 Baseline Conditions

This section details the actions required to maintain Baseline Conditions. This includes any Covered Activities that are being implemented, or have been implemented on the

Enrolled Property that benefit the Covered Species and will be maintained over the duration of the Template Safe Harbor Agreement.

E.1.a. Hydrology/Water Quality

Tailwater Reduction

-Permittee will maintain the following constructed tail-water/ water quality projects:

1.) Northern Bottom tail-water collection facility: The adjustable water control structure allows collection of tailwater to be re-used and incorporated in a collection ditch below diversion ditch #3.

2.) "Lower corrals" tailwater collection and piping allowing for re-use. The lower corrals system allows tailwater to be collected prior to entering Parks Creek and used rather than increasing the volume of water diverted by diversion #3

E.1.b. Passage/Migration/Diversion Screening

E.1.b1-Permittee diverts water from 7 active points of diversion on Parks Creek, including sharing the Edson-Foulke Ditch. Edson-Foulke is a neighboring Permittee and is therefore addressed in a separate Site Plan Agreement. Permittee agrees to continue efforts to maintain passage at all of the diversion points. Current diversion structures consist of tarp and/or gravel dams. PCR diversion #1 and PCR diversion #2 uses a backhoe positioned from the edge of the stream to construct low elevation diversion dams to divert water as flows reduce during late spring/early summer. All other diversion structures are constructed by hand and are minimal. All structures use less than 5 cubic yards of material per site. Fish passage is provided per site by constructing a channel through the diversion structure for passage and by-pass flows. By-pass flows are typically congregated into one channel this has minimal slope and sufficient width and depth for juvenile passage.

E.1.b2-All sites on Parks Creek have fish screens although the existing fish screens on diversions #4, #5 and #6 have been damaged by high flows, are difficult to maintain and don't function in this applied setting. Permittee currently operates and maintains all fish screens and commits to continue to do so.

The active diversion points within the Spring Creek system include a collection reservoir and diffuse springs. The diffuse springs are routed via established ditches but the flow volumes are less than 0.2 cfs feeding grassy waterways where fish presence seems highly unlikely. Regardless, passage is not impacted by the established ditches.

E.1.c. Instream Habitat Complexity

No current instream projects exist

E.1.d. Riparian Condition

Riparian Fencing

E.1.d1-Riparian fencing has been completed on a 1.0 mile reach of Parks Creek downstream of the lower corrals and for approximately 1.7 miles above Old Hwy 99. 2.9 river miles remain unfenced below Old Hwy 99. The Permittee will continue to perform the yearly maintenance (replace posts, functioning gates, etc.) of the existing riparian fence over the duration of the Agreement and will not intentionally damage riparian existing plantings within the current fenced area.

Riparian Habitat

E.1.d2 -Within the existing fenced area downstream of Old Hwy 99 (exclusion zones), Permittee has planted approximately 0.75 acres. Cuttings were taken from existing trees along Park Creek. Permittee agrees to maintain and protect riparian cuttings.

E.1.e Substrate Quality

Permittee has potential spawning habitat available. Permittee will manage to protect and maintain spawning sites.

E.1.f. Pasture Management

Permittee will continue to manage livestock using current grazing rotation.

E.1.g. Assessments/Studies

No active studies or assessment are currently ongoing.

E.2 Elevated Baseline Conditions

This section and Figure 4 details the actions required to achieve and maintain Elevated Baseline Conditions. This includes any Covered Activities that will be implemented and maintained on the Enrolled Property during the term of the Agreement to improve unsuitable habitat conditions for the Covered Species.

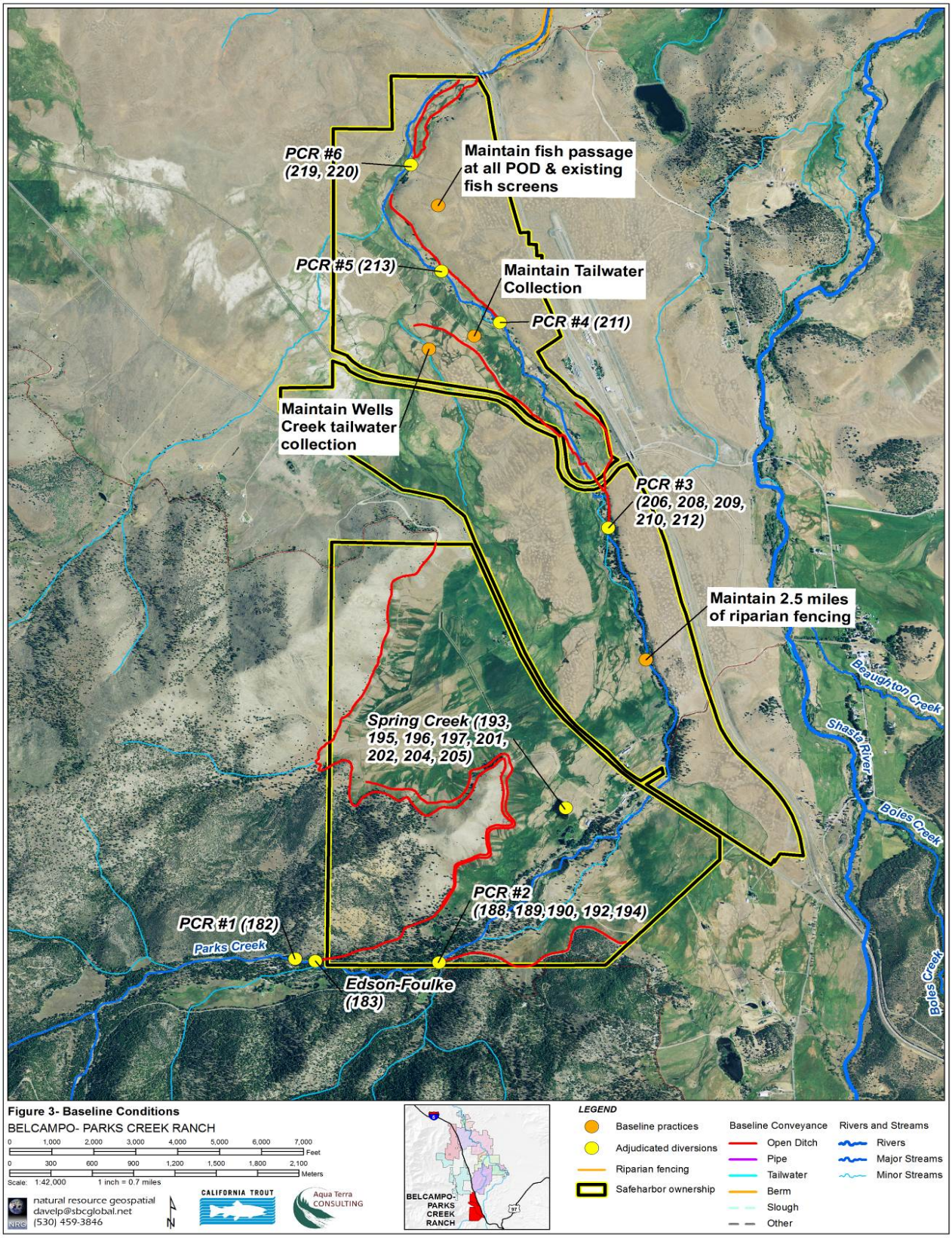

Figure 3- Parks Creek Ranch- Baseline Conditions Map

E.2.a. Hydrology/Water Quality

Tailwater Reduction:

E.2.a1-Parks Ck. Tailwater Project #1: Lower Reach of Parks Creek: Permittee will collect and re-route tail-water prior to entering Parks Creek. Collected tail water will be delivered for irrigation purposes downstream to replace or reduce the volume of water diverted at PCR diversion #6 rather than entering Parks Creek. Scope includes developing a tail-water collection facility and installing pipe and a siphon under Parks Creek to deliver tailwater to diversion #6 with the collection system. The tailwater is expected to replace diversion of water from 3/1-to 5/15. Permittee will assist in development of the design, seek funding, and assist with implementation if funds are secured. Design and permitting will begin within two years after issuance of ESP with intended implementation by the close of the fourth year of the issuance of the ESP.

