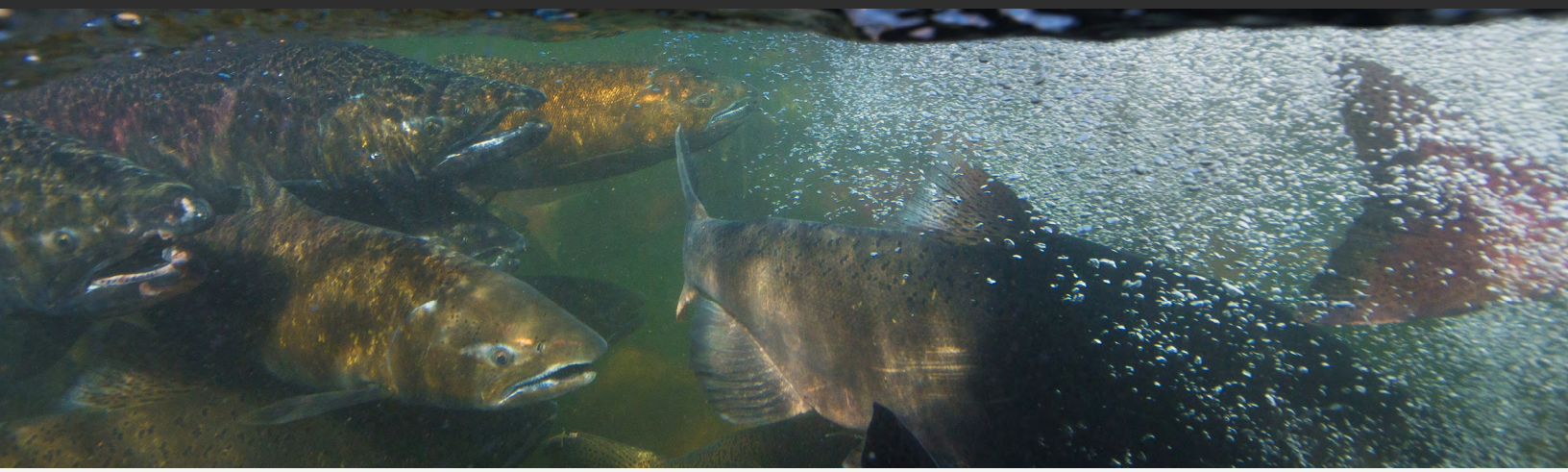


SECURING SOLUTIONS FOR THE SACRAMENTO-SAN JOAQUIN DELTA'S NATIVE FISH

Once abundant, Central Valley Chinook salmon, steelhead and smelt populations have declined significantly in recent years. Loss of habitat, altered flows, pollution, invasive species, predators and fluctuating ocean conditions have all influenced the health of native populations.

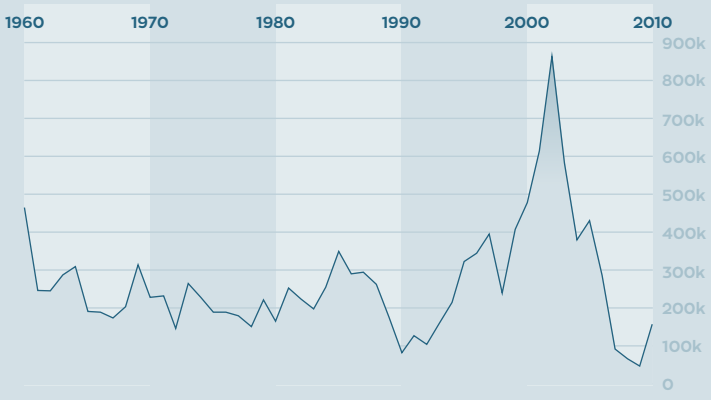
In the Sacramento-San Joaquin Delta (Delta), tidal marshes, floodplains and other features that once provided places for native fish to hold, rest, feed, and grow have been replaced by channels bound by rock-hardened levees. Existing operation of the state and federal pumping facilities can, at certain times, contribute to reverse river flows and trap migrating fish.

Today, approximately 95 percent of juvenile San Joaquin River salmon and 60 percent of Sacramento River Chinook salmon do not survive their migration through the Delta.

