

Grenada Novy Ranches

Site Plan Agreement between Lowell L. Novy, NOAA's National Marine Fisheries Services (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 (the Covered Species), is between Lowell L. Novy, DBA Novy Ranches – Grenada (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

B.1 General narrative and map describing the Enrolled Property

The Grenada Novy Ranches is owned by Lowell L. Novy in sole proprietorship, DBA Novy Ranches. As such, Lowell L. Novy will be the signatory. The Grenada Ranch is located along Highway A-12, approximately three miles east of Interstate 5, in Siskiyou County (41°38'11.56" N latitude, 122°29'22.88" W longitude). The Grenada Ranch includes a total of ±1085 acres, with ±586 acres under irrigation based on GIS coverage. Novy Ranches has, and for the term of the Permit, will continue to lease pasture commonly referred to the Zenkus Property. The Zenkus Property is 73 irrigated acres and is contiguous to and surrounded by either the Novy or Rice property. Unless specifically identified as Zenkus Property within this Site Plan Agreement, reference to Grenada Novy Ranches is inclusive of the Zenkus Property hereinafter. Inclusive of the Zenkus Property, the Grenada Novy Ranches is managing 659 acres of Enrolled Property under this Site Plan Agreement.

Grenada Novy Ranches is located within the lower part of the Mid-Shasta Reach and is adjacent to the Rice Livestock Company, Inc. Ranch. The Enrolled Property is adjacent to approximately 12,400 feet of the Shasta River. The river forms the property line and the ranch is on the right bank. The map included below shows the approximate property boundaries and general location within the Agreement Covered Area. Given Lowell L.

Novy's ownership of multiple properties, for the purpose of this Site Plan Agreement, the Enrolled Property will be identified as Grenada Novy Ranches (the Ranch).

This site plan has numerous appendices that are important context of the site plan.

Enrolled Property –Site Plan Agreement List of Appendices

- Appendix A - Property Deed
- Appendix B - Water Use Reports
- Appendix C - Zenkus Property Lease
- Appendix D - TMDL Waiver
- Appendix E - Soils Map
- Appendix F - Streambed Alteration Agreement
- Appendix G - Grazing Plan

B.2 Legal Description of the Enrolled Property

Grenada Novy Ranches APNs:

038-200-010 – Hay Field
038-170-180 – Contiguous Portion South of Hay Field
038-180-060 – Contiguous Portion North of Mid-North Portion
038-210-030 – Mid-North Portion
039-320-080 – Mid-North East Portion
038-220-030 – Mid-South Portion
038-220-020 – Mid-South West Portion
038-230-040 - South portion

Zenkus Property APN(s)

038-220-010 – Mid-South Portion
038-190-090 - Legal Description from the Enrolled Property Deed is included as
Appendix A.

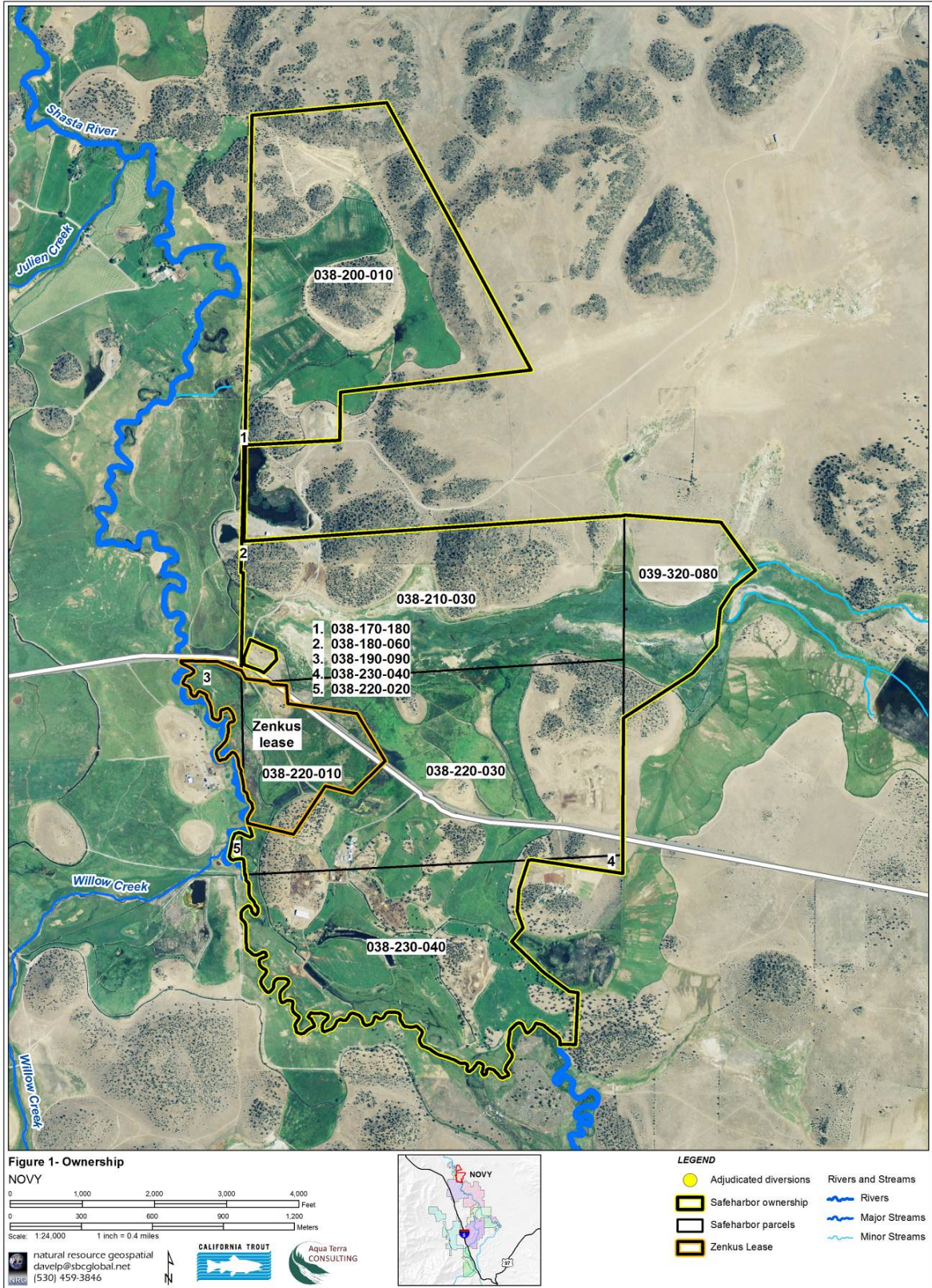


Figure 1. Grenada Novy Ranches Ownership Map

B.3 Description of Water Rights

Grenada Novy Ranches utilizes two points of diversion for irrigation: Novy, Rice, Zenkus – a shared pre-1914 riparian right and Novy Pump – a sole pre-1914 riparian right. The eWRIMS number for the Novy, Rice, Zenkus is S000808 and the Novy Pump is S024748.

The Ranch filed Statements of Water Use with State Water Board for both diversions and they are included in Appendix B.

The Novy, Rice, Zenkus Pre-1914 Riparian Diversion: The Ranch has a share of one riparian claim named the Novy, Rice, Zenkus Riparian Diversion. The 2017 Novy, Rice, Zenkus Diversion Statement of Use shows continuous diversion of 10 cubic feet per second (cfs) from March 01 to November 01 annually or a total of 4,840 acre-feet per season spanning 244 days of diversion. This diversion is shared with Rice Livestock Inc. and Truttman-Zenkus on rotation. Novy Ranches has had an on-going long-term lease with Truttman-Zenkus since 1976 and intends to manage the leased Zenkus property for the term of the Agreement, Appendix C. The rotation is dependent on land ownership, with approximately 302 acres irrigated from the diversion owned between the three ranches. Grenada Novy Ranches currently irrigates approximately 194 acres from Novy, Rice, Zenkus Pre-1914 Riparian Diversion with wildland flood irrigation. Including the Zenkus property, Grenada Novy Ranches uses about 64% of the water diverted by the Novy, Rice, Zenkus Diversion. Duration of use is not defined but typically occurs from 3/1-11/1 of each season. This riparian right was not incorporated into the Shasta River Decree when developed in 1928.

During the winter/off-season, water is not diverted from the Novy, Rice, Zenkus Diversion as other alternative livestock watering options are available at this time.

The Novy Pump Pre-1914 Riparian Diversion: Grenada Novy Ranches has sole operation of the Novy Pump. It has a capacity of 5.5 cfs and generally operates from March 1st to November 1st every season. A total of approximately 465 acres are irrigated with this diversion. Throughout the year, water is pumped from the Novy Pump Diversion with a 1 horse power submersible pump to satisfy two 600 gallon stock-water troughs.

Table 1 shows the diversion numbers, amounts diverted, time frames, and amount of land that is irrigated. See map below that shows the place of use.

Table 1: Summary and 2017 Statement of Use

Diversion #/Water Source	Description	Diversion Duration	Duration Statement Amounts	Total Ac-ft /season diverted	Acreage Irrigated W/Diversion	Average Days/Season diverted
S000808	Riparian - Rice-Novy	March 1- Nov 1	10 cfs	4840	+/-302 Novy, Rice, Zenkus	244
S024748	Riparian - Novy Pump	March 1- Nov 1	5.5 cfs	2661	+/-465	244
S024708	Stock water Riparian – Novy Pump	Nov 2- Feb 28	1.0 cfs	240	150 Livestock	121

Novy Ranches portion of Novy-Rice-Zenkus Riparian Diversion						
S000808	Riparian-Diverted Volume Apportioned to Novy & Zenkus	March 1- Nov 1	6.4 cfs	Novy/Zenk us Annual use per diversion: 64% of 4,840 afy = 3,097 afy	Novy, Zenkus Land: +/- 194	Novy/Zenkus Usage +/- 157

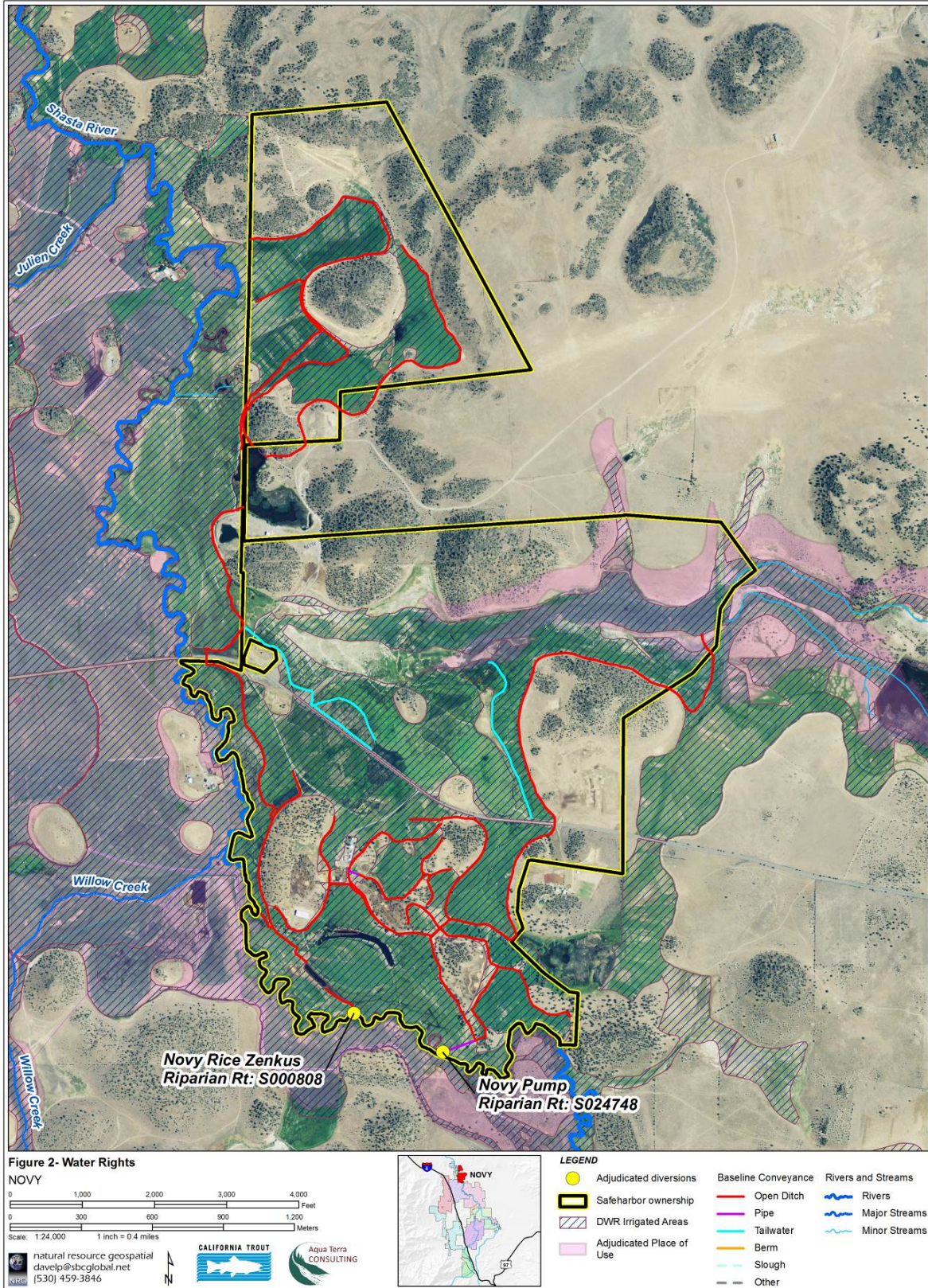


Figure 2. Grenada Novy Ranches Water Rights Map

C. Routine Agricultural Activities

C.1 Present Routine Agricultural Activities

The Ranch consists of approximately ±1085 acres, with approximately ±659 acres under irrigation (including 73 acres leased from Zenkus). All of the ±659 irrigated acres are considered grass pasture and are flood irrigated. The ranch maintains approximately 10 miles of open ditch to convey water throughout its pastures. The ranch also has 2 ponds that are used to catch tailwater for re-use. There is one bridge stream crossing on the ranch. There is one water lane and two off-channel watering troughs. There are approximately 5 miles of aggregate base/rock ranch roads.

On November, 2, 2016 and August 22, 2017 the Grenada Novy Ranches and Zenkus Ranch obtained their Shasta River Dissolved Oxygen and Temperature Total Maximum Daily Load (TMDL) Conditional Waiver of Waste Discharge Requirements from Matthias St. John, Executive Officer of the California Water Boards North Coast Regional Water Quality Control Board. Grenada Novy Ranches agrees to maintain compliance and conditions as well as management practices of this waiver - included in **Appendix D1&2**.

