SAFE HARBOR AGREEMENT

For Voluntary Habitat Enhancement Activities Benefitting
Southern Oregon and Northern California Coast Coho Salmon
(*Oncorhynchus kisutch*)
on Private Lands in the Shasta Valley, Siskiyou County, California

By and Between

The Hart Ranch

and

National Marine Fisheries Service
West Coast Region
California Coastal Office

March 2017

Table of Contents

1. Introduction

This Safe Harbor Agreement ("Agreement") is made and entered into on 21 February 2018, by and among Forrest Blair Hart, Susan S. Hart, individually and as Co-Trustees of The Hart Family 2003 Trust, Hart Cattle, LLC, a California limited liability company, Hart Cattle, Inc., a California corporation, Rabbit Hill, LLC, a California limited liability company, and Soda Springs LLC, a California limited liability company (collectively "Permittee") and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service ("NMFS"). Permittee and NMFS may be referred to individually as "Party" or collectively as "Parties" throughout this Agreement. This Agreement implements NMFS' Safe Harbor Agreement final policy (64 FR 32717) ("Safe Harbor Policy"), in accordance with the procedural and substantive requirements of section 10(a)(1)(A) of the Endangered Species Act ("ESA" or "Act") of 1973, as amended. The term Permittee shall include any successor trustees of the Hart Family 2003 Trust ("Trust") and any authorized agents of the Trust, Hart Cattle, LLC, Rabbit Hill, LLC, or Soda Springs LLC, including without limitation any manager of the limited liability companies.

Safe Harbor Agreements encourage voluntary conservation efforts by non-Federal landowners, such as Permittee, and provide those landowners with certainty that future property use restrictions will not be imposed if those efforts attract ESA covered species to their enrolled lands or result in increased numbers or distributions of covered species already present. Safe Harbor Agreements assure non-Federal landowners that future alteration or modification of their enrolled lands back to the pre-agreement condition—*i.e.,* Present or Elevated Baseline Condition, is permissible.

Permittee owns and/or operates the Hart Ranch, which is a fifth generation family-owned cattle ranch originally homesteaded in 1852. The Ranch is approximately 9,300 acres and is comprised of two main, noncontiguous tracts of land: the "Valley Floor" property and the "Butte Creek" property. The Valley Floor property is approximately 5,900 acres and contains the primary ranching activities, which consist of a cow-calf operation along with some crop farming. The Butte Creek property is about 3,400 acres and serves as the summer range for the cattle.

Permittee holds decreed water rights on the Little Shasta River and streams and tributaries thereto, which Permittee exercises for irrigation and stock watering in connection with its ranching operations on the Valley Floor property. Permittee's Valley Floor Property includes riparian lands adjacent to the Little Shasta River.

The Valley Floor property (Figure 1) provides habitat for Southern Oregon/Northern California Coast ("SONCC") Evolutionarily Significant Unit ("ESU") of coho salmon, which were listed as a threatened species under the ESA in 1997 (62 FR 24588), a decision reaffirmed in 2005 (70 FR 37160). NMFS released a final draft of the SONCC Coho Salmon Recovery Plan ("Recovery Plan") on September 30, 2014. The goal of the Recovery Plan is to recover the species so that protections of the ESA are no longer necessary.

This Agreement serves as the basis for NMFS to issue an enhancement of survival permit ("Permit") under ESA 10(a)(1)(A) for the incidental take of SONCC coho salmon covered by this Agreement for activities associated with their operation of the Hart Ranch, including the

potential future return of any enrolled lands to the Present or Elevated Baseline Condition. The Parties anticipate that the maximum level of take authorized under this Agreement and permit will never be realized. Permit issuance will not preclude the need for Permittee to abide by all other applicable Federal, State, and local laws and regulations that may apply.

2. Identification and Description of Enrolled Lands

The lands that are subject to this Agreement are limited to Permittee's Valley Floor property ("Enrolled Lands"), which are more particularly described in Appendix A of this agreement. The layout and location of the Enrolled Lands are shown in Figure 1. There are a total of 49 fields comprising a total of ~5,900 acres. Thirty-three fields comprising 1,887 acres are primarily irrigated by surface water and groundwater. Irrigation intensity varies among fields according to productivity and water availability, with available water supplies concentrated on the most productive fields when water supplies become limited. In general, irrigation begins in late March to early April depending primarily on spring air temperatures and precipitation. Irrigation is typically suspended in October, however, stock water rights allow the continued diversion of surface water throughout the winter.

The Hart Ranch is a third party certified non-hormone treated, antibiotic free, BVD-PI negative, non-GMO Project, GAP-Level 4 cow-calf operation running about 600 pairs. Calving typically begins in mid-December and lasts about 90 days. Cow-calf pairs are put onto non-irrigated winter range and fed supplemental hay put up the preceding summer or purchased off-ranch. As dry range is grazed down, pairs are moved onto spring and summer pasture, which may receive some irrigation. In the meantime, hay and grass fields are being irrigated and cut and baled to accumulate winter supplemental feed. Calves are video marketed and sold, shipping in mid-October to early-November, 45-60 days following age based weaning beginning in mid to late August. The ranch retains about 125 heifers for replacement. In the fall, cows and heifers are put into hay fields for late season grazing after irrigation is suspended and before calving begins again. Water for irrigation and stock watering purposes is primarily sourced from:

1. Little Shasta River – Obtained at Hart-Haight Irrigation Diversion
2. Groundwater Pumping
3. Evans Spring

Diversions from the Little Shasta River and Evans Spring to the Hart Ranch are made pursuant to the Shasta River Adjudication Proceeding Judgment and Decree entered December 30, 1932 (Shasta River Decree). A summary of these rights is provided in Table 1.

Table 1. Hart Ranch water rights to the Little Shasta River, Evans Spring and Martin Spring

Little Shasta River - Winter Stock Water				
Water Right Date (March)	**CFS**	**Time Period**	**Location**	**Purpose**
1857	0.15	November to March 1	Little Shasta River	Stock Water
1857	1.454	November to March 1	Little Shasta River	Stock Water
1860	0.499	November to March 1	Little Shasta River	Stock Water
Total	2.103			
Little Shasta River - Summer Irrigation and Stock Water				
Water Right Date (March)	**CFS**	**Time Period**	**Location**	**Purpose**
1857	1.604	March-November 1	Little Shasta River	Irrigation/Stock Water
1859	7.769	March-November 1	Little Shasta River	Irrigation/Stock Water
1860	3.253	March-November 1	Little Shasta River	Irrigation/Stock Water
1861	4.547	March-November 1	Little Shasta River	Irrigation/Stock Water
Total	17.173			
Springs -Year-Round Irrigation and Stock Water				
1855	2.355	Year-round	Evans Spring	Irrigation/Stock Water
1855	0.021	Year-round	Martin Spring	Irrigation/Stock Water
Total	2.376			

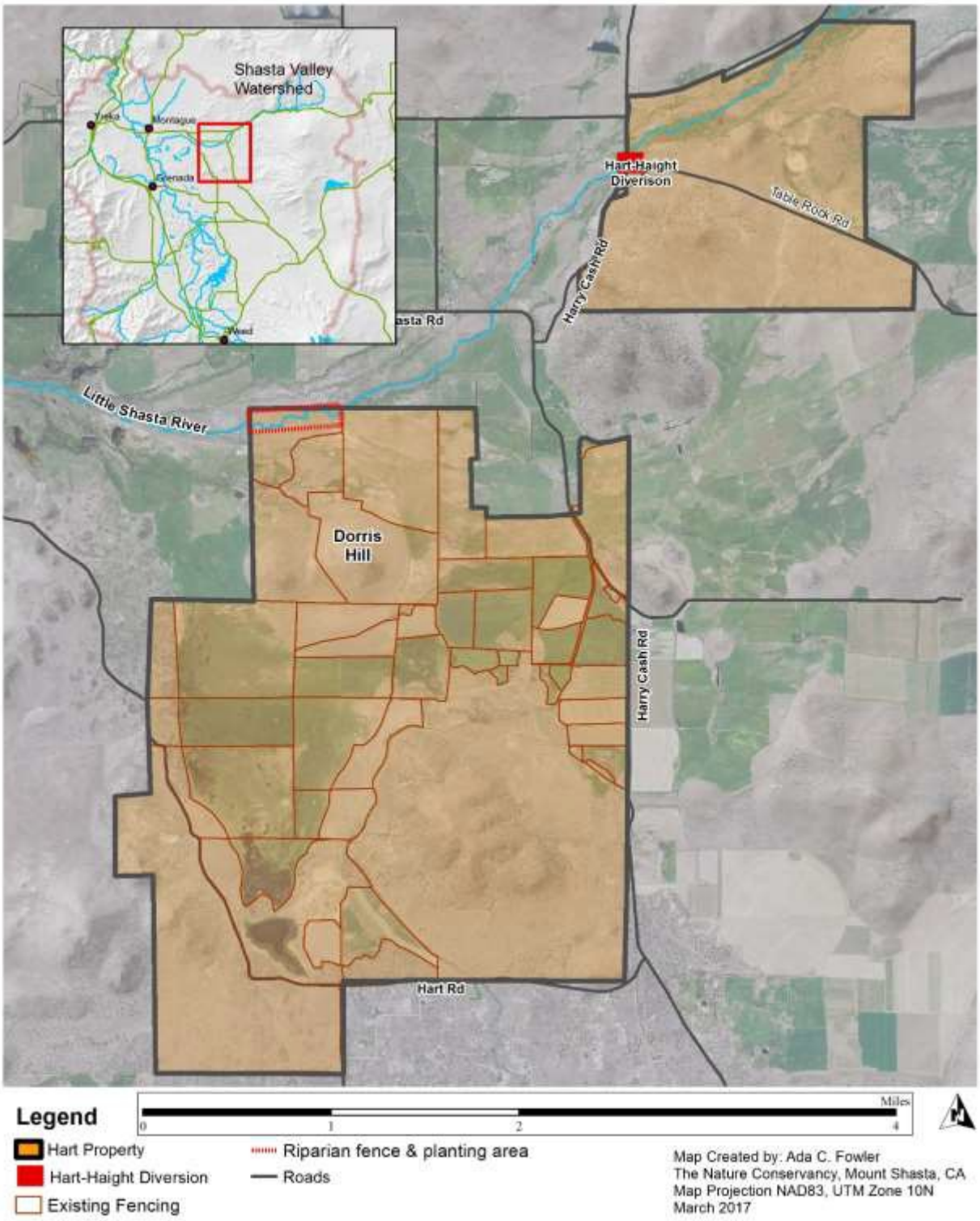

Figure 1. Hart Ranch Fields and Irrigation Features

3. Identification and Description of Covered Species

This Agreement covers the SONCC coho salmon, *Oncorhynchus kisutch.* The SONCC coho salmon are also referred to as the "Covered Species" in this Agreement. The Covered Species are listed as threatened under the ESA. The decision to list the SONCC coho salmon ESU was largely based on information regarding decreased abundance, reduced distribution, and degraded habitat. There are far fewer streams and rivers supporting coho salmon in this ESU now compared to historical conditions and numerous basin-specific extirpations of coho salmon have been documented. At the time of listing, the major factors contributing to the decline of the species were thought to originate from long-standing, human-induced actions (*e.g.*, habitat degradation, harvest, water diversions, and artificial propagation), combined with natural environmental variability (62 FR 24588, May 6, 1997). Currently, over three quarters of the independent populations that comprise the SONCC ESU are at high risk of extinction (NMFS 2014).

