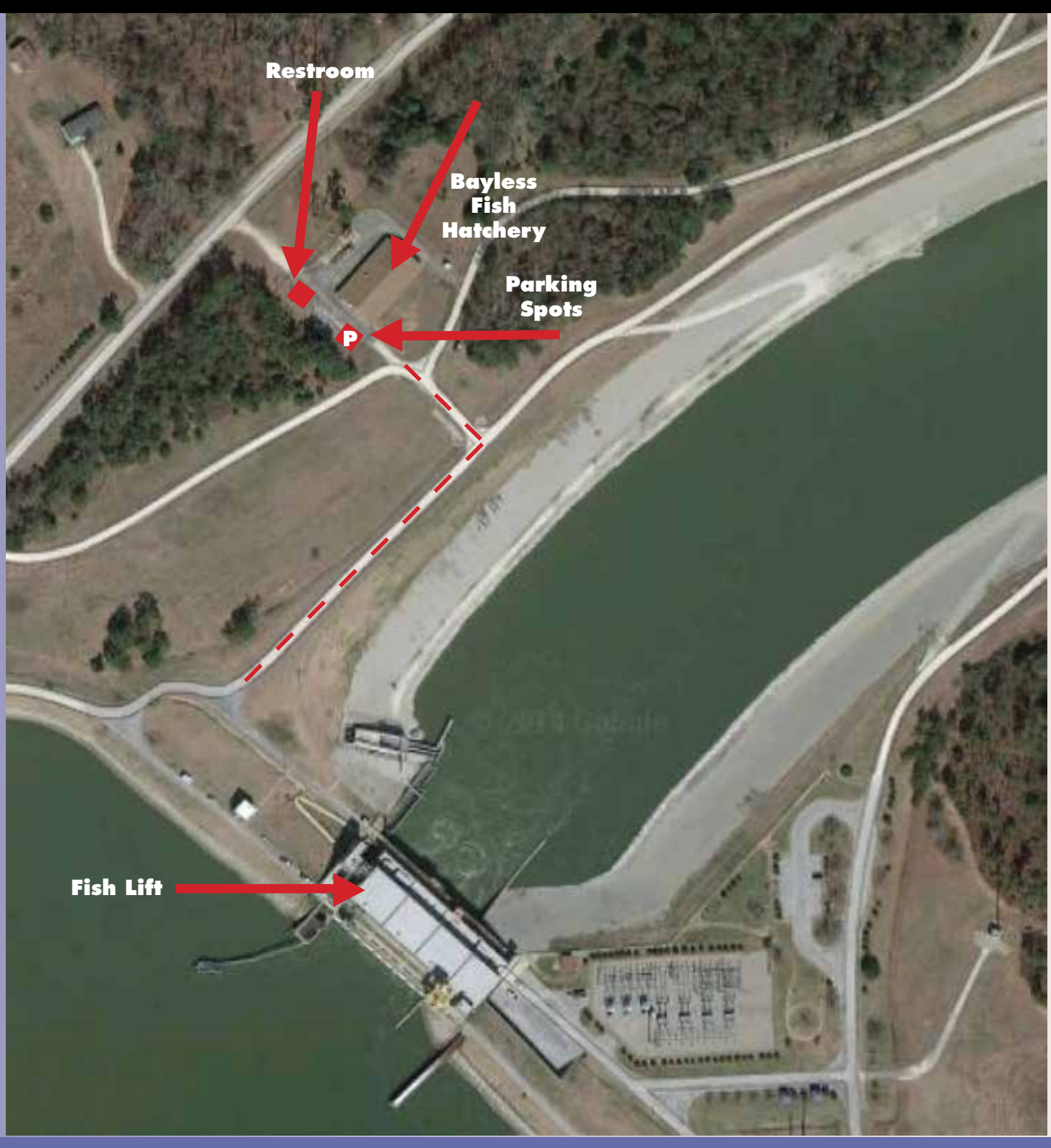
What We Do

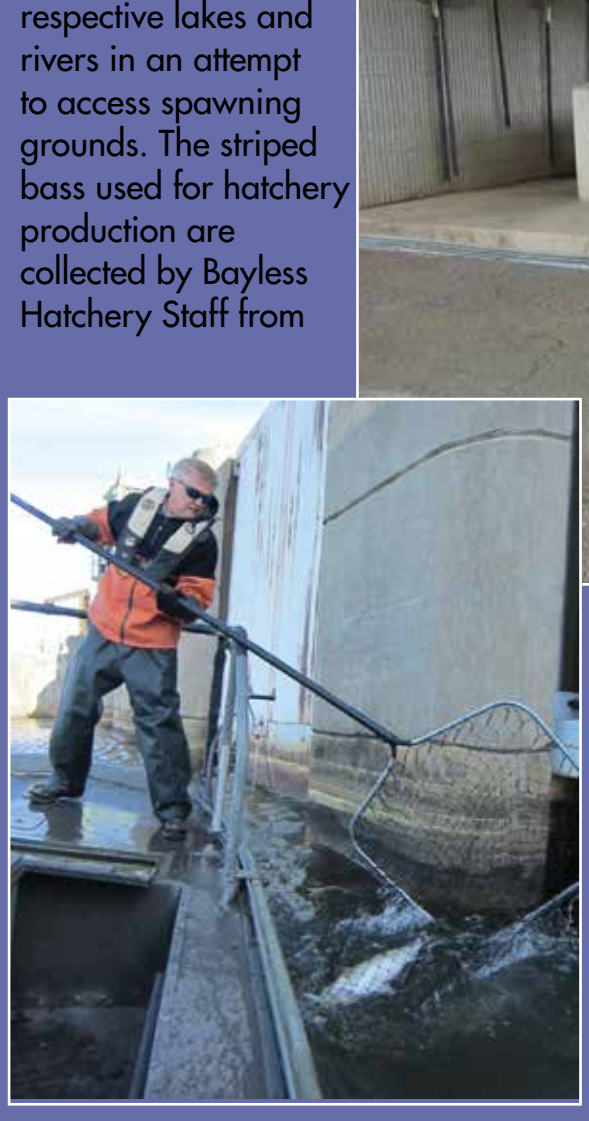
Operated by the South Carolina Department of Natural Resources (SCDNR), this fish hatchery is one of six in South Carolina serving a vital role in the management of our state's fishery resources. The Jack D. Bayless Fish Hatchery is responsible for producing larval stages of striped bass, hybrid striped bass, American shad and incubation of robust redhorse eggs. Striped bass larvae produced at Bayless Hatchery are transported to various SCDNR and U.S. Fish and Wildlife hatcheries for grow out to fingerling size. American shad larvae are stocked in the Broad and Wateree Rivers. Robust redhorse larvae are stocked in rearing ponds at the Dennis Wildlife Center for harvest in the fall. The Jack D. Bayless Fish Hatchery produces approximately 12 million striped bass/hybrid larvae annually, 2 to 4 million American shad larvae and hatches up to 25,000 robust redhorse larvae.



1. BROODSTOCK

This facility is the center for all striped bass larvae produced within the state. Each spring, adult striped bass migrate upstream from their respective lakes and rivers in an attempt to access spawning grounds. The striped bass used for hatchery production are collected by Bayless Hatchery Staff from the Rediversion Canal, Cooper, Congaree, Wateree and Saluda Rivers using electrofishing techniques. Adult male and female striped bass are collected and transported back to the hatchery.

Weighing striped bass.



Electrofishing to collect striped bass.

Tagging gun with tags.

Once back at the hatchery all mature females are weighed to determine the appropriate amount of hormone to be injected.

Males are tagged and placed into their own raceways. The tagging allows staff to identify individual fish and how many times a male has been used for spawning. After a male has been used three times, it is released. Females are used once and then released. Staff will take fin clips from the males and females for genetic analysis to help determine the hatchery versus wild fish contribution to the overall population in rivers and lakes.