Soil Description through Novy Ranches: Throughout the Grenada Novy Ranches, there are up to five different soil types, with 41% being Salisbury Cobbly Loam, a very shallow soil. A great deal of effort has been focused in building the tilth of the soil over the past four decades. By feeding in pastured areas, the cattle have naturally and organically improved the soil such that water efficiencies are being seen via a lengthening of time between irrigation rotations. Another 36% of our land is made up of Gazelle Silt Loam – an incredibly high alkaline soil. This soil, irrigated by the Novy, Rice, Zenkus and the Novy Pump diversions, needs a great deal more water than typical soils. Eighteen percent of our land is made up of Lithic Haploxerolls-Rock. These are non-irrigated regions where dryland pasture practices with rye and early spring grasses are dry-land grazed. Soil map with Descriptions of soils listed in **Appendix E**.

Irrigation Management

Novy, Rice, Zenkus Pre-1914 Riparian Diversion: Novy Ranches and Rice Livestock Inc. operate a flashboard diversion on the Shasta River at the Novy-Rice- Zenkus Diversion which irrigates approximately 302 acres. With this diversion, Grenada Novy Ranches, including the Zenkus Property(73 acres), irrigates approximately 194 acres, on the east side of the Shasta River, generally from March through October. The water right is a Pre-1914 Riparian Right and not included in the Shasta River Decree. The 2017 Novy, Zenkus, Rice statement of use shows continuous diversion of 10 cubic feet per second (cfs) from approximately March 1st through November 1st or a total of 4,840 acre-feet per season. This diversion is shared with Rice Livestock Inc. and Zenkus on rotation. The rotation duration per users is dependent on land ownership, with approximately 302 cumulative acres irrigated from that diversion owned between the three ranches. Grenada Novy Ranches irrigates about 64% of the property serviced by Novy, Rice, Zenkus Riparian Diversion and uses approximately 64% of the total diversion volume is diverted

for Grenada Novy Ranches. Assuming equal delivery efficiency and equal use of the reported 4,840 acre-feet annually diverted for irrigation, Grenada Novy Ranches divert approximately 3,097 acre feet year or 15.96 acre-feet per acre for irrigation. Investigations show that inefficiencies can be attributed to delivery loss as well as poor irrigation distribution.

Flood irrigation is conveyed via open ditch prior to reaching the Grenada Novy Ranches parcels where water is then distributed through on farm lateral and toe ditches and turned out on to non-checked and unlevelled fields, although the Grenada Novy Ranches field(s) are within the flood plain and are generally level. Water is spread through swales and irrigation toe ditches.

Grenada Novy Ranches has been and is actively involved with the assessment and investigation being conducted on the Novy-Rice, Zenkus Riparian Diversion by the Shasta RCD. The investigation evaluates methods to improve delivery efficiency and irrigation methods to reduce the volume of water Grenada Novy Ranches applies to the 194 acres under irrigation by the Novy -Rice -Zenkus Riparian Ditch and under the management Grenada Novy Ranches, as well as livestock watering. Field check and leveling on these parcels are not alternatives due to loss of interim production and long-term production risk through disturbing shallow, alkali ground. In addition, this investigation evaluates fish passage at the diversion point

Tailwater from the Novy, Rice, Zenkus Riparian Diversion is prevented by historic berms that are maintained. The berms were constructed near the Shasta River and field borders and catch, redistribute and percolate flood irrigation water rather than allowing to flow to re-enter the Shasta River as unsuitable tail-water.

The Novy Pump Pre-1914 Riparian Diversion: The Grenada Novy Ranch irrigates approximately 465 acres on the north side of the Shasta River under the Novy Pump Pre-1914 Riparian Diversion from approximately March 01 through November 01. The 2015 Novy Pump Statement of Use shows continuous use of 5.5 cubic feet per- second from March 1st through November 1st resulting in the use of 2,661 acre- feet per year. If one were to assume equal delivery efficiency and equal use of the reported 2,661 acre-feet annually, Novy diverts approximately 5.72 acre-feet per acre. In addition, throughout the year, water is pumped from the Novy Pump Diversion with a 1 horse power submersible pump to satisfy two 600 gallon stock- water troughs.

Flood irrigation is currently conveyed via open ditch throughout the Grenada Novy Ranches parcels where water is then distributed in on farm lateral ditches and maneuvered via one lift pump. This water is turned out on to non-checked and unlevelled fields through a series of culverts and gravity flood irrigation. Again, field check and leveling on these parcels are not alternatives due to loss of interim production risk through disturbance of shallow, alkali soils.

Tail-water from the Novy Pump Diversion is prevented by created and maintained berms that were constructed near the Shasta River that catch, redistribute and percolate flood irrigation water rather than allowing to flow into the Shasta River as tail-water.

Irrigation Maintenance

Ditch cleaning

Open irrigation ditches on Grenada Novy Ranches are prone to vegetation growth, which slows the conveyance of water and clogs the buried openings. The ditches need to be cleaned several times per year to remove vegetation, as well as to repair breaches. Cleaning ditches on both the Novy, Rice, Zenkus and Novy Pump ditches consists of mechanical raking with a backhoe. Smaller clogged openings require hand-shoveling or hand-digging.

Diversion and Fish Screen Cleaning

Novy, Rice, Zenkus Diversion: Grenada Novy Ranches has the primary responsibility of maintaining this diversion and has the full responsibility of cleaning and operating the fish-screen and fish bypass return. The diversion requires the use of vertical flash boards and tarps which are inserted or removed based upon water flow to maintain necessary water diversion. Flash board insertion requires the use of heavy equipment to position the boards prior to placement against the flashboard dam. High water events require careful monitoring and full removal of the flash boards at the diversion. The fish screen needs daily maintenance, up to three times a day, to remove decaying aquatic vegetation other debris released from the river and ditches. An individual from the California Department of Fish and Wildlife comes once a week to inspect, clean and flush the diversion as well.

Novy Pump Diversion: Grenada Novy Ranches maintains the cone fish screen and pump solely. Maintaining the fish screen involves removing the sand/silt from around the cone screen while operating instream and these daily inspections also insure that the cone screen is operating correctly. Fish screen maintenance can involve a high water pressure hose as well as seasonal large equipment work. Maintaining the pump requires lubrication, maintenance, and sometimes a full shut-down, start up several times each week. The Novy Pump has a current, updated Streambed Alteration Agreement (Appendix F) for the operation and maintenance of the compliant self-cleaning fish-screen and diversion intake.

Pasture Grazing Management

Grenada Novy Ranches has many pastures where cattle graze. Placement of cattle is dependent upon bull, steer, heifer replacement, heifer fattening, size and age. Cattle are rotated as able with the ideal goal of maintaining pasture grasses.

Riparian Grazing Management

As developed within the 2016 Riparian Grazing Plan (Appendix G), produced by UC Cooperative Extension plan, grazing is currently allowed within the riparian area during periods that minimize the potential for impacts to fish and their habitat, and that have been determined by the Permittee to pose no threat to nesting water fowl. Currently the Grenada Novy Ranches riparian grazing occurs twice per year on the following schedule:

1. #1: After July 15th (hatching waterfowl off nests by July 4th). Grazing allowed to an approximate 6” stubble height for herbaceous vegetation.
2. #2: Non-irrigation Season – herbaceous riparian growth grazed to an approximate 6”

Duration and number of livestock is dependable upon available feed. Stubble height is the indicator for livestock removal therefore meets riparian grazing standards.

Fence Maintenance

Riparian exclusion fencing was completed in 2006 for the entire ranch. Throughout the Shasta River reach approximately 20 acres of Novy Ranches land have been fenced via approximately 12,400 linear feet of fencing. General fence maintenance will continue to maintain fences to protect stream and riparian areas. Grenada Novy Ranches will not accept the financial responsibility of repairing loss from major floods or other events where greater than 20% of the fence needs replacement.

Road Maintenance

All main ranch roads are covered in aggregate base/rock. The aggregate base is maintained on an annual basis, or as needed, to minimize erosion.

Vehicle Crossing Maintenance

Grenada Novy Ranches and Rice Livestock share a bridge over the Shasta River. Shoring and abutment refurbishment of the bridge is necessary approximately once every 10 years, while replacement of running planks occurs as needed. LWD projects upstream of bridge shall consider size of LWD material and techniques used considering this bridge as well as other bridges potentially affected.

Cattle Crossing Maintenance

There are no cattle crossings.

Herbicide/Fertilizer/Pesticide Use

Grenada Novy Ranches does not broadly apply fertilizer, pesticides or herbicides to its pastures. Grenada Novy Ranches applies Crossbow or other approved alternative spot-treat noxious weeds such as whitetop, hemlock and other noxious woody species when present. This typically occurs within the riparian areas. Grenada Novy Ranches abides by the most sparingly use application standards on label of pesticide/herbicide manufacturer, on sunny non-windy days to ensure control during application. Application typically occurs upon observation of noxious weed or weed patch occurring from February through July with one application. Cumulative area treated within proximity of riparian area is less than .4 acres.

C.2 Avoidance and Minimization Measures Avoid

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 Property is within the Middle Shasta Reach of the Covered Area. Baseline conditions for the Enrolled Property are the Conditions described in Appendix 2 of the Agreement for these reaches of the Shasta River.

Elevated Baseline Conditions are certain Baseline Conditions improved as a result of certain Beneficial Management Activities.

Table 2 Summarizes the Beneficial Management Activities required to maintain Baseline Conditions and 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 Middle Shasta reach of the Shasta River. Section E describes the activities on the Enrolled Property in more detail. All Beneficial Management Activities stipulated below will be implemented per relevant AMM’s included in Appendix 3 of the Agreement.

Table 2. Baseline Conditions, Elevated Baseline and Other Beneficial Management Activities on the Enrolled Property

Habitat Parameter	Beneficial Management Activities		
	Present Day Baseline (Section E1-Maintain)	Elevated Baseline Condition (Section E2-Restore, Implement and Maintain)	Other Beneficial Management Activities (Section E3- Restore; Measures to Avoid and Minimize)
Hydrology/ Water Quality	<ul style="list-style-type: none"> - Installed 6 tailwater berms throughout Novy Ranches from 2009 to 2013 to reduce tailwater inputs and water quality impacts - E.1.a - Continue to monitor and repair tailwater berms as needed - E.1.a - Continue irrigation practices to ensure there are no tailwater impacts - E.1.a 		<ul style="list-style-type: none"> Seek funding and assist with implementation of efficiency project on the Novy, Rice, Zenkus Riparian Diversion conserving up to 5 cfs conveyance subject to funding conditions - E.3.a -Implement efficiency projects on the Novy Pump conveyance - E.3.a

Habitat Parameter	Beneficial Management Activities		
	<ul style="list-style-type: none"> - Continue to use handheld soil moisture sensors to optimize irrigation start and end times - E.1.a - Installed Novy Pump in 2007 to replace usage of the Huseman Ditch, thus leaving at least 5.5 cfc in stream for additional 3.5 miles. Continue to maintain pump to standards - E.1.a 		<ul style="list-style-type: none"> - Work with UC Extension to further understand soil moisture and further optimize irrigation efficiency – E.3.a - Participate in a reach-wide diversion management strategy. - E.3.a -Add instream beneficial use of secondary benefit of Novy, Rice, Zenkus and Novy Pump Diversions once projects are completed and one full irrigation season has occurred - E.3.a - Abide by SWRCB measuring and reporting standards. - E.3.a
Passage/ Migration/ Screening	<ul style="list-style-type: none"> - Installed Novy Pump with compliant in-channel cone fish screen in 2007 - E.1.b - Maintain unimpeded fish passage conditions at the Novy Pump diversion - E.1.b - Manage and adjust flashboards and by- pass volume at Novy, Rice, Zenkus diversion structure based on fish passage objectives – E.1.b 	<ul style="list-style-type: none"> -Assist and participate in seeking funding for the redesign and engineering of the Novy, Rice, Zenkus Diversion to meet criteria for all life-stages of salmonids. - E.2.b - Assist and participate in seeking funding for the implementation of the project Novy, Rice, Zenkus Diversion - E.2.b - Participate in the construction of a new fish screen on channel for the Novy, Rice, Zenkus Diversion - E.2.b 	<ul style="list-style-type: none"> - Seek funding, aid in implementation, operate and maintain fish screen and fish passage facility components of Novy, Rice, Zenkus Diversion – E.3.b

Habitat Parameter	Beneficial Management Activities		
Instream Habitat Complexity			<p>- Agrees to provide reasonable access per AMMs for implementation of habitat enhancement projects including LWD for bank stabilization as shown on attached Habitat Improvement Map. Appendix H - E.3.c</p> <p>-For proposed LWD site on right bank meander opposite of “Frog” pond, analyze and implement measures to prevent channel evulsion into pond. – Appendix H - E.3.c</p>
Riparian Function	<p>- Continue to minimize the potential impacts of grazing in riparian areas by limiting the season of use and by maintaining an approximate 6” stubble heights for herbaceous vegetation - E.1.d</p> <p>- Continue to perform yearly maintenance on existing riparian fencing - E.1.d</p> <p>- Maintain the few remaining trees/shrubs from four test plots along the Shasta River that were planted in 2015. - E.1.d</p> <p>- Continue to maintain bridge crossing - E.1.d</p>		<p>- Agrees to allow for and participate in further riparian plantings that benefit and improve salmonid habitat as well as bank stabilization, in coordination with the agencies as funding becomes available. E.3.d</p>
Substrate Quality			<p>- Agrees to provide reasonable access per approved AMMs to implement spawning gravel enhancement within the engineered roughened channel as part of the Novy, Rice, Zenkus Diversion Project - E.3.e</p>

Habitat Parameter	Beneficial Management Activities		
Pasture Management	- Continue beneficial rotational grazing practices – E.1.f		- Manage pasture grazing as described in E.3.f
Assessments/ Studies	- Participated within flow study across the Shasta River Reach in 2016 - E.1.g - Continued participation in temperature monitoring at ingress, middle and egress and DO monitoring at the ingress of the Grenada Novy Ranches Shasta Reach via RCD - E.1.g		Allow reasonable access for monitoring as described in Section G.2.
Supplementation			- Allow access for salmonid supplementation when proper protections for ESA liability are in place - E.3.h

E. Beneficial Management Activities

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

E.1 Actions Required to Maintain 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 Agreement.

E.1.a Hydrology/Water Quality

Increased water delivery as a result of irrigation efficiencies

Diversion relocation/combination

Novy Pump replaced usage of the Huseman Ditch in 2007, thus moving it downstream. This improvement left at least 5.5 cfs in the river for an additional 3.5 miles. Grenada Novy Ranches agrees to continue to maintain pump to standards.

Tail Water Reduction

Installed 6 tail water berms throughout Novy Ranches from 2009 to 2013 to reduce tail water temperature impact upon the Shasta River. Grenada Novy Ranches agrees to continue to monitor and repair tailwater berms as needed. In addition, irrigation practices will be monitored to ensure that there are no new tailwater impacts.