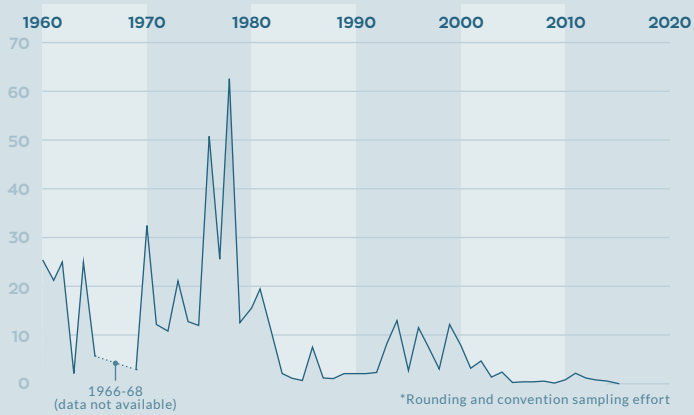
DECLINING FISH POPULATIONS

The California WaterFix seeks to reduce reverse flows and fish entrainment in the Delta, and ensure sufficient flows to protect fish migrating past the north Delta diversions. A healthier Delta can contribute to more resilient fish populations better able to withstand adverse and unpredictable conditions due to climate change.

TOTAL CHINOOK SALMON UPSTREAM MIGRATING ADULTS DURING THE FALL RUN

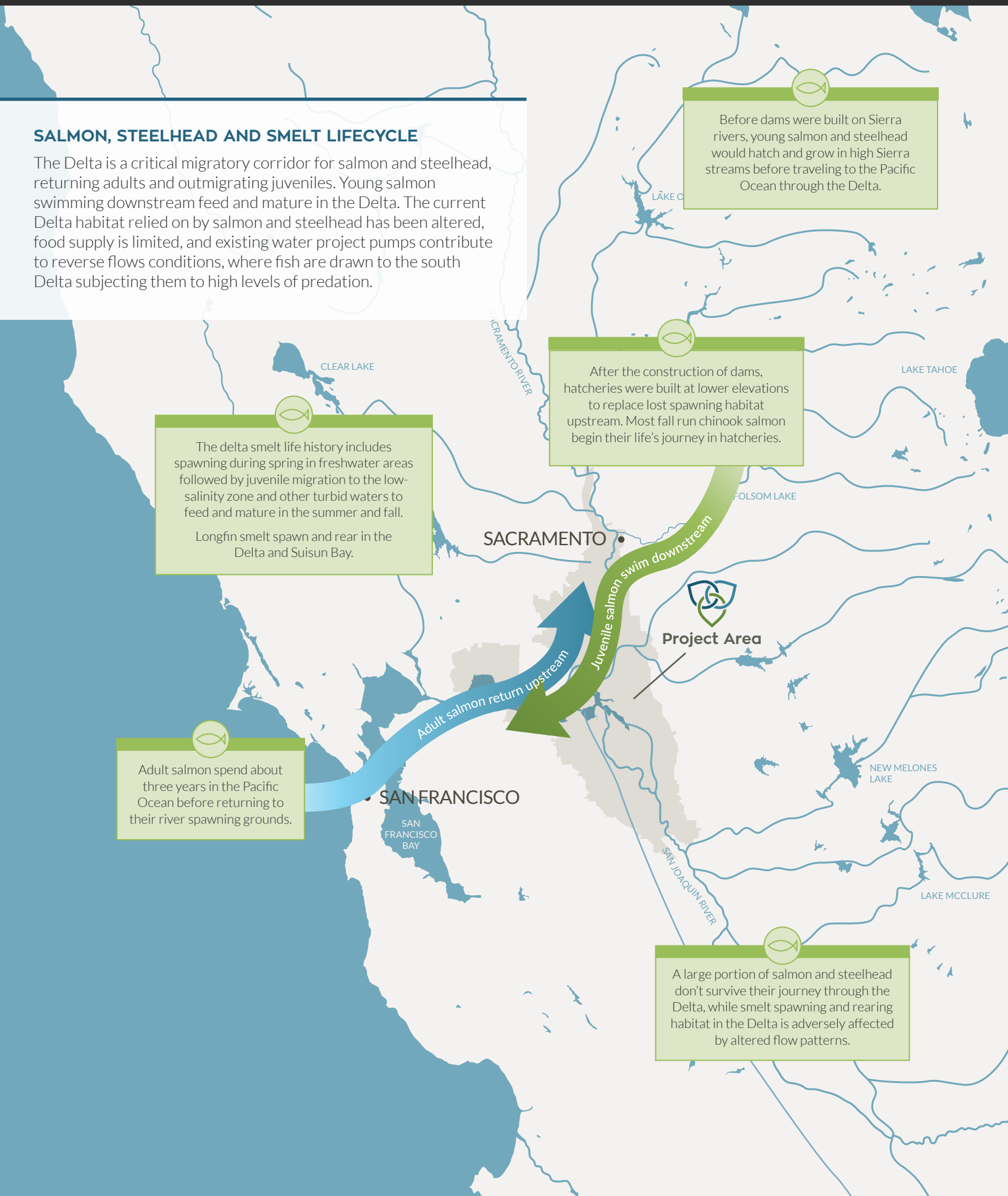


TOWNET DELTA SMELT SURVEY INDEX*



SALMON, STEELHEAD AND SMELT LIFECYCLE

The Delta is a critical migratory corridor for salmon and steelhead, returning adults and outmigrating juveniles. Young salmon swimming downstream feed and mature in the Delta. The current Delta habitat relied on by salmon and steelhead has been altered, food supply is limited, and existing water project pumps contribute to reverse flows conditions, where fish are drawn to the south Delta subjecting them to high levels of predation.



PROPOSED SOLUTION

California WaterFix has identified four ways to support salmon, steelhead and smelt in the Delta.

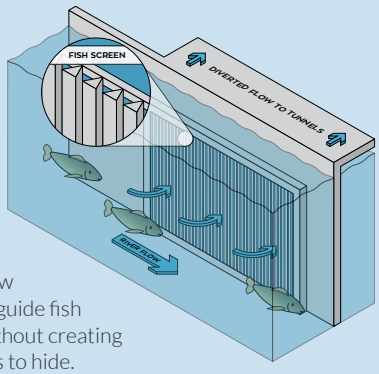
- SCREENED DIVERSIONS
- IMPROVED RIVER FLOWS