The Shasta River coho salmon population is at a high risk of extinction. Currently, juvenile population estimates are alarmingly low (Figure 2) and the adult returns are well below the depensation threshold identified in the SONCC Recovery Strategy (depensation threshold =531 adults) (Figure 3).

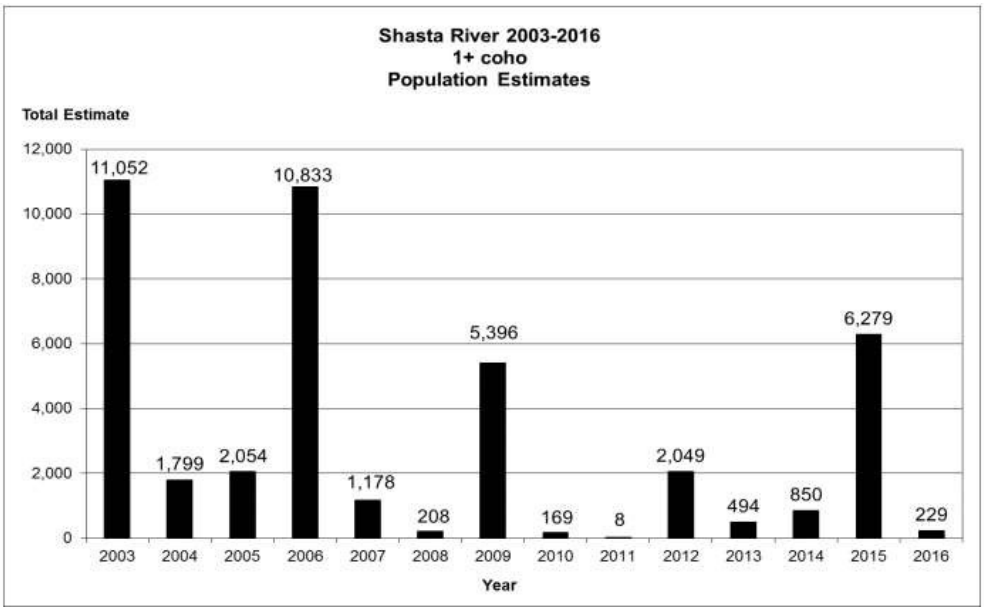

Figure 2. Shasta River 2003 – 2016 1+ coho population estimates (2016 was the 4th lowest production year in in the 14 years of estimates)

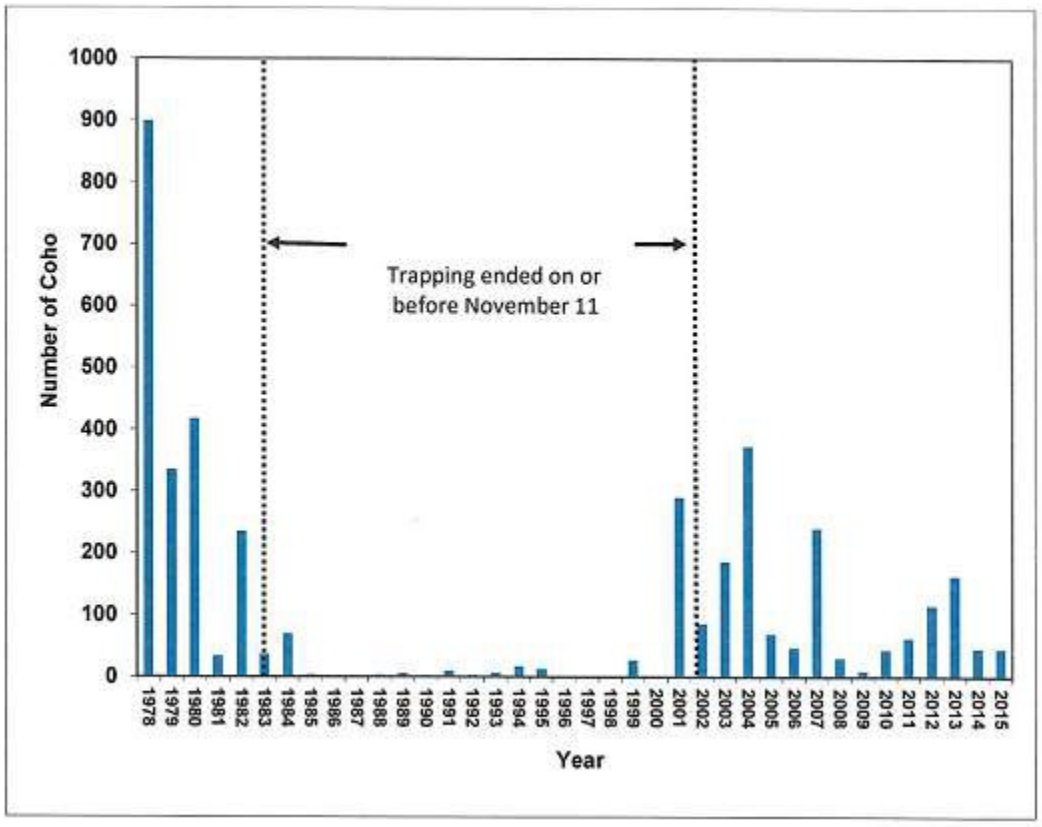

Figure 3. Returns of coho salmon to the Shasta River 1978 – 2015

The Little Shasta River reach on the Enrolled Lands historically functioned as Coho Salmon spawning and rearing habitat. Stream flows from November 1 to March 1 are probably sufficient to provide connectivity to the confluence with the Shasta River. However, a comprehensive assessment of habitat quality and quantity at that flow from the Hart's point of diversion to the confluence has not yet been conducted. Stream flow from March 1 to October 31 is heavily impacted by irrigation withdrawals. Visual observations of stream flow on the Enrolled Lands over multiple years indicate that the stream is generally dewatered downstream of the Hart-Haight Diversion during the irrigation season.

The Enrolled Lands upstream of the Hart-Haight Irrigation Diversion provides potential Covered Species spawning and juvenile rearing habitat throughout the year. The portion of the Enrolled Lands below the diversion may provide coho salmon spawning and rearing habitat from November 1 to March 1.

A. Scientific and Common Names of Covered Species

The common name of the Covered Species is SONCC coho salmon. The scientific name of the Covered Species is *Oncorhynchus kisutch*.

B. Covered Species Description and Distribution

Species description and distribution for the Shasta River population is taken directly from the 2014 Coho Recovery Plan (NMFS 2014).

The SONCC Coho Salmon ESU includes all naturally spawned populations of coho salmon in coastal streams between Cape Blanco, Oregon and Punta Gorda, California, as well as coho salmon produced by three artificial propagation programs: Cole Rivers Hatchery, Trinity River Hatchery, and Iron Gate Hatchery.

The Shasta River population is a core, Functionally Independent population within the Interior Klamath River diversity stratum; historically having had a high likelihood of persisting in isolation over 100-year time scales, and with population dynamics or extinction risk over a 100-year time period that are not substantially altered by exchanges of individuals with other populations (Williams et al. 2006) (Figure 4).

The diversity and complexity of the physical and environmental conditions found within the Shasta River basin created unique life history strategies and diverse coho salmon habitat. Historical in stream river conditions, fostered by unique cold spring complexes, created abundant summer rearing and off channel overwintering habitat that were favorable for production of coho salmon in the Shasta River basin.

The current distribution of coho salmon spawners is concentrated in the main stem Shasta River from river mile 32 to about river mile 36, Big Springs Creek, Parks Creek, and in the Shasta River Canyon (river mile 0 to 7). Juvenile rearing is also occurring in these same areas, and occasionally in lower Yreka Creek (Garwood 2012) and the upper Little Shasta River (Whelan, J., pers. comm. 2006). Coho salmon have also been observed utilizing aquatic macrophyte habitat in the Big Springs Creek area that is both complex and productive. This distribution is both a small fragment of the current Shasta River stream network and of the modeled IP in the basin.

Two of the three runs of coho salmon in the Shasta River are considered functionally extinct. Coho salmon runs in the Shasta Valley probably averaged a little more than 1,000 fish annually in the late 1950s, which already suggests a depressed population. In the early 1960s, the runs were estimated to average 600 fish. More recently, data suggest (Figure 3) the 2004 adult returning brood year class is the strongest, although still lower than historical numbers. Returns for the 2002 and 2003 brood classes have been extremely depressed.

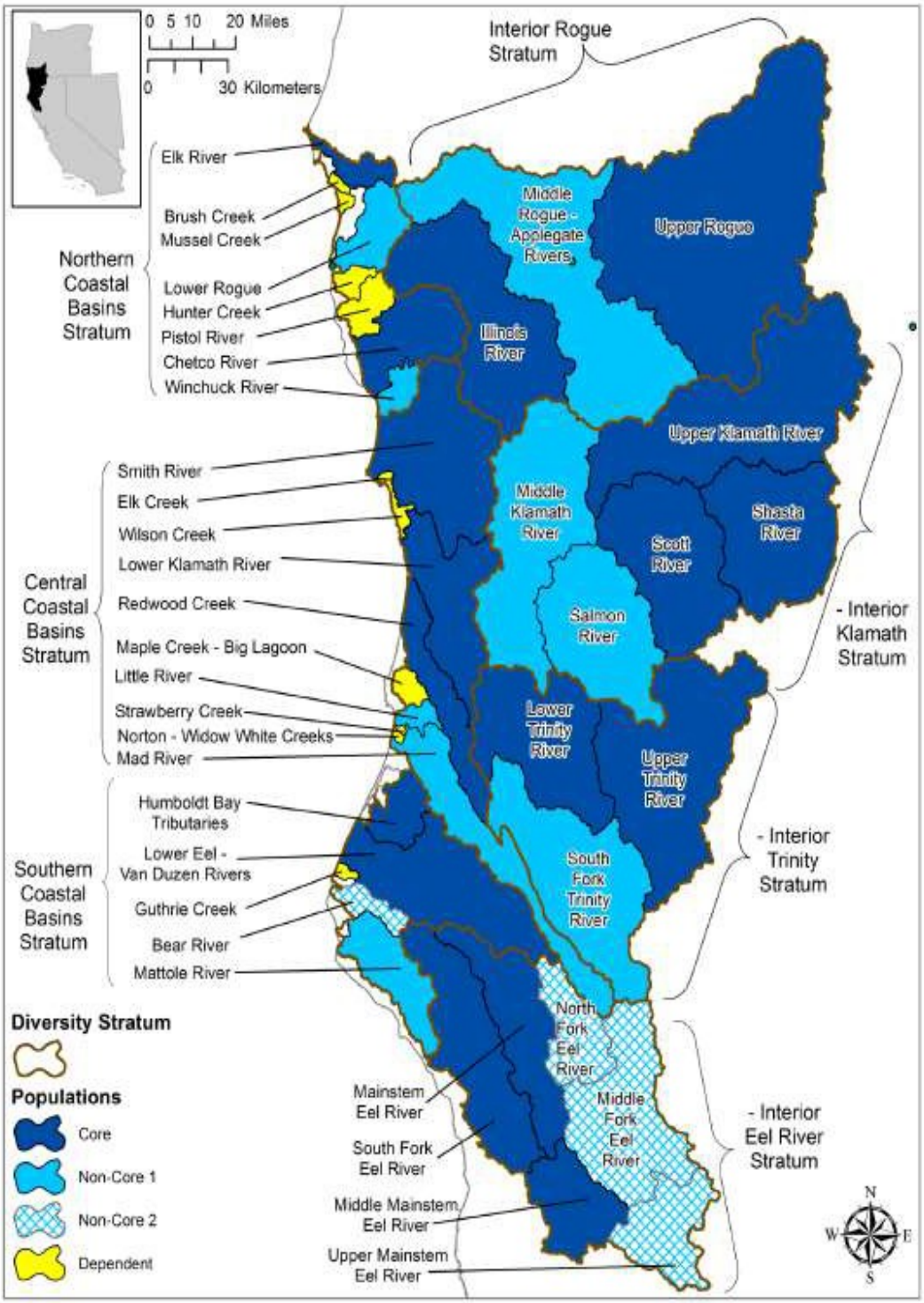

Figure 4. The role of each population in the recovery of the SONCC coho salmon ESU

Adult coho salmon have been observed spawning in the Shasta River Canyon, lower Yreka Creek, throughout the Big Springs Complex area, and in lower Parks Creek. Juvenile coho salmon have been observed rearing in these same areas, continuing further upstream, and in the upper Little Shasta River. Potential coho salmon habitat is distributed throughout the Shasta River basin and IP model shows the highest values (IP > 0.66) are throughout the Shasta Valley, in low gradient reaches, and near cool spring fed tributaries to the Shasta River and Parks Creek (Table 2).