Soil Moisture Monitoring Program

Hand-held soil moisture sensors have been used by irrigators to identify when to begin and stop irrigating. We currently use the Soil Moisture Meter product by LIC. This product rates soil moisture on a scale of 1-10, where 1 is dry and 10 is wet. Throughout the ranch, Soil Moisture Tool Boxes have been placed for easy usage by the irrigator. Grenada Novy Ranches tries to keep its field moisture levels within the 4-6 (average wet) range.

E.1.b Passage/Migration/Diversion Screening

Installed Novy Pump with compliant in-channel cone fish screen in 2007. The Novy Pump has a current, updated Streambed Alteration Agreement for operation of the compliant self-cleaning fish-screen and diversion intake. Grenada Novy Ranches agrees to maintain the diversion facility and fish screen.

Manage and adjust flashboards and by-pass volume at Novy, Zenkus Rice diversion structure based on fish passage objectives. Currently this is managed with a minimum 4-foot constant opening at all times when flashboards are installed. The flashboards are removed between early October and mid-April annually. Downstream smolt outmigration occurs annually. Chinook and Coho salmon adult migration is documented by spawning counts conducted annually upstream of the diversion.

E.1.c Instream Habitat Complexity

No current activity

E.1.d Riparian Function

Riparian Fencing

Approximately 12,400 linear feet of riparian exclusion fencing within Grenada Novy Ranches will continue to be maintained. However, the Ranch will not accept the responsibility of repairing loss from major floods or other events where 20% of the fence or greater needs replacement. If riparian fencing loss greater than 20 percent occurs, Grenada Novy Ranches will work with partners to obtain funding to repair or replace the fencing.

Reduced Riparian Grazing Intensity/Frequency

Pastures adjacent to the river have been fenced, to restrict free access by the cattle.

Current grazing management in accordance with the grazing plan developed by UC Extension Service. Grazing is currently allowed within the riparian area during periods that minimize the potential for impacts to fish and their habitat, and that have been determined by the Permittee to pose no threat to nesting water fowl. Currently the Novy Ranches riparian grazing occurs twice per year on the following schedule:

1. #1: Mid-July 15th (hatching waterfowl off nests by July 4th). Grazing allowed to an approximate 6” stubble height for herbaceous vegetation. Vegetation stubble height has been shown to be a good indicator of:
 - the effect of grazing on the physiological health of the individual plant;
 - the ability of the vegetation to provide stream-bank protection and to filter out and trap sediments from overbank flows; and
 - Stubble height correlates to root depth and increases the water retention of the soil.
2. #2: Non-irrigating season – herbaceous riparian growth grazed to approximately 6” which is accordance with the Riparian Grazing Plan Appendix G.

Crossings

Riparian Management Evaluation Plots

Four test plots along the Shasta River have been planted at different elevations and locations in April, 2015 to better understand survival ability, to further provide future river shading and riparian habitat enhancement. Each plot contained plantings of apple, hazelnut, peach, black walnut, ash, plum, choke cherry, and elderberry. Primarily due to small rodents, flooding and cattle destruction, survival of these trees has had low success. The time involved with watering, upkeep, building of solid fencing as well as implementing rodent barriers has been greater than expected. Grenada Novy Ranches agrees to further monitor these four plots.

E.1.e Substrate Quality

Substrate for spawning has not been observed on the enrolled property; however, a site visit will be conducted with agency staff to address this question as outlined above.

E.1.f Pasture Management:

Continue beneficial rotational grazing practices.

E.1.g Assessments/Studies

Participated within the flow study conducted by the Resource Conservation District (RCD) across the Shasta River Reach in 2016.

Currently Grenada Novy Ranches has participated in monitoring the following parameters:

Temperature – seasonal w/equipment from the RCD conducted at ingress, middle, egress, and at Highway A-12 (Truttman).

Dissolved Oxygen – seasonal w/equipment from the RCD conducted at ingress and at Highway A-12 (Truttman).

Grenada Novy Ranches will continue to allow access to monitor water quality parameters and will consider allowance and participation in future assessments and inventories that enhance agricultural viability and/or instream enhancement.

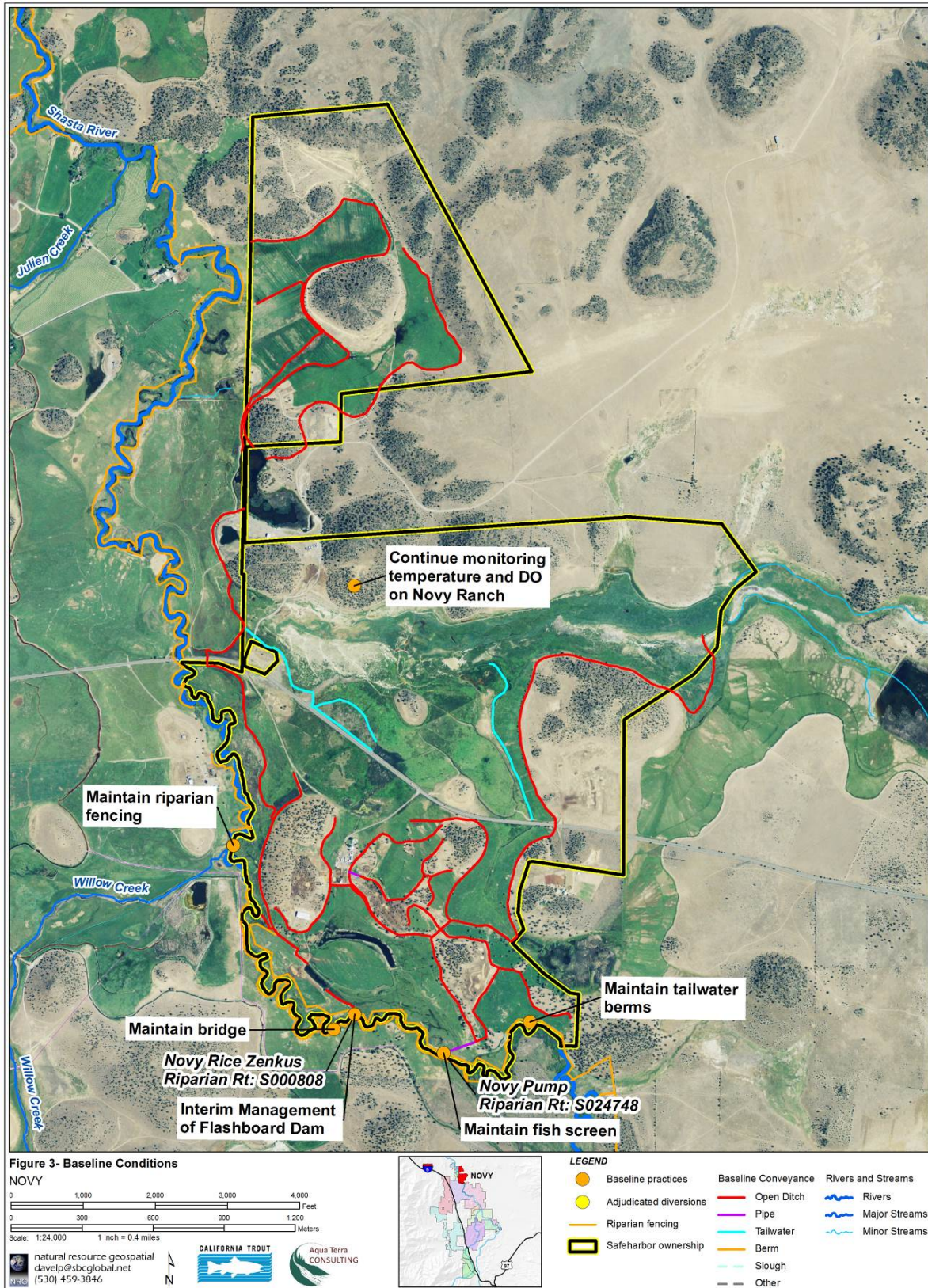


Figure 3. Grenada Novy Ranches -Baseline Conditions

E.2 Actions Required to Achieve 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.

E.2.a Hydrology/Water Quality

See E.3.a (Other Land and Water Use Beneficial Management Activities)

E.2.b Passage/Migration/Diversion Screening

Novy, Rice, Zenkus Pre-1914 Riparian Diversion: The existing fish screen is located in the diversion ditch approximately 1,700' below the POD and the by-pass does not meet current screening criteria. Grant-funded studies are ongoing on the Grenada Novy Ranches to determine the best design options that will insure year-round compliance with fish passage criteria. The 100% design is estimated to be completed by in 2019.

Grenada Novy Ranches agrees to work with the agencies to seek funding, and assist with installation, of a compliant fish passage facility with a functional diversion facility. Once the screen is installed, Grenada Novy Ranches commits to operate and maintain an effective diversion facility that provides year-round fish passage per fish passage criteria. Barrier remediation implementation funding will be applied for through FRGP, Prop 1, NRCS and other funding sources from 2019- 2020. Implementation is expected to be completed by 2022, but will be based on funding availability.

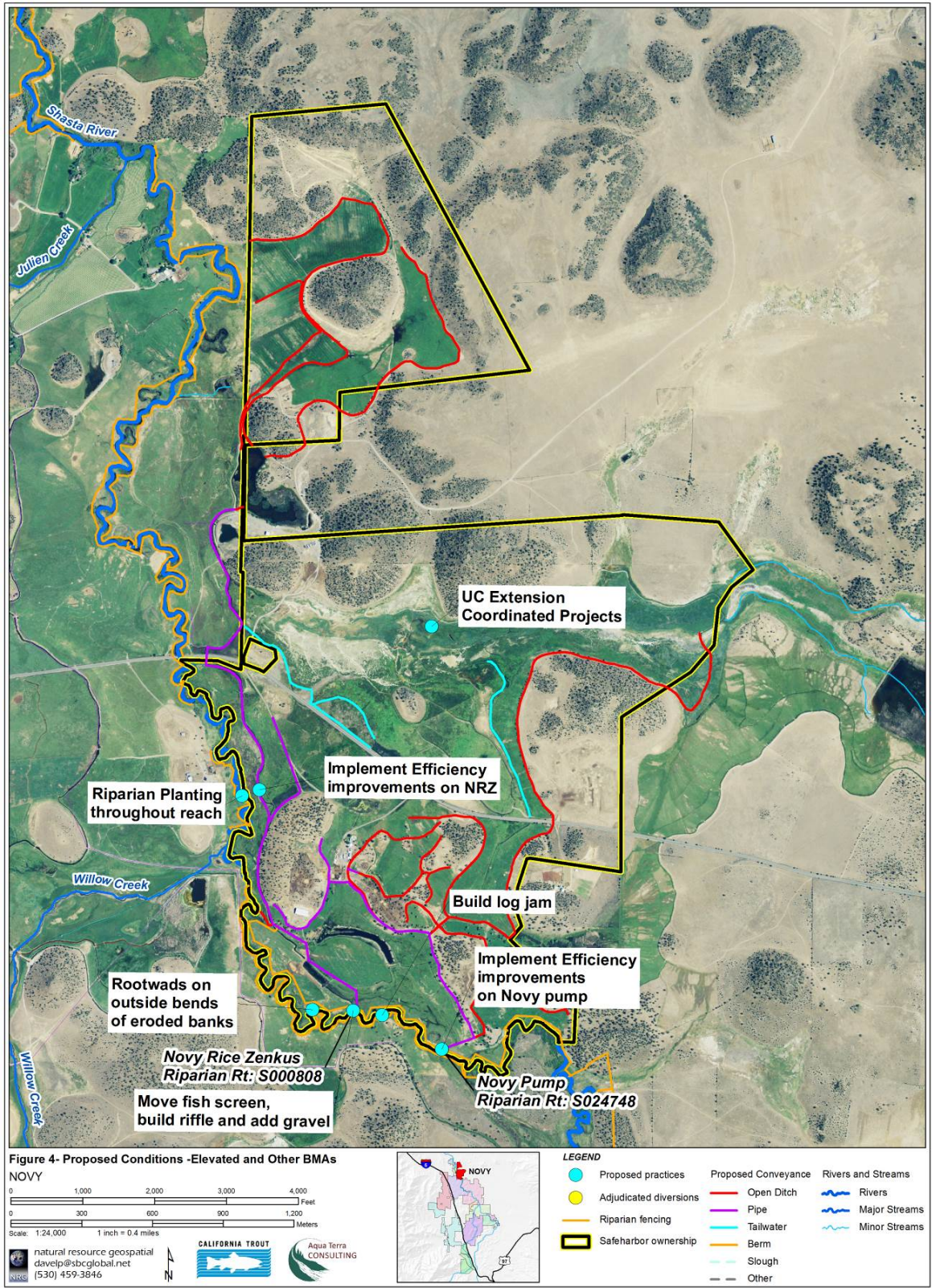


Figure 4. Grenada Novy Ranches Proposed Conditions Map

E.3 Other Beneficial Management Activities

This section summarizes any other Beneficial Management Activities that will be implemented and maintained during the term of the Agreement to improve habitat conditions for the Covered Species.

E.3.a Hydrology/Water Quality

Increased Delivery and Irrigation Efficiency

Novy, Rice, Zenkus Pre-1914 Riparian Diversion: Grenada Novy Ranches will commit to the efficiency improvements recommended in the assessment and work to develop and implement conservation solutions. Scope includes reducing diversion from 10.00-cfs to 5.00-cfs through converting main ditch and lateral to piping, lift pump and flood valves.

Novy, Rice, Zenkus Riparian by Grenada Novy Ranches

Current Grenada Novy Ranches use: 3,098.0 afy
Commitment after piping continuation project 1,549.0 afy
**1,549 afy provided to 194 acres results in 7.98 feet applied per acre

- Improve distribution and irrigation as a result of Novy, Rice, Zenkus Riparian Diversion cooperative assessment. Water conservation project implementation funding will be applied for through Fisheries Restoration Grant Program (FRGP), Prop 1, NRCS and other funding sources beginning in 2018-2019. Implementation is expected to be completed by 2022, but implementation will be based on funding availability

Novy Pump Diversion: Grenada Novy Ranches, in coordination with NRCS and secondary funding, will commit to the efficiency improvements recommended in the assessment and work to develop and implement conservation solutions. Scope includes creating irrigation efficiencies via piping of the Novy Pump diversion and open ditch. If feasible, with funding in place, this action will be implemented. Water conserved as a result of delivery efficiency will result in cessation of diversion per rotation based upon noticed efficiencies. Implemented pipeline may result in cessation of diversion for several days a month during March, April, May June and October. Novy Pump Diversion water conservation implementation funding will be applied for through FRGP, Prop 1, NRCS and other funding sources from 2019- 2020. Implementation is expected to be completed by 2022, but will be based on funding availability

Soil Moisture Monitoring Program: Grenada Novy Ranches will enroll the assistance of UC-Cooperative Extension to discuss implementation and usage of other soil moisture sensors (while still using current hand-held soil moisture sensors), including the use of randomly selected soil sampling sites throughout ranch to further adjust irrigation practices accordingly. This element will be completed within one year of signing the Agreement.

