

353

23

Region 5

Andrew Cohen  
1905 1/2 Virginia Street  
Berkeley, CA 94709

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
DEPARTMENT OF FISH AND GAME

FISH BULLETIN 136

ECOLOGICAL STUDIES OF THE  
SACRAMENTO-SAN JOAQUIN DELTA

PART II  
Fishes of the Delta

Compiled by  
JERRY L. TURNER D. W. KELLEY



1966

percent of the volume of food. *N. awatschensis* occurred in at least 10 percent of the stomachs throughout all seasons and was especially common in the diet during the summer. Tendipedids also were eaten most frequently in the summer. Four young catfish in their second summer had eaten small fish.

TABLE 4  
Stomach Contents of Young White Catfish

Food item	Percent frequency of occurrence					Percent volume
	Fall	Winter	Spring	Summer	Average	All seasons
Mysid shrimp ( <i>Neomysis awatschensis</i> ).....	13.4	10.7	17.6	31.5	21.3	12.8
Amphipod ( <i>Corophium</i> ).....	92.0	96.0	95.9	92.9	93.9	79.3
Tendipedids.....	13.9	1.3	8.6	22.1	14.3	5.8
Fishes.....	--	--	--	1.3	0.5	2.0
Stomachs examined.....	227	110	283	347	967	--
Stomachs containing food.....	187	75	244	308	814	--

The diet of young white catfish was not the same throughout the Delta (Figure 5). *Corophium* was consumed in large numbers at every station throughout the year. *N. awatschensis* was an important food in the fall and summer at Isleton and Sherman Island on the Sacramento River and at Santa Clara Shoal and West Island on the lower San Joaquin River. Tendipedid larvae and pupae were common in the diet of the young catfish in Old River at Victoria Island and at Fabian Canal, especially during the summer and fall. They formed a significant part of the diet in the San Joaquin River at Mossdale in the fall, spring, and summer. Our knowledge of the winter diet in the San Joaquin River at Mossdale is limited. We analyzed only six stomachs that contained food; *Corophium* was the only food that had been consumed.

#### JUVENILE AND ADULT WHITE CATFISH

Large numbers of juvenile and adult white catfish were taken by both the gill net and otter trawl. The monthly catch with the two gears varied considerably. The monthly otter trawl catch was high in the fall and low in the summer (Figure 6). The gill net catch was less variable with increased catches from February through June.

White catfish caught in the Delta were quite small. Over 85 percent of our gill net catch was 25 cm or less FL (Figure 7). The largest fish caught was 57 cm.

#### Distribution

White catfish were taken at almost every sampling station with both otter and midwater trawls and gill nets (Figure 8). Catches were highest in the quiet water areas of Hog and Sycamore Slough, Franks Tract, and in the San Joaquin River below Stockton. Few catfish were taken in the fast flowing areas of the Sacramento and Mokelumne rivers. Only three white catfish were taken in over a year's sampling with all three gears in the Sacramento River at Isleton.

- Haskell, William L. 1959. Diet of the Mississippi threadfin shad, *Dorosoma petenense*, in Arizona. *Copeia*, (4) : 298-302.
- Hazel, Charles R., and D. W. Kelley. 1966. Zoobenthos of the Sacramento-San Joaquin Delta, p. 113-133. *In* D. W. Kelley, (ed.), *Ecological studies of the Sacramento-San Joaquin Estuary*. Calif. Fish and Game, Fish Bull., (133) : 1-133.
- Hendricks, L. Joseph. 1961. The threadfin shad, *Dorosoma petenense*, p. 93-94. *In* Boyd W. Walker, (ed.), *The ecology of the Salton Sea, California, in relation to the sportfishery*. Calif. Fish and Game, Fish Bull., (113) : 1-204.
- Heubach, William, Robert J. Toth and Alan M. McCready. 1963. Food of young-of-the-year striped bass (*Morone saxatilis*) in the Sacramento-San Joaquin River system. *Calif. Fish and Game* 49(4) : 224-239.
- Ivlev, V. S. 1961. *Experimental ecology of the feeding of fishes*. Yale Univ. Press, New Haven, 302 p.
- Kimsey, J. Bruce. 1958. Possible effects of introducing threadfin shad (*Dorosoma petenense*) into the Sacramento-San Joaquin Delta. *Calif. Dept. Fish and Game, Inland Fish. Admin. Rept.*, (58-16) : 1-21.
- Kimsey, J. Bruce, Robert H. Hagy and George W. McCammon. 1957. Progress report on the Mississippi threadfin shad, *Dorosoma petenensis atchafalae*, in the Colorado River for 1956. *Calif. Dept. Fish and Game, Inland Fish. Admin. Rept.*, (57-23) : 1-48.
- Parsons, John W., and J. Bruce Kimsey. 1954. A report on the Mississippi threadfin shad. *Prog. Fish Cult.* 16(4) : 179-181.
- Turner, Jerry L. 1966. Seasonal distribution of crustacean plankters in the Sacramento-San Joaquin Delta, p. 95-104. *In* D. W. Kelley, (ed.), *Ecological studies of the Sacramento-San Joaquin Estuary*. Calif. Fish and Game, Fish Bull., (133) : 1-133.