

California Voluntary Drought Initiative

VOLUNTARY DROUGHT AGREEMENT

Porter Creek, Russian River
Gallo Vineyards Inc., Coastal
October 9, 2014



This Voluntary Drought Agreement (Agreement) is developed to implement the goals of the California Voluntary Drought Initiative (Initiative, attached). The parties enter into this Agreement in furtherance of the terms, policies and goals of the Initiative. This Agreement is between NOAA's National Marine Fisheries Service (NMFS), the California Department of Fish and Wildlife (CDFW), and Gallo Vineyards Inc., Coastal (Gallo).

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 and State-listed fish species is greatest. Porter Creek, tributary to the Russian River, is one such priority area. This site periodically contains Central California Coast (CCC) coho salmon and persistently contains CCC steelhead, both of which are listed under the Federal Endangered Species Act (ESA) as endangered and threatened, respectively. Coho salmon are also listed as Endangered under the California Endangered Species Act (CESA).

Porter Creek

Porter Creek is tributary to the Russian River in Sonoma County, California. This watershed drains an area of approximately 7.3 square miles (CDFG 2006) and generally flows year-round above the Upper Valley Bridge (Bridge) at stream mile 1.4 (see map attached). Below that point, the stream traverses a valley floor that is more porous than the upstream bedrock. This results in greater flow infiltration and lower summer base flows. Portions of the reach below the Bridge typically go dry in summer, but a substantial section remains wetted and supported juvenile coho salmon in the summer of 2013, a dry year.

Porter Creek currently supports steelhead spawning and rearing, with some natural reproduction of coho salmon as well. The Russian River population of coho salmon is considered essential to the recovery of the species as a whole.

Deciduous forest dominates the riparian corridor, but there are zones of conifers along the lower floodplain, as well as grassland and oak-woodland in the upslope areas. The watershed is entirely privately owned, and managed for vineyard, timber, and livestock production. A habitat survey conducted in 1997 reported only one water diversion on Porter Creek.

Restoring habitat and salmonid populations in Porter Creek is an important step toward the goal of re-establishing viable steelhead and coho salmon populations within the Russian River. As an example of the importance of this stream to ongoing recovery efforts, several thousand hatchery-reared coho salmon fry are released every year in Porter Creek as part of the Russian River Coho Salmon Captive Broodstock Program (RRCSCBP).

Land owned and managed by Gallo adjacent to Porter Creek includes a 253 acre-foot (af) off-channel reservoir for irrigation purposes. Gallo has the ability to release water from this reservoir to Porter Creek for the purpose of augmenting natural streamflow.

Elements of the Voluntary Drought Initiative and Agreements

The general elements of the Initiative include eligibility, in-stream flow targets, changes in diversions (or in this case, flow enhancements), and monitoring for project effectiveness. For this Agreement, Gallo agrees to release water from the existing off-stream reservoir to Porter Creek for the purpose of augmenting natural stream flow for listed anadromous fish. Gallo also agrees to assist in some elements of monitoring as specified below and agrees to allow limited access to their property to facilitate fish rescue and relocation by NMFS, CDFW and RRCSCBP staff.

Implementation and Duration

Once signed, this Agreement will be in effect for the remainder of the 2014 drought, and will remain in place until December 31, 2014, or until Federal or State drought emergency declarations or designations are no longer in effect, whichever comes first. However, this Agreement may be extended until January 31, 2015, by mutual agreement of NMFS, CDFW, and Gallo if Federal or State drought declarations or designations are still in effect on December 31, 2014. Pursuant to this Agreement, Gallo agrees to the following activities to enhance stream flows for coho salmon and steelhead in Porter Creek.

Flow releases will begin upon a determination by Gallo that no permits are required from any Federal, State or local agency to carry out this activity. If any such permits are required, Gallo will not commence the release until such permits have been obtained. CDFW and NMFS will assist Gallo to expedite receipt of any required permits.

Gallo will make the water releases described herein upon approval by the State Water Resources Control Board, Division of Water Rights (SWRCB) Application 31743 and Petitions for Change to SWRCB License Nos. 3697, 4216, 4729A, and License 5559 (Applications A010795, A014178, A13684A and A013384 respectively). The application and license changes are necessary for Gallo to divert water from the mainstem Russian River after December 15, 2014 to offset water released to Porter Creek for in-stream fisheries benefit pursuant to this agreement.

If, at any time during the agreement period, habitat parameters are judged as unsuitable for rearing juvenile coho salmon and/or steelhead by CDFW and NMFS, the two agencies along with Gallo will modify the rate of, or terminate flow releases if such releases are not benefiting stream habitat conditions for listed salmonids, provided that the total volume of releases will not exceed 50 acre feet.

Scope of Agreement

This agreement specifies a two-part flow enhancement project (Summer Habitat Maintenance and Broodstock Habitat Enhancement), an associated monitoring and adaptive response plan, and a provision for fish rescue and relocation. In addition to the three signatory parties to this

Agreement, Sweetwater Spring Ranch and UC Extension Sea Grant will be cooperators with this program as described below.

