

BDCP

BAY DELTA CONSERVATION PLAN

FACTS ABOUT CONVEYANCE

WHAT IS CONVEYANCE?

Water flowing from the Sierra mountains and moved through the Delta is the core of California's water system, providing drinking water to 25 million people and supporting farms that produce roughly half the nation's domestically grown fresh produce.

How this water is moved through the Delta is known as "conveyance" and includes natural watercourses as well as constructed facilities like canals and pipelines, including control structures such as weirs. Conveyance facilities also require associated infrastructure such as pumping plants and power supply, diversion structures, fish ladders, and fish screens. Conveyance infrastructure in the Delta has a significant effect on the ability of the Delta ecosystem to support a viable population of native fish species. The Conveyance Working Group is evaluating potential changes to the conveyance system in support of BDCP goals and objectives, namely both to restore the Delta ecosystem and to protect water supplies.

HOW DOES CONVEYANCE AFFECT FISH?

The current "through-Delta" conveyance method has several effects on fish.

1. The pumps that pull water from the Delta into canals trap and kill fish in some locations. In addition, native fish are more subject to predation by non-native species near certain conveyance facilities.
2. The conveyance system at times changes the direction of the flow of water, which may confuse fish as they try to travel along their intended paths and also affects how far inland salty bay water reaches.
3. Altered hydrodynamics—water movement and interaction with channel beds and banks—does not provide the proper nutrients, water temperature, water volume, water speed or water depth to support fish species survival.

It is widely believed that conveyance is not the only problem for fish. Other problems are the availability of quality habitat, contaminants, competition and predation by non-native species, climate change, and harvest (commercial fishing and poaching). These issues are being addressed in other BDCP working groups and coordinated with the Conveyance Working Group.

BACKGROUND

The Delta was historically in a near constant state of change. Daily tidal flux, annual flooding, and ever changing patterns of water flow shaped and reshaped the landscape. Today, the Delta is a very different place. Hundreds of miles of levees line the Sacramento and San Joaquin rivers and ring Delta islands, protecting farmland and communities. The Delta has several major water export locations that pump water to canals that deliver water to the Bay Area, the San Joaquin Valley, and Southern California. In an effort to engineer the Delta for water conveyance and agriculture, we have created a fairly static environment—while the water still flows, and the tides still fluctuate, the land and the water have become disconnected, and the complexity of the ecosystem has diminished considerably. Continued change in the Delta is inevitable because of sea level rise, earthquakes, continued land subsidence, and higher winter flood flows.

The purpose of the BDCP is to provide for the recovery of endangered and sensitive species and their habitats in a manner that also will provide for the protection and restoration of water supplies.

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BDCP APPROACH TO DEVELOPING CONVEYANCE-RELATED CONSERVATION MEASURES

There is now growing consensus that the most promising approach to meet both ecosystem and water supply goals would be to focus on the potential habitat benefits that could be realized by implementing what is known as “dual conveyance,” which consists of:

- ▶ improving the existing system for moving water through the Delta using existing points of diversion in the southern Delta, and
- ▶ new point(s) of diversion in the northern Delta with isolated conveyance around the Delta.

The benefit to this approach would be 1) the protection afforded to the state water supply system against the threat of sea level rise, earthquakes, continued land subsidence, and higher winter flood flows; 2) flexibility to help in maintaining water quality for in-Delta agriculture and other interests, and 3) providing opportunities for habitat restoration that otherwise would not exist.

The BDCP Steering Committee agreed in late 2007 to focus on dual-conveyance as most promising for further analysis. As a result, the BDCP Conveyance Working Group is now developing and recommending specific potential changes to the Delta conveyance infrastructure. They are crafting these potential changes as actions that are intended to become, after extensive review and analysis, conservation measures that will be identified in the conservation plan.

The efforts of the Conveyance Working Group include:

- ▶ Developing criteria for the operation of conveyance facilities that would provide desirable hydrodynamic and water quality conditions (For example, how high do flows need to be for specific restoration activities?)
- ▶ Recommending potential locations and sizing of new facilities, including intake structures, temporary and permanent barriers, and fish screen types
- ▶ Addressing issues related to both near-term and long-term conveyance actions
- ▶ Developing recommendations for both new around-Delta facilities and improved through-Delta facilities
- ▶ Understanding how well the system can adapt to uncertainties and how it reacts under extreme conditions

GENERAL PROCESS FOR BDCP CONVEYANCE ELEMENTS