Table 2. Tributaries in the Shasta River with high IP reaches (IP > 0.66) (Williams et al. 2006)

Stream Name	Stream Name
Shasta River[1]	Yreka Creek[1]
Big Springs Creek[1]	Little Shasta River[1]
Parks Creek[1]	Willow Creek[1]
Oregon Slough	Juniper Creek
Dale Creek	Boles Creek
[1] Denotes a "Key Stream" as identified in the State of California's Coho Recovery Strategy	

C. Threats to the Species

According to NMFS (2014) the key limiting threats to Shasta River coho are agricultural practices and dams/diversions. Key limiting stressors are impaired water quality and altered hydrologic regime.

D. Watershed Description[1]

The Shasta Valley is situated on the western side of the Cascade Range in far northern California. The Shasta River basin is uniquely located at the boundary between two of California's principal geomorphic provinces: the Klamath Mountains province and the Cascade Range province. The Klamath Mountains province includes the western portions of the Shasta River watershed, where varied bedrock geologic conditions comprised principally of Paleozoic sedimentary and metamorphic rocks give rise to the Scott and Siskiyou Mountains. These contiguous mountain ranges intercept moist air originating over the Pacific Ocean, creating a pronounced rain shadow over the Shasta River basin. Due to this rain shadow, precipitation is low (i.e., 12-18 inches/year) and diminishes considerably to the north and east. The majority of this precipitation falls as rain and snow between October and March, producing snowmelt and rainfall runoff along easterly draining and headwater tributaries to the Shasta River.

The eastern portions of the Shasta Valley are contained within the Cascade Range geomorphic province, an area underlain by Tertiary and Quaternary volcanic and debris flows, including a

[1] The watershed description section is summarized from NMFS 2014.

large Pleistocene debris avalanche. Westerly-draining tributaries to the Shasta River originate in these Cascadian volcanic rocks along the southern and eastern watershed boundaries. Flows in these tributaries are dominated by discharge from numerous groundwater springs sourced principally from high elevation snowmelt percolation through the porous volcanic rocks. Differences in underlying lithological conditions throughout the Shasta River basin generate spatial differences in hydrological conditions and dependent geomorphic conditions. Shasta Basin geology continues to be influenced by Cascadian volcanism, particularly a massive lahar from Mt. Shasta that covered much of the southern portion of the Shasta Valley approximately 350,000 years ago.

Hydrologic and dependent geomorphic conditions in the Shasta River downstream from Big Springs Creek are largely defined by spring flow from Big Springs Creek and other small springs and spring-fed tributaries. When they are not being used for irrigation, these freshwater springs provide cool water flow originating primarily from glaciers on Mt. Shasta, and this keeps the Shasta River watered throughout the year. The hydrology of the Shasta River has been and continues to be affected by Dwinnell Dam, surface water diversions, and interconnected groundwater pumping.

The construction of Dwinnell Dam and the Parks Creek diversion by the Montague Water Conservation District (MWCD) in about 1926 has altered the natural flow and sediment transport regime in both the upper Shasta River and lower Parks Creek and also blocked access to about 22 percent of the available fish habitat for anadromous salmonids. A reduction in the frequency of large flood flows along with the elimination of sediment transport processes downstream of Dwinnell Dam have resulted in coarsening of the bed and reduction in habitat diversity immediately downstream. The loss of woody debris, pools, side channels, springs, and accessible wetlands from land use conversions, have also contributed to reduced summer and winter rearing capacity for juvenile coho salmon. Further alterations to stream channel function from agricultural practices include a reduction in the number of beaver ponds, which provide important habitat attractive to rearing coho salmon.

Historic gold mining along Yreka Creek and the lower seven miles of the Shasta River occurred from the 1850s through the 1930s. Early mining activities were dependent on the development of water diversion systems to meet mining needs and gravel extraction was focused along the main stem Shasta River. Large dredge mining activities ended around 1950 in the Shasta River basin, including Yreka Creek, but riparian areas remain poorly vegetated and erodible in these sites. These past operations continue to be a threat for coho salmon along the west side of the Shasta River basin through legacy effects of remnant tailing piles, altered channel morphology, and potential remaining gold mining-associated pollution inputs.

Intensive timber harvest of the region surrounding the Shasta River watershed began in the 1850s, reached a peak in the 1950s, and is currently occurring at a much reduced harvest rate and intensity. Extensive road networks were built to facilitate the intensive timber harvest, and many of them are on steep, naturally fragile terrain. Increased sediment loads resulting from these roads and upslope timber harvesting (e.g., Parks Creek drainage) have accumulated in the Shasta Valley. This, along with hydraulic conditions characterized by unvarying spring-fed base flows, have resulted in the covering of substrate, decreased availability of spawning gravel, and simplified pool and riffle habitats. This sediment has not been thoroughly flushed since

construction of the Dwinnell Dam in 1926 and continues to be a threat to the Shasta River coho salmon population.

Wildland fire risk has increased in the Shasta River during the recent past due to fire suppression activities that have resulted in a buildup of understory fuels. These understory fuels were historically reduced by low-intensity fires that occurred every 12 to 19 years. Fire suppression activities over the past 50 years have inadvertently created a new fire regime around the margins of the Shasta Basin, which can be characterized by frequent high severity, stand-replacing fires.

The Little Shasta River Watershed is a small watershed contiguous with the larger Shasta Valley. After entering the Shasta Valley floor, the Little Shasta River runs through the far northwestern corner of the Hart Ranch. Agriculture practices and water diversions have reduced coho habitat quality and quantity throughout the basin. Habitat conditions upstream of the Hart-Haight Irrigation Diversion could provide habitat for freshwater life stages of coho salmon due primarily to the presence of springs that provide cool water. However, this has not yet been fully investigated.

E. Relevant Critical Habitat Designations, Conservation Strategies, Recovery Plans, or Agreements

NMFS has designated critical habitat for SONCC coho salmon as all accessible reaches of rivers (including estuarine areas and tributaries) between Cape Blanco, Oregon, and Punta Gorda, California (64 FR 24049, May 5, 1999). Critical habitat includes all waterways, substrate, and adjacent riparian zones below longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years).

In the critical habitat designation, NMFS identified five essential habitat types for SONCC coho salmon: (1) spawning areas; (2) adult migration corridors; (3) juvenile summer and winter rearing areas; (4) juvenile migration corridors; and (5) areas for growth and development to adulthood. Spawning and rearing are often located in small headwater streams and side channels. Adult and juvenile migration corridors include these tributaries as well as main stem reaches and estuarine zones. Growth and development to adulthood occurs primarily in near-and offshore marine waters, although final maturation takes place in freshwater tributaries when the adults return to spawn (64 FR 24049, May 5, 1999). Within these areas, essential features of coho salmon critical habitat include adequate substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space, and safe passage conditions. In addition, designated freshwater and estuarine critical habitat includes riparian areas that provide the following functions: shade, sediment, nutrient or chemical regulation, stream bank stability, and input of large woody debris or organic matter (64 FR 24049, May 5, 1999).

F. Description of the Present and Elevated Baseline Conditions of the Enrolled Lands

For purposes of this Agreement, "Baseline Conditions" means population estimates and distribution of and/or habitat characteristics and determined area of the Enrolled Lands that sustain seasonal or permanent use by the Covered Species at the time that the Agreement is

executed by the Parties. (Safe Harbor Policy at 32722.) For purposes of this Agreement, the "Elevated Baseline Condition" is the Baseline Condition along with new or improved fencing and fish passage improvements installed pursuant to Beneficial Management Activities #2 and #4 described in section 4.A below.

Potential Covered Species habitats associated with the Enrolled Lands consist of two stream sections located upstream and downstream of the Hart-Haight Irrigation Diversion. These sections are designated as:

- Upstream of Hart-Haight
- Downstream of Hart-Haight[2]

Habitat conditions necessary for coho salmon survival, which has been evaluated at the Enrolled Lands, include appropriate stream flows, stream temperatures, riparian vegetation conditions, prey base, and stream habitat types. This subset of habitat conditions necessary to coho salmon survival, represent those that the Permittee either contributes to or can influence with the management activities proposed in the SHA.

G. The Baseline Conditions of the Enrolled Lands Upstream of the Hart-Haight Irrigation Diversion

This portion of the Enrolled Lands extends approximately 1 mile from the Hart-Haight Irrigation Diversion to the upstream property boundary (Figure 5). The Baseline Conditions include riparian and stream habitat in this reach which provide potentially suitable conditions for listed coho (Appendix B). These conditions are a direct result of protection measures implemented and maintained by the Hart family for decades (Figure 6, and Appendix B). The Hart family only allows cattle access to this portion of the property to "flash graze" pasture land near the stream. Flash grazing is the practice of briefly (a couple of weeks) grazing a pasture with a high concentration of livestock to capitalize on an atypical forage resource. Flash grazing is also an economical method of controlling weeds. Thick riparian brush along the stream channel on this portion of the Enrolled Lands limits cattle access to short sections (less than 10 feet in width) of the stream, which they use for watering during the short grazing period Stream habitat surveys conducted in 2015 found little damage to stream banks due to the presence of cattle (see Figure 12).

[2] The Enrolled Lands downstream of the Hart-Haight diversion are not adjacent to the point of diversion. See Figure 1.