- IMPROVED WATER QUALITY
- REDUCED PREDATION

California WaterFix would improve flow regimes for fish in the Delta by setting bypass flows and rules for seasonal Delta outflows, water quality and other flow-dependent variables.

1 NORTH DELTA DIVERSIONS

New intakes in the north Delta would feature state-of-the-art, fish-friendly screens to protect young fish, with bypass flows set to create safe passage for smolts on their way to the ocean.

Positive-barrier fish screens would meet criteria established by fish agencies to successfully screen out small young salmon and other fish species. The screens would be optimized for flow velocities to gently guide fish past the screens without creating places for predators to hide.



2 OUTFLOWS FOR FISH

Seasonal outflows would be set, including higher spring flows to improve conditions for migrating salmon and longfin smelt. Higher fall flows would be maintained to improve the overall health of the estuary and to benefit delta smelt in wet and above normal years.

3 REDUCED ENTRAINMENT & IMPROVED FLOWS

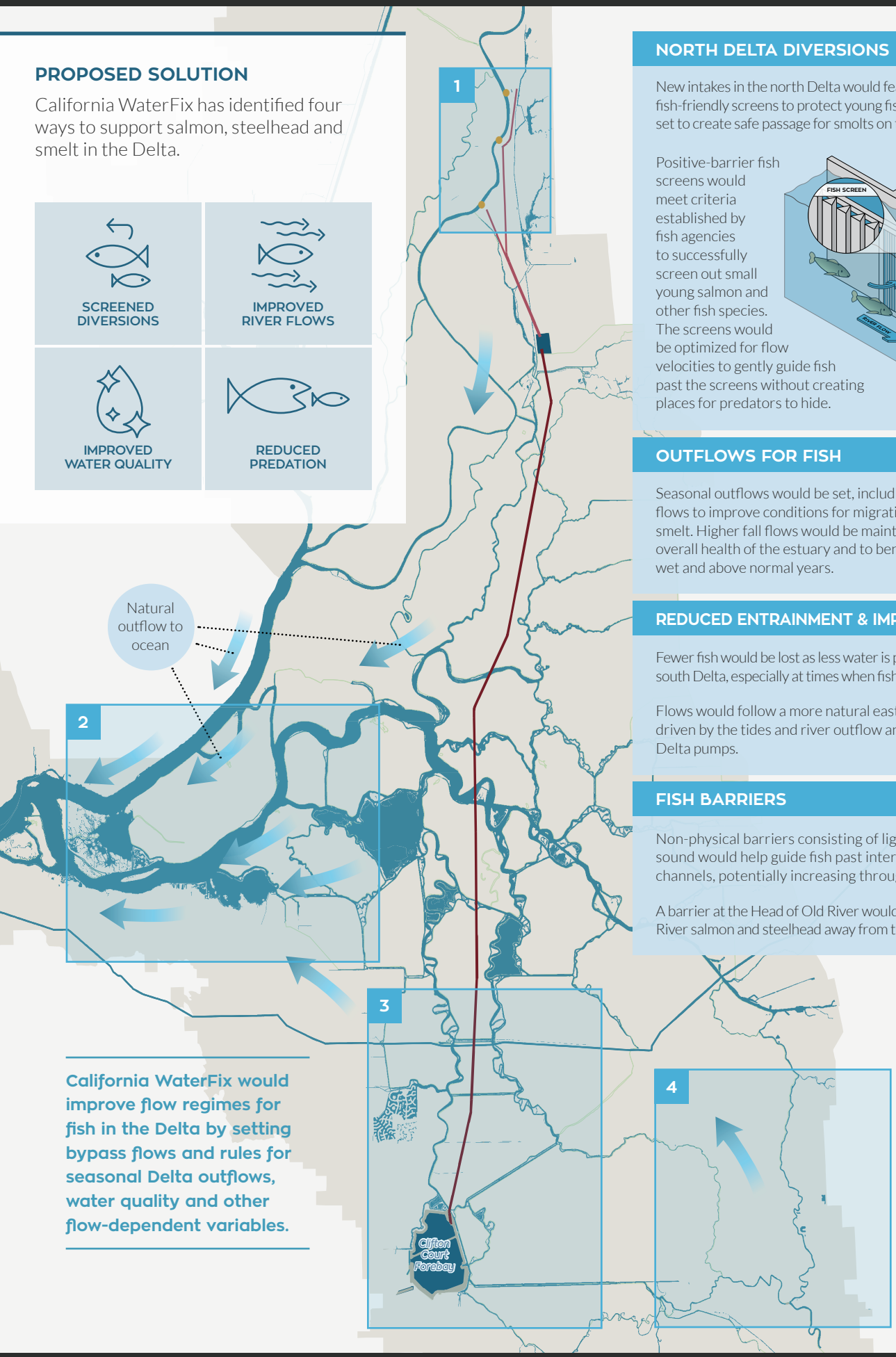
Fewer fish would be lost as less water is pumped through the south Delta, especially at times when fish are most vulnerable.