Participation in Mid Shasta reach flow strategy: In addition to that which is already mentioned within B.1.a, Grenada Novy Ranches will additionally cooperate in the Mid-Shasta Flow strategy per commitments described below:

- Abide by SWRCB water measuring and reporting requirements including continuous measurement and recording of diverted flow.
- Grenada Novy, Rice, Zenkus Riparian and Novy Pump commits to participate in Mid-Shasta Flow Strategy through the following measures:
 - Grenada Novy Ranches agrees to limit diversion to half of the maximum diversion from 4/1-4/10 of each spring to aid in reducing rapid flow reduction that occurs at the onset of irrigation season since 2014.
 - Maximum diversion volume of the Novy, Rice, Zenkus diversion will reduce from 10.0cfs -5.0 cfs as a result of the piping and conservation project with acknowledgement that a substantial portion of the currently used 10 cfs returns to the Shasta River as tail water or sub-surface water. Note: Zenkus Investigation being confirmed regarding 4.0 cfs being sufficient.
 - Grenada Novy Ranches, in coordination with the Shasta Water Trust, agrees to limit the diversion to half of the maximum diversion from 9/20-9/30 of each fall to aid in enhancing flows for adult Chinook and Coho migration that can be impacted by late season diversion, which the ranch has done since 2013.
 - Participate in spring pulse flows per Mid-Shasta comprehensive flow plan when piping projects are complete and water is readily available to turn-on/turn-off in a non-time impeding delivery system.

In-stream Beneficial Use

- Grenada Novy Ranches will work with SWCG to add instream beneficial use as a secondary benefit for the water conserved by proposed projects for Novy-Rice-Zenkus diversion. The estimated timeframe for seeking funding is 2019 and 2020. The timeframe for implementation is 2022.

E.3.b Passage/Migration/Screening

- Seek funding, aid in implementation, operate and maintain fish screen and fish passage facility components of Novy, Rice, Zenkus Diversion. The estimated timeframe for seeking funding is 2019 and 2020. The timeframe for implementation is 2022.

E.3.c Instream Habitat Complexity:

Large Woody Debris

- The Permittee will allow investigations and will participate in design and placement of instream structures including large woody debris (LWD) structures, off-channel habitat and developing existing oxbows. The Permittee is willing to allow development of back-water rearing areas, if feasible, in this stretch of the Shasta River as long as liabilities and impacts to ranching are not elevated. If actual projects are developed, the Permittee will provide trees and on-site rock.

- The Permittee is willing to re-work one specific bank erosion site that is just upstream of the Novy, Rice, Zenkus Diversion. At this site, a log jam would be incorporated in addition to adding LWD, as funding is available. This action will stabilize the bank and reduce sedimentation while increasing habitat complexity. Permittee will provide trees and on-site rock. It is anticipated that a grant application for these LWD projects will be submitted within the first year after signing the Agreement. The estimated timeframe for implementation of LWD features is between 3-6 years after signing the Agreement

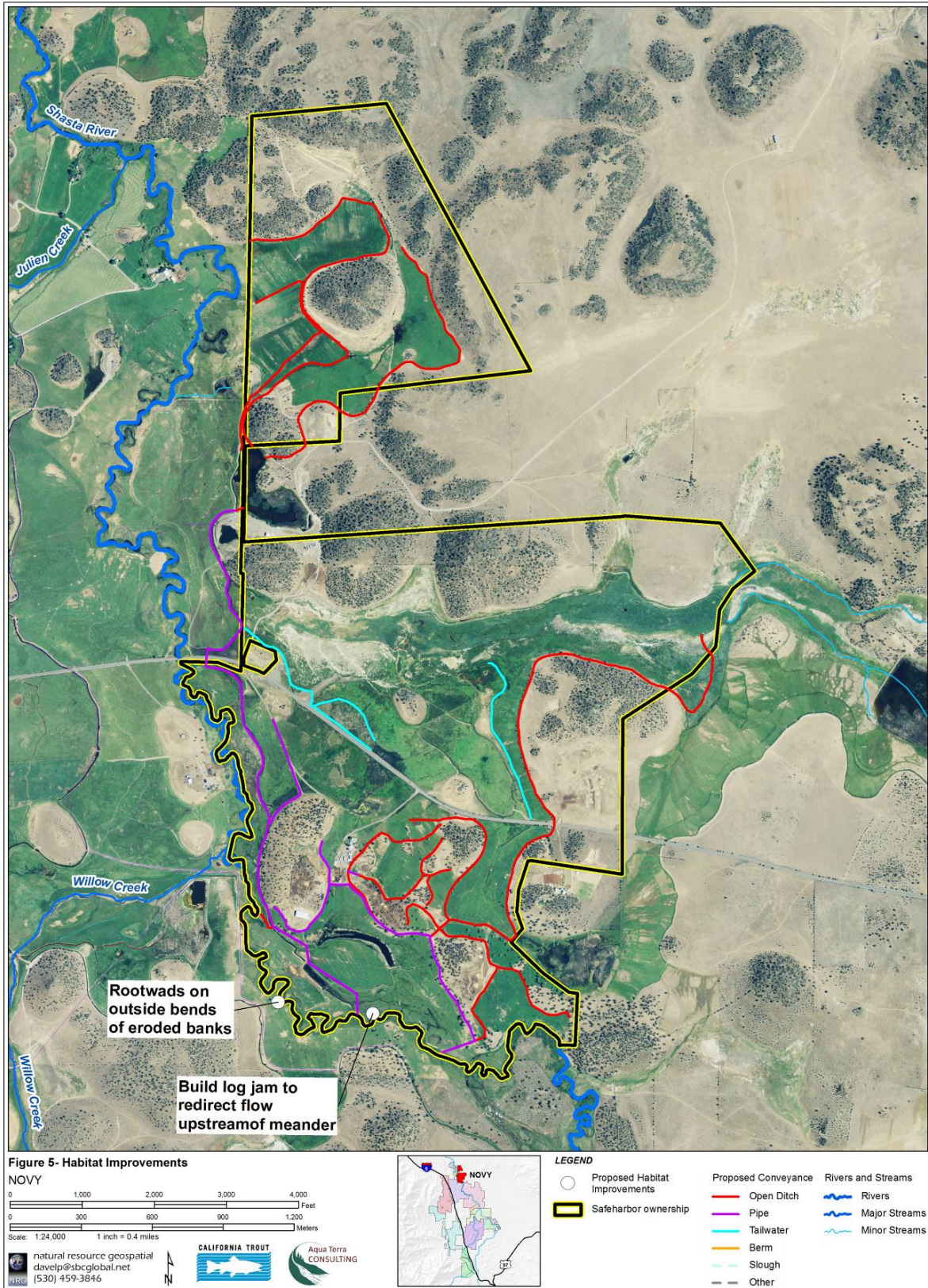


Figure 5. Grenada Novy Ranches Habitat Improvement Maps

E.3.d Riparian Function

Off-Channel Stock watering

- Off-channel stock water facilities were completed in 2013. With the potential piping of the Novy, Rice, Zenkus Diversion and Novy Pump, the Permittee will allow additional off-channel stock watering options once they are identified.

Riparian Management Evaluation Plots (e.g. planted vs. natural recruitment)

- Grenada Novy Ranches will allow for and participate in further native and non-native riparian plantings, in coordination with the agencies, as time and funding (for supplies and labor) become available.

E.3.e Substrate Quality

- Substrate beneficial for spawning activity is assumed not present in this stream reach.

Providing Access for Gravel Augmentation Projects

- This reach of the Shasta River does not currently have spawning substrate. Permittee is open to allowing spawning gravel to be placed at the proposed reconstructed riffle during the Novy, Rice, Zenkus Riparian diversion retrofit.

E.3.f Pasture Management

Pasture Grazing Management

E.3.g Assessment Studies

- Grenada Novy Ranches is agreeable to water temperature and DO monitoring on the Enrolled Property.
- Grenada Novy Ranches is agreeable to providing access for and having PIT tag antennas on site after hearing proposal and understanding/negotiating level of access.
- Grenada Novy Ranches will allow access for juvenile presence/absence surveys and juvenile tagging on the property if given SWCG standard notice prior to survey efforts.

E.3.h Supplementation

The Ranch is open to salmonid supplementation when proper protections against Take liability are in place (e.g., the Agreement).

E.3.i Covered Species Effects and Considerations Specific to Grenada Novy Ranches

While this section is technically not a component of the Agreement, Grenada Novy Ranches provides the information below to further elaborate upon the uniqueness of the enrolled property.

During the summer months, the water temperatures within the Shasta River entering Novy Ranches appear too warm for the rearing of juvenile salmonids/coho. This, coupled with the absence of adult spawning gravels as well as deep-channels with fast-moving water through the Novy Ranches makes this reach basically a pass-thru conduit for adult and juvenile salmon at this time. Cumulative benefits as a result of the SWCG may improve conditions for summer rearing, winter rearing and outmigration survival over time.

Hydrology: With the exception of high flood flows that originate from Parks Creek, Streamflow in the Mid-Shasta River is primarily dependent on discharges from Big Springs Creek and, to a lesser extent, Parks Creek and releases from Dwinnell Dam. Significant surface water diversions occur upstream of Novy Ranches' two points of diversion. Spring and summer streamflows within the Novy reach of the Shasta River are largely dictated by upstream and downstream adjudicated water right priorities as well as riparian diversions. Cumulative benefits as a result of the SWCG may improve long-term conditions for summer rearing, winter rearing and outmigration survival over time.

Groundwater derived streamflow from Big Springs Creek provides various and unstable base flows possibly influenced by the ground water or broader pumping in the Pluto Caves Complex to the valley portion of the Shasta River. Parks Creek regularly provides late winter and early spring runoff flows. Streamflow throughout the mid-Shasta River progressively decreases during the spring and summer seasons. Water mastering pursuant to Shasta River Adjudication priorities indirectly maintains summer streamflows in the Novy reach that provide suitable depths and wetted widths to support juvenile rearing. However, the cumulative effects of diversions of flows upstream of the Novy Ranches, lack of mature woody riparian vegetation, and the geomorphological aspects of the Shasta River, likely contribute to elevated summer water temperature conditions.

Water Quality: Preliminary data collected during recent (2017 – an excellent water year) water temperature and dissolved oxygen (DO) monitoring on the Novy reach (Reach 4) of the Shasta River are consistently cooler throughout the irrigation season than in all other reaches within the Shasta River. Temperatures, did however, exceed the MWMT criterion 103 or 171 days monitored, with an overall average temperature of approximately 19-20C. Summer DO concentrations did not fall below the NCWQCP minimum objective (6ml/L DO) during 147 days monitored. Furthermore, DO readings just downstream of Novy/Zenkus Ranches at “Reach 3” also did not fall below minimum objectives. (Site RCD Shasta River Irrigation Water Management and Watershed

Stewardship project Agreement No. 13-501-251-2, Annual Monitoring Report 2017) Novy Ranches will continue to participate in temperature and DO monitoring through the Shasta Valley RCD.

Spawning Substrate: Site-specific channel substrate evaluations of the Novy Ranches reach of the Shasta River have not been conducted, but field observations indicated that substrate particle sizes within this portion of the watershed are generally too small to support successful spawning by the Covered Species and are a reflection of natural hydrogeomorphic processes that are dominated by very gradual channel gradients and groundwater-derived base flows and infrequent flood flows.

Channel Structure: As described by Nichols et al. (2010), channel gradients of the Shasta River downstream of Big Springs Creek are less than 1% as the river meanders through the central portions of the Shasta River Valley. This portion of the river exhibits channel morphologies typical of spring-fed rivers that derive the majority of streamflow from groundwater sources. Such rivers exhibit remarkably homogenous channel morphologies conspicuously absent of channel bars or other bed forms typical of runoff-dominated rivers. Observations of the Shasta River channel along Novy Ranches are consistent with this generalized description.

Floodplain Function: Novy Ranches is located within the laterally unconfined valley portion of the watershed, and hydrologic connectivity to the floodplain is present during large flow events. Floodplain function enhancement opportunities and constraints are discussed in more detail within the Agreement.

Winter Habitat: Throughout Novy Ranches, the Shasta River meanders; creating cut banks for juvenile rearing when conditions are suitable. Extensive tulle growth as developed along the banks, covering ~75% since riparian fencing has been in place (2006). Currently, no oxbows exist on the Shasta River throughout Novy Ranches. While aerial maps make it appear that oxbows are present, these are tail water catch basins. If a natural oxbow occurs within the Novy Ranches reach, it will be left to enhance juvenile rearing.

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

The Agreement, Site Plan Agreement, and ESP take effect when signed by the Permittee, NMFS, and CDFW. The Agreement, Site Plan Agreement, and ESP have a term of 20 years, which may be extended by mutual written consent of the Permittee, NMFS, and CDFW. One (1) year prior to end of term of the Agreement, Site Plan Agreement, and ESP, the Permittee, NMFS, and CDFW will meet to decide whether to extend the term of the 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 Routine Agricultural Activities. The Permittee commits to implement the AMMs and associated monitoring protocols listed in Table G1 below and as 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/or 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 and included in the annual report.

G.1 Avoidance and Minimization Measures Monitoring

The Permittee agrees to the following AMMs and Monitoring actions:

Covered Activity	Novy Ranches - AMM	AMM Monitoring Technique
Irrigation Management	A1 A2	<p>All maintenance of instream diversion structures shall be monitored as follows:</p> <p>-Log of what in-water work had occurred and what minimization measures were implemented will be included in the annual report</p> <p>-When construction or repair work is being done, three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002</p> <p>http://www.fs.fed.us/pnw/pubs/gtr_526/ or an annual agency inspection can be requested.</p>
Irrigation Maintenance	B1 B2 B3 B4 B5 B6 B7 B8	<p>All maintenance of instream irrigation facilities shall be monitored. Following are some examples of protocols:</p> <p>-Log of maintenance activities carried out within the calendar year be included in the yearly SHA report.</p>

Covered Activity	Novy Ranches - AMM	AMM Monitoring Technique
<p>Riparian Grazing Management</p>	<p>C1 C2 C3</p>	<p>Riparian grazing management shall be monitored as follows:</p> <p>-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/gtr_526/. 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 report.</p> <p>-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.</p> <p>-NMFS and CDFW may initiate periodic inspection of grazed riparian pastures to ensure riparian grazing management plan is effective.</p> <p>-NMFS, CDFW, or a qualified party, approved by CDFW or NMFS, may conduct redd surveys to determine the need for livestock restrictions in streams. In the event surveys indicate redds are not present, then livestock access will follow the procedures described in riparian grazing management plan.</p>
<p>Fence Maintenance</p>	<p>D1 D2</p>	<p>-A short description of fence maintenance activities will be included in the annual report.</p>

Covered Activity	Novy Ranches - AMM	AMM Monitoring Technique
Road Maintenance	E2 E3	-A short description of annual road maintenance activities will be included in the annual report.
Crossing Maintenance	No In-Stream Crossings	
Herbicide/Fertilizer/Pesticide Use	G1 G2 G3 G4 G5	- Participant commits to log use of herbicide, fertilizer and pesticide activities carried out within the calendar year be included in the annual report.
Flood Repair	H1 H2	- Participant 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

The Permittee agrees to the following monitoring actions:

Habitat Parameter	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
Hydrology/Water Quality	<ul style="list-style-type: none"> - Installed 6 tailwater berms throughout Novy Ranches from 2009 to 2013 to reduce tailwater inputs and water quality impacts - E.1.a - Continue to monitor and repair tailwater berms as needed - E.1.a - Continue irrigation practices to ensure there are no tailwater impacts - E.1.a - Continue to use handheld soil moisture sensors to optimize 	<ul style="list-style-type: none"> - Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 documenting functioning diversion, pipeline improvements and spring source enhancements. -Soil Moisture sensor data 	<ul style="list-style-type: none"> - Diversion monitoring station will be maintained and operated as designed. Provide yearly data.