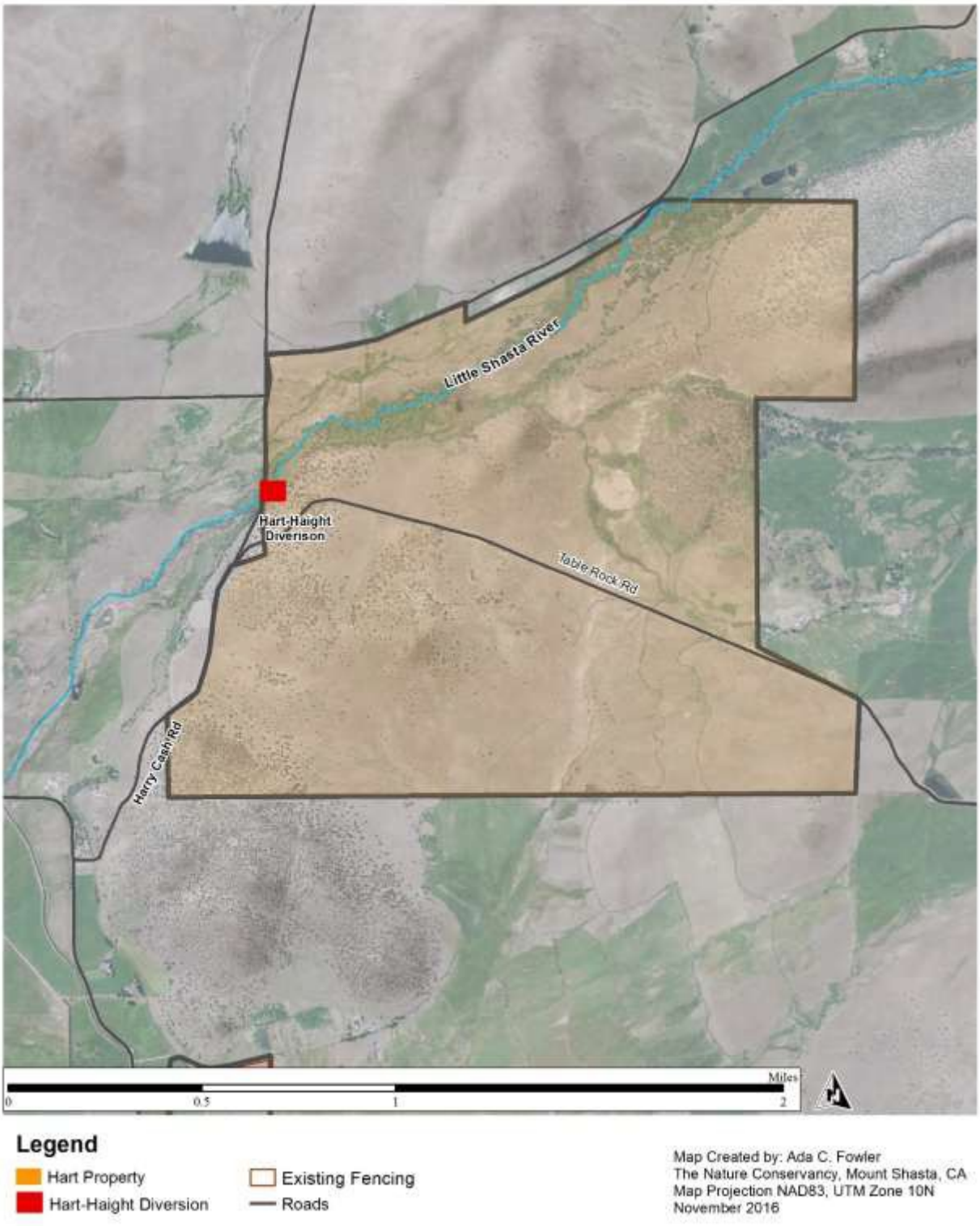

Figure 5. Map of Enrolled Lands at and above the Hart-Haight Irrigation Diversion– Little Shasta River. (See Appendix B for Photos)

Stream flow in the Upstream of Hart-Haight stream reach is impacted by irrigation withdrawals. The amount of water withdrawn varies by month, water year and water right priority of local landowners. According to data presented in the Shasta River Decree, landowners have rights to approximately 90 cfs of river and spring water sources in the Little Shasta River watershed. (Shasta River Decree, 1928).

Figure 6. Stream and riparian habitat just upstream of the Hart-Haight Diversion (See Appendix B for Photos and habitat summary data).

Historical average monthly stream flow (from the years 1957 through 1978) for the Little Shasta River is shown in Figure 7. These data were collected at a stream gage located upstream of all major water diversions. River flow downstream of the gage was likely higher prior to European development due to the contribution of instream flow from multiple springs. Water from these springs are now used for irrigation purposes during the summer and stock water year-round.

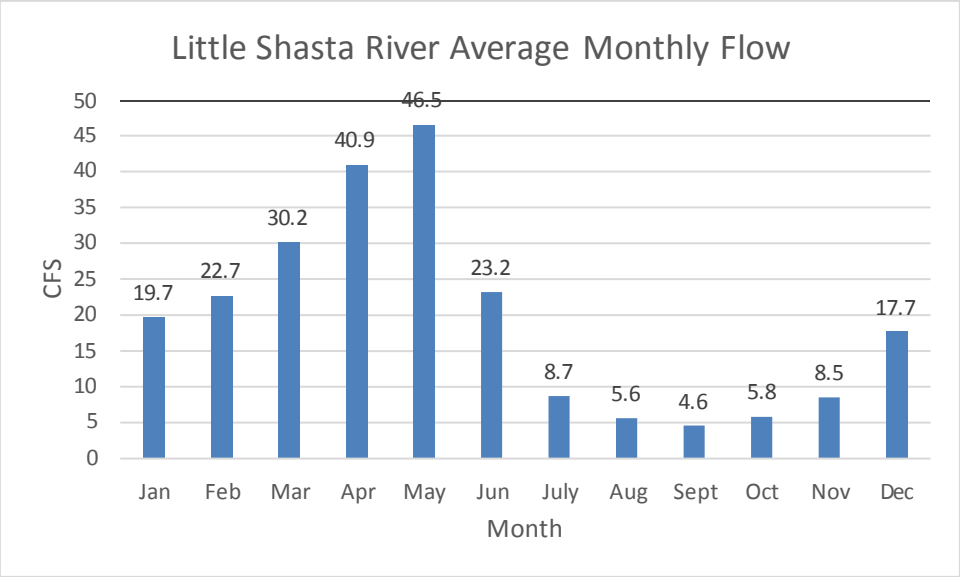

Figure 7. Little Shasta River Mean Monthly Streamflow at USGS Station 11516900 (Little Shasta River near Montague) for water years 1957-1978.

The Upstream of Hart-Haight reach of the Enrolled Lands provides habitat for coho salmon. The Musgrave diversion, which provides water for irrigation purposes to other landowners, is likely a partial barrier to adult and juvenile migrants during periods of low flow[3]. Any improvements to the diversion required to achieve fish passage criteria would be the responsibility of these other landowners.

H. The Baseline Conditions of the Enrolled Lands in the reach below the Hart-Haight Irrigation Diversion

Estimates of stream flow at the Hart-Haight Irrigation Diversion by month for 2013 and 2014 are shown in Figure 8. This data was collected by the Little Shasta River Watermaster. The data in this figure indicate that irrigation practices upstream of Hart property have reduced stream flow from March through October. Flows from November to March 1 are not measured but are assumed similar to those listed in Figure 6 as the vast majority of water diversions for irrigation are terminated during this time period.

[3] Because stream flow in this reach is controlled by upstream water users, the Harts' cannot control nor guarantee that water depth on their property will always be suitable for juvenile or adult coho migration.

Stream temperatures at the Hart-Haight Irrigation Diversion in 2014 ranged from 3.3 C to 26.4 C (Table 3). These temperatures were collected under what is considered drought conditions for the Little Shasta River. Average monthly stream temperatures ranged from 7.2 C (November) to 17.7 C (July). Stream temperatures are partially supportive of coho salmon despite the major reduction in stream flow in this reach resulting from irrigation activities of upstream property owners, although the maximum temperatures would likely cause coho movement in search of more suitable temperatures. Based on stream flow and temperature data the reach is considered to be Functionally At-Risk from March 1 to October 31 and Properly Functioning from November 1 to February 28. Although stream temperatures in December were quite high in 2014, they were likely similar to what occurred historically (post European development) in the reach during periods of drought.

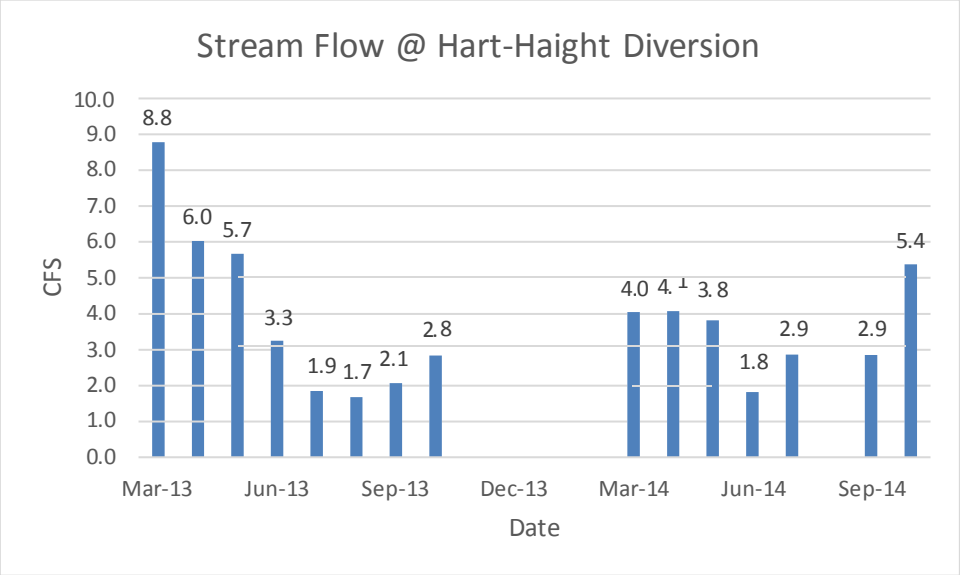

Figure 8. Stream flow (in cfs) as measured at the Hart-Haight Irrigation Diversion for 2013 and 2014. Stream flows for November through February are not available as these months fall outside of the irrigation season. Based on historical stream gage data for the Little Shasta River flows during this period are generally greater than 8 cfs (Figure 7). Watermaster did not collect August data, but note consistent rate in July and September allowing inference for August (*i.e.*, ~2.9 cfs).

The Hart-Haight Irrigation Diversion is likely passable for adult coho for the primary migration period of November 1 to February 1 when river flows are greater than 8 cfs; however no formal fish passage analysis has been recently conducted due to a lack of stream flow in the system.

Upstream passage of juvenile coho at the Hart-Haight irrigation diversion is likely impaired at both low and high flows but data are not available to confirm this assumption, as coho are currently not present in this portion of the Little Shasta River.

Table 3. Average, minimum and maximum stream temperature at Hart-Haight Diversion (2014).

	Average	Minimum	Maximum
May	16.0	9.1	26.4
June	15.1	9.6	20.4
July	17.7	11.9	22.5
Aug	15.9	11.3	21.1
Sept	13.7	10.0	17.3
Oct	10.7	7.1	14.2
Nov	7.2	3.3	11.4
Dec	11.9	4.8	24.8

I. The Baseline Conditions Downstream of the Hart-Haight Irrigation Diversion

The Downstream of Hart-Haight portion of the Enrolled Lands is located approximately 2.2 stream miles downstream of the Hart-Haight Irrigation Diversion (Figure 9). This portion of the Enrolled Lands encompasses approximately 0.62 miles of the Little Shasta River.

From March 1 through October stream flow in this portion of the Enrolled Lands consists primarily of seepage from irrigation activities, which wet a small portion of the channel at different locations (Figure 9). Stream flow in the non-irrigation season (November 1 to March 1) is likely greater than 8 cfs in most years according to historical stream gage data located upstream of all irrigation diversions. Stream flow and temperature from March 1 to October 31 is considered to be Not-Properly Functioning, while flows from November 1 to February 28 are considered Properly Functioning.

