

# What a Decade of Monitoring Can Tell Us About Fish Trends in the Sacramento **Deep Water Ship Channel**

James Cole Anderson\* and Christina E. Burdi Interagency Ecological Program California Department of Fish and Wildlife 2109 Arch Airport Road, Suite 100, Stockton, CA 95206 Corresponding Author: <u>Christina.burdi@Wildlife.ca.gov</u>



| Introduction  | Results                     | Results continued   |  |
|---|-----------------------------|---|--|
| The Sacramento Deep Water Ship Channel (SDWSC) was thought to be an important habitat for several | 900 Average CPUE by Station | Average Monthly CPUE Figure 14: average CPUE per  |  |
| species of the San Francisco Estuary, including the   |                             | 200 month for the SDWSC   |  |
| endangered Delta Smelt. The California Department   | 800                         | 180   |  |
| of Fish and Wildlife's (CDFW) long-term monitoring  |                             | 140   |  |
| surveys Summer Townet (STN) and Fall Midwater   | 700                         |   |  |
| Trawl (FMWT) began sampling the SDWSC in 2011   |                             |   |  |
| and 2009, respectively. These surveys provide   | 600                         | 00 Gerage   |  |
| valuable data on the fish community in this region  |                             | <ul> <li>₹ 40</li> <li>30</li> </ul>  |  |
| from June to December annually.   | 500                         |   |  |
|   | a <sup>3</sup> )            | June July August September October November December<br>Delta Smelt Striped Bass Threadfin Shad |  |



### Summer Townet Survey (STN)

900

800

700

600

500

400

200

100

STN is conducted twice a month from June through August annually, and consists of two 10 minute stepped oblique tows per station with a tow net.



All fish are identified, enumerated, and fork lengths are taken to the nearest mm for all Delta Smelt,

Station Averages by Year

- 2019 CPUE similar to 2018. 796 saw large
- 796, 797 consistently have highest catch
- When TFS are removed, average monthly August, before rising in September and
- Southern stations have more American Shad (AS), White Catfish (WCAT), and at one point, DS.
- AS CPUE decreased in 2019, lower since 2016.
- SB CPUE increased 2018-2019.
- 2017 saw a 363% increase in combined **CPUE for that year.**



Figure 18: Threadfin Shad





## Discussion

• CPUE spike in 2017 (wet year) • Further study could examine why fish catch is much higher in the middle stations of the SDWSC than the ends, particularly station 723 where the channel converges with 3 other waterways. SDWSC still provides valuable data on distribution and abundance of important

species

• Particularly TFS

# Acknowledgements

Guidance and assistance provided by Tim Malinich, and James White. Funding for FMWT and STN provided by DWR and USBR. Photos provided by CDFW staff. Data collected by CDFW field and laboratory staff 2011-2019. Editing assistance provided by Spencer Breining-Aday, Chris Newbrough, and Maria Velazquez.