United States Department of Agriculture
NRCS Natural Resources Conservation Service

# Migratory Shorebird Habitat Management

*Alabama Guide Sheet No. AL646A*

**Definition and Overview**

Over 30 species of shorebirds migrate through Alabama each year. They feed in shallow standing water and mud flats in the inland waters of Alabama during migration. Appendix A lists twenty of the more commonly encountered shorebirds which may benefit from land management. This guide sheet will assist landowners who want to manage habitat for these shorebirds.

**Habitat Management**

Areas such as beaver ponds, marshes, coastal flats, natural and man-made shallow water ponds, and other wetlands serve as habitat and food sources.

Habitat management consists of retaining and managing suitable feeding areas for shorebird species. The production of late summer and fall food is especially important, since this is a time when Alabama sees the most species of shorebirds. It is also the time of most critical need for most shorebirds, as it is generally a very dry time of the year. Fewer natural feeding areas of shallow water and mud flats are available because of the heat and lack of rainfall at that time.

**Creating Habitat**

Existing Beaver Ponds

Beaver ponds that contain an acre or more of shallow water, mostly dead trees in the shallow margins and buttonbush or emergent waterweeds, can provide excellent habitat. They generally contain streams that ensure water flows during late summer and early fall.

Installing a Clemson Beaver Pond Leveler will allow land managers to control water levels in these areas. This device has a swivel elbow on the rear riser pipe that allows the land manager to draw water down in small increments.

Existing Fish Ponds

Ponds that are to be used as dual purpose ponds for managing fish and shorebirds have many inherent problems that must be overcome to be successful.

A minimum of 5 to 6 feet of water are required at the deep end of a fish pond in order for normal oxygen levels to be achieved during the summer months. Levels below this depth will have problems with fish dieoff due to oxygen depletion. Therefore, at maximum drawdown levels, these ponds should retain this minimum depth.

By nature, a bass/bream pond will become bass heavy if drawn down during the summer months. Lower water levels reduce submerged vegetation near the shoreline, eliminating areas where bream normally hide. Therefore, land managers should expect some increase in the bass numbers with respect to bream populations.

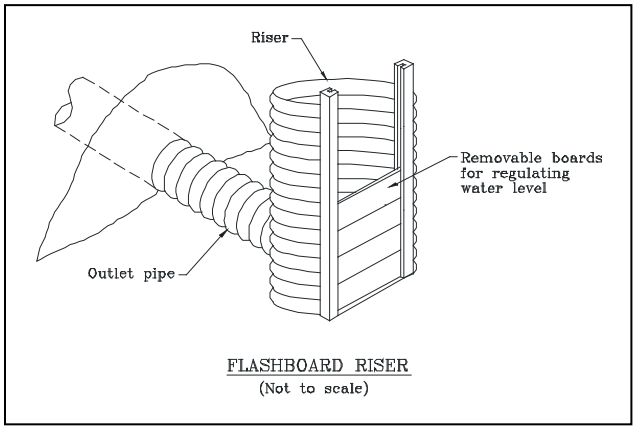
The pond will need to be retrofitted with a water control structure, such as a flashboard riser, so that the water can be manipulated in small increments to produce the best habitat for shorebirds.

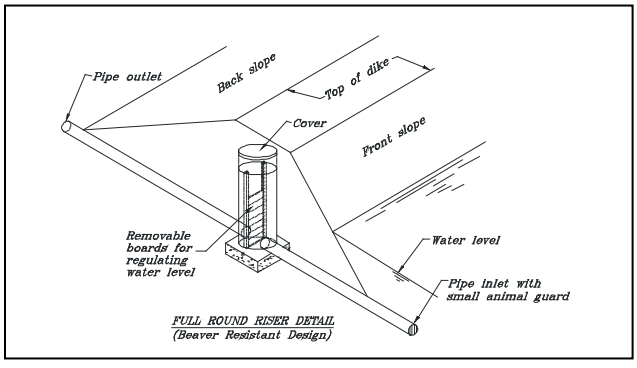
Waterfowl Management Fields

Waterfowl management fields are well suited to managing for migratory shorebirds. The soils should have a high water holding capacity. Dikes should be constructed if needed. If not already present, install a water control structure, such as a flashboard riser, so that the water can be manipulated in small increments to produce the best habitat for shorebirds.