Riparian and stream habitat is in poor condition (i.e. Not-Properly Functioning) due primarily to past ranching practices that allow cattle full access to the stream and effects of water diversions located upstream of the Hart-Haight Irrigation Diversion that dewater the stream from late spring to early fall (Figure 10).

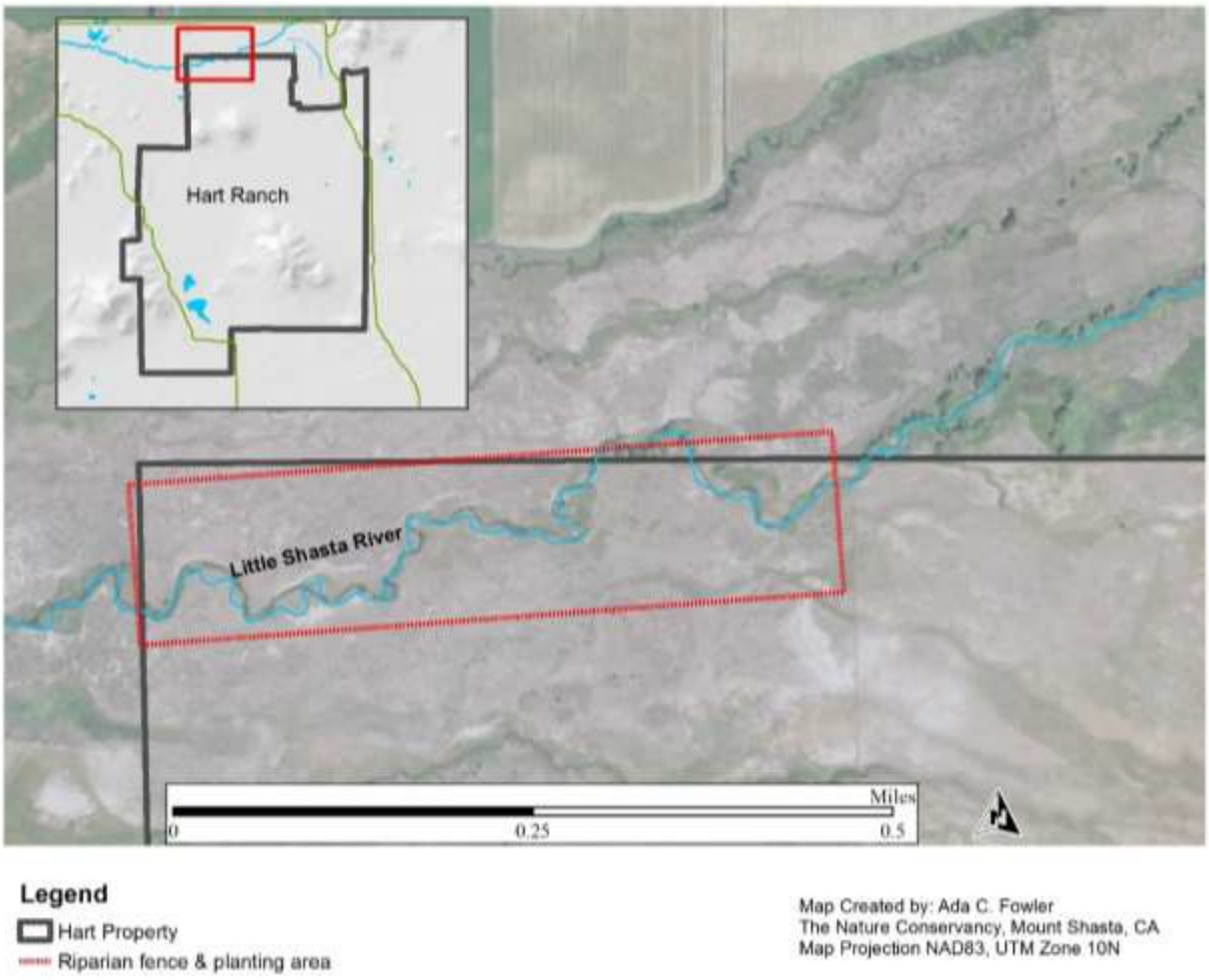

Figure 9. Lower Hart-Haight – Little Shasta River (See Appendix B for Photos)

Figure 10. Typical stream and riparian habitat conditions in the Downstream of Hart-Haight portion of the Enrolled Lands (See Appendix B for more photos).

J. Baseline Conditions of the Enrolled Lands Relative to Covered Species Abundance

SONCC coho salmon adult and juvenile production estimates for the Shasta River for the period 2001-2014 are provided in Table 4. Upwards of 80 percent of the adult coho migrating into the Shasta River have been of hatchery origin primarily from Iron Gate Hatchery.

According to the Recovery Plan, a total of three juvenile SONCC coho salmon were observed by California Department of Fish and Wildlife (CDFW) on Smith property in the Little Shasta River downstream of Hart Diversion in 2006 (NMFS 2014). Since that time there have been no reports of SONCC coho salmon presence on or migrating through or near the Enrolled Lands, though there have been limited surveys to document presence.

Table 4. Adult coho estimates, yearling coho production estimates and ratio of yearling coho produced per adult return for the Shasta River, Brood Years 2001-2013. (Data provided by CDFW staff)

Adult Year Brood Year	Adult Estimate*	Yearling year	Yearling point estimate	Yearlings produced per adult
2001	291	2003	11,052	38.0
2002	86	2004	1,799	20.9
2003	187	2005	2,054	11.0
2004	373	2006	10,833	29.0
2005	69	2007	1,178	17.1
2006	47	2008	208	4.4
2007	255	2009	5,396	21.2
2008	30	2010	169	5.6
2009	9	2011	19	2.1
2010	44	2012	2,049	46.6
2011	62	2013	494	8.0
2012	115	2014	850	7.4
2013	163	2015	6,279	38.5
Average				**19.2**

4. Description of Management Activities

This Agreement identifies two types of management activities: beneficial management activities and routine management activities. Beneficial Management Activities are the voluntary conservation actions to be undertaken by Permittee that NMFS has determined will benefit the Covered Species. Routine Management Activities are the routine land and water use activities for which Permittee has obtained incidental take coverage pursuant to the Permit issued in conjunction with this Agreement.

A. Beneficial Management Activities

The Recovery Plan (NMFS 2014) concluded that impaired water quality and altered hydrologic function are the key limiting factors for the Shasta River coho salmon population, and that juveniles are the limiting life stage for the population due to poor water quality and stressful conditions encountered during hot, dry summer months. Many portions of the Shasta River and its tributaries become disconnected when surface flows dry-up in the summer, limiting available rearing habitat, increasing water temperature, and decreasing survival of juvenile salmon. The two key limiting threats, those that most affect recovery of the population by influencing stresses, are agricultural practices and dams/diversions.

To address the stresses and threats in the watershed, the Recovery Plan (NMFS 2014) determined some of the highest priority recovery actions for the Shasta River coho salmon population are:

1. Increase instream flows by securing unused water rights and establishing a water trust to benefit salmon

2. Reduce water temperature, increase dissolved oxygen

3. Increase cold water in the Upper Shasta basin

4. Reduce warm tail-water inputs into the stream

5. Increase stream flows by improving the Grenada Irrigation Ditch Diversion to decrease impacts on coho salmon

6. Develop a plan to increase flows out of Greenhorn Dam to enhance coho salmon rearing habitat.

The primary beneficial management activities to be undertaken to accomplish a net conservation benefit for the Covered Species target recovery priorities 1-3 and include: (a) increasing instream flows in the Little Shasta River; (b) riparian habitat improvements below the Hart-Haight irrigation diversion; and (c) maintenance of the high quality stream and riparian habitat above the Hart-Haight irrigation diversion. Permittee will also undertake other miscellaneous beneficial management activities described in Section 4.A.1-6 below. Where Permittee responses or action depend on securing third-party funding, Permittee commits to active and good faith pursuit of such funding.[4]

1. Beneficial Management Activity #1: Increased Instream Flows in the Little Shasta River.

The Permittee holds decreed water rights on the Little Shasta River. Following execution of the Agreement and issuance of the Permit, the Permittee intends to use existing state law mechanisms to enhance Little Shasta River flows on the Enrolled Lands in the following three ways:

1) All of the Permittee's decreed water rights will be modified to add instream flow as a beneficial use in the form of a permissive dedication using Water Code Section 1707. This modification will provide the Harts with the increased flexibility and opportunity to leave their water rights instream for fish and wildlife and insure that the water is protected from downstream diverters.

2) 0.5 cfs of Permittee's most senior Little Shasta River decreed right will be permanently dedicated instream, year round, using Water Code 1707 following the successful third party funding and full implementation of the Hart stockwater/mainline

[4] On March 9, 2017, the California Wildlife Conservation Board announced that it is in the process of awarding a $2.2 million grant to California Trout (CalTrout) that is intended to provide a substantial portion of the funding of the beneficial management activities in this Agreement. Permittee is working cooperatively with CalTrout to secure that funding so that it is available to implement the Agreement.

conveyance project. This permanent dedication will be reliably available year round to the Little Shasta River based on the seniority of this 3rd priority 1857 water right.

3) Over and above the 0.5 cfs dedicated from stockwater improvements (2), an additional up to 1.0 cfs of water will be dedicated instream. A full 1.0 cfs will be dedicated in all years in which full 5th priority water rights are available to the Harts. Harts hold a proportional share of 5th priority water rights on the Little Shasta River. In years when flows decrease below the set benchmark, watermastering triggers proportional flow reductions to each 5th priority right holder. Hart's instream dedication will also be subject to this proportional reduction. However, Harts will maintain this dedication at no less than .475 cfs as poor water year regulation moves to 4th and 3rd priority rights. Harts hold a total of 1.604 cfs of 3rd priority water rights (1857 priority date).

Although the Permittee's flow enhancement dedications in 1) and 2) above are not compelled or required actions or measures under this Agreement, their willingness to make those dedications is premised on their successful completion of this Safe Harbor Agreement and receipt of an enhancement of survival permit from NMFS. NMFS understands and agrees that only flow enhancement action 3) above is a required and mandatory conservation measure in this Agreement, but it also understands that without this Agreement Harts may not implement actions 1) and 2), and therefore all of these actions are appropriately considered in evaluating net conservation benefit of this Agreement.

In summary, the best available data and analysis indicates that in most years Harts will dedicate 1.5 cfs to enhance Little Shasta River flows, and in the driest years 0.975 cfs of will be dedicated to enhance Little Shasta River flows. Flow availability to dedication was derived by taking measured historical flows by water year type, subtracting all first and second priority rights and 3rd priority rights held by other than Hart diverters, and plotting the remaining flow – that available to Hart dedication, (Figure 11). Two 'dry years' 2013 and 2015 are included; with 2015 notably representing the only year when measured spring snow pack equaled zero. Flow availability in 2015 at its lowest, in September, still was sufficient to provide 0.975 cfs.

The Parties anticipate that during the term of this Agreement, NMFS and or CDFW may monitor Little Shasta River flow conditions both above and below the Hart-Haight irrigation diversion and will pursue opportunities with other nearby landowners to improve Little Shasta River flow conditions in an effort to achieve the SONCC coho salmon recovery goals for the Little Shasta River. If NMFS identifies, based on best available science, a conservation need for additional instream flows in the Little Shasta River, Permittee agrees to consider dedicating additional water instream, beyond its initial 1.0 cfs dedication, during the term of this Agreement or in a new or renewed Agreement, as long as adjacent landowners are equitably sharing the burden of providing water for instream flows.