Habitat Parameter	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
	<p>irrigation start and end times - E.1.a</p> <p>- Installed Novy Pump in 2007 to replace usage of the Huseman Ditch, thus leaving at least 5.5 cfc in stream for additional 3.5 miles. Continue to maintain pump to standards - E.1.a</p> <p>Seek funding and assist with implementation of efficiency project on the Novy, Rice, Zenkus Riparian Diversion conserving up to 5 cfs conveyance subject to funding conditions - E.3.a</p> <p>-Implement efficiency projects on the Novy Pump conveyance - E.3.a</p> <p>- Work with UC Extension to further understand soil moisture and further optimize irrigation efficiency – E.3.a</p> <p>- Participate in a reach-wide diversion management strategy. - E.3.a</p> <p>-Add instream beneficial use of secondary benefit of Novy, Rice, Zenkus and Novy Pump Diversions once projects are completed and one full irrigation</p>		

Habitat Parameter	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
	<p>season has occurred - E.3.a</p> <p>- Abide by SWRCB measuring and reporting standards. - E.3.a</p>		
Passage/Migration/ Screening	<p>- Installed Novy Pump with compliant in-channel cone fish screen in 2007 - E.1.b</p> <p>- Maintain unimpeded fish passage conditions at the Novy Pump diversion - E.1.b</p> <p>- Manage and adjust flashboards and by-pass volume at Novy, Rice, Zenkus diversion structure based on fish passage objectives – E.1.b</p> <p>- Assist and participate in seeking funding for the implementation of the project Novy, Rice, Zenkus Diversion - E.2.b</p> <p>- Participate in the construction of a new fish screen on channel for the Novy, Rice, Zenkus Diversion - E.2.b</p> <p>- Seek funding, aid in implementation, operate and maintain fish screen and fish passage facility components of Novy, Rice, Zenkus Diversion – E.3.b</p>	<p>- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 documenting fish passage and fish screen.</p> <p>-Water measuring protocol that is in concurrence with SB88 of diversion, submit diversion data.</p>	

Habitat Parameter	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
Instream Habitat Complexity	<ul style="list-style-type: none"> - Agrees to provide reasonable access per AMMs for implementation of habitat enhancement projects including LWD for bank stabilization as shown on attached Habitat Improvement Map. Appendix H - E.3.c -For proposed LWD site on right bank meander opposite of “Frog” pond, analyze and implement measures to prevent channel evulsion into pond. – Appendix H - E.3.c 	<ul style="list-style-type: none"> - Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 Habitat improvements 	
Riparian Condition	<ul style="list-style-type: none"> - Continue to minimize the potential impacts of grazing in riparian areas by limiting the season of use and by maintaining an approximate 6” stubble heights for herbaceous vegetation - E.1.d - Continue to perform yearly maintenance on existing riparian fencing - E.1.d - Maintain the few remaining trees/shrubs from four test plots along the Shasta River that were planted in 2015. - E.1.d - Continue to maintain bridge crossing - E.1.d - Agrees to allow for and participate in further riparian 	<ul style="list-style-type: none"> - Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document riparian grazing area, and crossing and stock water systems in proper function. 	<ul style="list-style-type: none"> -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	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
	plantings that benefit and improve salmonid habitat as well as bank stabilization, in coordination with the agencies as funding becomes available. E.3.d		
Substrate Quality	- Agrees to provide reasonable access per approved AMMs to implement spawning gravel enhancement within the engineered roughened channel as part of the Novy, Rice, Zenkus Diversion Project - E.3.e	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document fence maintenance.	
Pasture Management	- Continue beneficial rotational grazing practices – E.1.f	- Three to five photo points using USDA Forest Service Photo Point Monitoring Handbook, 2002 To document pasture condition.	
Assessment/Studies	- Participated within flow study across the Shasta River Reach in 2016 - E.1.g - Continued participation in temperature monitoring at ingress, middle and egress and DO monitoring at the ingress of the Grenada Novy Ranches Shasta Reach via RCD - E.1.g Allow reasonable access for monitoring as described in Section G.2.	-Reports of studies will be written/summarized/ obtained and provided in the annual report	-Access to maintain existing pit tag array and trap and tag fish as deemed feasible by agency staff -Juvenile surveys for presence absence and for capturing and PIT tagging fish with 7 day notification of landowner.

Habitat Parameter	Novy Ranches – Beneficial Management Activities	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
Supplementation	- Allow access for salmonid supplementation when proper protections for ESA liability are in place - E.3.h		- Access for salmon surveys

H. Annual Report and Adaptive Management

The Permittee will complete the Annual Report yearly 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



Permittee *for Lowell L. Novy*

11/23/2020

Date



February 24, 2021

NMFS

Date

SEPARATE SIGNATURE BLOCK FOR CDFW:

By signing the Agreement and this Site Plan 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 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.

CDFW

Date

APPENDIX A

Deed for Grenada Novy Ranches

Siskiyou County Recorder
Leanna Dancer, Recorder

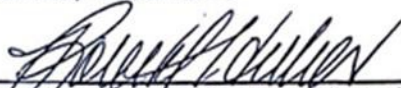
Recording Requested by &
When Recorded Return To:

Lowell L. Novy, D.V.M.
653 Allegro Court
Simi Valley, CA 93065

DOC - 08-0009404
Check Number 6087
Monday, AUG 25, 2008 11:50:11
Ttl Pd \$23.00 Nbr-0000149317
JES/CL/1-6

QUITCLAIM DEED

Documentary Transfer Tax \$-0-


Signature of Declarant or Agent determining tax.

HUBER & TAKASUGI
Firm Name

This conveyance is not pursuant to sale; is to the inter vivos trust for the benefit of grantor(s) and is exempt. R&T 11911

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, LOWELL L. NOVY hereby remises, releases and forever quitclaims to LOWELL L. NOVY, Trustee of the LOWELL L. NOVY TRUST, under Declaration of Trust, Dated June 22, 2004, the following described real property in the County of Siskiyou, State of California:

PARCEL I:

Being a part of Section 19, Township 44 North, Range 5 West, M.D.M., described as:

BEGINNING at a point on the West line of said Section 19 from which the Southwest corner of said Section 19 bears South 1200 feet; thence North 56° 04' East, 1200.0 feet; thence North 40° 51' East 524.0 feet; thence North 8° 56' East 538.4 feet; thence North 28° 45' East 363.1 feet; thence North 53° 00' East 396.0 feet to a point; thence on a diagonal line Northwesterly to the Northeast corner of the South half of the Northwest quarter of the Northwest quarter of said Section 19; thence Westerly along the North line of the South half of the Northwest quarter of the Northwest quarter to a point on the West line of said Section 19; thence South along the West line of said Section 19 to the place of beginning.

PARCEL II:

The North half of the Southwest quarter of the Southwest quarter of Section 13, and all that part of the North half and the North half of the South half of

said Section 13 lying West of a diagonal line running from the Southeast corner of the Northwest quarter of the Southeast quarter of said Section 13 to the Northeast corner of the West half of the Northeast quarter of the Northwest quarter of said Section 13, all in Township 44 North, Range 6 West, M.D.M.

PARCEL III:

All that portion of the Southeast quarter of the Southeast quarter of Section 14 and the Northeast quarter of the Northeast quarter of Section 23, Township 44 North, Range 6 West, M.D.M., described as:

BEING a strip of land 20 feet in width beginning at the Southeast corner of the Northeast quarter of the Northeast quarter of Section 23; thence North along the East line of said Sections 23 and 14, a distance of 1900.0.

PARCEL IV:

All that portion of the North half of Section 25, Township 44 North, Range 6 West, M.D.M., lying North and East of the centerline of the Shasta River.

EXCEPTING THEREFROM the following Exceptions A and B and the following described easements.

EXCEPTION A: A strip of land 660 feet wide and 158_ feet in length beginning at the East one-quarter corner of said Section 25. (Said 660 feet runs East and West and said 1582 feet runs North and South.)

EXCEPTION B: All that portion of Section 25, Township 44 North, Range 6 West, Mount Diablo Meridian, described as follows:

Commencing at a 2 inch iron pipe at the East one-quarter corner of Section 24, Township 44 North, Range 6 West, as shown on that certain map recorded in Record Survey Book No. 6 at page 118, Siskiyou County Records; thence S. 0° 38' 35" W., 3757.14 feet to an iron pipe on the Northerly line of the C. T. Drummond parcel in the Northeast one-quarter of said Section 25 and the TRUE POINT OF BEGINNING; thence N. 88° 50' 23" W., 654.22 feet along said North line of said Drummond property to an iron pipe at the Northwest corner thereof; thence S. 0° 34' 25" W., 904.26 feet along the West line of said Drummond property to an iron pipe; thence N. 77° 17' 35" W., 121.11 feet; thence N. 52° 10' 36" W., 464.31 feet; thence N. 47° 32' 13" W., 608.25 feet; thence N. 40 48' 20" E., 222.60 feet; thence N. 20° 29' 49" W., 252.71 feet; thence N. 03° 10' 52" E., 314.50 feet; thence N. 17° 22' 32" E., 400.60 feet; thence S. 82° 16' 20" E., 1429.03 feet to a 3/4 inch iron pipe set in the existing stone and wire fence between Drummond and Jenkins; thence S. 82° 15' 20" E., to a point on the East line of said Section 25 and the West line of the Drummond property; thence Southerly

along said East line of Section 25 to a point which bears S. 88° 50' 28" E. from the TRUE POINT OF BEGINNING; thence N. 88° 50' 28" W. to the TRUE POINT OF BEGINNING.

ALSO RESERVING a non-exclusive easement for access to the Shasta River over 20.00 foot wide strip of land lying adjacent to and Westerly and Northerly of the following described line:

Beginning at the most Southerly corner of the above described Exception B, which corner lies on the West line of the Drummond property; thence Southerly along said West line of property to the East-West midline of Section 25; thence Westerly along said East-West sideline to the Shasta River.

ALSO RESERVING a non-exclusive easement for electrical power transmission over a strip of land 10.00 feet wide lying 5 feet on each side of the following described centerline:

Beginning at a point from which the Northwest corner of the above described Exception B bears N. 17° 22' 32" E., 235.0 feet; thence N. 89° 03' 28" W., 2553.0 feet, more or less to the existing electrical power facilities near the North one-quarter corner of Section 25.

ALSO RESERVING a non-exclusive easement for purposes of operating and maintaining water conveyance facilities, including pumps, pipelines, canals, ditches or flumes over a strip of land 20.00 feet wide lying 10 feet on each side of the following described centerline:

Beginning at a point in the centerline of the existing ditch which bears W. 40° 28' 20" E. from the most Westerly corner of the above described Exception B, thence following the centerline of said ditch Northwesterly, Westerly and Southeasterly to the beginning of said ditch at the outfall of the existing pipeline; thence Southeasterly along the centerline of said pipeline to the Shasta River.

PARCEL V:

The South half of the North half of the North half, the South half of the North half of Section 24, and the South half of Section 24, lying East of the centerline of the Shasta River, all in Township 44 North, Range 6 West, M.D.M.

RESERVING from Parcels IV and V a non-exclusive easement for ingress and egress and public utilities over a 60.00 foot wide strip of land lying 30 feet on each side of the following described centerline:

Beginning at a point on the Northerly line of Exception B described above, (following Parcel 5) from which the East one-quarter corner of said Section 24 bears N. 15° 46' 49" E., 3022.97 feet, and from which point of beginning the Northwest corner of the above described Exception B bears N. 82° 16' 20" W., 623.53 feet; thence N. 09° 14' 22" W., 620.06 feet to the centerline of existing County Road A-12.

BEGINNING at a point in the Shasta River from which the Southwest corner of Section 24 bears S. 5° 03' 32" W. 695.99 feet; thence S. 72° 41' E. 642.0 feet; thence N. 33° 49' E. 741.0 feet, more or less, to the South line of the Big Springs Road; thence S. 69° 29' E. 372.0 feet to a point on the intersection of fence and North line of Big Springs Road; thence N. 47° 52' E. 573.0 feet along fence, thence N. 39° 29' W. 762.0 feet along fence; thence N. 73° 35' W. 935.5 feet along fence; thence N. 6° 07' W. 233.0 feet along dump ground fence; thence N. 31° 02' W. 488.0 feet along dump ground line to the East line of the Big Springs Road; thence N. 36° 59' W. 244.0 feet to the point of intersection of the West line of Section 24 and the North and East Big Springs Road fence.

ALSO EXCEPTING THEREFROM that certain portion of the Northwest quarter of Section 24, Township 44 North, Range 6 West, M.D.B. & M., more particularly described as follows, to-wit:

BEGINNING at corner 25 of Grenada Ranch Tract as recorded in Map Book 2, page 153; thence N. 65° 17' 20" East 3381.22 feet to a point on Section line common to Sections 23 and 24, Township 44 North, Range 6 West, M.D.B. & M.; thence South 66° 42' 13" East 21.98 feet to the "TRUE POINT OF BEGINNING"; thence North 0° 47' 48" East 84.61 feet and parallel with the aforesaid section line; thence North 20° 29' 12" East 262.14 feet; thence South 61° 36' 4" East 371.95 feet; thence South 7° 45' 48" East 17.53 feet; thence South 42° 5' 12" West 229.51 feet; thence North 53° 51' 26" West 70.15 feet; thence North 66° 42' 18" West 243.14 feet to the true point of beginning.