**Water Control Structures**

In order to manipulate water levels and simulate natural hydrologic regimes it is important to properly place water control structures. Structures should be placed at the lowest elevation in the impoundment and be large enough to permit complete dewatering. Stoplog structures, also known as flashboard risers, have proven to be the most effective design. Desired changes in the water depth can be achieved with appropriately sized stoplogs, or boards, and water depths can be maintained with a minimum of monitoring.




**Water Management**

Ensuring Quality Habitat

Migratory shorebirds feed in very shallow water and soft mud flats. The typical shorebird will not use water more than 2 or 3 inches in depth. Many use probing bills to search soft mud beneath shallow water, as well as freshly exposed mud for invertebrates, which compose most of their diet. Once this mud begins to dry and harden, many species cannot feed in that location.

Shorebirds begin migrating through Alabama in late July and continue migrating into November. It is important to provide a continuous supply of shallow water and mud flat habitat throughout that period. In the dry conditions of late summer, exposed mud flats will dry quickly. In order to provide a continuous supply of quality habitat, mud flats should be exposed by dropping the water level by 2 to 3 inches each week beginning in late July to early August.

Most manufacturers of flashboard risers do not offer small “boards” that will drop water levels by only a few inches. Common board sizes are 5 inch and 7 inch. Some manufacturers will custom make smaller sized boards specifically for migratory bird habitat manipulation. One popular manufacturer will build 2.5 inch pvc “boards” for use in their risers. In order to manipulate the water using one of these systems, only one of the custom made small boards will be needed for the system. Using this system, a land manager will pull one of the standard 5 inch boards and replace it with the custom 2.5 inch board. This drops the water level by 2.5 inches. Then, one week later, the 2.5 inch board is removed, which will drop the water level by another 2.5 inches. The following week, that cycle is repeated, which will give a weekly exposure of fresh mud flats and shallow waters.

Ensuring Water Availability

Having a reliable water supply and the ability to pump from it is the best way to ensure water will be available to begin drawdowns in late summer. If pumping is not an option, then water should be held on site from spring rains. Land managers that plan to rely on spring rains should ensure all boards are placed in the water control structure in late winter.

Topography and size of the impoundment should determine the depth of water, but water should not exceed 5 feet deep at the deep end without approval of NRCS Engineer.

**References**

Clemson University Cooperative Extension Service The Clemson Beaver Pond Leveler, AFW Leaflet 1, Rep. March 1994.

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Appendix A

**Over thirty shorebird species may travel through Alabama during Spring and Fall migrations. Listed below are twenty of the more commonly encountered shorebirds which may benefit through directed land management. Also indicated are those shorebirds that winter in the state.**

| Species | Habitat Use | | | | | |
|---|---|---|---|---|---|---|
| | **Winter Resident** | **Ponds and Water Edges** | **Mudflats** | **Flooded Fields/Ditches** | **Wet Fields/Pastures** | **Grasslands** |
| **American Golden Plover (*Pluvialis dominica*)** | | | X | X | X | |
| **Black-bellied Plover (*Pluvialis squatarola*)** | X | | X | X | | |
| **Spotted sandpiper (*Actitis macularius*)** | X | X | | | | |
| **Solitary Sandpiper (*Tringa solitaria*)** | | | X | X | | |
| **Greater Yellow legs (*Tringa melanoleuca*)** | X | X | X | | | |
| **Lesser Yellowlegs (*Tringa flavipes*)** | X | X | X | | | |
| **Whimbrel (*Numenius phaeopus*)** | | | | | X | |
| **Upland Sandpiper (*Bartramia longicauda*)** | | | | | | X |
| **Long-billed Curlew (*Numenius americanus*)** | | | | | X | X |
| **Semipalmated Sandpiper (*Calidris pusilla*)** | | X | X | X | | |
| **Western Sandpiper (*Calidris mauri*)** | X | X | X | X | | |
| **Least Sandpiper (*Calidris minutilla*)** | X | X | X | X | | |
| **White-rumped Sandpiper (*Calidris fuscicollis*)** | | X | X | X | X | |
| **Pectoral Sandpiper (*Calidris melanotos*)** | | X | X | X | X | |
| **Dunlin (*Calidris alpina*)** | X | X | X | X | X | |
| **Stilt Sandpiper (*Calidris himantopus*)** | | X | X | X | X | |
| **Buff-breasted Sandpiper (*Tryngites subruficollis*)** | | | | | | X |
| **Long/Short-billed Dowitcher (*Limnodromus sp.*)** | X | X | X | X | | |
| **Wilson's Snipe (*Gallinago delicate*)** | X | | | X | X | |

Source: U.S. Fish and Wildlife Service, Daphne, Alabama.