Achieves Progress toward Recovery Plan Priority #1: The foregoing beneficial management activities conservation measures will provide meaningful and beneficial incremental improvements toward addressing passage and rearing flows and stream temperature parameters to the benefit of listed species on and off of the Enrolled Lands.

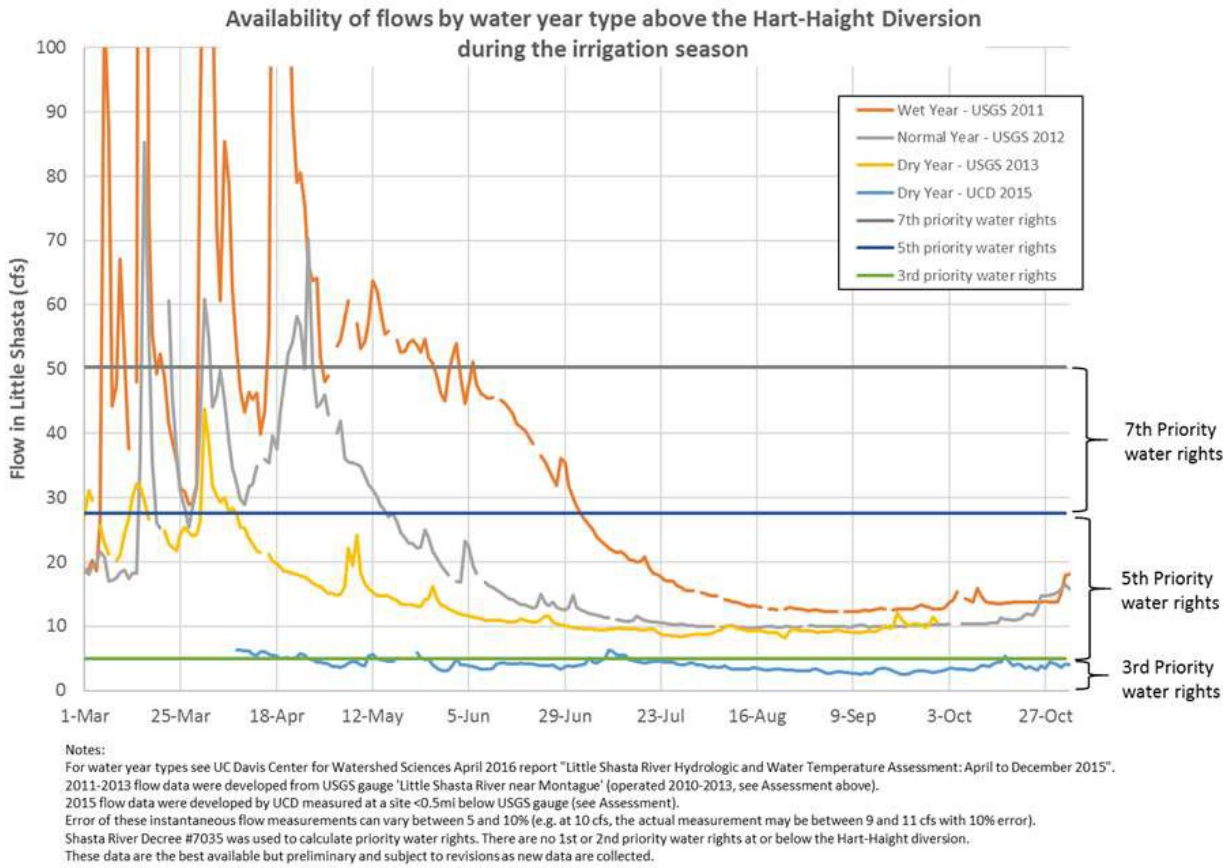

Figure 11. Availability of flows by water year type and priority above the Hart-Haight Diversion during the irrigation season.

2. Beneficial Management Activity #2: Riparian Habitat and Water Temperature Improvements below the Hart-Haight Irrigation Diversion

Permittee will install approximately 1.03 miles of riparian fencing on approximately 0.62 miles of the Little Shasta River to exclude cattle and create a 16-acre buffer of variable width (a minimum of 100 feet wide where possible) along the Little Shasta River where it crosses the Hart Ranch (downstream of the Hart-Haight irrigation diversion); provided that third party funding is provided for construction, installation, removal of existing fences and gates that are not effective at exclusion and replacement with new fences and gates effective at exclusion. Permittee will work diligently with CDFW and NMFS to obtain such funding. Existing and obsolete fences and other debris within the riparian zone will be removed and replaced by wildlife-friendly 4-wire fences and gates. Construction of the fence will occur well outside the ordinary high water mark ("OHWM"); the only activity that will be conducted within the OHWM will be removal of two or three obsolete fence remnants and other debris.

Additional opportunities to improve habitat parameters including riparian condition, floodplain connectivity, habitat complexity, and pool-riffle ratio, and spawning gravel on Enrolled Lands (downstream of Hart-Haight) will be pursued subject to securing third-party funding. It is anticipated that potential funders of these future additional measures will conduct or contribute to an evaluation of the Enrolled Lands and propose designs that deliver additional conservation benefits and be consistent with the Management Activities described in 6.B. below. Improvement of these habitat parameters may be achieved through additions of large woody debris, construction of off-channel ponds, beaver management and beaver dam analogues, and/or gravel augmentation, fencing and planting.

Approximately 0.62 miles along the Little Shasta over a planting area of up to 6.5 acres within this buffer will be replanted according to a detailed revegetation plan approved by the CDFW and NMFS. The plan will address the collection and propagation of locally-adapted plants, selection of appropriate planting sites, site preparation, planting, watering regime, maintenance and monitoring methods, and schedule; provided, however, that the plan will only be implemented if funding is provided by third parties. Permittee will work diligently with CDFW and NMFS to obtain such funding.

NMFS and CDFW have identified the potential use of Evans Spring water for temperature management and flow enhancement. NMFS and CDFW acknowledge that there are currently significant physical and legal impediments to the use of this water that are not likely to be resolved during the term of this Agreement. Notwithstanding these limitations, during the term of this Agreement, the Permittee will collaborate with NMFS and CDFW in efforts those agencies may undertake to remove the physical and legal limitations in ways that could allow for the use of Evans Spring water for Little Shasta River flow and temperature improvement. NMFS and CDFW agree that Permittee should not bear the financial burden of the actions that will be necessary to access and deliver Evans Spring water for the benefit of SONCC coho salmon.

Achieves Progress towards Recovery Plan Priorities 2 and 3: The foregoing beneficial management activities are expected to improve riparian condition, floodplain connectivity, habitat complexity, pool-riffle-flat water ratio, and potentially temperature improvements to the anticipated benefit of listed species and their habitats on and off of the Enrolled Lands.

3. Beneficial Management Activity #3: Maintenance of Properly Functioning Stream and Riparian Habitat above the Hart-Haight Irrigation Diversion

The ~1.0 miles of high quality stream and riparian habitat located on Hart land upstream of the Hart-Haight diversion will continue to be maintained and protected. Photos of the habitat conditions present in this area are included in Appendix B.

Achieves Recovery Plan Priorities 2 and 3: The foregoing beneficial management activity ensures the continued protection of Covered Species habitat on the Enrolled Lands that could otherwise be impaired by the Routine Management Activities identified below.

4. Beneficial Management Activity #4: Irrigation Works Diversion Structure Improvements and Screening

Permittee and CDFW will continue to maintain the juvenile screening system on the Hart-Haight irrigation diversion in good working order during all times that Permittee is diverting water from the diversion to the Hart Ranch.

Permittee will allow a cooperating entity to modify the Hart-Haight irrigation diversion to improve adult and juvenile passage conditions based on best available science. Any and all costs associated with modifications to the Hart-Haight irrigation diversion shall be borne by other parties. Permittee will cooperate with NMFS, CDFW and other nongovernmental entities to obtain funding for any needed improvements to the Hart-Haight irrigation diversion.

5. Beneficial Management Activity #5: Best Management Practices Use of Pesticides and Fertilizers.

NMFS will provide Permittee with best management practices for use of pesticides and fertilizers on the Enrolled Lands. Permittee agrees to use pesticides and fertilizers in a manner that meets or exceeds those practices. Further, Permittee shall apply pesticides, if any, in conformance with the pesticide label as well as any required buffers from anadromous streams in conformance with the Order entered in *Washington Toxics Coalition et al. v. Environmental Protection Agency et al.*, (W.D. Wash No. C01-132C) (January 22, 2004).

When possible, areas will be spot treated to reduce the amount of pesticides applied. Use of broad spectrum insecticides will be minimized or avoided as they are more likely to be harmful to non-target organisms including fish and aquatic insects if exposed. Chemicals with the lowest possible toxicity rating will be used when possible. Use of mobile, pre-emergent herbicides will be minimized or avoided as they can impact non-target plants in the riparian area leading to other impacts such as sedimentation. Avoid or minimize exposing aquatic resources by managing spray drift. This includes using modem spray equipment that does not limit your management choices {e.g., low volume or electrostatic sprayers); routinely checking for nozzle wear and calibrating the sprayer frequently throughout the growing season; turning off the sprayer along creeks, drainages and in the turn-around areas; supervising the spraying to minimize effects to surface waters.

6. Beneficial Management Activity #6: Access for Fishery Managers for Monitoring and Information Gain.

Permittee will provide reasonable access to the Enrolled Lands by NMFS and CDFW to conduct studies or engage in monitoring or other activities related to the recovery of the Covered Species, which is deemed by NMFS and CDFW to be valuable to evaluate the response of the habitat parameters to the conservation measures provided for herein. NMFS and CDFW also believe that such access and information will be useful in their efforts to demonstrate to other landowners in the Little Shasta River system the feasibility of undertaking voluntary conservation actions that contribute both directly and indirectly to the recovery of SONCC coho salmon while maintaining a working cattle ranch.

B. Routine Management Activities

The Enrolled Lands will be managed as needed to support cattle ranching operations. Other management activities required to operate the ranch include:

- Cattle grazing on Enrolled Lands.
- Diversion of Little Shasta River and Evans Spring water to irrigate 1,887+ acres of Enrolled Lands (Table 1).
- Cutting and harvesting of grass forage or other crops for cattle feeding, personal use or sale to other parties.
- Flash grazing of riparian habitat in the Upstream of Hart-Haight portion of the property.
- Pumping of groundwater for irrigation and stock water purposes.
- Use and maintenance of several home sites on the Enrolled Lands.
- Use and maintenance of existing roads on the Enrolled Lands.
- All other necessary and desirable actions related to the operation of the Hart Ranch that do not directly impact stream habitat or flows in the Little Shasta River.

5. Identification of Net Conservation Benefit

NMFS' Safe Harbor Policy provides that "net conservation benefit" means the cumulative benefits of the management activities identified in a Safe Harbor Agreement that provide for an increase in a species' population and/or the enhancement, restoration, or maintenance of Covered Species' suitable habitat within the Enrolled Lands, taking into account the length of the Agreement and any off-setting adverse effects attributable to the incidental taking allowed by the enhancement of survival permit. Net conservation benefits must be sufficient to contribute, either directly or indirectly, to the recovery of the Covered Species.