E.2.b. Passage/Migration/ Diversion Screening

E.2.b1-<u>Conduct Fish screen evaluation if E.3a2 and/or E.3a3 are determined infeasible</u>: The Permittee is proposing diversion combination projects reducing the number of diversion sites from 7 to 2 or 3 diversion points. Irrigation efficiency projects focusing on piping to improve delivery efficiency projects will accompany the diversion combination proposals described in E.3.a. The proposal concept will be initiated with a design and assessment phase, including diversion structures, fish screen analysis and pipeline alignment and design. Existing fish screens at diversions 1, 2 and Edson-Fouke, are not in compliance but would be potentially replaced/improved under the proposal described in E.3.a2. Existing fish screens at diversions 4, 5 and 6 are not in compliance but would be potentially replaced under the proposal described in E.3.a3. If the project described in E.3.a2 and/or E.3a3 are determined infeasible, the existing fish screens would require compliance evaluation correction or replacement. In the event evaluation and compliance work is necessary, Permittee will assist evaluators and seek assistance is refurbishing or replacing the existing fish screens within 4 years of the issuance of the ESP. Permittee will operate and maintain any new compliant fish screens installed in the future.

E.2.c. Instream Habitat Complexity

No actions are proposed in for Instream Habitat Complexity in elevated baseline for this Permittee.

E.2.d. Riparian Function

E.2.d1-Riparian Fencing: Permittee will seek funding and assist with installation of riparian fencing along the approximately 2.5 river miles of Parks Creek that does not have riparian fencing. Fencing placement will be in accordance with Enrolled Property management objectives and a Riparian Grazing Plan produced with UC Extension Service. Permittee will pursue development of fencing layout,

seek funding to implement riparian fencing and assist in implementation of riparian fencing beginning in the first year of the issuance of the ESP and intending to have riparian fencing completed by the close of the 4th year of the issuance of the ESP.

E.2.e Substrate Quality

No actions are proposed in for Substrate Quality in elevated baseline for this Permittee.

E.2.f. Pasture Management

No actions are proposed in for Pasture Management in elevated baseline for this Permittee.

E.2.g Assessments/Studies

No actions are proposed for Assessments/Studies in elevated baseline for this Permittee.

E.3 Other Beneficial Management Activities

This section summarizes any other Beneficial Management Activities that will be implemented on the Enrolled Property to benefit the Covered Species.

E.3.a. Hydrology/Water Quality

Reach-wide Flow Management Strategy

The Permittee will cooperate in water quality and water quantity projects within the Upper Parks Creek reach (outlined below):

Comprehensive Flow Strategy: Permittee and other Permittees have cooperated in the development of the Upper Parks Flow Strategy. The Upper Parks Creek stream reach extends from the upstream boundary of Enrolled Property, downstream to its lower (northeastern) property boundary near the Interstate-5 crossing over Parks Creek. The Parks Creek Flow Strategy establishes an annually variable minimum instream flow value, verified by a stream gage (CDEC gage PCE) located near I-5 crossing. Conservation projects proposed by Permittee include reducing diversion volume through diversion combination, delivery and irrigation efficiency measures through water conservation and irrigation improvements (Projects E.3a2 and E3a3). After project installation, estimated conserved water volumes will remain instream (prior to diversion)

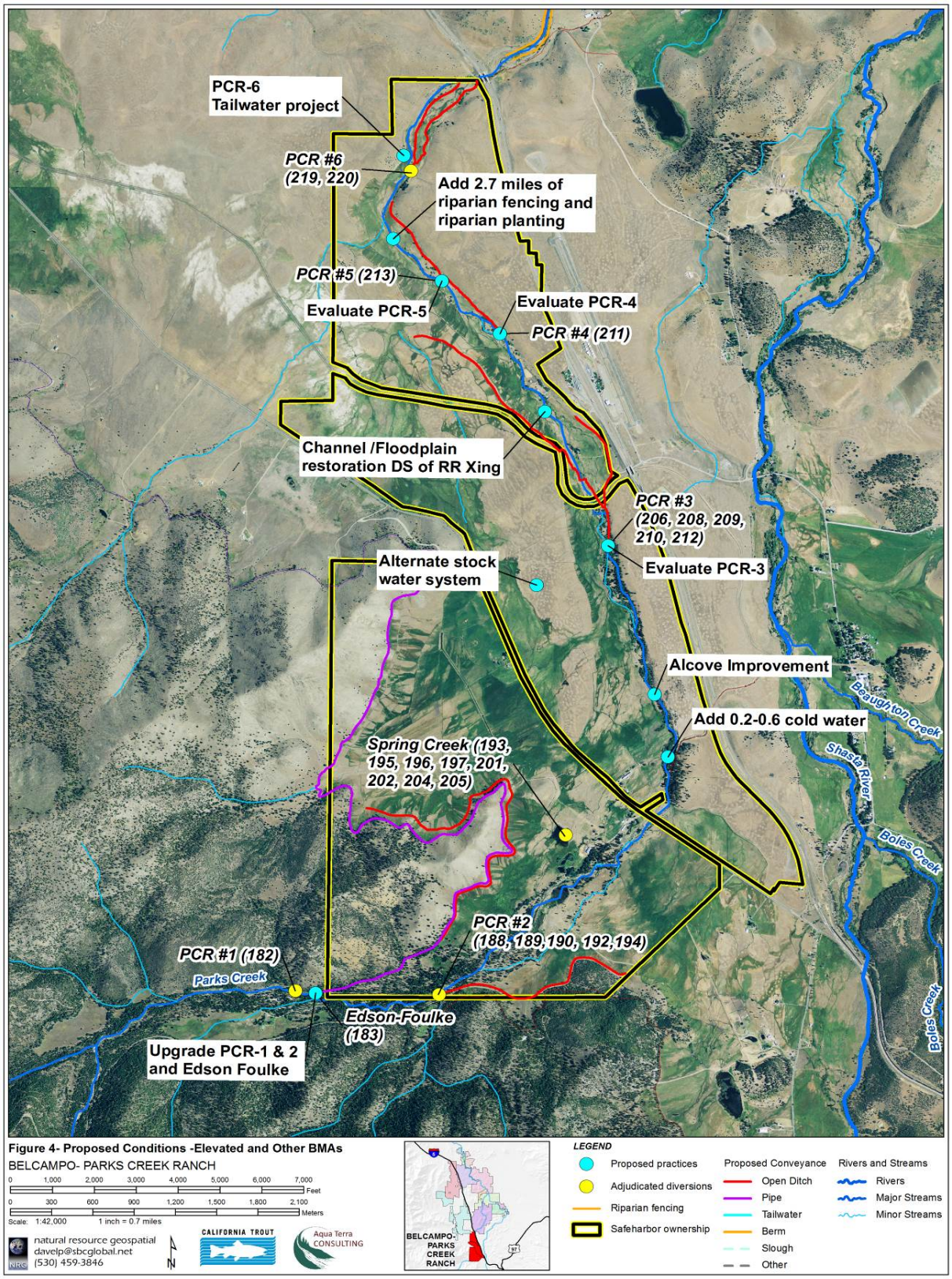

Figure 4.-Parks Creek Ranch –Proposed Conditions

throughout the term of the agreement. In the event the by-passed water conserved by implemented projects does not meet the minimum instream flow target, Permittee agrees to curtail or even cease diversion to meet the identified minimum instream flow value for that time period (see table below). During the spring, the schedule has a staggered diversion/bypass schedule intended to proportionality share available water with instream and irrigation needs.

Permittee diverts water throughout the year for irrigation and livestock watering purposes. Due to water right priority, Permittee is the only entity diverting during base flow period from approximately mid-July through early October during average water years. Permittee commits to ensuring conserved water remains instream prior to diverting and curtailing or ceasing diversion to meet established instream flow volumes identified in Upper Parks Creek Flow Strategy. Conserved water will be protected through WC 1707, forbearance or equivalent. In stream commitments identified in the Upper Parks Creek Flow Strategy are contingent upon full implementation of water conservation projects prior to meeting the flow schedule.

