



Russian River Estuary Adaptive Management

An estuary is where a river meets the ocean. The mix of freshwater from the river and saltwater from the sea creates a dynamic environment that supports a broad array of fish, wildlife, and invertebrate and plant species. Salmon and steelhead use estuaries to adapt to saline conditions prior to entering the ocean and to adapt to freshwater before migrating upstream to their spawning grounds.

The Problem

During the summer, tidal action forms a sandbar at the mouth of the Russian River near the town of Jenner. The sandbar often becomes high enough to prevent the river from entering the sea. The result is a lagoon that occasionally threatens to flood low-lying properties from Jenner to Duncans Mills.

For many years private citizens would breach the sandbar, enabling the river to flow into the ocean and eliminating the threat of flooding. In the early 1950s, the Sonoma County Public Works Department took over the job, using heavy equipment to breach the sandbar. In the mid-1990s, the task was turned over to the Sonoma County Water Agency (SCWA) during a county reorganization. Scientists with the National Marine Fisheries Service (NMFS) believe that the large volume of saltwater that enters the estuary when the sandbar is opened creates a less-than-optimal environment for young steelhead to grow before entering the ocean.

The Solution

NMFS biologists believe that a summertime freshwater lagoon would create a healthier nursery for young steelhead. They point to other rivers in California, where the formation of similar “perched” lagoons has improved conditions for steelhead during the summer months.

The Implementation

The biological opinion outlines a two-pronged strategy for creating a summertime freshwater lagoon.

Part one of the strategy is to reduce the flow of water in the Russian River during the summer. Less water in the river reduces the likelihood of the lagoon flooding nearby properties. Please see the “Proposed Changes to Russian River Flows” document for details on reducing summertime flows.

Part two of the strategy requires SCWA to adopt adaptive management practices in the estuary that involve the following:

- When the sandbar closes, instead of employing traditional breaching methods creating an outlet channel, allow river water to flow out while preventing ocean water from entering the lagoon (beginning in Summer 2010, see conceptual illustration).
- Studying the effects on the estuary of the jetty at Goat Rock State Beach and evaluating alternatives that include removing or notching the jetty (study is currently underway).
- If the new method of creating a perched lagoon isn't successful in reducing flood risks, evaluating the possibility of elevating structures from the closed sandbar.

The plan also requires extensive biological, physical, and water-quality monitoring to help determine whether a closed summertime lagoon is better for salmon.

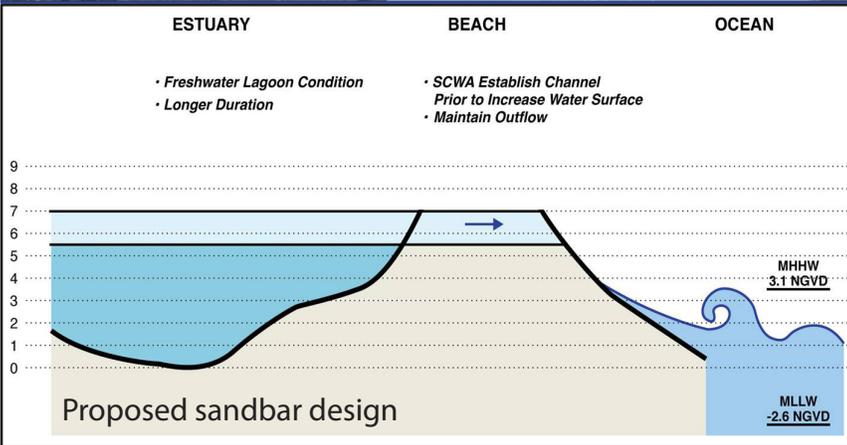
The proposed changes require an environmental impact report (EIR), which includes an analysis of how these changes will affect recreation, wildlife habitat, water quality and other aspects of the environment. The EIR process began in May 2010.



Current sandbar breaching practice



The Russian River estuary



Seining in the estuary

Since the mid-1990s, SCWA has opened the sandbar when flooding threatened low-lying properties. Beginning in summer 2010, when the sandbar closes SCWA will employ a design that will reduce flooding risks while allowing the creation of a freshwater lagoon. Harbor seals and other pinnipeds will be closely monitored, as will water quality and fisheries.



Salmonid prey availability study



Harbor Seals