California Voluntary Drought Initiative

VOLUNTARY DROUGHT AGREEMENT
Sacramento River Tributaries: Mill Creek
Nobmann Cattle LLC

This Voluntary Drought Agreement (Agreement) is developed to implement the goals of the California Voluntary Drought Initiative (Initiative). The parties enter into this Agreement in furtherance of the terms, policies and goals of the Initiative (attached). This agreement is between NOAA's National Marine Fisheries Service (NMFS) and Nobmann Cattle LLC (Nobmann CC).

Priority Watersheds

In an effort to focus resources and maximize the efficiency of the Initiative in the shortest time possible, we have chosen to concentrate on priority watersheds where the risk of drought-related effects to Federally-listed fish species are greatest. This section describes those priority watersheds and summarizes their importance to conserving sensitive species.

Mill Creek

The importance of Mill Creek to the survival and recovery of salmon and steelhead in Northern California's Central Valley, is significant. Of the 19 independent spring-run Chinook salmon populations that historically occurred in the Central Valley, the Mill Creek population is one of the last of a small group of naturally-produced populations. Mill Creek is identified in the Central Valley salmon and steelhead recovery plan as Core 1 populations for spring-run Chinook salmon and steelhead. Preserving and restoring Core 1 populations is the foundation of the recovery strategy because Core 1 populations are considered to have the greatest potential to support independent viable populations.

Mill Creek is unique in the Central Valley because it is has no upstream water storage facilities that can be managed to meet the stream flow and water temperature requirements of these fish species, to buffer the effects of drought. Instead, all of the water management facilities and water use occur on downstream reaches near the confluence with the Sacramento River, and their careful management is needed this year, to ensure salmon and steelhead are able to successfully migrate upstream to spawning habitat and downstream to the Sacramento River.

Table 1 lists the months when adult and juvenile forms of Chinook salmon and steelhead are present in the diverted stream sections of lower Mill Creek. Supporting documentation used to create this table was obtained from annual adult salmon and steelhead population monitoring conducted by California Department of Fish and Wildlife's (CDFW's) Red Bluff Fisheries

Office (Killam and Johnson 2012) and a summary report of rotary screw trap monitoring conducted on Deer and Mill Creek between 1994 and 2010 (Johnson and Merrick 2012) .

Table 1. – Occurrence, by month, of adult and juvenile Chinook salmon and steelhead in the diverted stream sections of lower Mill Creek. Dark shades indicate peak presence, while white indicates no presence.

Species	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Adult spring-run Chinook (upstream migration)										
Adult steelhead (upstream migration)										
Adult fall-run Chinook (upstream migration and spawning)										
Juvenile Chinook (downstream migration)										
Juvenile steelhead (downstream migration)										

Elements of the Voluntary Drought Initiative and Agreements

The general elements of the Initiative include eligibility, designated fish passage flows, and changes in the timing of diversions to help with flow and water temperature management, monitoring and evaluations. The specific elements of the program are tailored by stream and described in this Agreement.

Implementation and Duration

Implementation will occur when water users sign onto this Agreement. Agreements will be implemented during the 2014 drought, and will remain place until December 31, 2014, or as long as any Federal or State drought emergency declarations or designations remain in effect, whichever comes first.

Instream Flows

The flows described in this Agreement were developed based on instream flow studies, data collection efforts and reports associated with fish biology data collection, relevant literature, and the professional knowledge and experience of CDFW and U.S. Fish and Wildlife Service (USFWS) field staff. CDFW and USFWS have conducted flow studies, snorkel surveys, and established video monitoring stations to determine what flow conditions allow salmon and steelhead to move up- and downstream through areas in these streams where physical obstacles (riffle height, dams, and fish ladders) are a challenge for the fish migration during drought conditions.

The range of instream flows that are proposed in this Agreement are considered by NMFS and CDFW to be the minimal flows that are necessary to allow for adult and juvenile fish migration on lower Mill Creek. The range of flows in this Agreement (which incorporate base flows and pulse flows) incorporate, to the best of our knowledge, the uncertainty associated with a variety of fish passage consideration in these streams, including passage past critical riffles, fish ladders and other obstacles. The range also incorporates consideration for the variable run timing of target fish species. These are not optimal flows, but the minimum, reasonable targets that will minimize the effect of drought while balancing fish and agricultural interests. Flows below those described in this Agreement would be expected to cause significant harm to the target species.

Water users will be working closely with the NMFS and CDFW to ensure that flow contributions are closely coordinated, monitored, and evaluated to determine fish migration success. Adjustments may be needed to fine tune flows in coordination with NMFS and other fish and water agencies field to ensure successful fish passage. NMFS and CDFW will work closely with water users to ensure that minimum fish passage flows are scheduled at the best times to ensure fish passage and survival.