Upper Parks Creek Flow Strategy:

The Upper Parks Creek Flow Strategy was developed in conjunction with NOAA and CDFW to achieve sufficient bypass flow as required during different life stages. The table below defines the Life Stages, corresponding date ranges and associated minimum flow targets, which are verified by a real-time streamflow gage (CDEC gage PCE) located at the base of the stream reach. After water conservation projects are implemented, Permittee will ensure conserved water remains instream prior to diverting and curtailing or ceasing diversion to meet established instream flow volume per identified life stage/calendar date.

Life Stage	Time Period	Minimum Flow at PCE
Adult Migration and Spawning	11/1-12/31*	10.00 cfs @PCE prior to diverting
Over-wintering/Incubation	1/1-2/28*	6.00 cfs @PCE prior to diverting
Juvenile outmigration/distribution		
Stage 1:	3/1-5/16	8.45 cfs @PCE prior to diverting more than 12.9 cfs (PCR #1,2 and EF #3)
Stage 2:	3/1-5/16	20.00 cfs @PCE prior to diverting more than 6.95 cfs (PCR #3-6)
Juvenile outmigration/distribution	5/16-5/23	12.00 cfs @PCE prior to diverting
Juvenile outmigration/distribution	5/24-5/31	8.00 cfs @PCE prior to diverting

Life Stage	Time Period	Minimum Flow at PCE
Juvenile outmigration/distribution	6/01-6/10	4.00 cfs @PCE prior to diverting
-Over-summering	6/11-10/14	1.00 cfs @PCE prior to diverting**
-Fall Ramp-up	10/15-11/1	4.00 cfs @PCE prior to diverting

*Storage rights for 228 acre/feet may be diverted from 11/1-2/28 by Edson Foulke after PCE target is met. Diverted volume for storage will not exceed 5.0 cfs

**Over summering reach extends from below MWCD diversion to PCR Diversion #3 where 2.0 cfs will be provided.

E.3.a2-Diversion Combination of Diversions #1, #2 and Edson-Foulke rights: Permittee diverts water from 7 active points of diversion on Parks Creek. The numerous points of diversion and varied priorities of rights makes assimilating and abiding by a reach wide flow strategy difficult. Further, the multiple points of diversion play into increased delivery loss. Permittee proposes to assess, design and if mutually agreeable, seek funds to implement, operate, and maintain a combined point of diversion (POD) for diversions points #1, #2 and rights in Edson-Foulke ditch. This proposal would include a diversion facility, including a fish screen, method to accurately measure volume of water by-passing the facility and volume of water diverted to the facility. The combined water rights are 11.3 cfs.

The project also proposes to design, install, operate, and maintain a pipeline to deliver water to the areas serviced for irrigation under those PODs to improve delivery efficiency. Further, the proposed pipelines will use irrigation flood risers to increase irrigation efficiency, where determined effective. In exchange for the combined point of diversion, increased delivery efficiency and irrigation efficiencies, Permittee agrees to by-pass 2.8 of the 11.3 cfs of water available for diversion to instream benefit for the life of the project or term of the ESP, whichever is longest. In addition, when water conserved through conservation projects does not meet instream flow objective, Permittee will by-pass additional water as needed to meet instream flow objective. Design will begin by the end of the second year the ESP is issued. If a project is mutually agreed upon funding will be sought by close of the 4th year the ESP is issued.

E.3a3-Diversion combination of Diversion #3#4, #5 and potentially #6**:** Permittee diverts water from 7 active points of diversion on Parks Creek. The numerous points of diversion and varied priorities of rights makes assimilating and abiding by a reach wide flow strategy difficult. Further, the multiple points of diversion play into increased delivery loss. Permittee proposes to assess, design and if mutually agreeable, seek funds to implement, operate, and maintain a combined point of diversion (POD) for PCR diversion points #3, #4, #5 and potentially #6.

This proposal would include a diversion facility, likely near the existing point of diversion for diversion #3 including a fish screen, method to accurately measure volume of water by-passing the facility and volume of water diverted to the facility. The combined water rights for diversions 3-6 are 5.35 cfs.

The project also proposes to design, install, operate, and maintain a pipeline to deliver water to the areas serviced for irrigation under those PODs to improve delivery efficiency. Further, the proposed pipelines will use irrigation flood risers to increase irrigation efficiency, where determined effective. In exchange for the combined point of diversion, increased delivery efficiency and irrigation efficiencies, Permittee agrees to by-pass 0.6 -1.45 cfs (volume depends on design, inclusion of diversion #6) of the 5.35 cfs of water available for diversion for instream benefit for the life of the project or term of the ESP, whichever is longest. In addition, when water conserved through conservation projects does not meet instream flow objectives, Permittee will by-pass additional water as needed to meet instream flow objectives. Design will begin by the end of the first year the ESP is issued. If a project is mutually agreed upon funding will be sought by close of the 3rd year the ESP is issued.

E.3a4-Cold Water Contribution for over-summering habitat reach: Assess, design and seek mutual agreement of delivering cold water either from Spring Creek system or from Diversion #1 (under combined diversion concept or otherwise) to the identified over-summering reach downstream of MWCD diversion to aid in developing and enhancing cold water habitat for over-summering juvenile Coho salmon. A period of monitoring and measurement of available flows is necessary to determine the volume of cold water available. During base flows, the expected potential increase in flows will be .2 -.6 cfs of water under 18.5 C that will be provided to ensure flows exceed flow (2.0 cfs) and address temperature objectives within the over summering reach during the over-summering period.

In addition to the provided water, the Permittee will allow and participate in construction of an alcove habitat at the existing spring discharge (or where mutually agreed upon) that enters the over-summering. This project is expected to provide both summer rearing and winter off-channel habitat. Project will seek design and implementation funds by the close of the 5th year of the issuance of the ESP.

E.3a5-Efficient Alternative Livestock Watering System: Permittee will assess, design and implement efficient alternative livestock watering system to aid adult migration and spawning. In exchange for design and installation of efficient livestock water facilities, Permittee will to limit livestock diversion volume to 1.2 cfs rather than the 5.6 cfs stock water right. In pastures where livestock have access to Parks Creek, watering lanes may be used, depending on design. Permittee will provide map identifying need for watering sites by the close of the 2nd year of the agreement. Permittee will seek design and implementation funds with the intention to have the system constructed by the close of the fourth year of the issuance of the ESP.

E.3a6-Soil Moisture Sensors: Permittee will UC Extension Service advice and seek funding to install and operate soil moisture sensors per UC Extension Service guidance to improve water efficiency resulting in reduced diversion, instream benefit and improved pasture production. Permittee will coordinate this measure with delivery and irrigation efficiency projects proposed above (E.3.a2 and E.3.a3) with intension to have moisture sensors operating by year 5 of the agreement. Measure is also described in Section E.3.f.

E.3a7-Forbearance Agreement: Permittee agrees to enter into a Forbearance Agreement with SWCG members for the purpose of improving habitat for Covered Species in the Shasta River.

E.3.b. Passage/Migration/ Diversion Screening

Fish Screen Evaluation: Existing fish screens and diversion facilities will be evaluated under current fish screen and fish passage criteria if combined point of diversion projects proposed above are mutually not agreed upon and deemed infeasible. If diversion combination projects are determined infeasible, existing fish screens will be assessed for refurbishment or replacement. Permittee will operate and maintain any new compliant fish screens installed at diversions.

E.3.b1-Allow for improved diversion facility for MWCD: Permittee is agreeable in allowing MWCD to implement, operate, and maintain a compliant fish screening, fish passage and diversion facility so as long as there are no impacts to Enrolled Property's operations and Permittee is allowed to review and comment on design (and impacts are addressed during construction). The process will allow for negotiations including mutual agreement of the project design and terms of the easement, if revision of the easement is necessary.

E.3b2-Allow for improved diversion facility for Edson-Foulke: Permittee is agreeable in allowing Edson-Foulke Ditch Company to make improvements necessary to construct, operate, and maintain a compliant fish screening, fish passage and diversion facility so as long as there are no impacts to Enrolled Property operations and Permittee is allowed to review and comment on design (and impacts are addressed during construction). The process will allow for reasonable negotiations including mutual agreement of the project design and terms of the easement, if revision of the easement is necessary.

