

# An overview of prawn culture research in Louisiana: 1979-85

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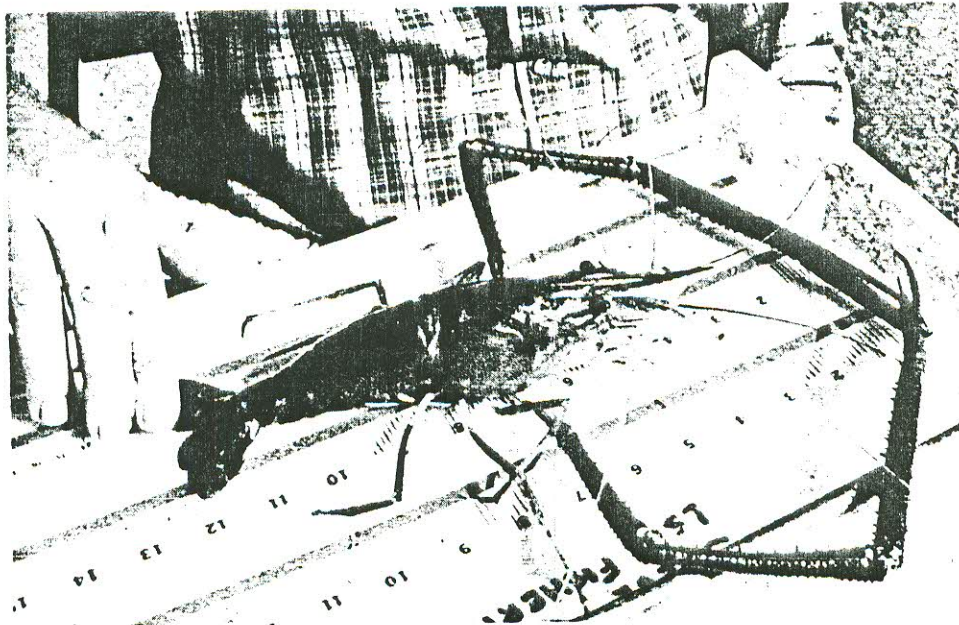
**W**ORLDWIDE, there are more than 100 species of freshwater prawns belonging to the genus *Macrobrachium*. Of these, the giant Malaysian prawn is the species most commonly cultured. This tropical crustacean is native to the marshes and river systems of the Indo-Pacific region.

Several characteristics make Malaysian prawns attractive for possible culture in Louisiana, including (1) easy maturation and spawning in captivity,

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Size potential of prawns was indicated when, at low stocking rates, some males averaged 4 to 5 to the pound at harvest.

(2) rapid growth—up to one-half inch per week—and large size of up to 1 pound each, (3) the variety of feedstuffs accepted, (4) the feasibility of culture in either fresh or brackish water, and (5) highly palatable tail meat which commands premium market prices.

Although prawns have many advantages and are being cultured commercially in tropical countries, it is not known if prawn culture is feasible in temperate climates. If it is, the prawn may occupy a new niche in the seafood market alongside crawfish and marine shrimp.

The Louisiana Agricultural Experiment Station (LAES) and the Louisiana Department of Wildlife and Fisheries (LDWF) have been conducting cooperative research for the past 7 years to evaluate culture potential of the giant Malaysian prawn in Louisiana.

## Research Methods

Pond culture experiments were conducted in replicated freshwater ponds at the Experiment Station's Ben Hur Farm in Baton Rouge and in replicated brackishwater ponds (salinity of 2 to 6 parts per thousand) at Rockefeller Wildlife Refuge, Grand Chenier.

The experiments were designed to compare prawn stocking densities, stocking sizes, and pond culture systems with prawn survival, growth, and yield per acre. In several studies, prawns were stocked in polyculture with channel catfish and/or with other fish species.

Water temperature, dissolved oxygen, and other water quality parameters were routinely monitored in all culture ponds. Concomitant with pond research, hatchery techniques of spawning and rearing of prawn larvae were also developed.

## Results

Since 1979, the LAES and LDWF have conducted 18 separate prawn culture experiments in more than 151 stocked ponds (Table 1). Regardless of experimental design and whether prawns were cultured in brackish or freshwater, certain culture trends were noted.

Water temperature and dissolved oxygen were probably the two most critical water quality parameters in prawn culture ponds. Consequently, these variables were checked daily in ponds just before sunrise when values were usually at their lowest level.

Prawns died at temperatures of approximately 55°F, and required a minimum of about 65°F for growth. Dissolved oxygen levels of less than 2 parts per million stressed prawns, and levels of less than .5 ppm were usually lethal. Channel catfish were similarly affected at these low levels of dissolved oxygen.

Overall, prawns were relatively hardy under most culture conditions, and no major trends were noted between prawn culture in freshwater versus brackishwater.

