



June 13, 2024

#### Comments on Draft Review of Food Webs in the Delta

The ISB's Review on Food Webs in the Delta is an important step in directing future management decisions and future research into food chain interactions between species in the Delta. It is of utmost importance for consideration in achieving the co-equal goals required for all projects that may be proposed in the Delta.

The review is very thorough for trophic levels up to fish species. It lacks significant emphasis on higher trophic levels (avian, mammals, reptilian, human) that are important from both top down and bottom up impacts on the food web. Threatened and nearly extinct fish species have been the most studied in the Delta; however, numerous avian and reptilian species that reside in the Delta are also listed as endangered or threatened. Species in the higher trophic levels of the food web have been less monitored and studied in the Delta, but their adequate study and consideration is essential to the understanding of Delta food webs. The sections on Eco-system Management and Recommendations could be expanded to emphasize the need for inclusion of species of all trophic levels in Food Webs in the Delta. For instance, "What are the impacts of the millions of migratory birds that annually migrate through and/or winter in the Delta on the Food Web?"

The Review does not sufficiently emphasize the threats to the "normal" food webs. Threats such as HABs are likely to increase and to cause significant, if not devastating, effects on the food web. Other variables such as contaminants (nutrients, pesticides, herbicides, heavy metals, invasive species, temperature increases, extreme droughts or floods, etc.) pose additional threats to higher trophic levels and do not get much coverage in the review. Many of these threats are highly dependent on water flows in the Delta. An understanding of how water flows through the Delta affects the food webs, both directly and indirectly, is of utmost importance and should be included in the Recommendations section.

The San Joaquin Audubon Chapter recognizes the difficult and expert guidance the ISB gives to the Delta Stewardship Council. Thank you for your efforts and for the opportunity to comment on the Draft Review.

David S. Fries, Ph.D.

Conservation Chair

San Joaquin Audubon Society