E.3.b3-Allow access to conduct assessment of floodplain restoration project at stream reach below RxR crossing: Assess, design and if mutually agreeable, implement a channel and floodplain restoration project near the RxR crossing. Current stream reach is incised potentially because of the railroad crossing limiting access to flood plain and constricting the channel. Current condition is limiting the potential enhancement of approximately .5 miles of Parks Creek.

E.3.c. Instream Habitat Complexity

Habitat Complexity- See Figure 5 in Site Plan Appendix:

E3c1-Construct Alcove Habitat within over-summering reach: Permittee agrees to construct an alcove at the existing spring outlet within the over-summering reach. The alcove will be designed to naturally scour and LWD will be placed to provide cover. The habitat will provide cold water over-summering habitat as well as overwintering habitat. This project is anticipated to be designed within 3 years after execution of the Agreement and implemented within 5 years of execution of the Agreement.

E3c2-Construct numerous LWD sites to increase habitat complexity: Permittee agrees to assist in development, provide available materials, assist in seeking funding and assist in implementation of habitat improvement projects as specified on the Habitat Improvement Map. Up to 15 LWD structures with 3-5 pieces each are proposed. Sites where active erosion is occurring within the over-summering reach are a priority for structures by Permittee. This project is anticipated to be designed within 2 years after execution of the Agreement and implemented within 4 years of execution of the Agreement.

E3c3Beaver Management for Instream Benefit: Permittee agrees to encourage and allow the development of beaver dams on Parks Creek so as long as beaver activity does not affect operations. The Permittee will adhere to the Beaver BMPs and contact CDFW if conflicts with beavers and diversion operation occur.

E.3.d. Riparian Function

E.3.d1-Develop Riparian Grazing Plan: Permittee will work with UC Extension Service to define Enrolled Property's objectives and develop a riparian grazing plan. Permittee will work with UC Extension Service to complete riparian grazing plan by the close of the second year of the issuance the ESP.

E.3.d2-Riparian Planting: Permittee will participate and provide cuttings materials for riparian planting as specified on the SWCG Habitat Improvement Map, and specifically in areas downstream of Old Hwy 99 to I-5. Permittee will seek funding and intends to plant four acres of riparian plantings within the first four years of the issuance of ESP.

E.3.e. Substrate Quality

Enrolled Property operation will protect spawning substrate and ensure riparian grazing plan is protective of potential redds.

E.3.f. Pasture Management:

Soil Moisture Sensors: Permittee will UC Extension Service advice and seek funding to install and operate soil moisture sensors per UC Extension Service

guidance to improve water efficiency resulting in reduced diversion, instream benefit and improved pasture production. Permittee will coordinate this measure with delivery and irrigation efficiency projects proposed above (E.3.a2 and E.3.a3) with intension to have moisture sensors operating by year 5 of the agreement. Measure also described in Section E.3.a6.

E.3.g. Assessments/Studies

Access for Studies:

E.3.g1-Permittee will review and allow access for reasonable studies that support Agreement objectives.

E.3.g2-Permittee will allow access and support stream channel and floodplain restoration feasibility study for the RxR crossing reach as described in Section E.3.b. If feasible and mutually agreed upon, allow the project to be implemented to improve passage and channel function.

E.3.h. Supplementation

The Enrolled Property is open to salmonid supplementation when incidental take is authorized and in place through the Agreement and associated ESP.

F. Effective Date and Duration of the Site Plan Agreement and Agreement

The Template Safe Harbor Agreement, Site Plan Agreement and the Permit take effect when signed by the Participants/Permittees, NMFS, and CDFW. The Permit's take authorization will not be effective until Permittee implements the flow strategy contained in Section E.3 of this Site Plan. Permittee will implement the flow strategy contained in Section E.3 of the Site Plan within two years of permit issuance. Permittee will notify both NMFS and CDFW upon flow strategy implementation. Upon written confirmation by NMFS that the flow strategy is being implemented, the Permit's take authorization will become effective.

If within three years of permit issuance NMFS does not issue confirmation that Permittee is implementing the flow strategy contained in Section E.3 of this Site Plan Agreement, then the Permit will automatically expire and its take authorization will never have been effective.

The Template Safe Harbor Agreement, Site Plan Agreement and ESP have a term of 20 years, which may be extended by mutual written consent of the Permittees, NMFS, and CDFW as stipulated in the Agreement. One (1) year prior to end of term of the Template Safe Harbor Agreement, Site Plan Agreement and ESP, the Permittees, NMFS, and CDFW will meet to decide whether to extend the term of the Template Safe Harbor Agreement, Site Plan Agreement and ESP.

G. Monitoring and Reporting

AMMs are intended to minimize or reduce potential adverse impacts that may occur during implementation of BMAs or during Routine Agricultural Activities. The Permittee commits to implement the AMMs and the AMM monitoring protocols listed in Table G1below and described in Appendix 3 of the Agreement.

Implementation monitoring includes those monitoring tasks associated with construction and implementation of BMAs (e.g., construction of habitat restoration projects) and associated AMMs. Implementation monitoring of BMAs serves to verify that habitat restoration projects are constructed as designed and managed as intended. The Permittee commits to monitoring actions as summarized in Table G2. Permittee also commits to all relevant AMMs included in Appendix 3 of the Agreement related to the implementation of the BMAs identified in Section E above.

AMM and implementation monitoring will be conducted by the Permittee, the SWCG, or a contractor.

G.1 Avoidance and Minimization Measures Monitoring Commitments

Parks Creek Ranch Routine Agricultural Activity	Parks Creek Ranch –AMM (See Appendix 3 of Agreement for full description)	AMM Monitoring Technique
Irrigation Management	A1 A2 A3 A4 A5	All maintenance of instream diversion structures shall be monitored as follows: -Log of what in-water work had occurred and what minimization measures were implemented will be included in the annual report -When construction or repair work is being done, three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 http://www.fs.fed.us/pnw/pubs/gtr526/ or an annual agency inspection can be requested.
Irrigation Maintenance	B1 B2 B3 B4 B5 B6 B7 B8	All maintenance of instream irrigation facilities shall be monitored. Following are some examples of protocols: -Log of maintenance activities carried out within the calendar year to be included in the annual report.

Parks Creek Ranch Routine Agricultural Activity	Parks Creek Ranch –AMM (See Appendix 3 of Agreement for full description)	AMM Monitoring Technique
Riparian Grazing Management	C1 C2 C3	Riparian grazing management shall be monitored as follows: -Three to five permanent photo point stations will be established and marked at locations within each riparian pasture designed to show both vegetation changes before and after seasonal grazing activities, and long-term trends. Photo points shall be established using USDA Forest Service Photo Point Monitoring Handbook, 2002 http://www.fs.fed.us/pnw/pubs/gtr526/. Digital photographs will be taken at each photo point station once per year for trend monitoring, and before and after riparian pasture grazing takes place for annual implementation reporting. -Maintain a log of grazing activities carried out within the calendar year and include in the annual report. At a minimum, the log will include the following information: beginning and end dates of riparian pasture grazing; number of animals, monitoring practices during the riparian grazing period, and management actions taken as a result of monitoring results including management cues used to determine the time to move livestock out of the riparian pasture. -NMFS and CDFW may initiate periodic inspection of grazed riparian pastures to ensure riparian grazing management plan is effective.
Fence Maintenance	D1 D2	-A short description of fence maintenance activities will be included in the annual report template.
Road Maintenance	E2 E3	-A short description of annual road maintenance activities will be included in the annual report.
Crossing Maintenance	F1 F2	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 http://www.fs.fed.us/pnw/pubs/gtr526/
Herbicide/Fertilizer/Pesticide Use	G1 G2 G3 G4 G5	- Permittee commits to log use of herbicide, fertilizer and pesticide activities carried out within the calendar year be included in the annual report.