ALSO EXCEPTING THEREFROM all that portion of Section 24, Township 44 North, Range 6 West, M.D.M., described as follows:

A strip of land 20 feet in width to be used for road purposes, the side lines of which are described as BEGINNING at a point on the North line of the Country Road leading from Grenada to Big Springs where said North line of said road intersects the West Section line of Section 24, Township 44 North, Range 6 West, M.D.M.; thence in a Southeasterly direction along the North line of said County Road to a point (said point being identical to the point of intersection of a line drawn perpendicular to and 20 feet in length from said

Section line with the North line of said Country Road); thence Northerly and parallel to said Section line 1030 feet, more or less, to point on the North line of the Southwest quarter of the Northwest 1/4 of said Section 24; thence approximately North 63° 26' East 1455 feet, more or less, to a point on the East line of the Northwest quarter of the Northwest quarter and 660 feet South of the North line of said Section; thence West and parallel to the North line of said Section to a point that bears 20 feet from and perpendicular to the last-described right-of-way line; thence approximately South 63° 26' West 1459 feet , more or less, to a point on the West Section line of said Section 24; thence Southerly along said Section line to a point on the North line of said Country Road and the point of beginning.

ALSO EXCEPTING from all the above-described parcels the right of way and easement of County Records.

ALSO TOGETHER with that certain easement described in the Grant of Easement between Jerald J. Jenkins and Barbara Jenkins, husband and wife, Grantor and Lowell L. Novy and Esther Novy, husband and wife, Grantee dated June 23, 1976 and recorded June 29, 1976, Official Records, Siskiyou County Records.

APN: 038-200-01
038-210-03
038-220-02 and -03
038-230-04
039-320-08

Dated: August 15, 2008


LOWELL L. NOVY

ACKNOWLEDGMENT

State of California)
) ss
County of Ventura)

On August 15, 2008, before me, Russell Takasugi, a Notary Public, personally appeared **LOWELL L. NOVY**, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument he executed said 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.



Russell Takasugi

Notary Public

[SEAL]

Appendix B1

Statements of Water Use – Novy/Rice/Zenkus

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2016

Primary Owner: NOVY RANCHES
Statement Number: S000808
Date Submitted: 02/04/2017

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1900

3. Purpose of Use	
Irrigation	488 Acres Pasture
Stockwatering	350. cattle

4. Changes in Method of Diversion

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used				
Month	Rate of diversion (CFS)	Amount directly diverted (Acre-Feet)	Amount diverted or collected to storage (Acre-Feet)	Amount beneficially used (Acre-Feet)
January	0	0	0	0
February	0	0	0	0
March	4	226	0	226
April	4	226	0	226
May	4	226	0	226
June	4	226	0	226
July	4	226	0	226
August	4	226	0	226
September	4	226	0	226
October	4	226	0	226
November	0	0	0	0
December	0	0	0	0
Total		1808	0	1808
Type of Diversion	Direct Diversion Only			
Comments				

Water Transfers	
6d. Water transferred	No
6e. Quantity transferred (Acre-Feet)	
6f. Dates which transfer occurred	/ to /

Appendix B2

Statements of Water Use – Novy Pump

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2016

Primary Owner: NOVY RANCHES
Statement Number: S024748
Date Submitted: 02/04/2017

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1900

3. Purpose of Use	
Irrigation	465 Acres Pasture
Stockwatering	200 <i>cattle</i>

4. Changes in Method of Diversion	

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used				
Month	Rate of diversion (CFS)	Amount directly diverted (Acre-Feet)	Amount diverted or collected to storage (Acre-Feet)	Amount beneficially used (Acre-Feet)
January	0	0	0	0
February	0	0	0	0
March	5.50	319.60	0	319.60
April	5.50	319.60	0	319.60
May	5.50	319.60	0	319.60
June	5.50	319.60	0	319.60
July	5.50	319.60	0	319.60
August	5.50	319.60	0	319.60
September	5.50	319.60	0	319.60
October	5.50	319.60	0	319.60
November	0	0	0	0
December	0	0	0	0
Total		2556.80	0	2556.80
Type of Diversion	Direct Diversion Only			
Comments				

Water Transfers	
6d. Water transferred	No
6e. Quantity transferred (Acre-Feet)	
6f. Dates which transfer occurred	/ to /

Appendix B3

Statements of Water Use - Zenkus

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2016

Primary Owner: RITA A ZENKUS
Statement Number: S000792
Date Submitted: 02/04/2017

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1900

3. Purpose of Use	
Irrigation	98 Acres Pasture

4. Changes in Method of Diversion	

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used				
Month	Rate of diversion (CFS)	Amount directly diverted (Acre-Feet)	Amount diverted or collected to storage (Acre-Feet)	Amount beneficially used (Acre-Feet)
January	0	0	0	0
February	0	0	0	0
March	2.50	141.25	0	141.25
April	2.50	141.25	0	141.25
May	2.50	141.25	0	141.25
June	2.50	141.25	0	141.25
July	2.50	141.25	0	141.25
August	2.50	141.25	0	141.25
September	2.50	141.25	0	141.25
October	2.50	141.25	0	141.25
November	0	0	0	0
December	0	0	0	0
Total		1130.00	0	1130.00
Type of Diversion	Direct Diversion Only			
Comments				

Water Transfers	
6d. Water transferred	No
6e. Quantity transferred (Acre-Feet)	
6f. Dates which transfer occurred	/ to /
6g. Transfer approved by	

Appendix C

Zenkus Lease Agreement

Your copy

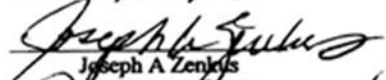
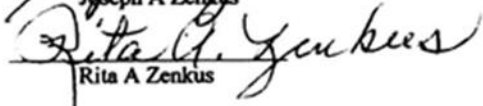
LEASE/SUBLEASE AGREEMENT

February 2017

We, Joseph and Rita Zenkus (Leasers) lease to Lowell Novy, also known as Novy Shasta Ranch, (Lessee) our Shasta River property, also known as Parcels 38-220-010 and 38-190-090 of meadow pasture for one year beginning on March 1, 2017 for use as pasture for cattle. Lease payment of \$4,500.00 should be received by April 15, 2017. A "No Hunting" control and the use of the riparian water rights of the leased property is included in this agreement.

The property will not be subleased without the prior written permission of the leasers. Any sublease agreement information is to include the subleases individual(s) name(s), address (es) and current telephone number(s). Additionally one-half of any sublease payment exceeding the basic lease amount will be due and paid to the leasers within 30 days of the sublease payment. Lessee shall save leasers harmless from any and all suits, actions, claims or demands arising out of injuries to or death of any person or persons to or loss of any property in or about the leased premises caused by the act of the lessees, their servants, agents, employees, patrons, customers or invitees, whether due to the negligence of lessees or otherwise. The lessee shall provide all expenses of defending any suits, actions, claims or demands that may be filed or claimed against the leaser. Lessee will also be responsible for maintaining all property fences, fertilizing, dragging and irrigation of the property in the scheduled rotation.

Dated: 2/28/17


Joseph A Zenkus

Rita A Zenkus


Lowell Novy

Appendix D1

Grenada Novy Ranches NCRWQCB - TMDL Waiver



North Coast Regional Water Quality Control Board
November 2, 2016

Ms. Judy Novy Holmes Novy Ranches P.O. Box 144 Gazelle, CA 96034 judy@novyranches.com

Dear Ms. Holmes: Subject: Shasta TMDL Waiver Compliance and Novy Ranch Assessment Report File: Shasta River DO & Temperature TMDL; TMDL Waiver Assessments

Thank you for meeting with my staff and providing the tour of your ranches on March 9 and August 18, 2016. In the attached ranch assessment reports, Rebecca Fitzgerald states that you and your family manage the assessed portions of the Novy Grenada Ranch and Novy Gazelle Ranch in a manner consistent with water quality goals.

I commend you and your family's stewardship of the Shasta River. You have proactively installed fencing along the river, planted riparian trees, installed upslope stockwater systems, upgraded the Novy diversion pump, and worked with others on watershed stewardship and monitoring projects. Additionally, cattle grazing in riparian areas along the Shasta River are limited to the spring and fall, and cattle are removed when vegetation stubble height reaches eight inches. This helps to ensure the natural establishment and persistence of riparian vegetation, which will improve shade and essential riparian functions.

Ms. Fitzgerald observed that the management measures and practices employed on the ranches prevent, minimize, and control anthropogenic discharges of nutrients, animal waste, other oxygen consuming materials, fine sediment, and elevated solar radiation loads, including the loss of riparian vegetation, from affecting the Shasta River. Assuming no significant changes in conditions and management practices, you are in compliance with the Shasta River Dissolved Oxygen and Temperature Total Maximum Daily Load (TMDL) Conditional Waiver of Waste Discharge Requirements (Resolution No. R1-2012-0083).

JOHN W. CORBETT, CHAIR | MATTHIAS ST. JOHN, EXECUTIVE OFFICER

5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403 | www.waterboards.ca.gov/northcoast

Ms. Judy Novy Holmes - 2 - November 2, 2016

Your efforts to manage the two ranches in a manner consistent with water quality goals are acknowledged and appreciated. Additionally, I encourage your continued involvement in salmonid habitat improvement projects at the ranch and throughout the watershed. Thank you for your efforts to protect the quality of water on and adjacent to your ranches and in the Shasta River Watershed.

Please contact Ms. Fitzgerald regarding any questions at 707-576-2650, or rebecca.fitzgerald@waterboards.ca.gov.

Sincerely,

Matthias St. John Executive Officer

161102_RMF_dp_NovyGrenada&GazellRanch_ComplianceLtr

Attachments: Novy Grenada Ranch Assessment Report Novy Gazelle Ranch Assessment Report

cc: Mr. Tim Beck, Beck Consulting & Repair, 20015 Gazelle Callahan Road, Gazelle, CA, 96034, tcbeck@hughes.net

Appendix D2

Zenkus Property NCRWQCB - TMDL Waiver



North Coast Regional Water Quality Control Board

August 22, 2017

Judy Novy Holmes Novy Ranches P.O. Box 144 Gazelle, CA 96034 judy@novyranches.com

Joseph and Rita Zenkus 1869 Baron Court Yuba City, CA 95991

Dear Ms. Holmes and Mr. and Ms. Zenkus: Subject: Zenkus Ranch Follow-up Assessment Report and TMDL Waiver Compliance File: Shasta River DO & Temperature TMDL; TMDL Waiver Assessments

Thank you for meeting with my staff and providing the tour of your ranch on July 21, 2017. In the attached ranch assessment report, Eli Scott states that you and your families manage the assessed portions of the Zenkus parcels in a manner consistent with maintaining water quality protections. The purpose of Mr. Scott's visit was to follow up on an assessment completed by Rebecca Fitzgerald on August 18, 2016, where she observed a swale that could provide surface water connectivity to the Shasta River and introduce tailwater during irrigation season.

In order to address an observed water quality issue and remain in compliance with the Shasta River Dissolved Oxygen and Temperature Total Maximum Daily Load Conditional Waiver of Waste Discharge Requirements, Resolution No. R1-2012-0083 (Shasta River TMDL Conditional Waiver), you were required to develop and submit a plan to describe actions and a timeline to disconnect the one observed swale and any other non-bermed swales from draining to the Shasta River. Mr. Scott is in receipt of this plan and observed the berm repairs during his assessment.

I commend your stewardship of the Shasta River. With the completion of this work, your operation is in compliance with the Shasta River TMDL Conditional Waiver. Your efforts to manage the Zenkus properties in a manner consistent with maintaining water quality protections are acknowledged and appreciated. Additionally, I encourage your continued

DAVID M. NICHEN, CHAIR | MATTHIAS ST. JOHN, EXECUTIVE OFFICER

5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403 | www.waterboards.ca.gov/northeast



Zenkus Ranch - 2 - August 22, 2017

involvement in salmonid habitat improvement projects at the ranch and throughout the watershed. Thank you for your efforts to protect the quality of water on and adjacent to your ranch and in the Shasta River Watershed.

Please contact Mr. Scott regarding any questions at 707-576-2610 or Elias.Scott@waterboards.ca.gov.

Sincerely,

Matthias St. John Executive Officer

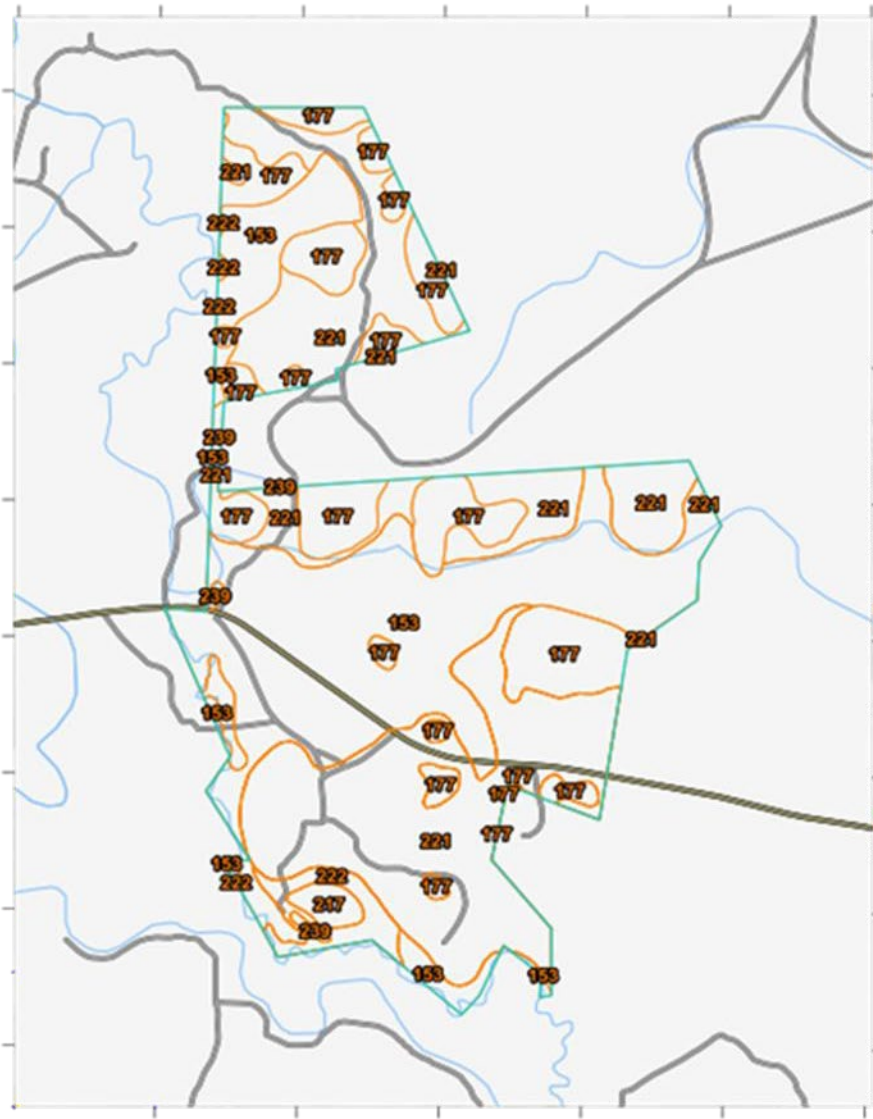
170822_EWS_dp_ZenkusRanch_ComplianceLtr

Attachment: Zenkus Ranch Follow Up Assessment Report

cc: Mr. Tim Beck, Beck Consulting & Repair, 20015 Gazelle Callahan Road, Gazelle, CA, 96034,
tcbeck@hughes.net

Appendix E1

Grenada Novy Ranches Soils Map



Appendix E2

Grenada Novy Ranches Soil Descriptions

40

Soil survey

152—Facey loam, 5 to 15 percent slopes. This deep, well drained soil is on toe slopes of mountains. It formed in colluvium derived dominantly from metamorphosed rock. The native vegetation is mainly perennial grasses, shrubs, forbs, and a few scattered juniper trees. Elevation is 2,500 to 5,000 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 46 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is dark grayish brown and grayish brown loam about 10 inches thick. The subsoil is brown, yellowish brown, and very pale brown clay loam about 49 inches thick. Bedrock is at a depth of 59 inches.

