Mitigation and Monitoring Compliance for the Northern Pike Containment System at the Outlet of Lake Davis on Big Grizzly Creek

Introduction

This document is prepared pursuant to Sections 15091 & 15097 of the Guidelines for Implementation of the California Environmental Quality Act and Section 21081.6 of the Public Resources Code. DWR has proposed the installation of a northern pike containment system at the outlet of Lake Davis in July through November 2006. Construction would occur at the existing outlet facilities located downstream of Grizzly Valley Dam on Big Grizzly Creek.

By completing the construction of the containment system, DWR will ensure that no northern pike, regardless of lifestage, will escape through the outlet structure into Big Grizzly Creek. This will reduce the chances of northern pike escaping into the Feather River system, and ultimately into the Sacramento and San Joaquin River Delta. The containment system will allow reservoir releases to continue based on current operating procedures.

In DWR (2006), DWR staff described potential environmental impacts of the containment system and mitigation measures that would reduce impacts to less than significant levels. This document describes how monitoring, reporting, and mitigation requirements will be satisfied. Table 1 provides a summary of all mitigation and monitoring that will be conducted for the project.

Plant and Wildlife Monitoring

Pre-project Surveys

The contractor will begin work at the site around July 17, 2006. DWR environmental staff will coordinate with the Division of Engineering to ensure that pre-project surveys are made before construction begins. A DWR biologist will conduct a pre-project survey to determine the presence of any mountain yellow-legged frogs within Big Grizzly Creek within ¼ mile of the project area. Surveys will be done according to Department of Fish and Game protocols. Surveys for nesting raptors within a ¼ mile radius of the construction site will also be completed no more than 21 days prior to initiating construction activities.

Due to the limited number of plants in the construction zone, no pre-project survey will be necessary beyond the ones conducted on September 13, 2005 and October 20, 2005. During these surveys, no State or federally listed special status plant species or other plant species of concern or habitat were identified within the proposed project area. The project footprint is a highly disturbed area that contains very little vegetation. Although no willows will be removed during construction, local willow cuttings will be planted on the left bank just downstream of the project footprint (Photo 1). Pre-project photos of the vegetation in the area will be compared with post project photos to document the extent of vegetation disturbance and survival.

During Project Activities

Environmental Monitoring
To ensure compliance with permit conditions and avoidance measures, DWR environmental staff will conduct an environmental awareness training session for contractor employees and the DWR inspector. The training session will be held on the first day equipment is brought to the project site. All contractor employees will attend. Copies of all permits, environmental requirements, and State policies that pertain to the work will be provided to the inspector and contractor. The DWR construction inspector and contractor crew leaders will communicate permit conditions to construction employees hired after the training session. The training session will cover topics such as avoidance areas, location of staging areas, northern pike education, water quality issues, oil spill prevention, flow augmentation requirements, standard DWR environmental policies, and other permit requirements. Each attendee will sign a form stating that they were provided with environmental compliance training. These forms will be kept on file at DWR's Division of Planning and Local Assistance in Sacramento.

DWR will provide a trained environmental project monitor to make inspections of the project area throughout the construction period. The project monitor will ensure that avoidance areas are clearly marked and will make inspections of protected areas to ensure that flags remain in place. This should reduce the chances of accidental disturbance. If a sensitive area is disturbed, the appropriate regulatory agencies will be notified immediately to determine suitable mitigation. The monitor will also be available to assist the construction supervisor if changes to the project plan occur. When changes to the project plan occur, the monitor will determine if additional surveys are needed and will notify permitting agencies as necessary. Qualified DWR environmental staff will perform any additional surveys.

During the first month of construction, the environmental project monitor will visit the site at least twice per week. After the initial month, the project monitor will visit the site at least once per week. The environmental project monitor will also be present on site on a daily basis during any flow cessation periods, and will be available to visit the site more frequently if needed.

Flow Cessation Mitigation and Monitoring
DWR will shut off releases from the Grizzly Valley Dam outlet structure on two to six separate occasions during the construction period (DWR 2006). During each flow cessation period, about 0.5 cfs of Lake Davis water will be pumped into Big Grizzly Creek and released just downstream of the Cipoletti weir. (This water is referred to as 0.5 cfs flow augmentation.) The intake for 0.5 cfs flow augmentation will be screened to prevent any movement of pike from Lake Davis into the stream channel.

Prior to the initial flow cessation period and 0.5 cfs flow augmentation, a block net will be placed in Big Grizzly Creek approximately 150 feet downstream of the outlet. The block net will remain in place until the final flow cessation period is completed. The

block net is made of a cloth-like material with 0.125 inch openings. It will be fastened securely to both stream banks and to the bottom of the channel. The block net will serve two purposes:

1. Prevent fish from moving upstream into the area that will be most affected by the flow cessation, and
2. Provide a backup to the 0.5 cfs flow augmentation intake screen in the unlikely event that pike are drawn through the screen and escape into the creek.

Upstream of the block net location are three pools that commonly harbor fish. Trained DWR or DFG staff will electrofish the creek upstream of the block net to the Grizzly Valley dam outlet as required in DFG's Streambed Alteration Agreement. Rescue of any fish in the area will reduce fish mortality within the three pools in the reach. Any captured fish will be transported to Lake Davis or further downstream in Big Grizzly Creek. The release location will be determined by DFG's Streambed Alteration Agreement.

During each of the six flow cessation periods, DWR or DFG staff will walk the three mile stretch of creek downstream of Grizzly Valley dam that is adjacent to property owned by DWR or the U.S. Forest Service. Staff will record downstream water temperatures, dissolved oxygen levels, and document any fish mortality and whether fish appear stressed.

