MEMORANDUM OF UNDERSTANDING

by and between

DEER CREEK IRRIGATION DISTRICT

and

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

DEER CREEK

This California Endangered Species Act Memorandum of Understanding ("CESA MOU") is made and entered into by and between Deer Creek Irrigation District (hereinafter called DCID), acting through its Board of Directors, and the California Department of Fish and Wildlife (hereinafter called the "CDFW").

The purpose of this CESA MOU is to provide a framework for cooperative activities and monitoring that involve or address issues of importance to salmonids, particularly Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha),* hereinafter referred to as spring run, in Deer Creek, Tehama County. This CESA MOU provides for take associated with actions taken by the CDFW or DCID to rescue and relocate spring run or assist with increasing flows in the creek for the benefit of spring run as management activities under the authority of Section 2081(a) of the California Fish and Game Code.

RECITALS

WHEREAS, the CDFW has jurisdiction over the conservation and protection of fish, wildlife, and native plants and their habitats necessary for biologically sustainable populations of those species and holds those resources in trust for the people of California (California Fish and Game Code Section 1802).

WHEREAS, spring run are classified as a threatened species by the State of California Fish and Game Commission pursuant to the California Endangered Species Act (CESA, Code section 2050 et seq.).

WHEREAS, Fish and Game Code section 2080 prohibits the import, export, take, possession, purchase or sale of any species, in whole or in part, that has been listed as threatened or endangered by the California Fish and Game Commission. Take is defined in Fish and Game Code section 86 as 'hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill." However, Fish and Game Code section 2081(a) allows CDFW to authorize take and other acts prohibited by Fish and Game Code section 2080 for scientific, educational, or management purposes. This CESA

MOU authorizes a limited level of take of spring run for management purposes.

WHEREAS, Fish and Game Code section 5937 states, "The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in absences of a fishway, allow sufficient water to pass over, around or through the dam to keep in good condition any fish that may be planted or exist below the dam..."

WHEREAS, salmonid presence shall be defined by reviewing historical records and utilizing current fisheries monitoring on Deer, Mill, and Antelope creeks and the Sacramento River between the Red Bluff Diversion Dam and the confluence of Clear Creek.

WHEREAS, on January 17, 2014 Governor Brown issued a proclamation, declaring the state to be in an emergency due to the drought conditions.

WHEREAS, on April 25, 2014, Governor Brown issued an Executive Order directing state agencies to, in part, work with other state and federal agencies and with landowners in priority watersheds to protect threatened and endangered species and species of special concern and maximize the beneficial uses of scarce water supplies, including employment of voluntary agreements to secure instream flows, relocate members of those species or take other measures.

WHEREAS, on December 22, 2014, Governor Brown issued another Executive Order declaring a continued state of emergency due to drought conditions, extending many of the terms of the April 25, 2014 Executive Order until May 31, 2016.

WHEREAS, Deer Creek provides many important surface water beneficial uses, including agriculture, recreation, wildlife habitat, freshwater habitat, and anadromous fish habitat, particularly for spring run listed as threatened under the Federal and State Endangered Species Acts and Central Valley steelhead (*Oncorhynchus mykiss*) hereinafter referred to as steelhead listed as threatened under the federal Endangered Species Act. Due in part to naturally occurring low flows, agricultural diversions, channel morphology and excessive temperatures, the upstream migration of adults or downstream migration of juvenile spring run and steelhead may be impeded or blocked in some years. Conditions may further deteriorate such that spring run and steelhead will need the restoration of suitable instream flow conditions to provide passage and/or be rescued and relocated.

WHEREAS, the flow prescriptions identified in this CESA MOU are considered by CDFW to be the minimum flows, in the current Drought Emergency, necessary to allow for adult and juvenile salmonid migration in Deer Creek below Stanford Vina Ranch Irrigation Company (SVRIC) dam, and they are considered the minimum flows needed to minimize the effects of drought while balancing salmonid and agricultural interests.

WHEREAS, DCID is a political subdivision of the State of California, duly organized and existing under Division 11 of the California Water Code and providing water service for the irrigation of lands and crops within the county of Tehama.

WHEREAS, DCID has adjudicated rights to divert Deer Creek surface water for irrigation. DCID has an adjudicated right to approximately 33 percent of the flow of Deer Creek and SVRIC, located downstream of DCID, has an adjudicated right to 66 percent of the flow from Deer Creek.