Flows would follow a more natural east and west pattern, driven by the tides and river outflow and less by the south Delta pumps.

4 FISH BARRIERS

Non-physical barriers consisting of light, air bubbles, and sound would help guide fish past interior Delta sloughs and channels, potentially increasing through-Delta survival.

A barrier at the Head of Old River would guide San Joaquin River salmon and steelhead away from the south Delta pumps.



ADDITIONAL EFFORTS TO RESTORE NATIVE FISH POPULATIONS

In addition to California WaterFix, other efforts are underway to help reverse the decline in native Delta fish populations. The California Water Action Plan includes aggressive actions to restore salmon, steelhead and smelt populations.

BRING BACK SALMON TO THE SAN JOAQUIN RIVER

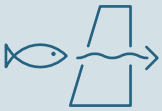
The Department of Fish and Wildlife (DFW) and the Department of Water Resources (DWR) lead the state's effort, as part of the San Joaquin River Restoration Program, to restore to the San Joaquin River from Friant Dam to the confluence of the Merced River and bring back a naturally-reproducing, self-sustaining Spring-run Chinook salmon fishery while reducing or avoiding adverse water supply impacts. As part of that effort the DFW will complete construction of a conservation hatchery and research facility. DWR will support the implementation of channel and structural improvements that result in restoring fish and flows. The administration will work with the Legislature and others to secure further funding as necessary to achieve these activities and the restoration goal.

IMPROVE HABITAT FOR NATIVE FISH

California EcoRestore will accelerate and implement 30,000 acres of habitat restoration and protection over the next three to five years to support the long-term health of the Delta's ecosystem.

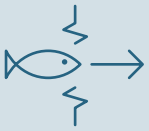
ENHANCE WATER FLOWS IN STREAM SYSTEMS STATEWIDE

The State Water Resources Control Board and the Department of Fish and Wildlife will implement efforts to enhance flows in at least five stream systems that support critical habitat for anadromous fish.



ASSESS FISH PASSAGE AT LARGE DAMS

The Department of Fish and Wildlife, in coordination with state and federal resource agencies, will develop an evaluation and feasibility process for addressing fish passage at California's rim dams and develop rim dam solution plans for the most feasible locations. Rim dams are the large dams at the base of most major river systems in California. Where feasible, passage above the rim dams may be necessary to recover salmon.



ELIMINATE BARRIERS TO FISH MIGRATION

The administration will work with the Legislature and others to secure funding to install or repair fish screens within major tributaries. In smaller watersheds around the state, the Department of Fish and Wildlife will complete culvert and bridge improvement and small dam removal projects to provide anadromous fish species access to historic spawning and rearing habitat.

More information on the California Water Action Plan may be found at:

WWW.RESOURCES.CA.GOV