March 18. 2019
For Immediate Release

New report: Delta water supply impacted by human use protections and capacity significantly more than endangered fishes

89% of Delta water flow into Bay was to combat salinity or due to water flows exceeding export capacity. Less than 1.5% related to Delta smelt.

SACRAMENTO, CA--New findings published in the journal *San Francisco Estuary & Watershed Science*, reveal that water exports from the South Delta were limited by infrastructure and water quality concerns far more often than protections for endangered species. During the 2010-2018 study period, 89% of Central Valley water flowing into San Francisco Bay was the result of salinity control and infrastructure constraints on water exports compared to less than 1.5% caused by endangered species act safeguards specific to protection of Delta smelt from entrainment in the export pumps.

“Safeguards for the San Francisco Bay estuary's six endangered fish species led to relatively small increases in freshwater flow to the Bay,” said Greg Reis, staff scientist for The Bay Institute and lead author of the research article. “In two of the nine years we studied, protections for Delta Smelt did not limit water exports for even a single day -- the effect on water supplies of protecting this unique species, which functions as an indicator of overall ecosystem health, is far less than what's commonly reported."

Reis added, "Most of the water flowing out of the Delta to San Francisco Bay exceeds system capacity in wet years, and in dry years is needed to keep salt away from Delta farms and state and federal export pumps in order to protect human uses of this water."

Analyzing long-term trends regarding the factors that governed water export facilities in the Delta, researchers from The Bay Institute, The Nature Conservancy, and San Francisco Baykeeper found that data do not support the much-publicized narrative of fish vs. farmer which significantly overstates how much endangered species regulations have impacted the amount of water that is exported from the Delta.

"Despite water quality regulations that are intended to protect fisheries and wildlife populations in general, and endangered species act protections for the most imperiled fishes, the proportion of Central Valley river flows that make it all the way to San Francisco Bay has been declining for decades," said Dr. Jonathan Rosenfield, Senior Scientist at San Francisco Baykeeper and co-author of this study. "Currently, Californians divert, on average, about 1/2 of the ecologically critical winter-spring runoff that would otherwise flow into San Francisco Bay, and the fish, wildlife, and water quality that rely on this water are suffering as a result."

For years the narrative of water usage in the Delta has been driven by the contention that water use by agriculture was being limited by environmental regulations. But, access to data regarding those claims has been extremely challenging. Though data were publicly available, the data were scattered in various locations, often in ad-hoc fashion without context, which led to misinformation being inadvertently amplified.

Improved access to, and clear context for, data presented by state and federal agencies is critical to preventing unfounded claims from filtering into government water policy.

“Given the ongoing conversation, it was surprising to see how low the numbers actually are ” said Dr. Jeanette Howard, Director of Science, at The Nature Conservancy’s California Water program. “But, what this study clearly shows is that we need more transparency and public access to data when it comes to understanding our water in California. As temperatures rise and we see wider swings between wet and dry seasons across the state, we need to base our decisions around usage of this critical resource in reality.”

Between 2010 and 2018, exports were limited to maintain salinity standards for human water use on 29% of days, roughly the same frequency as that required for protections of the Bay’s six endangered fish species. Often overlooked in the rhetorical battle over environmental protections, exports were constrained by infrastructural constraints (including full storage reservoirs, required system maintenance, or because the export system had met capacity) on 1 of 6 of days, including 59% of days in water year 2017.

In 2014 and 2015, the driest years of the study, the contrast was especially stark. Salinity control led to export constraints on 62% and 56% of days, respectively, while exports were not cut short to protect Delta smelt on any days. In 2011 and 2017, the wettest years studied, infrastructure and hydrologic limitations constrained project water exports on 49% and 59% of days, respectively.

Researchers also looked at how much freshwater flows from the Central Valley watershed to San Francisco Bay. The status of many fish and aquatic wildlife species depend on freshwater flows through the estuary during winter and spring. They found that the amount of freshwater runoff from the Central Valley that reaches San Francisco Bay has decreased significantly over time, even following implementation of new water quality regulations in 1995. The vast majority of the water flowing into San Francisco Bay over the past nine years was necessary to control water salinity or exceeded export pump capacity, and all the water flowing to the Bay helped maintain water quality for human consumption.

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