Parks Creek Ranch Routine Agricultural Activity	Parks Creek Ranch –AMM (See Appendix 3 of Agreement for full description)	AMM Monitoring Technique
Flood Repair	H1 H2	- Permittee shall take photographs of the emergency site repairs and a detailed description of the repairs to be included in the annual report.

G.2 Implementation and Effectiveness Monitoring Commitments

Habitat Parameter	Parks Creek Ranch Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/ Technique
Hydrology/ Water Quality	-Continue to manage tailwater production using existing collection and reuse system as described in E.1.a. -Eliminate/Reduce tailwater through proposed projects E.2.a. -Participate in design and implementation of diversion point combination of site #1,2 and Edson-Foulke right to enhance instream flows E.3.a -Participate in design and implementation of irrigation delivery assessments, design and seek funds to implement delivery efficiency projects to provide instream benefit. E.3.1 Participate in design and implementation of contributing source water for cold water refugia as part of enhancing over-summering reach of Parks Creek. E.3.a Install soil moisture sensors throughout the Enrolled Property to improve water efficiency as a component of conserving water from instream benefit. Section E.3.a. Participate in a reach-wide flow strategy as outlined in. E.3.a1 Manage fields to reduce tailwater returns from outside sources to reduce diversion as described in Section E.2.a.	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 documenting functioning diversion, pipeline improvements and spring source enhancements.	- Flow monitoring station at PCE and upstream boundary. Share yearly data for the duration of the agreement

Habitat Parameter	Parks Creek Ranch Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/ Technique
Passage/ Migration/ Screening	-Assess, design, and assist in seeking implementation funds to construct, operate, and maintain combined diversions and new fish screens at the diversion sites as described in Section E.2.b. -Operate and maintain existing Fish Screen as described in Section E.1.b	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 documenting fish passage and fish screen. -Water measuring protocol that is in concurrence with SB88 of diversion, submit diversion data.	Allow for installation of a PIT tag array near PCE to monitor movement of coho salmon into the Upper Parks Creek reach throughout the year. Allow access to agency staff to maintain the array and download data twice per month.
Instream Habitat Complexity	-Will participate in implementation of habitat enhancement projects (LWD for bank stabilization) as shown on the attached Habitat Improvement Map and as described in Section E.3.c. - Will participate in the implementation of habitat enhancement projects as specified on Habitat Improvement Map and as described in Section E.3.c. -Implement beaver Best Management Practices BMPs as described in E.3.c.	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 Habitat improvements	Allow access to agency staff to conduct juvenile surveys to determine habitat use and distribution. Surveys will be conducted between March and September.
Riparian Condition	-Continue to perform yearly maintenance on existing riparian fencing as described in E.1.d. -Permittee will maintain existing watering lanes for stock water as described in Section E.1.d. -Will participate in riparian planting projects as described in Section E.3.d. -Permittee will work with UC Extension to implement riparian grazing plan E.3.d -Permittee will provide additional watering lanes or install alternative stock watering systems to limit riparian access for watering purposes E.3.d.	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document riparian grazing area, and crossing and stockwater systems in proper function.	-Survival rates of riparian planting will be reported by Shasta Valley RCD or other implementing organization for a minimum period of 3 years after planting occurs or term will be stipulated by the grants utilized for implementation.

Habitat Parameter	Parks Creek Ranch Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/ Technique
Substrate Quality		- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document fence maintenance.	
Pasture Management	-Permittee will continue to utilize pasture rotation to avoid over grazing as described in E.1.f.	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document pasture condition.	
Assessment/ Studies	- Continue to allow access for studies as described in Section E.1.g. - Allow access for studies as described in Section E.3.g.	-Reports of studies will be written/summarized/ obtained and provided in the annual report	-Access to maintain future? pit tag array and trap and tag fish as deemed feasible by agency staff
Supplementation	-The Permittee will allow access for salmonid supplementation as described in Section E.3.h.		

H. Annual Report and Adaptive Management

The Permittee will complete an annual report yearly and reported as stipulated in the Agreement.

I. Regulatory Assurances

Upon execution of the Agreement and this Site Plan Agreement and the satisfaction of all other applicable legal requirements, NMFS will issue a permit under Section 10(a)(1)(A) of the ESA to assure the Permittee may incidentally take Covered Species, in accordance with the Site Plan Agreement and Agreement, as a result of implementing the Covered Activities described in this Site Plan Agreement, and except where such activities would result in the diminishment or non-achievement of the Baseline and/or Elevated Baseline Conditions established for the Enrolled Property. This assurance depends on the Permittee maintaining the Baseline Conditions and/or achieving the Elevated Baseline Conditions set forth in the Site Plan Agreement, complying fully with the Agreement and the Site Plan Agreement, and so long as the continuation of Covered Activities would not be likely to

result in jeopardy to Covered Species or the adverse modification or destruction of their designated critical habitat. NMFS provides no assurances with regard to any action that may affect species not covered under the Agreement, including the take of non-covered species and the adverse modification or destruction of their designated critical habitat.

J. Signatures of NMFS, CDFW, and the Permittee

Parks Creek Ranch	11-24-20 Date
, for	February 24, 2021
Barry A. Thom Regional Administrator NOAA's National Marine Fisheries Service West Coast Region	Date

SEPARATE SIGNATURE BLOCK FOR CDFW:

By signing the Template Safe Harbor Agreement, CDFW expresses its expectation that the Agreement along with a Permittee's Site Plan Agreement signed by NMFS and the NMFS ESP, could meet the requirements of section 2089.22 of the California Fish and Game Code with respect to the particular Enrolled Property described in the Site Plan Agreement. However, CDFW will not make such determination until reviewing that Site Plan Agreement signed by NMFS and the NMFS ESP.

California Department of Fish and Wildlife	Date

Appendix A

Legal Deed - Parks Creek Ranch

Siskiyou, County Recorder
Mike Mallory, Assessor–Recorder
DOC – 2017 – 0004673 – 00
Acct 2–Mt Shasta Title and Escrow
Wednesday, JUN 07, 2017 13:50:17
Ttl Pd $7,624.00 Nbr–0000296974
MKF / C1 / 1-6

RECORDING REQUESTED BY:
Mt. Shasta Title & Escrow Company

MAIL TAX STATEMENT
AND WHEN RECORDED MAIL DOCUMENT TO:
Outpost M-R, LLC, a California limited liability company
20 Trafalgar Square, Suite #205
Nashua, NH 03063

Space Above This Line for Recorder's Use Only

A.P.N.: 020-350-270 and 020-350-340 and 020-350-280 and 020-160-240 and 020-350-400 and 021-121-020 and 021-130-250 and 022-250-100 and 020-090-360 and 020-090-430 and 202-100-240 and 202-100-490 and 020-100-520 and 020-100-600 and 020-100-620 and 020-080-230 and 020-090-140 and 020-090-510 and 020-100-610 and 020-100-640 and 022-300-120 and 020-090-230 and 020-090-260 and 020-090-520 and 022-300-130 and 020-090-090 and 020-090-130 and 020-090-600 and 020-090-630 and 020-090-150 and 020-090-170 and 022-300-110 and 022-300-140 and 022-300-150 and 022-300-180 and 020-160-140 and 020-160-160 and 020-340-130 and 020-160-230 and 020-350-390 and 021-121-030 and 020-350-230 and 020-150-011 and 020-150-021 and 020-150-030 and 020-150-080 and 020-150-091 and 020-150-100 and 020-160-020 and 020-160-030 and 020-160-050 and 020-160-171 and 020-160-181 and 020-160-190 and 021-130-021 and 022-310-101 and 022-570-140 and 022-570-150 and 020-160-200

File No.: 4702-5395812 (PAB)

GRANT DEED

The Undersigned Grantor(s) Declare(s): DOCUMENTARY TRANSFER TAX **$7,590.00**; CITY TRANSFER TAX $;
SURVEY MONUMENT FEE $

[x] computed on the consideration or full value of property conveyed, OR
[ ] computed on the consideration or full value less value of liens and/or encumbrances remaining at time of sale,
[x] unincorporated area; [ ] City of , and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **Mole-Richardson Co., LTD., a California corporation formerly known as Mole Richardson Company, a California corporation**

hereby GRANTS to **Outpost M-R, LLC, a California limited liability company**

the following described property in the unincorporated area of the County of **Siskiyou**, State of **California**:

PARCEL A:

Mail Tax Statements To: **SAME AS ABOVE**

PARCEL 1, per the Parcel Map for "Raymond C. Dancer," located in the Section 33, Township 42 North, Range 5 West, M.D.M., filed December 7, 1976, in Book 4, Parcel Maps, page 147, Siskiyou County.

