

TABLE 8. Total body length of mature and immature crawfish and construction properties of their respective burrows
(All measurements are in cm)

	Total body length	Burrow diameter	Depth crawfish captured	Burrow depth
<i>Immature crawfish</i>				
Average	4.9	2.9	26	39
Mode(s)	4.0	2.0	10	10, 15, 25, 83
Median	5.0	3.0	22	34
Range	3.0-6.0	1.5-9.0	10-70	10-109
Number of observatoins	25	25	25	25
<i>Mature crawfish</i>				
Average	7.7	5.8	39	56
Mode(s)	8.0	4.0	0	18, 40, 53, 63
Median	8.0	6.0	42	53
Range	5.0-9.5	3.0-14.0	0-105	10-120
Number of observations	31	31	31	31

FLORIDA WALLEYE?

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Florida has comparatively few species of large predatory freshwater fishes. Many lakes of the state have an abundance of forage fishes. Therefore, niches may be available for additional desirable predatory species.

As far as I know, there is no record of walleye (*Stizostedion vitreum*) occurring naturally as far south as peninsular Florida. People not familiar with walleye may have the mistaken impression they require cold, deep water. If this were so, an attempt to introduce them into Florida would be absurd. However, there is a strong superficial resem-

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blance between many lakes there and warm, shallow Midwestern lakes that have good walleye populations. Because of this resemblance, I decided to see if walleye could survive in Florida.

Permission was obtained to use a privately owned, dug pond, about 0.3-acre in size at Vero Beach, Florida (latitude 27° 39'). Rotenone was applied for a complete kill, but no fish were found. On May 10, 1960, several thousand sac-fry, courtesy of the Iowa State Conservation Commission, were received by air and stocked in the pond. No forage fish were stocked. In succeeding months several unsuccessful attempts were made to recapture some of the fry with nets and an electric shocker. Pond conditions made both gear types inefficient, so rotenone for a complete kill was applied on March 9, 1961, 10 months after stocking. Three walleye, measuring 215, 231, and 240 mm total length were recovered. Their gonads did not show signs of development.

The experiment was repeated. Several thousand sac-fry were received on May 17, 1961. The ice had melted in transit, bag water was 24.4° C. and many fry were dead. The fry were stocked immediately; *Gambusia* were later stocked as forage. Recovery attempts were unsuccessful and rotenone was applied on February 19, 1962, nine months after stocking. Two walleye, 320 and 326 mm total length, were recovered. Both were males and, as can be seen in Figure 1, the testes were nearly mature.

The small number recovered each year does not necessarily indicate walleye could not be established in Florida. It may be that most fry died immediately. On the other hand, walleye are cannibalistic. Even in intensively managed rearing ponds, walleye density is normally low in number and/or biomass. Walleye fingerling harvest in Minnesota is reduced to about 10 fish per acre-foot if they are allowed to grow to 115 mm. Minnesota fingerlings between 1953 and 1958 were harvested at a much shorter length. Intensively managed ponds produced an average of 2259 walleye fingerlings per acre-foot, but averaged only 48 mm total length and 2.2 kg per acre-foot (Dobie; 1956, 1959).

Florida temperatures are cooler than popularly thought. Maximum air temperature during the experiment was 35.3° C.; minimum was -1.1° C. Pond temperature must have been within these limits. The five walleye recovered prove some unknown percentage of the fry were genetically capable of rapid growth and testicular maturation in the temperature and photoperiod ranges experienced.

Walleye are not a pond species. They generally require lakes with a wave-swept shore, or a stream, for successful spawning. Many Florida lakes fall in this category and may have a niche for walleye. The experiment reported was a "spare time" project. I believe that with proper planning and execution, the walleye could be successfully introduced. Of course, introduction should only be attempted under supervision of the Florida Game and Fresh Water Fish Commission. Initial introduction should be in isolated lakes where the walleye could be eradicated if they had unexpectedly adverse effects upon native fish populations.

LITERATURE CITED

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ABSTRACT

In 1960 and 1961, walleye fry were stocked in a 0.3-acre pond in peninsular Florida, far south of their natural range. Three walleye, 10 months old and about 230 mm long, were recovered from the 1960 stocking. Two walleye, 9 months old and about 325 mm long, were recovered from the 1961 stocking. These two were almost mature males.