2. SPAWNING

Fisheries staff inject females with the hormone HCG (human chorionic gonadotropin) to promote egg development. About 30 hours after injection, a catheter is inserted into the ovary of the fish and the eggs are examined under a dissecting microscope. From this examination the time till ovulation is predicted. During the spawning season, fisheries staff work around the clock.

Egg slide.

Eggs magnified.

Once the female has ovulated and eggs are ripe, fisheries staff will submerge her into a specially outfitted rectangular tank with a sling and using a backpack eletroshocker anesthetize the fish for 3 seconds.

Female under electroshock anesthesia.

It takes three employees to strip spawn a striped bass—one individual will support the mouth, one the tail of the fish and one person will gently squeeze the females abdomen to release the lime green eggs into a measuring jar. The eggs are separated equally into three bowls.

Eggs stripped from female.

After this is done, staff will choose three males, anesthetize them and gently squeeze their abdomens to release the milt (or sperm) into the bowls of eggs (one male per bowl). A turkey feather is used to stir the milt and eggs together and water is added. Eggs are fertilized within seconds. The excess water is decanted and eggs are transported inside the fish house where they are placed into special hatching jars for incubation.

Milt stripped from one of the three males.

Milt stirred with eggs.

3. FISH HOUSE

The hatching jars are each labeled with the date and time of spawn, species and the parentage of which male was crossed with which female. Eggs are placed into the hatching jars where they are incubated for two days until hatching occurs. The hatching jars are engineered in such a way to allow continuous water flow to roll and aerate the eggs. This flow also assists the newly hatched fry that swim to the surface to move with the overflow water into the larger circular tanks.

Hatching jars.

At approximately 5 days old, the striped bass larvae are fed Artemia (also known as sea monkeys or brine shrimp) that are reared onsite in the shad lab.