At the end of the final flow cessation period, after the 0.5 cfs flow release is stopped, DWR or DFG staff will electrofish the creek from the block net upstream to the Cipoletti weir to confirm that no pike escaped into the creek. Once a trained DWR or DFG biologist is confident there are no pike in the creek, the block net will be removed and flow from the outlet will resume.

Post Project Activities

The environmental project monitor will make a final inspection of the project area after the construction of the containment system is completed. The monitor will ensure that the contractor removed all equipment and trash from the project area, and will notify the construction supervisor if any items remain in the area. The monitor will also remove flagging from avoidance areas.

Although no riparian vegetation will be removed by the project, DWR will plant willow cuttings downstream of the project site between the Cipolletti weir and the pedestrian bridge (Photo 1). This 50 foot long, previously disturbed area is located immediately downstream for the project construction area and currently lacks riparian vegetation. A trained DWR botanist will coordinate the willow planting soon after snowmelt in spring of 2007. One Ponderosa pine will be removed in the project footprint; this will be replaced after project completion at a 1:1 ratio. The pre-project vegetation photos will be compared to conditions at project completion to ensure no damage to the plant communities outside of the scope of the project.

A log of monitoring activities and final monitoring report will be available to the regulatory agencies at the completion of the project upon request. The log will include

date, time, monitor name, description of construction activities, description of which avoidance and construction areas were inspected, any changes to the project plan, and completion of additional survey if necessary. The log and final monitoring report will be available to the regulatory agencies following completion of the willow plantings in spring 2007.

Photo 1. Left bank to be vegetated with willow cuttings in spring 2007

Table 1: Mitigation measures and implementation for construction of northern pike containment system

Environmental Factors and Resources	Potential Impact	Mitigation Measure or Monitoring	Objective of Mitigation Measure or Monitoring	Deadline for Implementation of Measure	Responsible Party	Estimated Completion Deadline
Trout fishery	Disturbance from flow cessation	Conduct electrofishing and relocation	Removal of fish from project area and relocation to Lake Davis or Big Grizzly Creek. Approximately 150 feet will be electrofished from outlet downstream. This will include three pools that commonly harbor fish.	During any flow cessation periods	Mike Hendrick and David Grant	During any flow cessation periods
		Install block net to temporarily close portion of creek. A net will be placed downstream of third pool, approximately 150 feet downstream of outlet.	Reduce chances of fish moving upstream into project area	1 day prior to initial flow cessation period	Doug Rischbieter	Removal after final flow cessation period
		Big Grizzly Creek inspection	To assess the health of fish in Big Grizzly Creek during flow cessation.	During flow cessation periods	Mike Hendrick and David Grant	During and Immediately after flow cessation periods
Emergent Vegetation	Disturbance or removal	Obtain pre-project photographs of project area and surroundings	To ensure a baseline of conditions prior to construction activities	1 day prior to contractor being on site	Mike Hendrick	1 day prior to contractor being on site
		Conduct weekly inspection to insure areas outside construction area have remained undisturbed	Reduce the chance of accidental take or disturbance	During construction	Various DWR staff	Project duration
		Conduct post project surveys and replanting	Plant willow cuttings downstream of Cipolletti weir to the pedestrian bridge on the left bank. Replace lost Ponderosa Pine at a 1:1 ratio.	After construction is completed	Gail Kuenster	Spring of the year following project completion

Table 1 (cont): Mitigation measures and implementation for construction of northern pike containment system

Environmental Factors and Resources	Potential Impact	Mitigation Measure or Monitoring	Objective of Mitigation Measure or Monitoring	Deadline for Implementation of Measure	Responsible Party	Estimated Completion Deadline
Big Grizzly Creek flow cessation periods	Channel dewatering, increased water temperatures and decreased dissolved oxygen levels	Reduce number and length of flow cessation periods	Reduce negative effects of shut off period on downstream fisheries, mountain yellow legged frog, other aquatic life, and downstream diverters	During construction	Various DWR staff	Project duration
		Provide about 0.5 cfs flow augmentation during flow cessation periods	Reduce negative effects of flow cessation periods on downstream fisheries, mountain yellow legged frog, other aquatic life, and downstream diverters	During water flow cessation periods	Maury Miller and Mike Hendrick	Project duration
		Notification of flow cessation periods to downstream diverters	To allow downstream diverters time to prepare for reduced flows	One week prior to flow cessation periods	Maury Miller	Project duration
		Install bypass line and release 10-23 cfs during construction period	To allow for regular stream releases to occur until strainers are functioning	During construction	David Panec	Project duration
Big Grizzly Creek water flow augmentation, (release of ~0.5 cfs of water drawn from Lake Davis)	Release of pike downstream into Big Grizzly Creek	Install fish screen on intake to flow augmentation line	To reduce the chances of pike entering the flow augmentation line	Prior to use of the flow augmentation line	George Heise and Maury Miller	Duration of project
		Electrofish creek from Cipolletti weir to pedestrian bridge	To capture and kill any pike that escape through flow augmentation line	During and after use of the flow augmentation line	Mike Hendrick and David Grant	After final use of the flow augmentation line
		Install block net downstream of pedestrian bridge	To prevent downstream movement of pike	1 day prior to use of flow augmentation line	Doug Rischbieter	After final use of the flow augmentation line

References

Department of Water Resources. 2006. Mitigated Negative Declaration and Initial Study for the Northern Pike Containment System at the Outlet of Lake Davis on Big Grizzly Creek. May 2006. DWR, Division of Planning and Local Assistance, Sacramento, CA.