Included in this unit are small areas of Bonnet soils that have slopes of 5 to 15 percent, Jilson gravelly loam, and a soil that is similar to this Facey soil but has bedrock at a depth of more than 60 inches. Also included are a few areas of soils that have slopes of 15 to 30 percent. Included areas make up about 15 percent of the total acreage.

Permeability of this Facey soil is moderately slow. Available water capacity is low to high. Effective rooting depth is 40 to 60 inches. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used for cultivated crops, hay and pasture, rangeland, and homesite development. The main crops are irrigated and nonirrigated wheat and barley.

This unit is suited to crops commonly grown in the area. It is limited mainly by slope. Sprinkler or contour ditch irrigation is suited to the unit. The method used generally is governed by the crop grown. Pipe, ditch lining, or drop structures should be installed in irrigation ditches to facilitate irrigation and prevent excessive ditch erosion. Irrigation water should be applied at a rate that insures optimum production without increasing runoff, deep percolation, and erosion.

Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or grass-legume mixtures help to maintain fertility and tith. All tillage should be on the contour or across the slope.

This unit is suited to hay and pasture. It has few limitations. Proper grazing practices, weed control, and fertilizer are needed for maximum quality of forage. Grazing when the soil is wet results in compaction of the surface layer, poor tith, and excessive runoff.

This unit is suited to use as rangeland. It has few limitations. The soil in this unit responds well to fertilizer, to range seeding, and to proper grazing use. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock. If the shrubs are managed to create open areas, the soil produces a good stand of desirable grasses and forbs.

The potential plant community on this unit includes bottlebrush squirreltail, Thurber needlegrass, Idaho fescue, bluebunch wheatgrass, and beardless wheatgrass.

This unit is suited to homesite development. The main limitations are load supporting capacity, shrink-swell potential, moderately slow permeability, and slope. Only the part of the site that is used for construction should be disturbed. Plans for homesite development should provide for the preservation of as many trees as possible. Establishing and maintaining plant cover can be achieved through proper fertilizing, seeding, mulching, and shaping of the slopes.

If this unit is used for septic tank absorption fields, the limitation of moderately slow permeability can be overcome by increasing the size of the absorption field. The steepness of slope is a concern in installing absorption fields. Absorption lines should be installed on the contour.

If buildings are constructed on the soil in this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage as a result of shrinking and swelling. Buildings and roads should be designed to offset the limited ability of the soil to support a load.

This map unit is in capability unit IIIe-1(21), irrigated and nonirrigated.

153—Gazelle silt loam. This very poorly drained soil is in basins. It is moderately deep to a hardpan. The soil formed in alluvium derived from mixed rock sources and is slightly affected by salts. Slope is 0 to 2 percent. The vegetation in areas not cultivated is mainly salt-tolerant grasses, shrubs, and forbs. Elevation is 2,500 to 3,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is light brownish gray and light gray, strongly alkaline silt loam about 11 inches thick. The upper 14 inches of the underlying material is white silt loam. The next 13 inches is a white, strongly cemented hardpan. The lower part to a depth of 60 inches or more is white silt loam. In some areas the surface layer is sandy loam.

Included in this unit are small areas of Montague clay and Salisbury clay loam. Also included are a few areas of soils that are similar to this Gazelle soil but are free of salts or are moderately affected by salts and contain sodium. Included areas make up about 15 percent of the total acreage.

Permeability of this Gazelle soil is moderately rapid above the hardpan. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is very slow. A seasonal high water table is at a depth of 0 to 18 inches from December through March. This soil is subject to long periods of flooding from November through May.

This unit is used for hay and pasture, rangeland, and homesite development.

This unit is suited to hay and pasture. The main limitations are slight salinity, depth to the hardpan, the seasonal high water table, and the hazard of flooding.

The concentration of salts in the surface layer limits the production of plants suitable for hay and pasture. Leaching the salts from the surface layer is limited by the high water table; however, the concentration of salts can be reduced if drainage is provided and an adequate irrigation water management program is followed. Sprinkler irrigation is the most suitable method of applying water. Salt-tolerant species are most suitable for planting.

The hardpan can be ripped and shattered. This increases the effective rooting depth and improves internal drainage.

Proper grazing practices, weed control, and fertilizer are needed for maximum quality of forage. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff.

This unit is suited to use as rangeland. The main limitations are the seasonal high water table and slight salinity. The soil in this unit responds well to range seeding and to proper grazing use. Plants that tolerate wetness and slight salinity should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

The potential plant community on this unit includes inland saltgrass, carex, and rush.

This unit is poorly suited to homesite development. The main limitations are salinity, the hazard of flooding, depth to the hardpan, and the seasonal high water table. Plants that tolerate a high water table and slight salinity should be selected to establish lawns, shrubs, trees, and vegetable gardens. Drainage is needed for best results with most lawn grasses, shade trees, ornamental trees, shrubs, vines, and vegetable gardens.

Drainage is needed if roads and building foundations are constructed. Flooding can be controlled only by use of major flood control structures. The hardpan is ripable and therefore is not a serious limitation for most engineering uses.

Onsite sewage disposal systems often fail or do not function properly during periods of high rainfall because of the hardpan. The high water table increases the possibility of failure of septic tank absorption fields.

This map unit is in capability subclass Vw(21), irrigated and nonirrigated.

154—Gazelle Variant sandy clay loam. This very poorly drained soil is in basins. It is shallow to a hardpan. The soil formed in alluvium derived from mixed rock sources. It is slightly affected by salts. Slope is 0 to 2 percent. The vegetation in areas not cultivated is mainly salt-tolerant grasses, shrubs, and forbs. Elevation is 2,500 to 3,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is

about 50 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is light brownish gray sandy clay loam about 12 inches thick. The next layer is a light brownish gray and dark grayish brown, moderately cemented hardpan about 6 inches thick. The underlying material to a depth of 60 inches or more is white silt loam.

Included in this unit are small areas of Montague clay and Salisbury clay loam. Also included are a few areas of soils that are similar to this Gazelle Variant soil but are free of salts or are moderately or strongly affected by salts and contain sodium in places. Included areas make up about 15 percent of the total acreage.

Permeability of this Gazelle Variant soil is moderately slow above the hardpan. Available water capacity is very low to low. Effective rooting depth is 10 to 20 inches. Runoff is very slow. A seasonal high water table is at a depth of 0 to 12 inches from December through April. This soil is subject to brief periods of flooding in December and January.

This unit is used for hay and pasture, rangeland, and homesite development.

This unit is poorly suited to irrigated and nonirrigated hay and pasture. The main limitations are salinity, depth to the hardpan, the seasonal high water table, and the hazard of flooding. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff.

The concentration of salts in the surface layer limits the production of plants suitable for hay and pasture. Leaching the salts from the surface layer is limited by the high water table. However, the concentration of salts can be reduced if drainage is provided and an irrigation water management program is followed. Salt-tolerant species are most suitable for planting.

The hardpan can be ripped and shattered. This increases the effective rooting depth and improves internal drainage.

This unit is suited to use as rangeland. The main limitations are the seasonal high water table, salinity, and the hazard of flooding. The soil in this unit responds well to range seeding and to proper grazing use. Plants that tolerate wetness and salinity should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

The potential plant community on this unit includes inland saltgrass, carex, and rush.

This unit is poorly suited to homesite development. The main limitations are salinity, the hazard of flooding, depth to the hardpan, and the seasonal high water table. Plants that tolerate a high water table and slight salinity should be selected to establish lawns, shrubs, trees, and vegetable gardens. Drainage is needed for best results with most lawn grasses, shade trees, ornamental trees, shrubs, vines, and vegetable gardens.

This map unit is in capability subclass VIII(22), nonirrigated.

176—Lava flows-Xerorthents complex, 0 to 50 percent slopes. This map unit is on mountains. The vegetation is mainly brush, shrubs, annual grasses, and forbs. Elevation is dominantly 3,000 to 5,000 feet but ranges to nearly 8,300 feet on Gooseneck Mountain. The average annual precipitation is 20 to 40 inches, the average annual air temperature is 48 to 52 degrees F, and the average frost-free season is 60 to 125 days.

This unit is about 40 percent Lava flows and 30 percent Xerorthents.

Included in this unit are small areas of soils that are similar to Xerorthents but are underlain by bedrock at a depth of 40 to 60 inches. Also included are areas of Rubble land and Riverwash. Included areas make up about 30 percent of the mapped acreage.

Lava flows consists of sharp jagged surfaces, crevices, and angular lava blocks.

Xerorthents are very shallow to moderately deep, excessively drained soils that formed in residual material derived from basalt and andesite. These soils have a surface layer that is variable in texture and is underlain by bedrock at a depth of 8 to 40 inches.

This unit is used for wildlife habitat and watershed.

This map unit is in capability subclass VIII(22), nonirrigated.

177—Lithic Haploxerolls-Rock outcrop complex, 0 to 65 percent slopes. This map unit is on mountains.

The vegetation is mainly brush, shrubs, annual grasses, and forbs. Elevation ranges from 2,000 to 6,000 feet. The average annual precipitation is 20 to 50 inches, the average annual air temperature is 48 to 52 degrees F, and the average frost-free season is 60 to 125 days.

This unit is about 40 percent Lithic Haploxerolls and 30 percent Rock outcrop.

Included in this unit are soils that are similar to Lithic Haploxerolls but have a clay loam or clay subsoil or are underlain by bedrock at a depth of 10 to 40 inches. Also included are areas of Rubble land and Riverwash. Included areas make up about 30 percent of the mapped acreage.

The Lithic Haploxerolls are very shallow, excessively drained soils that formed in residual material derived from intrusive igneous or metamorphic rock. These soils have a dark colored surface layer that is variable in texture and is underlain by bedrock at a depth of 8 to 10 inches. Reaction is slightly acid or neutral.

Rock outcrop consists of exposures of intrusive igneous or metamorphic rock that is barren of vegetation.

This unit is used for wildlife habitat and watershed.

This map unit is in capability subclass VIII(5,22), nonirrigated.

178—Lithic Xerorthents-Rock outcrop complex, 0 to 65 percent slopes. This map unit is on mountains. The vegetation is mainly brush, shrubs, annual grasses, and forbs. Elevation is 2,000 to 6,000 feet. The average annual precipitation is 20 to 50 inches, the average annual air temperature is 48 to 52 degrees F, and the average frost-free season is 50 to 125 days.

This unit is about 40 percent Lithic Xerorthents and 30 percent Rock outcrop.

Included in this unit are small areas of soils that are similar to Lithic Xerorthents but are 10 to 40 inches deep to bedrock, Rubble land, Riverwash, and areas where slopes are more than 65 percent. These included areas make up about 30 percent of the mapped acreage.

Lithic Xerorthents are very shallow and excessively drained. They formed in residual material derived from intrusive igneous, sedimentary, or metamorphic rock. These soils have a surface layer that varies in texture and is underlain by bedrock at a depth of 8 to 10 inches.

Rock outcrop consists of exposures of intrusive igneous, sedimentary, or metamorphic rock.

This unit is used for wildlife habitat and watershed.

This map unit is in capability subclass VIII(5), nonirrigated.

179—Louie loam, 0 to 2 percent slopes. This well drained soil is on terraces. It is moderately deep to a hardpan. The soil formed in alluvium derived dominantly from extrusive igneous rock. The vegetation in areas not cultivated is mainly perennial grasses, shrubs, and scattered juniper. Elevation is 2,500 to 3,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is light brownish gray loam about 12 inches thick. The upper 9 inches of the subsoil is yellowish brown loam. The lower 8 inches is yellowish brown sandy clay loam. The next layer is a light yellowish brown, strongly cemented hardpan about 3 inches thick. The underlying material to a depth of 60 inches or more is stratified sand, gravel, cobbles, and some stones. In some areas the surface layer is sandy loam.

Included in this unit are small areas of a soil that is similar to this Louie soil but has a hardpan at a depth of more than 40 inches. Also included are small areas of Redola loam. Included areas make up about 15 percent of the total acreage.

Permeability of this Louie soil is moderately slow above the impervious hardpan but is rapid below. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is slow, and the hazard of water erosion is slight.

This unit is used for cultivated crops, hay and pasture, rangeland, and homesite development.

This unit is suited to irrigated wheat and barley. It is limited mainly by low to moderate available water

Included in this unit are small areas of shallow and very shallow soils that vary in texture, Mary loam, Jilson gravelly loam, Terwilliger loam, sedimentary rock, serpentine, and soils that have slopes of 50 to 80 percent. Included areas make up about 15 percent of the mapped acreage.

This unit is used for wildlife habitat and watershed. A few areas are also used for quarrying limestone.

This map unit is in capability subclass VIII(5,21,22), nonirrigated.

217—Salisbury clay loam, 0 to 2 percent slopes.

This well drained soil is on terraces. It is moderately deep to a hardpan. The soil formed in alluvium derived from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, forbs, and shrubs. Elevation is 2,500 to 4,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 48 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is gray clay loam about 4 inches thick. The upper 4 inches of the subsoil is dark grayish brown clay loam. The lower 16 inches is dark grayish brown and dark brown clay. The next layer is a strongly cemented hardpan about 8 inches thick. Below this to a depth of 60 inches or more is stratified sand, gravel, and some stones.

Included in this unit are small areas of a Kuck clay loam, Lassen clay, and Mary loam that have slopes of 0 to 2 percent. Also included are a few areas of Medford clay loam. Included areas make up about 15 percent of the total acreage.

Permeability of this Salisbury soil is slow above the impervious hardpan and rapid below it. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is slow, and the hazard of water erosion is slight.

This unit is used for cultivated crops, hay and pasture, rangeland, and homesite development.

This unit is suited to irrigated and nonirrigated wheat and barley. It is limited mainly by depth to hardpan. The hardpan can be ripped and shattered. This increases the effective rooting depth and improves internal drainage.

Furrow, border, corrugation, and sprinkler irrigation systems are suited to this unit. The method used generally is governed by the crop grown. In areas where the hardpan has not been ripped, irrigation water must be applied carefully to prevent the development of a perched water table. Drainage may also be required.

Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or grass-legume mixtures help to maintain fertility and tilth.

This unit is suited to hay and pasture. It has few limitations. Proper grazing practices, weed control, and fertilizer are needed for maximum quality of forage. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff. Irrigation

water can be applied by the sprinkler and border methods.

This unit is suited to use as rangeland. It has few limitations. The soil in the unit responds well to fertilizer, to range seeding, and to proper grazing use. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

The potential plant community on this unit includes bottlebrush squirreltail, Idaho fescue, bluebunch wheatgrass, and sagebrush.

If this unit is used for homesite development, the main limitations are the depth to the hardpan, low load supporting capacity, the potential for shrinking and swelling, and slow permeability. Mulching, fertilizing, and irrigating are needed to establish lawn grasses and other small seeded plants.

If buildings are constructed on the soil in this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage as a result of shrinking and swelling. Buildings and roads should be designed to offset the limited ability of the soil to support a load.

The suitability of the soil for septic tank absorption fields can be improved by ripping the hardpan to increase permeability. The limitation of slow permeability can also be overcome by increasing the size of the absorption field.

This map unit is in capability unit III(3)(21), irrigated and nonirrigated.

218—Salisbury clay loam, 2 to 9 percent slopes.

This well drained soil is on terraces. It is moderately deep to a hardpan. The soil formed in alluvium derived from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, forbs, and shrubs. Elevation is 2,500 to 4,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 48 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is gray clay loam about 4 inches thick. The upper 4 inches of the subsoil is dark grayish brown clay loam. The lower 16 inches is dark grayish brown and dark brown clay. The next layer is a strongly cemented hardpan about 8 inches thick. Below this to a depth of 60 inches or more is stratified sand, gravel, cobbles, and some stones.

Included in this unit are small areas of Kuck clay loam, Lassen clay, Mary loam, and Medford clay loam. Included areas make up about 15 percent of the total acreage.

Permeability of this Salisbury soil is slow above the impervious hardpan and rapid below it. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used for cultivated crops, hay and pasture, rangeland, and homesite development.

If this unit is used for homesite development, the main limitations are the depth to rock, low load supporting capacity, the potential for shrinking and swelling, gravel in the surface layer, and slow permeability. Removal of pebbles in disturbed areas is required for best results when landscaping, particularly in areas used for lawns. Mulching, fertilizing, and irrigating are needed to establish lawn grasses and other small seeded plants.

If buildings are constructed on the soil in this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage as a result of shrinking and swelling. Buildings and roads should be designed to offset the limited ability of the soil to support a load.

The suitability of the soil for septic tank absorption fields can be improved by ripping the hardpan to increase permeability. The limitation of slow permeability can also be overcome by increasing the size of the absorption field.

This map unit is in capability unit IIIe-3(21), irrigated and nonirrigated.

220—Salisbury gravelly clay loam, 5 to 9 percent slopes. This well drained soil is on terraces. It is moderately deep to a hardpan. The soil formed in alluvium derived from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, forbs, and shrubs. Elevation is 2,500 to 4,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 48 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is gray gravelly clay loam about 4 inches thick. The upper 4 inches of the subsoil is dark grayish brown gravelly clay loam. The lower 16 inches is dark grayish brown and dark brown gravelly clay. The next layer is a strongly cemented hardpan about 8 inches thick. Below this to a depth of 60 inches or more is stratified sand, gravel, cobbles, and some stones.

Included in this unit are small areas of Kuck clay loam, Lassen clay, Mary loam, and Medford clay loam. Included areas make up about 15 percent of the total acreage.

Permeability of this Salisbury soil is slow above the impervious hardpan and rapid below it. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

This unit is used for cultivated crops, hay and pasture, rangeland, and homesite development.

This unit is suited to irrigated and nonirrigated wheat and barley. It is limited mainly by the depth to the hardpan and gravel in the surface layer. The hardpan can be ripped and shattered. This increases the effective rooting depth and improves internal drainage.

Furrow, border, corrugation, and sprinkler irrigation systems are suited to this unit. Irrigation water should be applied at a rate that insures optimum production without increasing runoff, deep percolation, and erosion. In areas where the hardpan has not been ripped, irrigation water must be applied carefully to prevent the development of a perched water table. Drainage may also be required.

Returning all crop residue to the soil and using a cropping system that includes grasses, legumes, or grass-legume mixtures help to maintain fertility and tilth. Diversions and grassed waterways may be needed. All tillage should be on the contour or across the slope. Gravel in the surface layer causes rapid wear of equipment used for tillage.

This unit is suited to hay and pasture. It has few limitations. Proper grazing practices, weed control, and fertilizer are needed for maximum quality of forage. Grazing when the soil is wet results in compaction of the surface layer, poor tilth, and excessive runoff. Irrigation water can be applied by the border and sprinkler methods.

This unit is suited to use as rangeland. It has few limitations. The soil in this unit responds well to fertilizer, to range seeding, and to proper grazing use. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

The potential plant community on this unit includes bluebunch wheatgrass, Douglas rabbitbrush, sagebrush, and Idaho fescue.

If this unit is used for homesite development, the main limitations are depth to rock, low load supporting capacity, the potential for shrinking and swelling, slow permeability, and gravel in the surface layer. Erosion is a hazard in the steeper areas. Only the part of the site that is used for construction should be disturbed.

Removal of pebbles and cobbles in disturbed areas is required for best results when landscaping, particularly in areas used for lawns. Mulching, fertilizing, and irrigating are needed to establish lawn grasses and other small seeded plants.

If buildings are constructed on the soil in this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage as a result of shrinking and swelling. Buildings and roads should be designed to offset the limited ability of the soil to support a load.

The suitability of the soil for septic tank absorption fields can be improved by ripping the hardpan to increase permeability. The limitation of slow permeability can also be overcome by increasing the size of the absorption field.

This map unit is in capability unit IIIe-3(21), irrigated and nonirrigated.

221—Salisbury cobbly loam, 0 to 9 percent slopes. This well drained soil is on terraces. It is moderately deep to a hardpan. The soil formed in alluvium derived

from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, forbs, and shrubs. Elevation is 2,500 to 4,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 48 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is gray cobbly loam about 4 inches thick. The upper 4 inches of the subsoil is dark grayish brown gravelly clay loam. The lower 16 inches is dark grayish brown and dark brown gravelly clay. The next layer is a strongly cemented hardpan about 8 inches thick. Below this to a depth of 60 inches or more is stratified sand, gravel, cobbles, and some stones. A few cobbles are on the surface in most places.

Included in this unit are small areas of Kuck clay loam, Lassen cobbly clay, a Mary loam that has slopes of 2 to 9 percent, Medford clay loam, and soils that have slopes of as much as 15 percent. Included areas make up about 15 percent of the total acreage.

Permeability of this Salisbury soil is slow above the impervious hardpan and rapid below it. Available water capacity is very low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is slight to moderate.

This unit is used as rangeland and for homesite development.

This unit is suited to use as rangeland. The production of vegetation suitable for livestock grazing is limited by cobbles on the surface. The soil in the unit responds well to fertilizer, to range seeding, and to proper grazing use. Use of mechanical treatment practices is not practical because of the cobbly surface and steepness of slope.

The potential plant community on this unit includes Idaho fescue, western juniper, bluebunch wheatgrass, and sagebrush.

If this unit is used for homesite development, the main limitations are the depth to the hardpan, low load supporting capacity, the potential for shrinking and swelling, slow permeability, and cobbles on the surface. Erosion is a hazard in the steeper areas. Only the part of the site that is used for construction should be disturbed.

Removal of pebbles and cobbles in disturbed areas is required for best results when landscaping, particularly in areas used for lawns. Mulching, fertilizing, and irrigating are needed to establish lawn grasses and other small seeded plants.

If buildings are constructed on the soil in this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage as a result of shrinking and swelling. Buildings and roads should be designed to offset the limited ability of the soil to support a load.

The suitability of the soil for septic tank absorption fields can be improved by ripping the hardpan to increase permeability. Use of sandy backfill for the

trench and long absorption lines helps to compensate for the slow permeability.

This map unit is in capability unit IVe-7(21), irrigated and nonirrigated.

222—Settlemeier loam, 0 to 2 percent slopes. This very deep soil is on flood plains. It formed in alluvium derived from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, sedges, and other water-tolerant plants. Elevation is 2,000 to 4,000 feet. The average annual precipitation is about 15 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is about 125 days.

Typically, the surface layer is gray loam about 10 inches thick. The next layer is gray fine sandy loam, loam, and silt loam about 34 inches thick. Below this to a depth of 66 inches is a buried surface layer of gray silt loam and sandy clay loam.

Included in this unit are small areas of Esro silt loam, Diyou loam, Stoner gravelly sandy loam, and Riverwash. Also included are areas, in Scott Valley, where precipitation is as much as 18 inches. Included areas make up about 15 percent of the total acreage.

Permeability of this Settlemeier soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight. A seasonal high water table is at the surface from December through June but fluctuates between depths of 12 and 24 inches the rest of the year. This soil is subject to flooding about 3 years out of 10 during prolonged, high-intensity storms. Channeling and deposition are common along streambanks.

This unit is used as rangeland.

This unit is suited to use as rangeland. The production of vegetation suitable for livestock grazing is limited by the high water table and the hazard of flooding. The soil in this unit responds well to fertilizer, to range seeding, and to proper grazing use. Plants that tolerate wetness should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock. If the plant cover is disturbed, protection from flooding is needed to control gullying, streambank cutting, and sheet erosion.

The potential plant community on this unit includes carex, rush, tufted hairgrass, bluegrass, and redtop.

This map unit is in capability unit VIw-2(21), irrigated and nonirrigated.

223—Settlemeier loam, drained, 2 to 5 percent slopes. This very deep, poorly drained soil is on flood plains. It formed in alluvium derived from mixed rock sources. The vegetation in areas not cultivated is mainly perennial grasses, sedges, and other water-tolerant plants. Elevation is 2,000 to 4,000 feet. The average annual precipitation is about 15 inches, the average

Appendix F

Novy Riparian Pump Streambed Alteration Agreement



California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
601 Locust Street
Redding, CA 96001
530-225-2300
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director



July 22, 2016

Lowell L. Novy
Novy Ranches
845 E. Los Angeles Ave
Simi Valley, CA 93065

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2015-0517-R1
Novy Pump

Dear Mr. Novy:

Enclosed is the final Streambed Alteration Agreement (Agreement) for the Novy Pump project (Project). Before the California Department of Fish and Wildlife (Department) may issue an Agreement, it must comply with the California Environmental Quality Act (CEQA). In this case, the Department, acting as a lead agency, filed a Notice of Determination (NOD) within five working days of signing the Agreement. The NOD was based on information contained in the 2008 Klamath River Restoration Grant Program Initial Study/Mitigated Negative Declaration prepared by the California Department of Fish and Wildlife.

Under CEQA, the filing of an NOD triggers a 30-day statute of limitations period during which an interested party may challenge the filing agency's approval of the Project. You may begin the Project before the statute of limitations expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Brad Henderson, Senior Environmental Scientist, at 530-225-2362 or Brad.Henderson@wildlife.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Curt Babcock".

Curt Babcock
Environmental Program Manager

ec: Brad Henderson, Senior Environmental Scientist
Brad.Henderson@wildlife.ca.gov

Conserving California's Wildlife Since 1870

Appendix G

Grenada Novy Ranches Grazing Plan

Novy Ranch

Prescribed Riparian Grazing Management Recommendation (October 22, 2016)

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 Ranch

Approximately 2.3 miles of the Shasta River flow through this property, along the south, southwest boundary of the ranch (see Figure 1). The entire river reach through this ranch is riparian corridor fenced on both sides with permanent wire fence that is in excellent condition and effective at controlling livestock access to the river and riparian area. Noxious weeds are common throughout this stream corridor. Weeds including yellow starthistle (YST), teasel, poison hemlock and irrigated pasture grass species occur throughout the riparian area. It is likely that invasive weeds are inhibiting recruitment of native riparian vegetation, and are competing with established native riparian vegetation along the entire reach. The reach has primary potential to support *Juncas* and *Carex* spp. Given the fine substrates and relatively high water table, the potential to support riparian woodies is less certain.

Riparian Grazing and Weed Management Recommendations

Grazing Management Objective. The ranch owner and managers have an existing prescribed riparian grazing strategy that has been in place since 2006. Their riparian grazing management goals are 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. Based upon our site visit to this ranch, it appears that the current riparian grazing program on this ranch is effective in achieving the intended goals. Due to high water table – it is unlikely this reach has the potential to support a significant riparian woody population. However, the prescribed riparian grazing recommendation below will allow riparian woodies to establish and grow if the reach does have the potential to support them.

Riparian Grazing Infrastructure. Again, the entire reach through this ranch is riparian corridor that is fenced on both sides with permanent wire fencing. This enclosure is in excellent working condition and is effectively controlling livestock access to the riparian reach. There are no accessible livestock crossings or watering areas within the riparian corridor, however, there are accessible gates which provide rotational opportunities to move livestock in and out of the fenced riparian area with available, off-site water sources as it winds through the ranch. At this

point of the recommendation, the riparian area through the ranch is broken into an upper, middle, and lower unit (see Figure 1). Portable electric cross fencing can be used to further segment the riparian corridor into practical grazing units if desired.

Recommended Seasons of Grazing. This reach of the Shasta River is not considered to be coho spawning habitat, but is only used as a pass through for Coho. Thus grazing bouts should occur in this grazing unit during the standard irrigation-growing season (spring through fall) and may be beneficial when reasonable residual dry matter is present throughout the year and monitored using management decision triggers below. The unit should not be grazed continuously through the grazing season. It should be worked into the normal rotation of livestock throughout pastures on the ranch. Rest periods must occur during the growing season (i.e., early, mid, and/or late growing season rest from grazing should occur each year). Management decision triggers described below will ensure grazing intensity (e.g., stocking rate) and livestock impacts are in balance with goals listed above.

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 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 plants <5ft in height, excessive streambank disturbance). For this site we recommend during any grazing bout that 1) physical hoof damage to streambanks be limited to no more than 20% of streambank per each side of stream; 2) minimum stubble height of browsed herbaceous vegetation at the stream greenline not go below 3”; and that 3) browse on recruiting riparian woody plants (< 5ft in height – below cattle maximum browse height) be limited to no more than 20% of current year’s leader growth within the riparian unit. Once any of these three triggers is hit during a grazing bout, livestock should immediately be rotated out of the riparian unit.

Table 1. Management triggers

Indicator	Trigger
Browse use on recruiting riparian woody species < 5 ft. in height	20% of current years leader growth Streambank Hoof action
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 weekly during grazing bouts where livestock are allowed access to riparian units from adjoining pastures (the current management regime), and every 1 to 2 days if livestock are enclosed in riparian units. 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. 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.