



## Managing Ponds

Spring Island has dozens of ponds scattered across its landscape. The salt marsh inlets and ravines around the Island's periphery were impounded in the late 1960s and early 1970s to attract waterfowl for hunting. Most of the interior ponds were created in the 1990s as water features for the golf course or as home and recreation amenities. With the exception of the Great Salt Pond and the wetlands within the Trust's nature preserves, the ponds are owned by the POA.

Spring Island's ponds are managed according to their intended uses (family fishing or saltwater fishing, for example). Some ponds provide multiple benefits. For example, Otter Pond is managed for fishing and wildlife by maintaining a water depth of several feet while one section is shallow for wading birds.

### **The saltwater ponds**

Prior to 1970, five saltwater ponds were constructed by closing off sections of high salt marsh with dikes. Wood Stork and Wood Duck Ponds have riser-board water control structures so that they have only infrequent water exchange. Great Salt Pond, Shrimp Pond and Otter Pond have water control structures with flap gates that allow water to enter the pond when tide levels on the outside are higher than water levels inside the pond. Incoming water brings baitfish, crustaceans and zooplankton. Increased water flow also increases oxygen levels in the pond.

The Great Salt Pond, at 30 acres, is the largest of the Island's saltwater ponds. The incoming tides carry an abundance of small saltwater fish (principally flounder, red drum, black drum and sea trout) into the pond where they mature if there is adequate oxygen in the water. Prior to the installation of an aerator, fish kills occurred when a heavy summer rainfall caused oxygen-deprived water from the bottom of the pond to rise to the surface.

The type of water control structure used at the Great Salt Pond has changed through the years. Originally, an aluminum structure was used. It was replaced with rice trunk gates in 1998. Eventually, the high salinity waters of Port Royal Sound caused the treated wood of the rice trunks to deteriorate. In 2014 the Trust received permits and funding to replace these structures and to establish one-way

flow through the pond by means of a canal that connects the shallow southern end to the high marsh at Palmetto Point. The structures are made with a new type of aluminum designed to hold up in high salinity water.

The Great Salt Pond has, since its creation, provided valuable wildlife habitat. A pair of bald eagles has nested nearby since 1986. Shorebirds, herons and wood storks feed in areas that have a depth of only a few inches. Hooded mergansers and bufflehead feed in the deeper sections of the pond. During the winter, Bonaparte's gulls and other water birds seek refuge there during storms.

The Shrimp Pond was created by connecting two dikes to a marsh island. During the 1980s and 1990s shrimp larvae were purchased and grown to maturity in this pond. The pond became a fishing pond when it was stocked with red drum, a species that tolerates a wide range of salinities. In 2012 two new rice gate water control structures were installed with a canal connecting them to provide deep-water fish habitat.

Otter Pond is a shallow pond that has been managed for wading birds. It became a fishing destination when large red drum appeared there. The pond has been stocked with additional fish since that time. The pond has a rice gate trunk and an outflow box that establish one-way flow of water.

Wood Stork Pond is a saltwater pond that is flooded only during the highest tides because it does not have a water control structure. Nonetheless, it supports red drum and other species of saltwater sports fish.

Wood Duck Pond is also a saltwater pond and often offers excellent viewing of water birds. Its secluded location makes it a favorite resting area for ducks, mergansers and osprey. It has limited water exchange with the salt marsh and therefore is not a fishing pond.

### **The freshwater ponds**

A series of freshwater ponds were created around the perimeter of the Island during the Walker era. These include Twin Pipes Pond, Rice Gate Pond and Night Heron Pond as well as Little Sister and Big Sister Ponds. A series of interior freshwater ponds were dug during the construction of the golf course and the development of home sites.

### ***Managing ponds for fishing***

Fishing is an important Spring Island amenity. The POA uses a fisheries consultant to provide recommendations on how to manage ponds for fishing.

Spring Island ponds offer a variety of fishing experiences. The Goose Ponds, Deep Pond and the pond on the 12th fairway are managed for large trophy bass. Old Tabby Links ponds are managed for a high bluegill catch and provide a great fishing experience for children. The Great Salt Pond and Shrimp Pond are exciting places for red drum, sea trout and flounder fishing as well as for trapping crabs and netting shrimp.

A number of practices increase the size and number of fish in our ponds: regular stocking with bait fish, keeping the density of bass from getting too high (by electro-shocking or other means of removal), providing supplemental food when necessary and adding structure to the pond bottoms to provide hiding places from predators.

Guided fishing trips on and off of Spring Island are wonderful experiences.

### ***Managing aquatic and bank vegetation***

Maintaining vegetation along the banks of freshwater ponds is a balancing act. Aquatic plants and bank vegetation can be beneficial because they serve many important functions such as providing oxygen and processing waste nutrients. They also protect the shoreline from erosion, provide cover for young fish and aquatic invertebrates and offers shade and nesting habitat for birds.

However, too much aquatic plant matter can cause fish kills if it dies and sinks to the bottom of the pond. Oxygen is depleted as microorganisms break it down. In addition, large floating mats of aquatic plants make fishing very difficult. Exceptionally large shrubs along the bank interfere with access and views. Along pond edges, views from home sites should be maintained under the guidance of the Landscape Ecologist.

The POA contracts with a pond management company to monitor and spray the aquatic vegetation in the Club-owned ponds. In some cases, herbivorous fish like the sterile triploid grass carp are used to control aquatic vegetation.

Aquatic herbicides that are safe for fish and other aquatic organisms are used specifically in and around wetlands. They also are used to keep trees and woody shrubs from growing on dikes.

### ***Alligators in ponds***

Alligators are present in all Spring Island ponds. Children should never be allowed to fish without supervision. Pets should be kept well away from edges and entirely out of the ponds.

### ***Maintaining dikes***

Dikes are maintained by periodic mowing. Trees and shrubs are typically removed to prevent roots from damaging the structural integrity of the dikes. Poor soil may limit the species that grow on dikes.

### **How pond management decisions are made**

Using the Annual Land Management Meeting as a model, the Stewardship Committee initiated a Pond Management Meeting in 2014. Professionals invited to this one-day meeting include experts in the areas of managing ponds for game fish, controlling invasive species, managing ponds for wildlife and maintaining the physical conditions of ponds.

These meetings will generate an updated pond management plan that includes stocking and harvesting protocols for specific ponds, annual schedules for maintaining pond depths with water control structures and prioritizing ponds slated for sediment removal.