Introduction

Conservation Biology is a multi-disciplinary, often crisis-oriented field, with strong ethical norms. Its three goals are to document biodiversity, to investigate human impact, and to develop practical approaches to maintain genetic diversity. The service-learning mission of this class was to assist community partners (St. Simons Land Trust and Georgia Department of Natural Resources) in their conservation goals at Cannon’s Point Preserve. Cannon’s Point Preserve is a 608-acre preserve on the north end of St. Simons Island that is now open to the public for low impact educational and recreational purposes.

Conservation/Management Plans

Native Species

Painted Bunting (Passerina ciris)
- Small neotropical songbird
- Conservation Status- Near threatened
- Threats- Habitat loss, pet trade
- Recommendations- Ecotourism

Diamondback Terrapin (Malaclemys terrapin)
- Only turtle found exclusively in brackish waters
- Conservation Status- Near threatened
- Threats- Crabbing, boating, habitat loss
- Recommendations- By-catch reduction devices, ghost trap removal

Invasive Species

Nine-banded Armadillo (Dasypus novemcinctus)
- Only armadillo in North America
- Non-indigenous, rapid range expansion
- Recommendations- Trapping, exclusion, shooting

Chinese Tallow (Triadica sebifera)
- Originally brought over from China
- Surveyed in small sparsely populated locations at CPP and presently pose no threat to native flora and fauna
- Recommendations- monitor tree because of its potential for invasiveness in the future due to the tree’s high fecundity rate, adaptations to subtropical environments and resistance to removal

Living Shoreline Pre-installation Monitoring

Living shorelines are a bioengineering technique that incorporates oyster shells and native vegetation to stabilize and enhance wetland habitats. Advantages include reduction of erosion, provision of natural habitat for aquatic and terrestrial fauna and flora, retention of polluted land run-off, absorption and dispersal of wave activity, and reduced economic cost. This class’s role in the living shoreline project at Cannon’s Point Preserve includes collecting data on the oyster recruitment availability, the fixed benthic faunal composition, and the composition of the plant community. The purpose of the pre-installation monitoring is to provide preliminary baseline data for future comparison.

Oyster Recruitment Availability

- Oyster recruitment data was collected throughout the 2014 spawning season. The purpose of monitoring oyster recruitment was to characterize the temporal and spatial availability of oyster spat (Figure 2).
- Longitudinally-grooved PVC tubing with embedded chips of calcium carbonate were used for recruitment.

Fixed Benthic Faunal Composition

- To determine the fixed benthic faunal composition of Cannon’s Point, eight transects were spaced evenly along the length of the shoreline site to cover the three intertidal zones (low, medium, and high) perpendicular to the creek.
- The numbers of the living oysters were counted in each quadrant as well as other sessile macrofauna (Table 1).

Plant Community Composition

- The number of smooth cordgrass (Spartina alterniflora) stems were counted in each of the intertidal quadrats established, and their densities were calculated (Table 1).
- Eight transects were established in the future living shoreline area and percent cover was estimated by species (Figure 3).

Butterfly Monitoring Program

Palamedes Swallowtail (Papilio palamedes)

- Butterflies are excellent indicators of biodiversity and environmental change.
- Palamedes swallowtail larvae feed exclusively on red bay trees, which are in decline due to the invasive ambrosia beetle.
- Pollard walks were used to determine the species diversity of the area and revealed the presence of four species, including the palamedes swallowtail.

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