As described previously in this Agreement, improvement of habitat conditions, increased stream flow and improved water quality on the Enrolled Lands and downstream are all high priorities and would contribute to the recovery of the Covered Species (NMFS 2014). The Beneficial Management Activities to be implemented by this Agreement address the full range of habitat parameters and help address key limiting stressors identified in NMFS (2014), and, therefore, are also expected to result in demonstrable conservation benefits to the Covered Species. The Agreement provides for the unique study and monitoring of Covered Species and its habitat on private lands that will increase the knowledge of NMFS regarding the benefit of conservation measures in the Little Shasta River and the response of the Covered Species.

The Parties anticipate that implementation of this Agreement will produce a net conservation benefit to the Covered Species by ultimately:

1. Providing areas where existing potentially suitable habitat for the Covered Species will be maintained or increased in quantity and quality.

2. Providing access to habitat that is currently inaccessible to Covered Species.

3. Providing improvements to habitat that is unsuitable for the Covered Species.

4. Providing habitat for the Covered Species to increase in population numbers or distribution.

5. Providing for study and monitoring to increase knowledge of SONCC in the Little Shasta River.

6. Providing an example to the community that a cooperative government/private partnership can achieve biological goals for the Covered Species while maintaining the Permittee's land-use objectives.

In regards to item 6, recovery of the Covered Species will require restoration actions on private lands to provide continuity of quality habitat for the species. Some private landowners may be reluctant to participate in activities that will benefit listed species due to fear of regulatory impacts. The Parties anticipate that this Agreement will provide an example to other landowners that recovery objectives can be met with limited impacts on farming and ranching operations; thus encouraging others to participate in positive, voluntary conservation activities and increasing the probability of achieving recovery objectives for the Covered Species.

6. Incidental Take of Covered Species and Return to Baseline Condition

A. Incidental Take of Covered Species.

Safe harbor agreements are written in anticipation that take of Covered Species could occur at some point in the future. As long as Permittee is not in material breach of this Agreement and is in compliance with the Permit, Permittee shall not violate the ESA if it incidentally takes the Covered Species. For purposes of this Agreement, incidental take of Covered Species refers to take of Covered Species that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity, including the routine management activities set forth in Section 4 of this Agreement. "Take" shall have the same meaning in this Agreement as it does for purposes of the Act. Nothing in this Agreement authorizes the Permittee to intentionally or purposefully take covered species.

Any take that occurs as a result of a reduction in the habitat quality and/or quantity established as the Present or Elevated Baseline Conditions on the Enrolled Lands described in Section 4 of this Agreement is not authorized.

B. Return to the Baseline Conditions

Upon expiration or termination of this Agreement, Permittee is authorized to return the Enrolled Lands to the Elevated Baseline Conditions, even if doing so results in incidental take of the Covered Species. This Agreement specifies certain Beneficial Management Activities that are to

be implemented and maintained on the Enrolled Lands and that are necessary to achieve a net conservation benefit for the Covered Species over the duration of the Agreement (10 years). The Permittee is required to contact NMFS prior to returning to Elevated Baseline Conditions. The advanced notification must provide sufficient time for NMFS to rescue and relocate any Covered Species from the Enrolled Lands.

Although the Agreement and Permit authorize the Permittee to return to Elevated Baseline Conditions on the Enrolled Lands at the end of the Agreement there may be other obligations beyond those imposed by the ESA that apply. All other applicable Federal, State, Tribal, and local laws and regulations still apply and the Permittee must abide by these when returning the Enrolled Lands to Elevated Baseline Conditions.

Although the Agreement and Permit authorize the Permittee to return to Elevated Baseline Conditions on the Enrolled Lands at the end of the Agreement, it is at both NMFS' and the Permittee's discretion whether or not to renew the SHA when it is about to expire (after 10 years). NMFS will contact the Permittee at least 90 days prior to the expiration of the Agreement and Permit to notify the Permittee of the upcoming renewal opportunity. At that time, the Permittee can either request that NMFS renew the Agreement or allow the Agreement and Permit to expire. Prior to renewal NMFS must reevaluate the Agreement and Permit to determine if they will continue to meet the net conservation benefit standard at the time of renewal. If the status of the Covered Species has declined (on the Enrolled Lands or elsewhere) since the Agreement was signed, an "as-is" renewal of the Agreement may no longer meet the Safe Harbor Agreement issuance standards. Additional conservation measures or conservation measures that are more extensive than those required in this Agreement may be necessary.

C. Take Avoidance and Minimization Measures

The following actions are included in this Agreement to avoid or minimize take of the Covered Species:

1. The juvenile screening system located at the Hart-Haight Irrigation Diversion will be maintained in good working order in coordination with CDFW. The screening system will be checked weekly for debris and screen failure when flow is being diverted for ranch operations. In addition, NMFS will request that the Watermaster inform Permittee of any concerns with the screening system when checking diversion rates each month. Any problems identified in screen operations will be rectified and reported to CDFW.

2. Riparian fencing will be maintained in good working order at all times. Fencing will be inspected prior to allowing cattle grazing in lands abutting the stream. The fence will be repaired as needed in a timely manner.

3. Best management protocols for implementing riparian improvements will be developed and provided to NMFS prior to any work being conducted within 50 ft. of the stream channel.

4. Cattle grazing in the upstream of Hart-Haight portion of the Enrolled Lands will be limited to short periods of time to "flash graze" lands adjacent to the riparian zone. Water access points for cattle will be limited to current locations.

5. Pesticide and fertilizer use will be consistent with NMFS and EPA RPAs.

Flash grazing refers to highly monitored grazing management whereby a group of cattle (in this case 1.5-yr old heifers - no calves) are used to manage the habitat. Based on the year, feed growth conditions, etc, cattle will be placed in an area to 'manage down' the feed to gain a 4-5" stubble height in the forage. The time of exposure is dictated by the forage height and condition, but typically the grazing period does not exceed 24 days. The area of grazing is monitored to determine stubble height and cattle effects to riparian area and stream channel. Due to the density of the riparian forest cattle access is limited to small portions (<10 ft.) of the stream (Figure 12)[5].

Figure 12. Stream bank erosion as a result of cattle grazing in the riparian zone of the Little Shasta River.

[5] Stream surveys conducted on 10/30/15 found only one small (< 10 ft. wide) section of stream where cattle activity had eroded the stream bank.

7. Assurances to Permittee Regarding Incidental Take

This Agreement provides Permittee with assurances that efforts to promote the conservation and recovery of the Covered Species on the Enrolled Lands will not result in additional restrictions on the use of the Hart Ranch.

The Permit will authorize Permittee to take SONCC coho salmon incidental to the rights, obligations, and activities contemplated in this Agreement; provided that such take is consistent with maintaining the Present and Elevated Baseline Conditions identified in Section 3 of this Agreement or returning the Enrolled Lands to the Baseline Conditions.

8. Adaptive Management

The Permittee will work cooperatively with NMFS and CDFW to adapt the Agreement as needed to best achieve SONCC coho salmon recovery objectives and ranch operations over time.

9. Monitoring and Reporting

The Permittee will provide a report to NMFS and CDFW by December 31 each year to document compliance with the terms of the Agreement. The report will include the following:

1. Brief description of all conservation and beneficial management Activities implemented each year.

2. Copy of Watermaster records showing flow diverted at the Hart-Haight diversion and releases to the downstream reach of the Little Shasta River below Hart-Haight irrigation diversion. Permittee will make a request of the Watermaster that this information be provided as frequently as possible and will transmit it to NMFS and CDFW when received.

3. Record of daily stream temperatures on Hart-Haight property downstream of diversion. Data will include maximum, minimum and mean temperatures as recorded by hobo monitors deployed below (near) the diversion structure.

4. Summary of any operational problems with the juvenile screening system located at the Hart-Haight irrigation diversion. Any improvements or repairs undertaken during the year will be described.

5. A summary of any Covered Species incidentally taken by Permittee in carrying out the activities authorized by this Agreement.

To document additional habitat status and effectiveness of the conservation measures implemented, Permittee will allow NMFS and CDFW access to the property a minimum of two times each year. Permittee will also allow NMFS or its representative access to Enrolled Lands as needed to capture and relocate any affected Covered Species and to conduct spawning and juvenile coho surveys as needed each year to document changes in Covered Species abundance on the Enrolled Lands.

10. Duration of Agreement and Permit

This Agreement becomes effective upon issuance of the Permit by NMFS. Both the Agreement and the Permit shall be in effect for ten (10) years beginning on the issuance of the Permit. The Agreement and the Permit may be extended upon mutual, written agreement among the Parties. Upon expiration of the Agreement and the Permit, Permittee may return the Enrolled Lands to the Elevated Baseline Condition.

11. Additional Terms

A. Modification of the SHA.

Either Party may propose amendments to this Agreement, as provided in 50 CFR 13.23, by providing written notice to, and obtaining written concurrence of, the other Party. A proposed modification notice shall include a statement of the proposed modification(s), the reasoning for the modification(s), and the expected results ("Proposed Modification Notice"). The Parties will use commercially reasonable efforts to respond to the Proposed Modification Notice within 60 days of receipt. Modifications become effective on the Parties' written concurrence, unless the Parties agree to an earlier or later effective date.

B. Amendment of the Permit.

NMFS may revise the Permit by agreement of the Parties. Reasons for revising the permit include, but are not limited to, modification of the SHA, agreed upon adaptive management, new significant information.

C. Permit Suspension or Revocation.

NMFS may suspend or revoke the Permit in accordance with the laws and regulation in force at the time of such suspension or revocation. NMFS may also, as a last resort, revoke the Permit if continuation of permitted activities would likely result in jeopardy to the Covered Species (50 CFR 13.28(a)). In such circumstances, NMFS will exercise all possible measures to avoid revoking the Permit.

D. Remedies; No Monetary Damages.

Each Party shall have all remedies otherwise available to enforce the terms of this Agreement and the Permit, except that no Party shall be liable for damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement, or any other cause of action arising from this Agreement.

E. Dispute Resolution.

The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

F. Availability of Funds.

Implementation of this Agreement by the NMFS is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. or state treasuries. The Parties acknowledge that NMFS will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

G. No Third-party Beneficiaries.

This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties of this Agreement with respect to third parties shall remain as imposed under existing law.

H. Relationship to the ESA and other Authorities.

This Agreement and activities conducted hereunder are subject to all applicable federal, state, and local laws and regulations. Nothing contained in this Agreement is intended to limit the authority of the United States to fulfill its enforcement responsibilities under applicable federal or state law.

I. Succession and Transfer.

If the Enrolled Lands are sold, transferred, or otherwise conveyed, in whole or in part, during the term of this Agreement to another non-Federal entity, NMFS will regard the new owner or transferee as having the same rights and responsibilities with respect to the Enrolled Lands and entitled to receive the benefits under this Agreement and the Permit; provided that the transferee agrees to become a party to this Agreement.

J. Termination of Agreement.

Permittee may terminate this Agreement for circumstances beyond the control of Permittee. In such circumstances, Permittee may return the Enrolled Lands to the Elevated Baseline Conditions identified in this Agreement, even if the Beneficial Management Activities have not been fully implemented; provided that Permittee gives NMFS written notice prior to carrying out any activity likely to result in the taking of the Covered Species. On the Permittee's returning the Enrolled Lands to the Elevated Baseline Conditions under these circumstances, the Permit will terminate. If Permittee terminates this Agreement for any other reason, the Permit shall immediately cease to be in effect.