Summer Habitat Maintenance

This portion of the flow enhancement plan supports stream flows in a section of Porter Creek between the Upper Valley Bridge and Pipe #1, located about 100 meters upstream of the bridge (see map). Reservoir water will be released via Pipe #1 at a variable rate of 5 to 15 gallons per minute, and will not exceed 7.5 acre feet total volume. These releases will be initiated immediately upon signing of this Agreement and will continue until the Brookstock Habitat Enhancement project starts, on or around November 1, 2014.

Brookstock Habitat Enhancement

Between November 1, 2014 and December 31, 2014 (or January 31, 2015, if this Agreement is extended as described above), Gallo will release water from the reservoir via Pipe #2 to support RRCSCBP coho salmon planted in Porter Creek from the conservation hatchery in Dry Creek. The outlet of Pipe #2 is located approximately 0.6 miles upstream of Upper Valley Bridge on Sweetwater Springs Ranch, owned by Kyle and Patricia Stone. These releases are intended to maintain approximately 1.5 mile of stream in a wetted condition between the Pipe #2 and Westside Road. Sweetwater Springs Ranch is cooperating by allowing pipe access and flow releases to occur where the relevant portions of Porter Creek intersect their property. The UC Extension Sea Grant, which staffs the RRCSCBP, is cooperating by coordinating the timing of fish plants into Porter Creek with these flow releases.

Brookstock Habitat Enhancement activities include:

- Construction of a 2” pipe to the upper release point 0.6 miles upstream of the Upper Valley Bridge (Pipe #2).
- In coordination with CDFW and NMFS, on or about November 1, Gallo will begin releases from Pipes #1 and #2 in advance of RRCSCBP fish planting. This will establish and enhance flows in Porter Creek from the Pipe #2 release point to the bridge crossing at Westside Road.
- Gallo will allow the RRCSCBP coho salmon planting to occur at the direction of CDFW in that section of Porter Creek.

- Once releases of fry have commenced, flow will be maintained by continually releasing water until December 31 (or January 31, 2015, if this Agreement is extended as described above), or until natural flow is established from seasonal rain fall, whichever comes first.
- Continual flow releases at Pipe #2 are limited to approximately 0.25 cfs (approximately 125 gallons per minute), and will be measured using an existing in-line flow meter.
- Pipe #2 release valve will be secured to prevent unintended cessation of releases.
- Table 1 summarizes the potential flow release schedule from Pipes #1 and #2.

Table 1. Pipe size, pressure (PSI), discharge rate (cfs and gpm), start and end dates, duration (days), and total volume (gallons and acre-feet) specifications for the two-part flow enhancement plan.

Pipe Name	Pipe size	PSI	Max Rate		Start	End	Days	Gallons	acft
#1	3 inch	20-100	0.04cfs	15gpm	6/1/14	11/1/14	150	3,240,000	9.9
#2	2 inch	20-100	0.28cfs	127gpm	11/1/14	1/31/15	89	16,276,320	50

Releases will continue for as long as possible or until the total volume released equals 50 acre feet (approximately 89 days), unless earlier terminated by Gallo, CDFW or NMFS. Cause for earlier termination may include:

- Rainfall has created necessary flows for natural habitat.
- Adverse impacts, or threatened adverse impacts, to water quality conditions in or below Pipe or Pipe #2 release points;
- Adverse impacts, or threatened adverse impacts, to fish and wildlife conditions in or below the Pipe #1 or Pipe #2 release points;
- Threats to human health or safety;
- Threats of property damage;
- Other good cause as may be determined by consensus between Gallo, CDFW, or NMFS, such as repair and maintenance.

Gallo, CDFW, and NMFS must reach a consensus decision before flow releases are to be terminated if the termination occurs prior to December 31, 2014 (or January 31, 2015, if this Agreement is extended as described above). If at any time during the Agreement period, habitat parameters are judged as unsuitable for rearing juvenile coho salmon and/or steelhead by CDFW and NMFS, the two agencies and Gallo will modify flow releases to maximize habitat conditions. The ability to enhance habitat will be limited by the amount of stored water available

(up to 50af), the remaining amount of time in the Agreement (duration), and the response of the stream channel to the addition of water. Gallo, NMFS and CDFW will communicate frequently to ensure that flow releases at Pipe #1 and Pipe #2 are closely monitored, and evaluated to determine fish rearing benefits. NMFS and CDFW will work closely with Gallo to ensure rearing conditions are maintained to the extent possible and consistent with this Agreement.

Conservation Benefits

The goal of the actions described in this Agreement is to sustain existing in-stream pool habitat for listed salmonids in Porter Creek. Due to conditions created by the California drought in 2014, these pools provide most of the currently available rearing habitat for juvenile salmonids in this stream. When surface water is continuous within a stream, water flows across riffles and transports macro-invertebrates into pools, thereby providing an important source of food. This flow connectivity also functions to aerate water in pools. However, in late summer, especially under drought conditions, juvenile salmonids can persist for long periods of time in residual pools (i.e., pools with no surface flow connection to other habitats) as long as sufficient space (volume) is available and temperature and dissolved oxygen levels remain at acceptable levels. Surface water in the summer months, whether in the form of standing pools or as interconnected stream flow, is generally derived from groundwater seepage along the course of the stream.

