

COCAHOE POND SPAWNING

Production of cocahoe minnow eggs is achievable throughout the late spring and fall months. Utilization of fertilized ponds has been successful in several southern coastal states.

Pond Spawning: Pond spawning requires a supply of brackish water with a salinity between 4-15 ppt. An adequate amount of land is also required. Construction of ponds should be shallow, about 3 feet deep, and contain sloped bottoms so they can be drained. Ideally, ponds should also have a harvest basin to collect fish.

Phase System: The 3-phase system is the most popular system used for pond spawning and production.

Phase-1: Phase-1 ponds are spawning ponds strictly used for egg production and collection.



Before stocking the ponds, any wild fish should also be excluded from the ponds by using a fine mesh material (285 micron or 0.01 inch) to cover the water supply pipe. Adult cocahoos at 0.35 ounces or larger can be stocked at 10,000/acre at a 2:1, female to male ratio in January to early February before water temperatures reach 59°F. The fish are fed a 28-40% protein, 3% body weight ration twice a day.

As water temperatures reach 68°F, synthetic substrates or mats (Spawntex®) are placed around the shallow edge of the pond for the females to lay their eggs on. These mats are made of a manufactured material consisting of coconut fibers with a latex binder. Spawning mats are sized at about 3 feet x 2 feet, 2 inches thick and placed in/on a wire frame, and then suspended below the water surface from two floats made of sealed PVC tubing. This substrate is too dense to allow fish to pass through, but each mat had sufficient void spaces to allow for eggs to be trapped and retained. The mats are left in the pond 4-10 days depending on the rate of egg deposition and temperature. Mats should be checked on a regular basis and transferred into the phase-2 pond all at the same time. This helps to prevent erratic hatching dates and variable sized fish that will lead to predation. These mats should be replaced with new mats.

Although there is no relationship between number of eggs collected and temperature, peak egg produc-

tion occurs between April and mid-May, when weekly water temperatures range from 75° to 83° F.

Phase-2: Phase-2 ponds are hatching ponds used for hatching eggs and growing fry. Hatching ponds are prepared in advance by filling to 1/3 capacity and fertilizing with organic and inorganic *fertilizers 2 weeks prior to stocking to promote plankton blooms. This will establish a first food for newly hatched fish. Treatments should be administered to kill predaceous insects and wild fish should also be excluded. As the fry hatch in the pond, they are fed a finely ground minnow meal, 28-30% protein, at 5 pounds/acre a day. Fry/fingerlings are cultured in the phase-2 ponds for 60-80 days.



*How much and what kind of fertilizer to use will depend on the size and condition of your pond. Please look into the SRAC (Southern Region Aquaculture Center) articles and other references listed below for more information about fertilizing ponds. You may also contact your local extension agent for this information.



Phase-3: The young fish are then transferred into a prepared phase-3 pond for grow out to harvestable sized minnows. Procedures and practices for grow out and ponds are available from previous extension and research documents. Please refer to:

SRAC: Growing Bull Minnows for Bait. (<http://www.ms-state.edu/dept/srac/>)

Tatum, W M., J. P Hawke, R. V Minton, and W C. Trimble, 1982. Production of bull minnows (*Fundulus grandis*) for

the live bait market in coastal Alabama. Alabama Marine Resources Bull. No. 13 Alabama Marine Resources Laboratory. Dauphin Island, AL 36528.

Strawn, K., P. W. Perschbacher, R. Nailon and G. Chamberlain. 1986. Raising Mudminnows. Texas A&M University Sea Grant College Program. TAMUSG-86-506R.

Waas, B. P., and K. Strawn, 1983. Seasonal and lunar cycles in gonadosomatic indices and spawning readiness of *Fundulus grandis*. Contributions in Marine Science Vol. 26:127-141.

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