K. Other Listed Species.

There is the possibility that other listed species may be present in the future on the Enrolled Lands as a direct result of the management activities specified herein. In the event that any non-

covered species that may be affected by covered activities becomes listed under the Act, the Parties shall work together in good faith either to amend this Agreement, and the Permit, to cover such other species or otherwise to confer upon the Permittee similar assurances with respect to such other species as are described above for the Covered Species.

L. Baseline Adjustment.

The Present and Elevated Baseline conditions described in Section 3 of this Agreement may, by mutual agreement of the Parties, be revised to reflect new circumstances and a new baseline agreed upon, for circumstances occurring during the term of this Agreement which are beyond the control of Permittee.

12. Responsibilities of Parties.

NMFS responsibilities include:

1. Upon satisfaction of all other applicable legal requirements, NMFS will issue an enhancement of survival permit to the Permittee in accordance with ESA section 10(a)(1)(A), authorizing take of SONCC coho salmon as a result of lawful activities within the Permittee's property. The permit term shall be for a minimum of 10 years.

2. Provide technical assistance to the Permittee, when requested.

3. Assure adequate monitoring through review of the annual report prepared by the Permittee.

4. Provide the Permittee with a minimum of 48 hours advanced notification prior to accessing the Permittee's Enrolled Lands, unless the Permittee agrees to less notification.

5. If warranted, recommend procedures and actions that the Permittee may implement to further minimize any effects based on review of annual reports, site visits and emerging best available information.

The Permittee responsibilities include:

1. Comply with this Agreement and implement the responsibilities applicable to Permittee as described in this Agreement.

2. Notify NMFS 60 days prior to any planned activity that they reasonably anticipate could result in destruction of habitat for Covered Species on their Enrolled Lands, and provide any employee or designee of NMFS access to their Enrolled Lands an opportunity to capture and relocate any affected Covered Species.

3. Provide reasonable access to the Enrolled Lands for NMFS, or their representatives, to determine compliance with this Agreement.

4. Monitoring the implementation and progress of the Management Activities in Section 5 of the Agreement and providing NMFS with the status of those activities in an annual report.

5. Notify NMFS immediately by telephone if mortality or injury of the Covered Species is observed and document the date, time and circumstances.

The Parties will also work cooperatively on other issues as reasonably necessary to further the purposes of the Agreement.

13. Notices.

Any formal notice or other from communication given under terms of this Agreement shall be given personally, or by first class mail, postage prepaid along with a courtesy copy of the notice sent via email. Any notice shall be delivered or addressed to the Permittee and NMFS at the mailing addresses and email addresses set forth below or at such other address as shall be designated by written notice by the parties.

If notice is given to the Permittee, it shall be given as follows:

Forrest Blair Hart
2821 Harry Cash Road
Montague, CA 96064
Email: hartranching@gmail.com

If notice is given to the NMFS, it shall be given as follows:

Assistant Regional Administrator
California Coastal Office
National Marine Fisheries Service
777 Sonoma Ave, Room 325
Santa Rosa, California 95404
Email: alecia.vanatta@noaa.gov

National Marine Fisheries Service:

_____, for

Barry A. Thom
Regional Administrator
National Marine Fisheries Service
West Coast Region

21 Feb 2018
Date

Permittee:

FOREST BLAIR HART

Forrest Blair Hart

Dated: 19 Feb 2018

SUSAN S. HART

Susan S. Hart

Dated: 19 Feb 2018

HART CATTLE, LLC

By: Forrest Blair Hart, Manager

Dated: 19 Feb 2018

HART FAMILY TRUST, dated 2004

By: Forrest Blair Hart, Trustee

Dated: 19 Feb 2018

RABBIT HILL, LLC

By: Forrest Blair Hart, Manager

Dated: 19 Feb 2018

SODA SPRINGS, LLC

By: Forrest Blair Hart, Manager

Dated: 19 Feb 2018

HART CATTLE, INC.

By: Forrest Blair Hart, President

19 Feb 2018

References

NMFS. 2014. Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon (*Oncorhynchus kisutch*).

Shasta River Water Decree. 1928-32. In the Superior Court of the State of California In and For the County of Siskiyou. In the matter of the determination of the relative rights, based upon prior appropriation, of the various claimants to the waters of Shasta River and its tributaries in Siskiyou County, California.

Williams, T.H., E.P. Bjorkstedt, W.G. Duffy, D. Hillemeier, G. Kautsky, T.E. Lisle, M. McCain, M. Rode, R.G. Szerlong, R.S. Schick, M.N. Goslin, and A. Agrawal. 2006. Historical population structure of coho salmon in the Southern Oregon/Northern California Coasts evolutionarily significant unit. NOAA-TM-NMFS-SWFSC-390.

APPENDIXES

Appendix A – Land Description

Owner	APN	Acres
Trust	039-170-310-000	64.11
Trust	039-130-140-000	44.00
	Sub-total:	108.11
RLLC	039-170-270-000	214.09
RLLC	039-170-280-001	685.30
RLLC	039-130-100-000	222.00
RLLC	039-140-080-000	160.00
RLLC	039-170-150-000	80.00
RLLC	039-170-290-000	1400.00
RLLC	039-182-010-000	480.00
Sub-total:		3241.39
SLLC	039-181-010-000	639.90
SLLC	039-170-300-000	600.00
SLLC	039-160-160-000	80.00
SLLC	011-030-070-000	281.00
SLLC	039-120-170-000	395.80
SLLC	039-110-150-000	50.00
SLLC	011-060-010-000	531.00
Sub-total:		2577.70
Grand Total:		5927.20

RLLC=Rabbit Hill LLC
HLLC= Hart Cattle LLC: operating company, does not own real property, only cattle and equipment
SLLC= Soda Springs LLC
Hart Family Trust Dated 2004

Appendix B – Habitat Data and Photos Upstream and Downstream of Hart-Haight Stream Reach

Table A-1: Upstream of Hart-Haight Stream Reach Habitat Data

	Glide	Pool	Small Cobble Riffle	Large Cobble Riffle
Length (ft.)	810	1,413	2,453	179
Average Width (ft.)	15.1	14.9	12.8	9.3
Average Depth (ft.)	1.0	2.5	0.5	0.6
Percent of Habitat	16.7%	29.1%	50.5%	3.7%
Total Length	4,855			

Note: A portion of the stream consisting of a large beaver complex could not by surveyed. Data collected on October 30, 2015. Flow at 2.5 cfs up to Musgrave Diversion. 5.0 cfs upstream of Musgrave Diversion.

Habitat Photos-Upstream of Hart-Haight Diversion

Photo 1 – Habitat Unit 1- Pool: 43 ft. Length, 12 ft. Width, Max Depth 3.9 ft.

Photo 2 – Habitat Unit 2 – Riffle: 40 ft. Length, 14 ft. Width, Max Depth 0.3 ft.

Photo 3 – Habitat Unit 3 – Glide: 44 ft. Length, 17 ft. Width, Max Depth 1.0 ft.

Photo 4 – Habitat Unit 5 – Pool: 86 ft. Length, 17.3 ft. Width, Max Depth 2.9 ft.

Photo 5 – Habitat Unit 6 – Riffle: 35 ft. Length, 18 ft. Width, Max Depth 0.4 ft.

Photo 6 – Habitat Unit 10 – Riffle: 15 ft. Length, 7 ft. Width, Max Depth 0.5 ft. (small pool at end of riffle)

Photo 7 – Fish Return Pipe at Musgrave Diversion.

Photo 8 – Habitat Unit 16 – Riffle, 30 ft. Length, 8 ft. Width, Max Depth 0.6 ft. Cattle have access to the stream.

Photo 9 – Habitat Unit 19 – Pool with Large Wood, 21 ft. Length, 14 ft. Width, Max Depth 2.0 ft.

Photo 10 – Habitat Unit 22 – Pool, 41 ft. Length, 13 ft. Width, Max Depth 2.5 ft.

Photo 11 – Musgrave Diversion; Fish Ladder on Left (Aluminum Box)

Photo 12 – Fish Ladder at Musgrave Diversion

Photo 13 – Habitat Unit 29 – Pool: 40 ft. Length, 25 ft. Width, Max Depth 3.5 ft. Green post in background.

Photo 14 – Habitat Unit 31 – Glide: 120 ft. Length, 10 ft. Width, 1.5 ft. Max Depth.

Photo 15 – Example of Debris Jam

Photo 16 – Debris Jams and Old/Active Beaver Ponds Create Lateral Channels

Photo 17 – Large Beaver Pond – Approximately 1 acre.

Photo 18 – Habitat Unit 44 – Glide – 20 ft. Length, 13 ft. Width, 0.6 ft. Max Depth.

Photo 19 – Habitat Unit 49 – Riffle at Top of Pool: 10 ft. Length, 5 ft. Width, Max Depth 0.4 ft. Starting to see larger cobble.

Photo 20 – Example of Long Glide and Pool with Good Riparian Cover.

Photo 21 – Habitat Unit 61 – Upstream End of Pool: Example of Slumping Bank, Cattle Have Access to the Stream.

Photo 22 – Habitat Unit 62 – Glide: 110 ft. Length, 13 ft. Width, 1 ft. Max Depth.

Photo 23 – Habitat Unit 67 – Large Cobble Riffle: 15 ft. Length, 8 ft. Width, Max Depth 0.5 ft.

Photo 24 – Habitat Unit 70- Pool: 45 ft. Length, 13 ft. Width, Max Depth 3.6 ft.

Photo 25 – Habitat Unit 74 – Large Cobble Riffle: 101 ft. Length, 8 ft. Width, Max Depth 0.7 ft.

Photo 26 – End of Survey (Hart Property Line and Fence)

Data and Photos for Stream Habitat Downstream of Hart-Haight Stream Reach

Photo 1 – Start of Hart Property near Fence 0 ft. Mark

Photo 2 – 100 ft.

Photo 3 – 200 ft.

Photo 4 – 300 ft. (Top of bank is approximately 6 ft.)

Photo 5 – 400 ft.

Photo 6 – 500 ft.

Photo 7 – 600 ft.

Photo 8 – 700 ft.

Photo 9 – 800 ft.

Photo 10 – 900 ft.

Photo 11– 1,000 ft.

Photo 12 – 1,100 ft.

Photo 13 – 1,200 ft.

Photo 14 – 1,300 ft.

Photo 15 – 1,400 ft.

Photo 16 – 1,500 ft. Example of bank height.

Photo 17 – 1,500 ft.

Photo 18 – 1,600 ft.

Photo 19 – Volcanic rock pile at 1,630 ft.

Photo 20 – 1,700 ft.

Photo 21 – 1,800 ft.

Photo 22 – 1,900 ft.

Photo 23 – 2,000 ft.

Photo 24 – 2,100 ft.

Photo 25 – 2,200 ft.

Photo 26 – 2,375 ft. Cowley Property Line

Photo 27 – Upstream Cowley Fence Boundary.

Photo 28 – Example of gravel on Cowley property by fence.

Photo 29 – 2,400 ft.

Photo 30 – 2,500 ft.

Photo 31 – 2,600 ft.

Photo 32 – 2,700 ft.

Photo 33 – 2,800 ft.

Photo 34 – 2,900 ft.

Photo 35 – 3,000 ft.

Photo 36 – 3,100 ft.


Photo 37 – 3,170 ft.