WHEREAS, DCID owns or has access to certain real property associated with the DCID Diversion Dam on Deer Creek, Tehama County (Real Property). DCID is willing to participate with the CDFW in fish rescue and relocation activities by allowing access to the Real Property for the purposes of monitoring, and/or capturing and removing, and/or relocating salmonids on or to Deer Creek adjacent to the Real Property or to the Sacramento River.

NOW, THEREFORE, THE PARTIES HERETO AGREE AS FOLLOWS:

1. Purpose

Elements of this MOU include eligibility, fish rescue efforts, designated fish passage flows, changes in the timing of diversions to provide improved instream flow and water temperature conditions which would minimize the need to rescue fish, monitoring, and evaluations of management actions. The specific elements of the program are tailored by stream and by an eligible diverting entity and as described in this MOU.

The elements of this CESA MOU, including flows, monitoring and evaluation, if implemented in the manner described below, will provide fishery protections necessary to avoid significant drought-related harm to salmonids, particularly spring run. The flows in this CESA MOU are based on the best available information for protecting salmonids, while maintaining water use in Deer Creek and are comparable to, and achieve, a similar biological outcome for salmonid protection as those required in the regulations being proposed by the State Water Resources Control Board (Title 23 CCR 877-879.2).

2. Methods

A. Monitoring: CDFW or its agent will carry out all monitoring activities. Monitoring and evaluation plans shall be in place to inform the effectiveness of the flow events and/or rescue efforts. Those activities may include:

i. Use of video monitoring to determine if adult salmonids are moving through lower Deer Creek in response to minimum base flows and pulse flow events, and to determine population abundance.

ii. Snorkel surveys may be conducted upstream and downstream of diversion structures and critical riffle areas to determine if minimum base flows are passing salmonids through these areas. It is the intent of the CDFW to detect any salmonid stranding issues before mortalities are observed, so that sufficient time

is provided to inform diverters and to take proactive flow restoration or other fish rescue actions.

iii. Monitoring of habitat conditions in Deer Creek or the Sacramento River prior to relocation of salmonids at risk, including spring run.

B. Fish Capture and Relocation: CDFW or its agent will carry out all fish capture and relocation activities. CDFW, or its agent, will notify DCID at the telephone number listed in Section 12, of all planned fish rescue/relocation activities it will carry out on the Real Property.

i. CDFW or its agent may relocate salmonids, including spring run, captured from elsewhere in the lower Deer Creek watershed (e.g. diversion canals), to Deer Creek adjacent to Real Property if suitable instream conditions exist, or to a suitable location on the Sacramento River.

ii. CDFW or its agent may monitor stream depth and temperature at relocation site(s) post-relocation to determine if conditions remain adequate to keep salmonids alive and provide for salmonid passage.

3. Notice to Other Water Diverters

Prior to notifying DCID as described in Section 2.0, the CDFW will request all water diverters on Deer Creek below DCID's diversion dam not to divert any Bypassed Water, as defined below in Sections 4.C (i) and 4.C (ii). If the CDFW determines that any water diverter below DCID's diversion dam will not cooperate, the CDFW may: (a) elect not to request DCID to bypass water, in which case the CDFW will notify DCID of its decision as soon as possible; (b) withdraw from the MOU in accordance with Section 9.0; (c) suspend the bypass flow events; or (d) take some other action consistent with the MOU. If this were to occur (i.e. other diverters not cooperating), DCID will still have met its commitment to provide flows for listed fish and thereby avoid a violation of CESA, during the timeframe of the CESA MOU.

4. DCID Commitments

A. DCID agrees to provide reasonable access to CDFW and its agents, including equipment access, to the Real Property to carry out any of the management activities listed in Section 2.0 of this CESA MOU for the purposes of:

i. Monitoring habitat conditions and salmonid abundance, size, and condition prior to any management activities;

ii. Capturing and removing salmonids from and/or relocating salmonids to suitable habitat, and for monitoring conditions post-relocation; or

iii. Monitoring stream flow conditions during flow events and/or during post-rescue/relocation to determine if conditions remain adequate to keep salmonids alive and provide for passage.

B. All water diversion facilities that DCID owns, operates, or controls associated with the property where salmonids may need to be removed and relocated to more suitable habitats shall be operated and maintained in accordance with current laws and regulations.

