

A GENERAL DESCRIPTION OF STURGEON AQUACULTURE CURRENTLY BEING CONDUCTED AT THE UNIVERSITY OF CALIFORNIA AT DAVIS

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During the spring of 1980 researchers at the University of California at Davis had their first successful attempt at the artificial propagation of white sturgeon *Acipenser transmontanus*. This was the first time white sturgeon had ever been laboratory spawned.

This work was completed for a number of reasons in addition to our scientific curiosity. In the state of California we have a constituency that is very much interested in the commercial aquaculture of this species as a food fish. Also, natural populations of sturgeon have been declining for a number of years and, if deemed necessary sometime in the future, we will have developed the technology to mass spawn sturgeon for a release and repropagation program.

Each year in the months of November and December broodstock acquisition takes place in San Francisco Bay. As many as 40 fish per day may be taken. Each fish is subjected to an abdominal incision so gonadal maturation may be noted. Only 10% of the total fish taken will be brought to U. C. Davis for spawning induction. Upon suturing, the remaining 90%, are immediately released at the capture site.

Females induced to ovulate by gonadotrophic injections are placed on a stretcher and ventilated by pumping water into their mouths and over their gills. A small abdominal incision is again made and the eggs removed. As many as 4 liters of eggs may be removed from a 55 kg animal. The incision is closed and the brood female placed into an isolation tank for future release into the Sacramento River.

Sperm is removed from brood males by a 20 cc syringe and the sturgeon eggs fertilized. To compensate for egg clumping caused by an adhesive outer egg layer on the surface, mechanical siltation of sturgeon eggs is applied for approximately one hour. Incubation of eggs will take 120 hours at a water temperature of 16°C.

Reproductive physiology studies are performed in conjunction with the induction and spawning process. Sturgeon larvae are collected and some utilized in a number of nutrition and environmental parameter experiments. Others are reared to fingerling size and released into the Sacramento River. During the spring of 1982 approximately 200,000 sturgeon fingerling were released as a byproduct of our work.

To date, U. C. Davis has three sturgeon year classes as a result of our work. These animals are being monitored for gonadal maturation and are being maintained for future broodstock.