ESTABLISHING AND MAINTAINING SECRETIVE MARSHBIRD HABITAT

Species of secretive marshbirds found in Arkansas, and that this guidance applies to include the: sora, Virginia rail, king rail, American bittern, least bittern, common gallinule (formerly common moorhen), purple gallinule, and the pied-billed grebe. Several of these species are listed as federal species of concern and/or state species of greatest conservation need.

Wildlife Benefits

Providing habitat for secretive marshbirds will provide habitat for several other species of wetland dependent species, including waterfowl, migratory birds, small mammals, etc. Additionally, secretive marshbird habitat will provide for increased filtration of sediments and nutrients from the water, thereby enhancing water quality and improving conditions for mussels, amphibians, reptiles, and fish species. This practice also addresses the following natural resource concerns; soil quality degradation, water quality degradation, and inadequate habitat for fish and wildlife.

Habitat Definition

Marshbirds favor wetlands containing several species of perennial emergent vegetation, such as those found in the genus *Carex* and *Juncus*. Cattails (*Typha spp.*) and rice cutgrass (*Leersia oryzoides*) are also beneficial as long as they are equally interspersed with open water and do not form a dense, monotypic stand. The vegetation overall should approach a hemi-marsh; with 50% of the wetland being comprised of open water, while emergent vegetation should be equally interspersed with water and comprise roughly 50% of the wetland area (Figure 1). Water depths ideally range from 1-18" across the wetland, with water being present year-round; if only in small pools (~0.2 acres). Micro-topography should be incorporated into any design. Small amounts of woody vegetation (trees/shrubs < 15ft in height) are tolerated, but should be kept at a minimum. Marshbirds favor wetlands located more than 1,200ft away from a forested area.

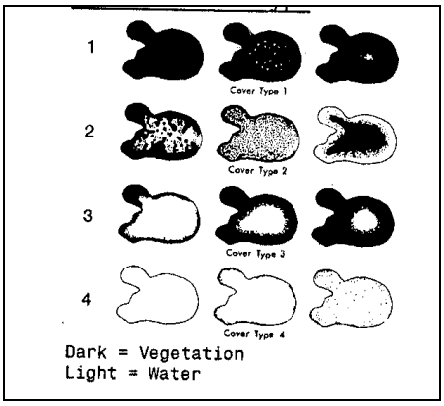

Figure 1. Cover type 2 is preferred for marsh birds.

Creating Marshbird Habitat

Use wetland restoration, creation or enhancement practice standards to construct a wetland favored by marshbirds. However, create micro-topography (ridges and swales) versus a smooth bottom. Small deeper pockets of water should exist to increase the likelihood of water being present year-round in scattered areas. Micro-topography will promote plant diversity, creating conditions favored by the plant species mentioned above.

Preferred plant species will respond from the seed-bank naturally. If the planner feels one plant (e.g. cattail) will dominate the site within one year of planting, then seeding a wetland mixture or a cover crop should be considered.

Recommended Seed Mixture (6-8lbs/acre of Pure Live Seed)

40% Japanese millet *(Echinochloa esculenta)*
20% Pennsylvania Smartweed (*Polygonum pennsylvanicum*)
15% Fox Sedge (*Carex vulpinoidea*)
5% Lurid (Shallow) Sedge (*Carex lurida*)
5% Hop Sedge (*Carex lupulina*)
5% Fringed (Nodding) Sedge (*Carex crinita*)
3% Soft Rush (*Juncus effusus*)
3% Green Bulrush (*Scirpus atrovirens*)
2% Woolgrass (*Scirpus cyperinus*)
2% Rice Cutgrass (*Leersia oryzoides*)

OR

100% Japanese Millet *(Echinochloa esculenta)*

Pure Live Seed

Pure live seed (PLS) is a measure used by the seed industry to describe the percentage of a quantity of seed that will germinate. PLS is obtained by multiplying the purity percentage by the percentage of total viable seed, then dividing by 100.

Purity is the percentage of seed by weight that is the labeled species; the rest of the material is inert, weed seed, or other crop seed. Total viable seed is the percentage of seed that will germinate (germination plus dormant).

$$\text{Pounds of Bulk Seed} = \frac{\text{Pounds of Pure Live Seed}}{\text{Purity (decimal)} \times \text{Germination (decimal)}}$$

Example: To sow 10 lbs PLS with 50% purity and 50% germination, sow $\frac{10}{0.5 \times 0.5}$ = 40 lbs bulk seed.