PARCEL A-1:

TOGETHER WITH a small water system easement, a portion being 15 feet wide and a portion being 25 feet wide as said easements are shown on the are shown on the Parcel Map for "Raymond C. Dancer," located in the Section 33, Township 42 North, Range 5 West, M.D.M., filed December 7, 1976, in Book 4, Parcel Maps, page 147, Siskiyou County.

Assessor's Parcel No.: 020-350-270

PARCEL B:

PARCEL 4, per the Parcel Map for "Raymond C. Dancer," located in the Section 33, Township 42 North, Range 5 West, M.D.M., filed December 7, 1976, in Book 4, Parcel Maps, page 147, Siskiyou County.

PARCEL B-1:

TOGETHER WITH a small water system easement, a portion being 15 feet wide and a portion being 25 feet wide as said easements are shown on the Parcel Map for "Raymond C. Dancer," located in the Section 33, Township 42 North, Range 5 West, M.D.M., filed December 7, 1976, in Book 4, Parcel Maps, page 147, Siskiyou County.

Assessor's Parcel No.: 020-350-340

PARCEL C:

All that portion of the Southwest quarter of Section 33, Township 42 North Range 5 West, M.D.M., described as:

BEGINNING at the intersection of the East side of the County Road, leading from Edgewood to Mount Shasta, byway of Durney's Mill, with the South side of the California State highway leading from Shastina to Gazelle; thence running approximately South 89° East and in line with an old fence and across the State highway to a point on the West line of the Northeast quarter of the South west quarter of Section 33; thence South and along said quarter section line approximately 800 feet to an angle in rail fence in Kassnafer Field; thence approximately South 72° 30′ West, and in line with continuation of said fence to a point on the East line of the County Road, said point being approximately 810 feet Southerly from the intersection of the County Road with the California State Highway; thence Northerly along the East side of said County Road approximately 810 feet to the place of beginning.

EXCEPT THEREFROM those portions conveyed in the following deeds:

a. To Frank Augustus King, recorded June 30, 1950 in Volume 262 in Official Records, page 83

b. To IT. Krois and wife recorded December 27, 1956 in Volume 379 of Official Records, page 257.

c. To the State of California recorded April 20, 1965 in Volume 515 of Official Records, page 300.

Assessor's Parcel No.: 020-350-280

PARCEL D:

That portion of the Northwest one quarter of Section 4, Township 41 North, Range 5 West, and those portion of the Southeast one quarter of Section 32 and the Southwest one quarter of Section 33, Township 42 North, Range 5 West, M.D.M., in the County of Siskiyou, State of California described as follows:

Beginning at the Northeast corner of land described in the Deed to Gino Gerimia Michelon in Book 519 Page 646 of Official Records of said County, said point being a 3/4" Iron Pipe tagged R.C.E. 8433 as shown in R.S.B. 4 Page 75, from which the Northwest corner of said Section 4 bears N21°22'37" W 1469.40 feet, thence Northwesterly, and Southwesterly along the Northerly line of said land of Michelon the following bearing and distances, N73°45'47" W 161.03 feet, thence N41°26'237" W 136.65 feet, thence S50°25'27" W 178.23 feet to the Northwest corner of said land and the Northeasterly line of Parcel 1 of P.M.B. 1, Page 127, thence Northwesterly along said Northeasterly line N32°17'18" W 306.70 feet, thence continuing along said Northeasterly line N23°57'38" W 38.30 feet to the West line of said Section 4, thence North along said West N1°26'34"E 1040.45 feet to the Northwest corner of said Section 4, thence West along the South line of said Section 32, S89°49'02" W 1336.27 feet to the Southeast corner of the Southwest one quarter of the Southeast one quarter of said Section 32, thence North along the East line of said Southwest one quarter N00°03'50"E 408.00feet, thence leaving said East line S88°52'34"E 1530.55 feet, thence N84°58'01"E 661.01 feet to the centerline of pavement to Shasta Valley Road (County Road No 3L002) thence Southerly along the centerline of pavement of said Shasta Valley Road the following bearings and distances, thence S6°54'33"W 599.11 feet to the beginning of a tangent curve concave Westerly and having a radius of 2200.00 feet, thence Southwesterly along said curve through a central angle of 9°15'47" a distance of 355.68 feet, thence tangent to said curve S16°10'20"W 5.00 feet to the beginning of a tangent curve concave Easterly and having a radius of 2200.00 feet, thence Southwesterly along said curve through a central angle of 6°52'42" a distance of 264.11 feet, thence tangent to said curve S9°17'38"W 605.59 feet, thence leaving said centerline N80°42'22"W 16.99 feet to the point of beginning.

Assessor's Parcel No.: 020-160-240, 020-350-400 & 021-121-020

PARCEL E:

All that portion of the Northeast corner of said Section 5; thence South 89°49'02" West 487.74 feet to the Easterly line of Parcel 1 as shown on that certain Parcel Map recorded on January 24, 1973 in Parcel 1, Page 127, Siskiyou Records; thence South 24°00'14" East along the Easterly line of said Parcel 1 to the East line of said Section 5; thence North 1°24'09" East along the East line of said Section 5 to the point of beginning.

Assessor's Parcel No.: 021-130-250

PARCEL F:

The Northeast quarter of Section 33, Township 43 North, Range 6 West, M.D.B.&M.

Assessor's Parcel No.: 022-250-100

PARCEL G:

The Southwest quarter of the Northeast quarter, the West one-half of the Southwest quarter

of the Northeast quarter of the Northeast quarter of the Southeast quarter, the West one-half of the Northeast quarter of the Southeast quarter, and the West one-half of the Southeast quarter of the Northeast quarter of the Southeast quarter of Section 18, Township 42 North, Range 5 West, M.D.M.

Assessor's Parcel No.: 020-090-360 & 020-090-430

PARCEL H:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON COMPANY, a California corporation, recorded July 31, 1990, as Instrument No. 90008825, Official Records.

Assessor's Parcel No.: 020-100-240, 020-100-490, 020-100-520, 020-100-600 & 020-100-620

PARCEL I:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded November 25, 1987, as Instrument No. 87013915, Official Records.

EXCEPTING THEREFROM all that property described in that certain Boundary Line Adjustment for Mole-Richardson Company & Mills Ranch, Inc., Recorded October 12, 1990, as Instrument No. 90013357, Official Records.

AND FURTHER EXCEPTING THEREFROM all that property described in that certain Boundary Line Adjustment for Mole Richardson Company, Recorded March 22, 1993, as Instrument No. 93002965, Official Records.

Assessor's Parcel No.: 020-080-230, 020-090-140, 020-090-510, 020-100-610, 020-100-640 & 022-300-120

PARCEL J:

All that property described in that certain Boundary Line Adjustment for Mole-Richardson Company & Mills Ranch, Inc., Recorded October 12, 1990, as Instrument No. 90013357, Official Records.

EXCEPTING THEREFROM all that property described in that Grant Deed to Mills Ranch, a corporation, recorded October 12, 1990, as Instrument No. 90013358, Official Records.

ALSO EXCEPTING THEREFROM all that property described in that Grant Deed to Mills Ranch, a corporation, recorded October 12, 1990, as Instrument No. 90013362, Official Records.

AND FURTHER EXCEPTING THEREFROM all that property described in that certain Boundary Line Adjustment for Mole Richardson Company, Recorded March 22, 1993, as Instrument No. 93002965, Official Records.

Assessor's Parcel No.: 020-090-230, 020-090-260, 020-090-520, & 022-300-130

PARCEL K:

All that property described in that certain Boundary Line Adjustment for Mole Richardson Company, Recorded March 22, 1993, as Instrument No. 93002965, Official Records.