Striped bass larvae are held in tanks till they reach 5 to 7 days old. At that time, they are transported in a specially outfitted temporing trailer to another hatchery, such as the Dennis Wildlife Center in Bonneau, where they are stocked into rearing ponds. Ponds are fertilized throughout the production cycle and water quality maintained.

After about a month in rearing ponds, larvae have grown to a 1.5-inch fingerling and are ready to be stocked. Ponds are drained into a catch basin where fish are collected with nets and placed on a hauling truck for transport to a stocking location. Some striped bass are held for 4 to 5 months to reach 6-9 inches (Phase II size).

Striped bass fingerling stocking occurs during May and into early June. Reservoirs receiving striped bass fingerlings are Moultrie, Marion, Murray, Greenwood and Wateree. Lake Thurmond and Hartwell are stocked with both striped bass and hybrid striped bass.

Harvesting Phase II striped bass.

Stocking Phase II striped bass.

4. SHAD LAB

American shad are produced using natural spawning from adults collected via electrofishing or from the St. Stephen Fish Lift.

Electrofishing to collect American shad.

American shad in nets.

American shad larvae are immersed into a OTC (oxytetracycline) bath. This process imparts a mark on bones in a fish allowing fisheries managers to determine the hatchery versus wild contribution three to five years into the future.

Eggs placed in hatching jars.

At 3-4 days old, the American shad larvae are stocked into the Broad and Wateree Rivers. Due to habitat degradation and impacts such as dams, this important food source for many game species isn't able to travel its historic spawning runs. American shad aren't just important food for catfish, striped bass and largemouth, but in the lowcountry of South Carolina they are prized for their roe (eggs) and smoked meat.

5. FISH LIFT

Travel over to the fish lift to learn how the lift works, the history of the lift and see American shad make their migration through the lift.

The same number of males and females are placed in each of the large round tanks. These tanks have large curtain enclosures to keep fish in seclusion and to help maintain the water temperature. Heaters also assist in maintaining the water temperatures in the tanks. Fisheries staff will raise the temperature one degree daily to reach the optimum 72 degrees Fahrenheit for spawning. Spawning will occur naturally in the tank.

Circular shad tanks.

American shad in tanks.

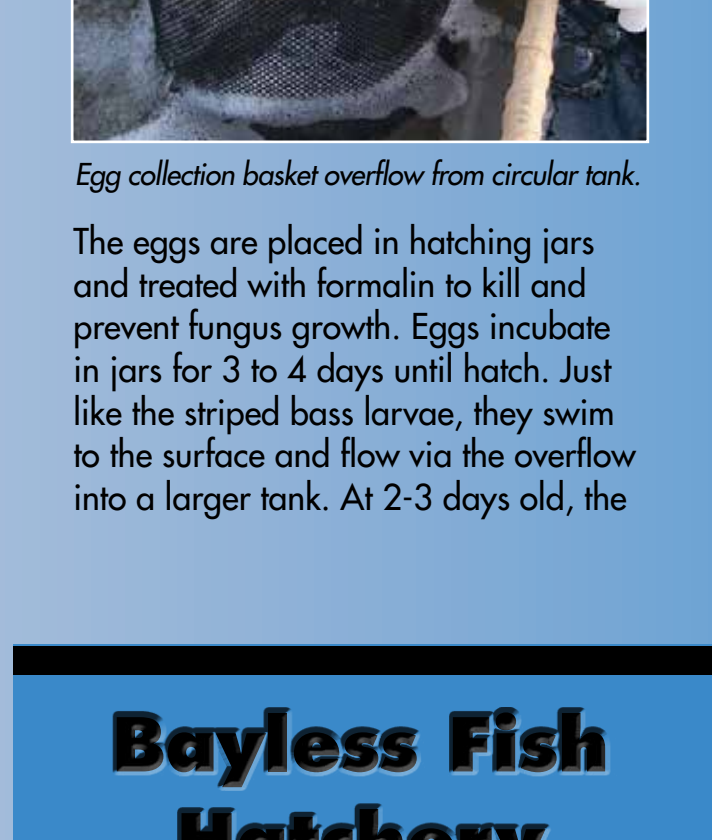
Eggs drain out of the large tank through the center drain and into a collection basket for removal. Fisheries staff transport the eggs to the shad lab here inside the fish house.

Eggs in collection basket and inset eggs in hatching jar.

Egg collection basket overflow from circular tank.

The eggs are placed in hatching jars and treated with formalin to kill and prevent fungus growth. Eggs incubate in jars for 3 to 4 days until hatch. Just like the striped bass larvae, they swim to the surface and flow via the overflow into a larger tank. At 2-3 days old, the

Bayless Fish Hatchery Walking Tour



For Additional Information, Contact:
Hatchery Manager
Jack D. Bayless Fish Hatchery
264 Platt Rd.
St Stephen, SC 29749
Phone: 843-567-3286

Operated seasonally from mid-March through April. To schedule a tour, call 843-825-3387.

SPORT FISH RESTORATION

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
DNR

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