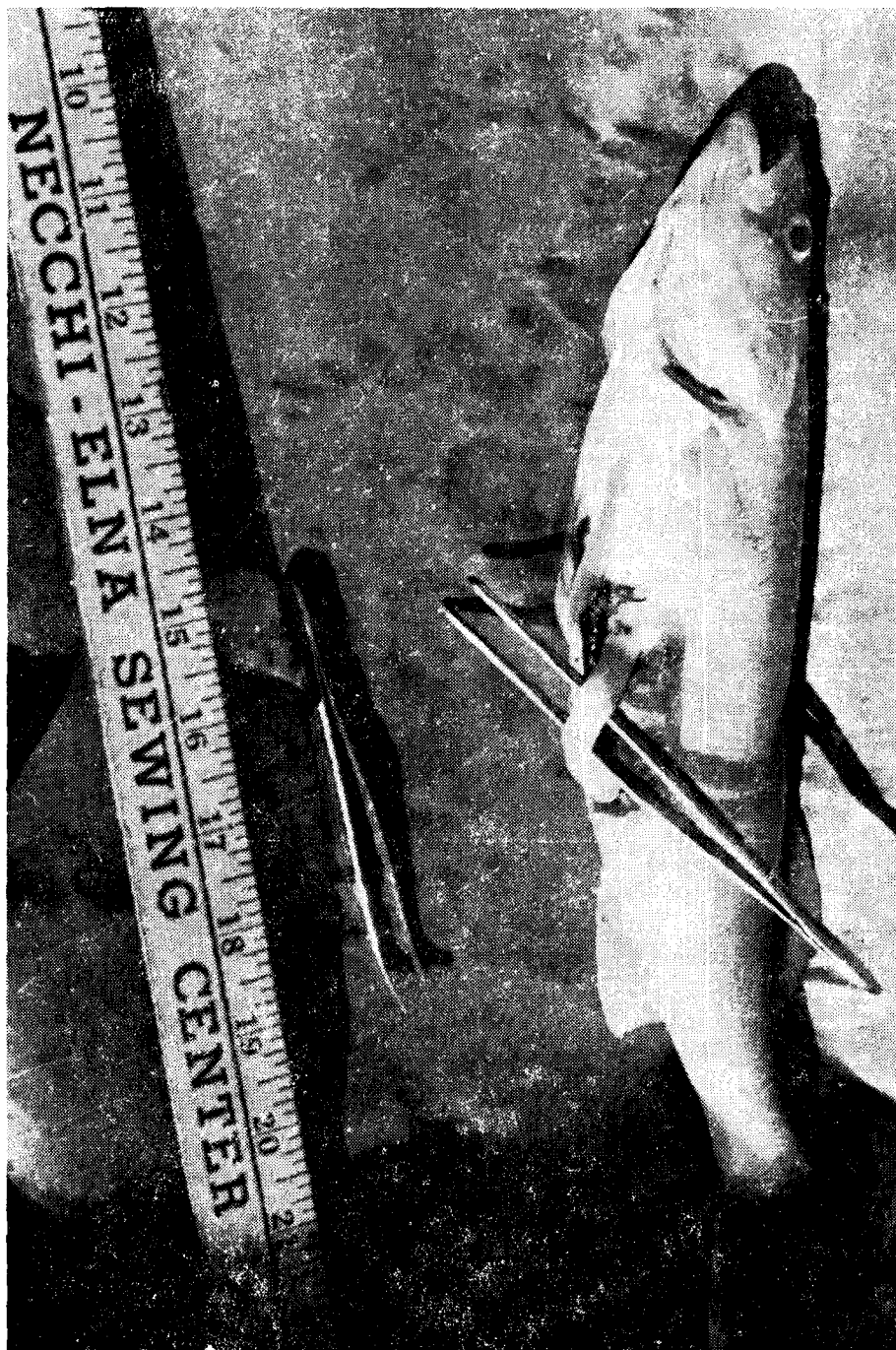


FIGURE 1. Forceps supporting a nearly mature testis of a 9-month old walleye from the 1961 stocking