Seeding Method & Dates

Broadcast the wetland seed mixture in November - May. If possible, place enough boards in the water control structure to saturate the soils if seeding is to be completed in the spring, or seed prior to rain events. The preferred method is to seed into a mudflat. Standing water is not recommended. If seeding in the winter, do not place any boards in the structure. Also, if hunting the site after winter seeding, be advised that it may be considered baiting and check with your local conservation officers/game wardens first.

Maintaining Marshbird Habitat

Vegetation – If the vegetation within the wetland covers more than 70%; disk, burn, or spray 50-75% of the wetland unit. This should be conducted every 3-4 years, or as approved by a Biologist with the Arkansas Game and

Fish Commission or US Fish and Wildlife Service. Leave scattered clumps or strips of emergent vegetation, roughly 50ft by 100ft in size across 25-50% of the wetland unit.

Water – Leave 4-6", on average, of water from March 1 – July 1 for nesting and brood rearing. Pumping or flushing of water may be utilized to keep water levels at the desired conditions, especially during the breeding and brood rearing season (April-August).

A. SPECIFICATIONS

1. Requirements. Eligible plant species are limited to native plants. Cover establishment will be primarily by natural succession unless otherwise recommended by the Conservation Planner.

2. Temporary Cover. Temporary cover when required is authorized in accordance with §3.A (C/S policy) of Notice CRP-479.

3. Seedbed Preparation and Planting. Prepared seedbeds should be left rough and not finished to a smooth texture, and as weed-free as possible. The seedbed should be prepared by disking. The seed mixture should be broadcast into the disked seedbed, and then lightly dragged after broadcasting to ensure seed to soil contact.

4. Herbicides. Follow University of Arkansas Cooperative Extension Service recommendations for application of herbicides to control noxious or invasive plants in wetlands. It is unlawful to spray several herbicide products over water. Do not spray 100% of the wetland vegetation. Patches of emergent plants should not be sprayed to promote a patchy appearance in the wetland.

5. Natural Succession. An assessment will be conducted at each site by NRCS or the technical service provider to determine if the site qualifies to establish by natural succession. The NRCS or TSP will look for potential invasive species, nearby seed sources, water level control capabilities and the customer's ability to manage the site.

6. Criteria for Adequate Secretive Marsh Bird Habitat.

    a. 40-70% of the wetland consists of wetland vegetation with open water equally interspersed; meaning pockets of water exist within the stands of emergent vegetation.
    b. The site has a diversity of wetland plants.
    c. The diversity of wetland plants includes robust emergents (e.g. cattail, cutgrass), short emergents (rushes and sedges).
    d. Water is present in pockets year-round, except during droughts.

B. PLANTS

Species of Native Wetland Plants 1

Japanese Millet *(Echinochloa esculenta)*
Fox Sedge (*Carex vulpinoidea*)
Lurid (Shallow) Sedge (*Carex lurida*)
Hop Sedge (*Carex lupulina*)
Fringed (Nodding) Sedge (*Carex crinita*)
Soft Rush (*Juncus effusus*)
Green Bulrush (*Scirpus atrovirens*)
Woolgrass (*Scirpus cyperinus*)
Rice Cutgrass (*Leersia oryzoides)*
Squarestem Spikerush (*Eleocharis quadrangulata*)
Blunt Spikerush (*Eleocharis obtusa*)
Blunt Broomsedge (*Carex tribuloides*)
Yellow Nutsedge (*Cyperus esculentus*)
Yellow Flatsedge (*Cyperus flavescens*)
Common Spikerush (*Eleocharis palustris*)
Fowl Mannagrass (*Gyceria striata*)
Canadian Rush (*Juncus Canadensis*)
Shortbristle Horned Beaksedge (*Rhyncospora corniculata*)
Broadleaf arrowhead (*Sagittaria latifolia*)
Pennsylvania smartweed (*Polygonum pennsylvanicum*)

1. Other species may be added to this listing, but must be approved by NRCS before being planted.