Pulse Flows

Previous pulse flows on Mill Creek lasting 24 hours or more have helped to create an attraction flow at the confluence of the tributary creek with the Sacramento River, encouraging fish to enter the stream, and providing the greatest instantaneous improvement to fish passage conditions through critical riffles and diversion structures. Pulse flows also encourage juvenile salmonids to migrate downstream before summer water temperatures become too warm. Coordination between diverting entities and their points of diversion must be conducted so that the duration and magnitude of water delivery interruptions are shared equally by all constituents in their respective service areas. To be most effective, pulse flows must be maintained for a minimum of 24 hours, with the first 12 hours of the event at maximum flow to promote fish attraction, and the remainder of the event stepped down incrementally to reduce potential fish stranding.

Mill Creek Flow Targets

<u>Spring Base Flows:</u>

April 1 to June 14: 50 cubic feet per second (cfs) for adult spring-run Chinook and juvenile young of the year spring-run Chinook salmon and steelhead.

June 15 to 30: 25 cfs for juvenile young of the year spring-run Chinook salmon and steelhead. If monitoring and evaluations conducted by CDFW determine that fish are not present in Lower Mill Creek or water temperatures are not conducive to fish survival during this period, and it is mutually agreed to by NMFS, CDFW and the participant, base flows may be reduced below 25 cfs.

Fall Base Flows:

October 15 to December 31: 50 cfs for out-migrating yearling juvenile spring-run Chinook and steelhead and the upstream migration of adult steelhead. In the event of a rain freshet, base flows could start on October 1 if mutually agreed to by NMFS, CDFW and participant.

Adult and juvenile spring-run Chinook salmon and steelhead are present in stream during other months. However, for the purpose of this Agreement, the critical passage periods described above are critical to fish protection during the drought.

Pulse Flows:

Time period of pulse flows: April 15 through June 14, at a minimum of once every two weeks.

Magnitude of pulse flows: Pulse flows should be a minimum of 50 cfs over base flow or full natural flows as recorded at the U.S. Geological Survey (USGS) gage station above Upper Dam.

Duration of pulse flows: Minimum of 24 hours

Gage stations where stream flow data is collected

USGS gage located above Upper Dam at the Mouth of the canyon
California Department of Water Resources gage downstream of Ward dam (Los Molinos)

Monitoring and Evaluations

Monitoring and evaluations plans shall be in place to inform the effectiveness of the program. Monitoring and evaluations will be conducted by CDFW staff and reported to and reviewed by NMFS. At a minimum, monitoring will involve:

(1) Use of video stations to determine if fish are moving through lower Mill, Deer, and Antelope Creeks in response to minimum base flows and pulse flow events, and to determine population abundance.

Snorkel surveys will be conducted downstream of diversion structures and critical riffle areas to determine if minimum base flows are passing fish through these areas. It is the intent of NMFS and CDFW to detect any fish stranding issues before mortalities are observed, so that sufficient time is provided to inform diverters and take proactive flow restoration or other fish rescue actions.

For pulse flow evaluations, CDFW field staff will identify fish passage issues by conducting snorkeling surveys downstream of the potential barrier to determine if listed salmonids are in the vicinity of the potential passage issue. If a fish passage issue is identified (*i.e.*, adult salmon are

not successfully migrating upstream past critical riffles or through fish ladders), CDFW will determine, and make pulse flow recommendations to water users where pulse flows may help to move fish upstream. Water users will make every reasonable attempt to provide the recommended pulse flow.

Specific Volunteer Flow Relationships and Commitments

Los Molinos Mutual Water Company (LMMWC) serves as the watermaster for Mill Creek and operates two diversions for agricultural water from both the north and south banks, one of which includes Ward Dam. LMMWC has entered into Voluntary Drought Agreement with NMFS to meet the flow targets described above. Nobmann CC owns a privately-owned farm with adjudicated rights to divert Mill Creek surface water for irrigation. Nobmann owns a decreed priority water right (one of three on Mill Creek), that totals three cfs to divert surface water from Mill Creek for irrigation and other purposes deemed beneficial to the State Water Resources Control Board.

Nobmann CC agrees to request the LMMWC, as watermaster, that a portion of its water rights on Mill Creek be used to meet the flows of the LMMWC Voluntary Drought Agreement. The amount to be bypassed will be proportional to the streamflow adjudicated to Nobmann CC and other water adjudicated to LMMWC or water right holders on Mill Creek.

PARTICIPATING PARTIES

Lee P. Nobmann — June 5, 14
Lee P. Nobmann
Managing Member
Nobmann Cattle, LLC
Date

Maria Rea — 6/04/2014
Maria Rea
Assistant Regional Administrator
NMFS, West Coast Region
California Central Valley Office
Date