

Red Bluff Diversion Dam Technical Team
2010 Report to the Independent Review Panel

The Reasonable and Prudent Alternative (RPA) included maintaining the openings under the Red Bluff Diversion Dam gates at a minimum of 18 inches when the eleven gates were in the river, forming Lake Red Bluff and allowing for the gravity diversion of water into the Tehama-Colusa Canal. The intention of this RPA item (Action I.3.3) was to avoid or minimize injury to any adult green sturgeon individuals that may pass downstream under the dam gates.

RPA Action I.3.3 also allows for a Red Bluff Diversion Dam Technical Team, consisting of California Department of Fish and Game, U.S. Fish and Wildlife Service, Reclamation, and Tehama-Colusa Canal Authority representatives, to decide to adjust the gate openings to a minimum of 12 inches if needed to maintain the structural integrity of the Dam and/or provide for adequate attraction flow patterns at the dam's fish ladders, or in consideration of other real-time fish migratory issues.

The Red Bluff Diversion Dam Technical Team met on May 6, 2010, and discussed potentially adjusting the near-shore gates to 12 inch openings to improve fish ladder attraction flows in late July or early August when the numbers of migrating adult salmon using the ladders historically increase. The gates went in on June 15, 2010, and the minimum openings under the gates remained at a minimum of 18 inches until the gates were raised, earlier than expected, on August 20, 2010. There were no reports of any suspected injuries to adult green sturgeon from passing under the dam gates.

The Technical Team also discussed whether to install the temporary fish ladder in the center of the dam during the gates-in period in 2010. Because of the length of time needed to install and remove the ladder, the relatively short gates-in period in 2010, and because of suspected affects of the 18 inch minimum gate openings on attraction flow patterns for the center ladder, the Technical Team decided not to install the center ladder in 2010.

Green Sturgeon Research

In order to offset the adverse passage impacts to green sturgeon due to the continued operation of the Red Bluff Diversion Dam during the two-year construction period of the new pumping plant, the Reasonable and Prudent Alternative (RPA; Action I.3.4) included specific green sturgeon research that is to be carried out. Specifically, the research consists of, 1) genetic evaluation of

the green sturgeon spawning population in the Sacramento River; 2) telemetric studies of adult green sturgeon movements; 3) characterization of green sturgeon spawning habitat in the Sacramento River; 4) telemetric studies of juvenile green sturgeon movements and identification of rearing habitat; 5) spawning of wild-caught green sturgeon and rearing of juveniles for telemetric and laboratory studies; and 6) evaluation of fish screen performance and alternative fish exclusion technologies.

Previously, Reclamation had worked for several years cooperatively with U.C. Davis, the U.S. Fish and Wildlife Service, and others to study the movements of adult green sturgeon in the Sacramento River, and to study the genetics of the spawning population. Reclamation entered into a new three year cooperative agreement with U.C. Davis to accomplish the RPA-prescribed green sturgeon studies, along with other cooperators. In 2010, green sturgeon adults were captured and surgically implanted with sonic transmitters. Tracking of tagged adults continued via a network of existing receivers and mobile tracking receivers. Larval and juvenile green sturgeon captured in downstream migrant traps are being reared in aquaculture facilities to be available for use in telemetric studies. Larval mortalities from downstream migrant traps and eggs from net tows provided genetic material to continue the genetic evaluation. Efforts also continued to identify and characterize spawning locations in the Sacramento River.

Previously, Reclamation convened a technical team to coordinate and review ongoing and proposed studies and results pursuant to RPA Action I.3.4. With the issuance of the final Endangered Species Act (ESA) section 4(d) rule additional coordination of research activities was necessary, and an ESA section 10(a)(1)(A) permit is now necessary for activities such as the captive spawning and rearing of wild-caught green sturgeon. In addition, the green sturgeon Recovery Team has started the recovery planning process for the species. As a result, NMFS, Reclamation, U.C. Davis, the California Department of Fish and Game, and others are continuing to work closely together and adaptively manage their research activities in light of new available information, an evolving regulatory environment, and ongoing recovery planning.