Groundwater levels typically decline in the late summer period, especially in areas where demand for groundwater is high. This decline can result in the loss of pool habitat, or degradation of conditions to the point where juveniles are lost to predation, asphyxiation, or other factors. When riparian vegetation loses its leaves and temperatures drop in the fall, evapotranspiration is reduced, which can sometimes be expressed as an incremental rebound in groundwater inputs to streams. But the overall trend is for streams to become increasingly desiccated until winter rains arrive. Flow in the project reach of Porter Creek began to dry out below the bridge in early summer and the upper reach became discontinuous in July. Isolated pools are likely to remain until flow enhancements begin.

The goal of the proposed reservoir releases is to prevent further desiccation of existing pools, and to increase pool volumes where possible, to allow planted juvenile salmon to survive into the

2014/2015 winter period. The influence of these flow additions on pool volume and quality is difficult to precisely quantify; however, available information suggests Gallo reservoir releases are likely to enhance conditions within the 1.5 mile project reach.

Habitat Suitability and Monitoring Program

The suitability of aquatic habitat conditions for juvenile salmonids and the effectiveness of this stream flow supplementation effort will be assessed by monitoring surface water elevations (i.e., stage) in Porter Creek, as well as monitoring water temperature and dissolved oxygen levels (DO). The goal shall be to maintain water temperatures within rearing habitats at or below 16° Celsius (C). While ambient stream temperatures may exceed this, flow enhancements from the reservoir are not expected to worsen temperature conditions. If water temperature of rearing habitat is warmer than 16° C and water discharge from the reservoir exceeds incoming stream temperatures by more than 1° C, NMFS and CDFW may request Gallo to adjust or terminate flow releases to control temperature increases. Similarly, the goal of this effort shall be to maintain dissolved oxygen (DO) levels within rearing habitats in Porter Creek at or above 6 milligrams per liter (mg/l). If the DO level of reservoir releases is 5 mg/l or less, then NMFS and CDFW may request Gallo to adjust or eliminate flow releases.

To monitor aquatic habitat conditions during implementation of reservoir releases, Gallo, NMFS and CDFW agree to the following monitoring program:

In-stream Flows:

- Baseline monitoring will be conducted above and below the water release points prior to initiation of reservoir releases. Staff plates will be installed above and below the Pipe #1 and Pipe #2 outlets by NMFS and CDFW. Prior to the initiation of reservoir releases by Gallo, NMFS and/or CDFW will observe and record stream stage at each staff plate two times per week.
- During reservoir releases, the staff plate below the pipe outlets will be checked and recorded by Gallo staff on workdays for the duration of the Agreement. Stage monitoring will not be required on weekends and holidays, assuming change in conditions during those periods is unlikely. UC Extension Sea Grant personnel may assume responsibility for flow monitoring.

Water Quality:

- Baseline monitoring of water temperature and DO will be conducted by NMFS and/or CDFW in the Gallo reservoir and in the stream below each planned release point prior to initiation of releases.
- During reservoir releases, NMFS and/or CDFW will measure water temperature and DO in the reservoir and in each stream below the release points. These measurements will be performed two times per week during reservoir releases.

In addition to this monitoring, annual in-stream visual monitoring and fish counting will be conducted by the UC Extension Sea Grant Coho Salmon Monitoring Program.

Fish Rescue

If NMFS and CDFW identify reaches of stream in the Russian River watershed where coho salmon (and steelhead) are at risk of becoming stranded due to stream desiccation, and they decide to rescue those fish, they may be relocated to the wetted sections of Porter Creek to complete their summer rearing.

If the stream has, or is predicted to have, a density of less than 1 fish per square meter of stream and if NMFS, CDFW and the RRCSCBP determine stocking is warranted, coho salmon from the conservation hatchery may be reared in the wetted sections of Porter Creek in the fall. Gallo will provide access to RRCSCBP personnel to assist with the logistics of fish stocking and monitoring.

Important Notes Concerning this Agreement

This Agreement represents an extraordinary measure intended to enable fish to survive the critical 2014 drought period. It does not provide for the diversion of water from Porter Creek. The agencies' preferred management approach continues to be maintaining stream habitat and flow from natural processes, especially those that build resistance to periods of drought. In addition, this Agreement does not allow for the installation or operation of any flashboard dam facility in Porter Creek or on the Gallo property.

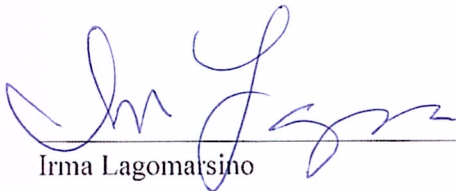
PARTICIPATING PARTIES



10/15/14

Jim Collins
Sr. Director of Vineyard Management
EJ Gallo Winery Inc.

Date



10/24/14

Irma Lagomarsino
Assistant Regional Administrator
NMFS, West Coast Region
California Coastal Area Office

Date



10/24/14

Scott Wilson
Regional Manager
Bay Delta Region
California Department of Fish and Wildlife

Date