



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
777 Sonoma Avenue, Room 325  
Santa Rosa, California 95404

CAR

WR-51

29449

November 15, 2001 151416-SWR-01-SR-928:SKL

Mr. Charles Rich, Chief  
Complaints Unit  
State Water Resources Control Board  
Division of Water Rights  
P.O. Box 2000  
Sacramento, California 95812-2000

Dear Mr. Rich:

This letter represents our findings and protest dismissal terms of appropriative water rights application 29449. It is based on a State Water Resources Control Board (SWRCB) field investigation attended by Dr. Stacy Li, National Marine Fisheries Service (NMFS), Mr. Chuck Glasgow (NMFS), and Mr. Tim Broadman and Mr. Dave Rielly (NMFS Law Enforcement) on 17 October 2001 in relation to a complaint of an unpermitted diversion on Stanshaw Creek by Doug and Heidi Cole. The Coles have directly diverted up to 3 cubic feet per second (cfs) from Stanshaw Creek (watershed is approximately 3.2 square miles) the year round (when flows are available) for the purposes of domestic use and hydroelectric generation. The water used for hydroelectric generation is diverted into Irving Creek in an adjacent watershed. Irving Creek is also tributary to the Klamath River. The Coles have applied for appropriative rights for the hydroelectric use, but have pre-1914 rights for domestic use. The amount of the pre-1914 use is approximately 0.5 cfs.

NMFS is interested in this project because the Klamath River watershed supports federally threatened Southern Oregon/Northern California coasts Evolutionarily Significant Unit (ESU) of coho salmon (*Oncorhynchus kisutch*).

### Existing Project

Typically each year the Coles must manually construct a structure of cobbles and boulders to divert water from Stanshaw Creek. The unscreened diversion delivers water via an earthen ditch approximately 1-foot deep, 2-foot wide, and 5200 feet long. The penstock is a steel pipe 16-inches in diameter and 455 feet long. A head of 200 feet is used to generate a maximum of 33.9 kilowatts with a Pelton wheel. Water not consumed by domestic use is returned to the Klamath River via



Irving Creek. With the diversion active, approximately a mile of Stanshaw Creek has reduced flows; this reach is well shaded by topographic features as well as a thick canopy coverage of about 60%. About 1/4 mile of Irving Creek has augmented flows from Stanshaw Creek.

Stanshaw Creek enters the Klamath mainstem near River Mile (RM) 76. Irving Creek also enters the Klamath mainstem near RM 75. Stanshaw Creek has a smaller watershed than Irving Creek. While both streams are not gauged, the few measurements of Irving Creek and Stanshaw Creek during the summer suggest a summer base flow in Irving Creek as more than double (7 cfs vs. 3 cfs) that of Stanshaw Creek. Both streams provide cooler water than the mainstem Klamath River during the summer. Because water temperatures during the summer in the mainstem Klamath River are stressful to salmonids, it is likely that rearing juvenile anadromous salmonids use each tributary as a thermal refuge. California Department of Fish and Game collected juvenile coho salmon and steelhead with a backpack electrofisher in the portion of Stanshaw Creek 100 yards downstream of Highway 96 in July 2000. There is a culvert under Highway 96 on Stanshaw Creek that may limit anadromous fish access to upstream reaches.

The culvert under Highway 96 at Stanshaw Creek is listed on resource agencies master list for culverts with passage problems. CalTrans has stated that they will replace the culvert in the future to allow salmonid passage.

At the site we reviewed the project, examined the point of diversion (POD), the flume, the penstock, the reach downstream of the POD, and the reach of Stanshaw Creek between Highway 96 and the Klamath River.

### **Terms to Remove Protest**

NMFS finds that the following conditions are necessary and sufficient to remove our protest:

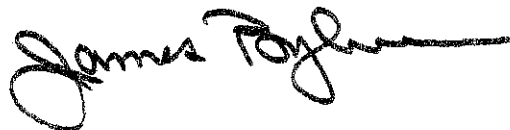
- a) **Diversion Intake:** Limit diversion flow to a maximum of 3 cfs. The applicant proposes to divert a maximum of 3 cfs, but the existing intake has no provision to control the amount of flow diverted. There are a variety of methods of controlling flow including: head gates with adjustable undershot weir, notched weir, orifice, dimensional flume, and the like (See Bureau of Reclamation 1997).
- b) **Fish screen:** The existing diversion is not adequately screened to prevent entrainment. Any diversion should be adequately screened. We saw an 8" salmonid in the flume during the field investigation. The fish screen should follow NMFS/CDFG fish screen criteria. However, these fish screen criteria were developed with large diversions in mind. There may be adequate screening alternatives for smaller diversions such as this one. Please contact Mr. Richard Wantuck, NMFS (707) 575-6063 for technical advice regarding fish screens in small drainages.
- c) **Return flow:** Return the diverted flow from Stanshaw Creek back to Stanshaw Creek instead of to Irving Creek. Thermal refugia during the summer is an important habitat element in the Klamath River. It is our belief that diverted flow returned to Stanshaw Creek will provide necessary cold water to provide a thermal refuge at the mouth of Stanshaw Creek without compromising the thermal refuge on Irving Creek. During the field investigation, Mr. Cole ,

the applicant, stated that we would be willing to move the hydroelectric generating plant so that the tail race flow would return to Stanshaw Creek. The new return would be located on Stanshaw Creek upstream of Highway 96.

- d) Bypass flows: This is based upon the assumption that 3 cfs is a representative summer base flow. The nature of the point of diversion precludes precise bypass flows due to leaf fall or debris accumulation. However, bypass flows are of major concern only at low flows, i.e., 3 cfs. We believe that there is ample canopy that keeps the stream cool downstream of the POD provided that most of the flow is in Stanshaw Creek during low flow periods. Therefore, we recommend that a minimum bypass flow of 1.5 cfs be maintained at all times downstream of the POD. This bypass flow represents 50% of the summer base flow. This bypass flow recommendation assumes tailwater from the hydroelectric plant will be returned to Stanshaw Creek. Therefore, the thermal refuge downstream of Highway 96 will be maintained. This bypass flow recommendation may be modified when CalTrans provides salmonid passage through the Highway 96 culvert. The applicant must install and maintain permanent staff gages at the point of diversion to allow monitoring and facilitate release of bypass flows. Alternatively, the applicant may perform a comprehensive biological and hydrological study to identify an alternate biologically based bypass flow.
- e) Monitoring: Regardless of the quality of stream at the point of diversion, the proposed project should provide California Department of Fish and Game personnel access to all points of diversion and places of use for the purpose of conducting routine and or random monitoring and compliance inspections.

Thank you for your cooperation in the above. We look forward to continued opportunities for NMFS and the State Water Resources Control Board to cooperate in the conservation of listed species. If you have any questions or comments concerning the contents of this letter please contact Dr. Stacy K. Li at (707) 575-6082.

Sincerely,



James R. Bybee  
Habitat Manager  
Northern California

cc: Doug and Heidi Cole  
Irma Lagomarsino, PRD, NMFS, Arcata  
Tim Broadman, Law Enforcement, NMFS, Arcata