C. DCID agrees to perform the following Required Management Elements (RME's) as outlined below as a condition of this MOU, according to the type of diversion activities conducted at a particular site. The amount to be bypassed and/or diverted will be proportional to the streamflow adjudicated to DCID (33.3%) and applies to minimum Base Flow and Pulse Flows identified below:

i. Minimum Base Flow: These flows are required to support juvenile and adult salmonids that may already be 1) holding in the Sacramento River waiting to enter Deer Creek; 2) in Deer Creek but may not have passed to upper elevations; or (3) may not have moved out to the Sacramento River. Unless otherwise noted, the flow requirements identified below, OR full natural flows (whichever is less) will be provided by 8:00 a.m. on the dates identified below.

a. January 1 through June 15:

50 cubic feet per second (cfs) for salmonid passage through the five miles of stream between SVRIC Dam and the confluence with the Sacramento River, as measured at the Department of Water Resources (DWR) lower Deer Creek flow gage located below SVRIC Dam (CDEC Station ID: DVD).

If stream temperatures measured at DVD meet or exceed a daily minimum of 75 °F (when the base flow requirement of 50 cfs is being met) for a seven day consecutive period in the month of June, adult base flows can be reduced to juvenile base-flow requirements until the end of the juvenile base-flow period is reached, or June 30, whichever comes earlier, as provided below.

b. June 16 through June 30:

20 cfs for juvenile salmonid passage through the five miles of stream between SVRIC Dam and the confluence with the Sacramento River, as measured at DVD.

If monitoring and/or evaluations conducted by CDFW determine

that juvenile salmonids are not present in lower Deer Creek during juvenile base-flow requirement periods June 16 through June 30, juvenile base flow requirements may be relaxed.

c. October 15 through December 31:

50 cfs for salmonid passage through the five miles of stream between SVRIC Dam and the confluence with the Sacramento River, as measured at DVD.

ii. Pulse Flows: Pulse flows mimic the sudden increases in stream discharge following rain or snowmelt events which may be absent in drought years. Adult salmonids have evolved to take advantage of such conditions when returning to natal tributaries. Previous pulse flows on Mill and Deer creeks lasting 48 hours or more have helped to create an attraction flow at the confluence of the tributary creek with the Sacramento River, encouraging salmonids to enter the stream, and providing the greatest instantaneous improvement to salmonid passage conditions through critical riffles and diversion structures. Pulse flows also encourage juvenile salmonids to migrate downstream before summer water temperatures become too warm.

a. Magnitude and duration of pulse flows:

Pulse flows will begin at 5:00pm. 100 cfs as measured at DVD will be required for the first 36 hours of the pulse flow. If pre-diversion stream flow measured at the Upper Deer Creek stream gage (USGS gage #11383500) is below 100 cfs, full natural flow achieved through closure of all agricultural diversion structures will be maintained in Deer Creek during the first 36 hours of the pulse flow.

The remaining period of the pulse flow shall include a declining ramping flow schedule, such that each adjustment in flow reduction will not exceed 10 cfs, with a minimum 3-hour period between adjustments until a return to base flow level.

b. Time period of pulse flows:

April 1 through June 15, up to once every two weeks. CDFW shall notify DCID at least 72 hours in advance when said pulse flow will be required.

CDFW will make its best effort to provide preliminary fish counts for pulse flow event periods to DCID prior to the scheduling of a subsequent pulse flow event. In addition, if

monitoring and evaluations conducted by CDFW determine that salmonids are not present or water temperatures are not conducive to salmonid survival during June, and it is mutually agreed to by CDFW and DCID, pulse flows may cease prior to June 15.

D. DCID shall notify the CDFW's Fisheries Program at the telephone number listed in Section 12, at least three (3) days prior to any significant planned changes in operation of the diversion and associated screen and bypass and other structures.

E. All water diversion facilities shall be maintained so they do not prevent, impede, or tend to prevent or impede the passing of salmonids upstream or downstream.

F. DCID shall notify CDFW, at the telephone number listed in Section 12, at least three days, or as soon as practicable, prior to closing a headgate or valve when salmonid stranding may occur in the diversion conduit as a result of that activity.

