

**SEA GRANT**

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By

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Springtime and love is in the water ... Wait. Water? You read right. With the longer, warmer days, oysters in Mobile Bay and Mississippi Sound are ripening up and getting ready to spawn, releasing their gametes into the salty water by the millions. At first glance, it may not sound particularly romantic, but these oceanic mollusks are nothing if not devoted to the act of reproduction.

It is, of course, complicated. Most oysters begin life as males, but develop into females as they age. You can't tell from looking at the oyster's shell whether it's male or female at any given time, but regardless of the oyster's sex this is the time of year when the oyster is 'ripening up', meaning the gonads are filling with maturing sperm or eggs. It's not unusual that over three quarters of a ripe oyster's mass consists of gonad. When the mood strikes (usually prompted in nature by increasing water temperature), the oysters will begin to spawn, often led by an apparently eager male releasing sperm out into the water. This prompts the other oysters in the bed to spawn as well. (Sounding a little more romantic now?) A single female can release upwards of tens of millions of eggs! Of course, in nature, many of those eggs will never be fertilized, or survive to reproduce; fisheries biologists typically assume that less than 0.01% survive.

Scott Rikard, manager of the Auburn University Shellfish Laboratory (AUSL), has a knack for increasing those odds. In fact, AUSL has produced hundreds of thousands of juvenile oysters ('seed') for research, restoration, fisheries enhancement, and shellfish farming, and has the capacity to produce millions. As a hatchery manager, Rikard coaxes ripe oysters to spawn by

treating the would-be parents to plenty of food, warm water and private quarters (think the oyster equivalent of a Caribbean cruise). When they spawn, he collects all the eggs and sperms and then mixes them so that most eggs find a mate. Those fertilized eggs immediately start dividing and develop into microscopic (less than one thousandth of an inch!) swimming larvae within 24 hours. Those larvae will swim and feed on even tinier plants (called phytoplankton, and supplied by Rikard and his crew), developing into veligers. The hatchery team will care for these free-swimming veligers for the next two weeks or so, until they're ready to settle down and finally attach to something. At this point in the wild, the young oysters might find and attach to the shells of adult oysters or the side of a piling. In the hatchery, Rikard makes sure that his oyster larvae have plenty of clean shells (kept in bags) to call home. When they're ready to attach, these late stage veligers, called pedi-veligers, go through metamorphosis and glue themselves onto this shell, giving up the free-swimming lifestyle for a more sedentary phase of their lives. At this point, newly attached oysters are just barely visible to the naked eye, looking like little dark specks on the shell pieces.

Whether in nature or in the hatchery, these newly settled oysters, called spat, now continue the life cycle, maturing and potentially spawning even as soon as one year later here in Alabama's warm coastal waters. So, if you're down along the shore, keep your eyes open for the first signs of this year's 'class' of oysters, the tiny specks on shells and rocks that are the product of this spring's oyster romance.

If you're interested in learning more about AUSL, shellfish hatcheries, or the oyster life cycle, contact Bill Walton, 251-861-3018.