Assessor's Parcel No.: 020-090-090, 020-090-130, 020-090-600, & 020-090-630

PARCEL L:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded April 6, 1987, as Instrument No. 87003561, Official Records.

Assessor's Parcel No.: 020-090-150, 020-090-170, 022-300-110, 022-300-140, 022-300-150, & 022-300-180

PARCEL M:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded June 18, 1980, as Book 891, Page 244, Official Records.

Assessor's Parcel No.: 020-160-140, 020-160-160& 020-340-130

PARCEL N:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded January 26, 1981, as Book 908, Page 268, Official Records.

Assessor's Parcel No.: 020-160-230, 020-350-390, & 021-121-030

PARCEL O:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded August 11, 1981, as Book 924, Page 130, Official Records.

Assessor's Parcel No.: 020-350-230

PARCEL P:

All that property conveyed in that Grant Deed to MOLE-RICHARDSON CO., a California corporation, recorded May 5, 1980, as Book 888, Page 233, Official Records.

Assessor's Parcel No.: 020-150-011, 020-150-021, 020-150-030, 020-150-080, 020-150-091, 020-150-100, 020-160-020, 020-160-030, 020-160-050, 020-160-171, 020-160-181, 020-160-190, 020-160-200, 021-130-021, 022-310-101, 022-570-140 & 022-570-150

Date: **06/02/2017**

A.P.N.:

File No.: 4702-5395812 (PAB)

Dated: June 02, 2017

Mole-Richardson Co., LTD., a California corporation

By: Michael Parker

Michael Parker, President

By: Charles L. Valdez

Charles L. Valdez, Secretary

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)SS
COUNTY OF LOS ANGELES)

On JUNE 5, 2017, before me, Andrea G. Setterstrom, Notary Public, personally appeared CHARLES L. VALDEZ, MICHAEL C. PARKER, 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

Andrea G. Setterstrom
Notary Public

This area for official notarial seal

ANDREA G. SETTERSTROM
Commission # 2054037
Notary Public - California
Los Angeles County
My Comm. Expires Jan 30, 2018

Page 6

Appendix B

Parks Creek Ranch - Riparian Grazing Plan

Mole-Richardson Ranch
Draft Prescribed Riparian Grazing Management Recommendation (January 10, 2017)
Prepared by

Kenneth W. Tate, Professor and UCCE Rangeland Watershed Specialist, UC Davis California Certified Rangeland Manager #79; CA Department of Forestry and Fire Protection Certified Rangeland Professional #00-104; Society for Range Management

Carissa Koopmann Rivers, Livestock and Natural Resources Advisor, Siskiyou County, UCCE

Riparian Areas on the Enrolled Property

Approximately 7 miles of the Shasta River tributary, Parks Creek, flows through this Enrolled Property. There are five reaches of the Parks Creek that are divided into separate management zones. The southern portion of the Enrolled Property riparian corridor (Reach 1) has been adequately fenced on both sides since 2007 with one crossing and no water gaps. This area includes an abundance of gravel and large boulders with a dense stand of woody vegetation that continues into the middle reach (Reach 2) which contains cobbles and is heavily infested with blackberry and yellow starthistle throughout. Continuing south, Reach 3 is an eroded, channelized segment lying between the railroad bridge and the Bettencourt riparian pasture. The Bettencourt riparian pasture (Reach 4) is fenced on both sides and also has present blackberry and yellow starthistle which carries down into the southern-most reach (Reach 5). Reach is similar to reach 4, containing some blackberry and yellow starthistle. (see Figure 1.).

There has been limited weed management effort within reaches 2, 3 and 4, and it is highly likely that invasive weeds are inhibiting recruitment of native riparian vegetation, and are substantially competing with sparsely established native riparian vegetation along the entire reach – which has potential to support riparian woodies (e.g., willows), *Juncas* and *Carex* spp.

Riparian Grazing and Weed Management Recommendations

Grazing Management Objective. The Enrolled Property owner and manager have expressed interest in developing an adaptive grazing strategy to reduce weeds within the riparian corridor – while limiting negative livestock impacts to riparian native vegetation, streambank stability, and instream habitat quality. There is good reason to expect that prescribed riparian grazing with livestock can reduce the cover and competitive advantage of invasive weeds throughout the riparian corridor – improving odds for native riparian species recruitment. A primary target for riparian grazing in this case should be YST. Livestock impacts to other existing invasive species including; teasel, poison hemlock, and blackberry will primarily result from physical damage (i.e., lodging, breakage, trampling) during grazing bouts timed to target YST control. Strong research evidence demonstrates that timing (season) of grazing is key to effective YST management via livestock grazing. YST is a palatable and sought-after forage species for cattle at all growth stages prior to bolting and emergence of spiny seed heads (reproductive stage).

Recommended seasons of grazing

The emergence of YST seed heads will vary annually on this site due to weather conditions, thus creating need for annual flexibility (i.e., adaptive management) in timing of grazing to target YST. Seed head emergence is likely between mid-May and late-June, creating an early growing season target grazing period between early April and late-June, depending upon annual weather conditions and YST development. Spring grazing bouts are an excellent period to avoid unwanted livestock browse or physical damage on riparian woody species and herbaceous riparian species. During this time YST and non-native forage grasses will be at their most palatable and nutritious; thus, livestock will preferentially browse these species over the riparian species we desire to enhance. Certainly, browse on non-target riparian species must be monitored, and grazing adjusted in response (see recommended livestock management decision triggers section below).

Senescent YST plants can form barriers (i.e., "skeletons") in fall and deter livestock and native ungulates from foraging on growing YST during the following spring – reducing subsequent spring target grazing effectiveness. Thus, short term, intensive fall grazing by livestock can be used as a tool to physically breakdown YST "skeletons" and facilitate spring targeted grazing as needed. Fall grazing bouts must be monitored carefully to ensure limited livestock browse or physical damage on riparian woody species. During this time YST skeletons and forage grasses will have relatively low palatability and nutrition; thus, livestock could preferentially browse woody species over the weedy species we desire to reduce. Fall grazing bouts may be most effective following a germinating rain, softening of dry YST skeletons, and emergence of winter annual grasses and forbs – but soils should not be too wet and subject to excessive hoof damage and compaction.

Riparian Grazing Infrastructure.

At this point in the recommendation process, the riparian area through the Mole-Richardson ranch is divided by natural barriers and fences, into five zones; Reach 1, reach 2 (Lemos), Bettencourt riparian pasture, and reach 2.

Reach 1 – The goal at the upper zone is to maintain healthy woody riparian recruitment and to continue winter grazing to reduce invasive plant species cover. This riparian area has been fenced separately from the upland area since 2007. The current livestock watering source on the south side of Parks creek (Stewart Springs Pasture) is discharge from #2 via ditches/sump or down-stream creek access. The north side of Parks creek has access to Spring creek ponds, irrigation ditches and sumps.

Reach 2 – The goal of the middle zone is to encourage weed suppression and to create a riparian upland pasture for spring grazing on the east side of the creek. This can be accomplished by constructing a fence on the west side leaving sufficient space for feasible grazing management. This new pasture will need water access and designated crossing points to be determined after a season of monitoring livestock behavior. Grazing this east pasture and riparian area during spring months will be beneficial for weed management and will allow utilization of the upland rangelands while forage is valuable. This east pasture can also benefit from fall/winter grazing with use standards in place (see below). The current livestock water access in reach 2 is Parks

creek, ditch discharge into sumps and ponds. Once this area is fenced, drinking water will be provided through sumps/ponds and ditch via Spring Creek and/or #1 diversion tailwater. During dry portions of the year Parks creek crossing at the last resort will be accessible.

Reach 3 – The Lemos zone has unique elements including a railroad crossing that is undercutting, with signs of erosion. Here it is recommended that riparian standards are watched using standard management triggers (see below) and that the land manager observe closely and monitor. The railroad will need some constructive attention in the future and this has potential to alter management of the reach. The current water source at reach 3 is the Parks irrigation ditch.