G. In cooperation with CDFW staff, DCID shall regularly inspect all fish screens and bypass pipes or channels to verify that they are effectively protecting salmonids and other fish species in accordance with CDFW and National Marine Fisheries Service (NMFS) fish screening criteria. Sufficient flow will also be supplied in the fish ladder (when in operation), located on DCID Dam to provide upstream and downstream migration of salmonids.

5. CDFW Commitments Regarding Fish Management Activities on the Real Property

A. CDFW agrees that CDFW and its agents will conduct all rescue/relocation activities only after CDFW has provided the advance notice to DCID as provided in Section 2 above.

B. CDFW will maintain the fish screens it has already agreed to maintain previously in writing.

C. Upon request, CDFW will provide all data after it has passed quality assurance review.

6. Authorized Take Level

Fish mortality related to diversions from Deer Creek made in compliance with the base flow and pulse flow requirements stated in this MOU is authorized .The number of spring run which may die in the course of fish capture and relocation activities conducted by CDFW is typically small (less than 10%) and is much-reduced from levels of mortality that will potentially occur in absence of carrying out this activity. As such, fish mortalities related to, or occurring in the course of, fish rescue activities is authorized.

7. Federal Endangered Species Act

Spring run are listed as a threatened species under the federal Endangered Species Act (ESA) of 1973. In its regulations, NMFS has limited the general prohibition of taking threatened spring run under the Federal ESA to allow, CDFW, it employees, and its designees to perform the rescue activities listed in Section 1 above. Steelhead are also listed as threatened by the Endangered Species Act; the flow prescription identified in Section 4 has been shown to NMFS staff and appears to be consistent with flow prescriptions identified in volunteer agreements developed by NMFS during the 2014 drought period. However, nothing in this CESA MOU authorizes any action pursuant to the Federal ESA.

DCID is not expected or authorized to assist in the handling of spring run as a part of the fish rescue effort.

8. Effective Date and Termination

Unless terminated sooner by either party of the CESA MOU by giving thirty (30) days prior written notice of earlier termination, this CESA MOU shall commence on the date of execution and will terminate on **May 31, 2016,** both days inclusive.

9. Dispute Resolution

The Parties shall make reasonable efforts to resolve any disputes that may arise from this MOU in a prompt and timely manner. In the event of a dispute, the Party claiming a dispute shall give verbal and written notice of the dispute to the other Parties within 5 business days. If resolution of the dispute cannot be resolved within 5 business days of the notice either party may terminate the MOU through written notice. Termination of the MOU will result in a loss of take coverage for future actions.

10. Amendments

Amendments to this CESA MOU may be proposed by either party and shall become effective when both parties sign a written modification to this document.

11. Applicable Law

This CESA MOU shall be construed under and governed by the laws of the State of California and of the United States, without giving effect to any principles of conflicts of law if such principles would operate to construe the CESA MOU, as amended herein, under the laws of any other jurisdiction.

12. Notice and Contact Persons

Any written notice , and the telephone notice specified in Section 4 required to be given by the CESA MOU, shall be deemed to have been given by the notifying party when mailed, postage

prepaid or delivered to the following representatives, who will also serve as main contact people for their respective Party:

For DCID:
Mr. John Edson
PO Box 154
Vina, CA 96092
john@edsonappraisals.com
(530) 519-2366

For CDFW:
Mr. Matt Johnson
Northern Region
California Department of Fish and Wildlife
1530 Schwab Street
Red Bluff, CA 96080
Matt.Johnson@wildlife.ca.gov
(530) 527-9490

13. Signatories' Authority

The signatories to the CESA MOU on behalf of all the Parties hereto warrant and represent that they have authority to execute the CESA MOU and to bind the Parties on whose behalf they execute the CESA MOU.

14. Disclaimer

The CDFW shall incur no fiscal obligation under this CESA MOU.

IN WITNESS WHEREOF, THE PARTIES HERETO HAVE EXECUTED THIS CESA MOU TO BE IN EFFECT AS OF THE DATE LAST WRITTEN BELOW.

JOHN W. EDSON
President,
Deer Creek Irrigation District

Date: 3/16/15

PO Box 154

NEIL MANJI
Regional Manager,
Region 1

Date: 3/16/15

California Department of

Vina, CA 96092
(530) 519-2366

Fish and Wildlife, Region 1
601 Locust Street
Redding CA 96001
(530) 225-2300