Reach 4 (Bettencourt riparian pasture) – has been an existing riparian pasture since 2014 and has traditionally been grazed in the late fall, however, this pasture would benefit from spring and fall grazing for effective weed management of Yellow starthistle predominately, with secondary control on blackberry. The current livestock watering source at reach 4 is Parks creek or the Parks irrigation ditch.

Reach 5 – Creating a spring riparian pasture that will include riparian and upland grazing in the lower zone to increase weed management can be done by including a wire fence at the high water mark on the west side from the Bettencourt riparian pasture fence down to the north boundary of Enrolled Property. Monitor using the triggers below and rotate grazing with surrounding upland irrigated pastures as necessary. The current livestock watering access in reach 5 is Parks creek, irrigation ditches and ponds.

At this time the establishment of fixed, hardened livestock river crossings or drinking access points is not recommended. Livestock crossing/drinking behavior should be monitored during the first year of riparian grazing and this recommendation revisited and adapted as needed based upon livestock behavior and extent/intensity of stream channel disturbance.

Table 1. Management Objectives

Riparian Reach	Optimal Grazing season	Objective
1	Fall, Winter	Maintain healthy woody recruitment, reduce invasive species cover.
2	Spring	Reduce invasive species cover, create upland pasture.
3	Observe and monitor	Observe and monitor
4	Spring, Fall	Reduce invasive species cover.
5	Spring	Reduce invasive species cover, create riparian/upland pasture.

Recommended Livestock Management Decision Triggers.

Managers must have real-time indicators they can observe directly on the ground to make decisions about the readiness of riparian grazing units for grazing (e.g., sufficient forage, YST actively growing and ripe for grazing), and when livestock need to be moved from a riparian unit to achieve conservation goals (e.g., excessive browse on recruiting riparian woody plans <5ft in height, excessive streambank disturbance). For this site we recommend that browse on recruiting riparian woody plants (< 5ft in height – below cattle maximum browse height) during a grazing bout (spring or fall) be limited to no more that 20% of current year's leader growth within the riparian unit. We also recommend that physical hoof damage to streambanks be limited to no more than 20% of streambank per each side of stream. Once either one of these triggers are hit, livestock should immediately be rotated out of the riparian unit.

Table 2. Management Triggers

Indicator	Trigger
Browse use on recruiting riparian woody species < 5 ft. in height	20% of current years leader growth
Streambank Hoof action	20% of each side of a streambank

Recommended Grazing Monitoring and Documentation. Siskiyou County UCCE and UC Davis will collaborate annually to provide hands-on, in-the-field training on assessing real-time status of the livestock management decision triggers recommended in the section above. We will base this training on standard, national methods developed in the "Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation" (http://www.blm.gov/nstc/library/pdf/MIM.pdf). We recommend progress towards these management triggers be assessed every 1 to 2 days during all riparian grazing bouts. We recommend, and will provide training on, the establishment of permanent photo monitoring points in each riparian grazing unit. Photos should be taken at the beginning and end of each grazing bout (certainly within the first few years of grazing). Photo points should be established so that riparian woody species, weedy species, and streambank conditions can be clearly observed and thus conditions and outcomes documented. Finally, we recommend that dates on and off, and numbers of livestock species and class of livestock used during each grazing bout be recorded for each riparian grazing unit.

Recommended Supplementary Riparian Weed Management Practices. Grazing alone will likely not achieve the desired level of control on the weedy species on this site. Practices such as targeted herbicide application and burning are valuable components of an integrated weed management strategy. For example, prescribed low intensity burning to remove YST skeletons during fall or winter is an excellent practice to prepare a site for efficient spring targeted grazing, and/or targeted spring herbicide application. Targeted herbicide use should be considered a

conservation practice on this site – with herbicide type, timing, and rates selected based upon real-time site specific conditions. Targeted mowing is another key practice that should be available to managers on this site. As with grazing, all of these practices should be implemented in a manner that does not negatively impact native riparian species recruitment and survival, or streambank stability and instream habitat conditions. Technical support for site specific integrated weed management is available from Siskiyou County UCCE and other local technical service providers.

Note: Siskiyou County UCCE and UC Davis will collaborate in the coming year to provide workshops on integrated riparian weed management for conservation and agricultural outcomes.

Parks Creek Ranch - Riparian Grazing Reach Map

Appendix C - Parks Creek Ranch

Proposed Habitat Improvements

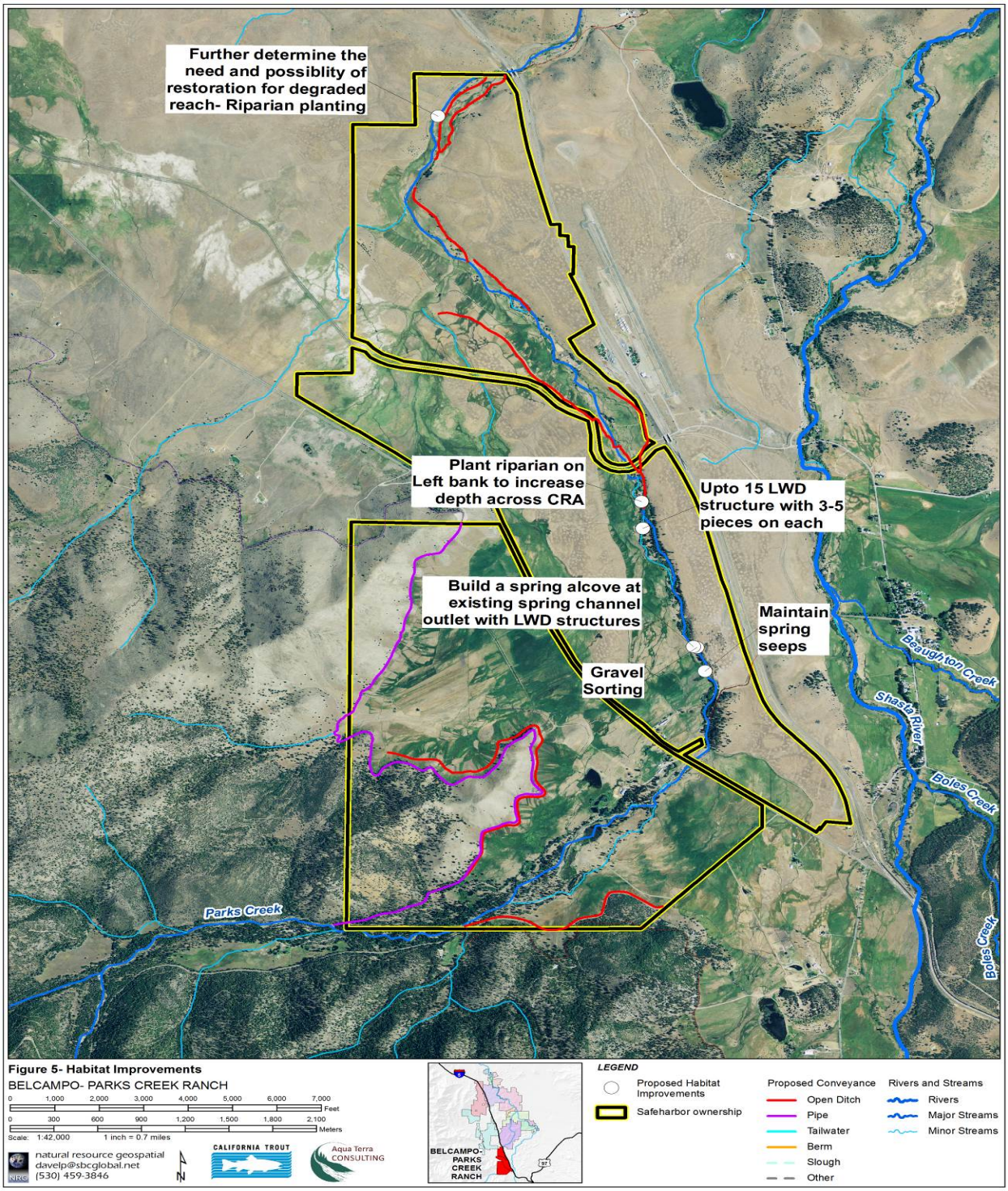

Figure 5. Proposed Habitat Improvements