



July 19, 2002

**BIOLOGY TECHNICAL NOTE NO. CA-16
190-VI**

**SUBJECT: ECS – BIOLOGY- SHALLOW WATER AREAS FOR WILDLIFE
JOB SHEET ASSOCIATED WITH PRACTICE STANDARDS 646
AND CP9**

Purpose: To transmit the above named job sheet.

Effective Date: When contents are received.

Attached is an approved job sheet for management and design considerations for Shallow Water Areas for Wildlife associated with Conservation Reserve Enhancement Program practice CP9, Shallow Water Management for Wildlife practice 646 and also as a component practice associated with Wetland Wildlife Habitat Management (644). Additionally, access to an electronic version of this document is available on the web at www.ca.nrcs.usda.gov/rts/sec4.htm

Filing Instructions

File the attached job sheet in the Biology section of the Technical Note binder.

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Attachment: Shallow Water Areas for Wildlife Job Sheet

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Shallow Water Areas for Wildlife Conservation Practice Jobsheet 646 and CP9



WHAT ARE SHALLOW WATER AREAS FOR WILDLIFE?

Managing shallow water on agricultural fields and moist soil areas can provide water areas for waterfowl resting, feeding and brood rearing. Proper management can increase and maintain desirable food and cover plants for waterfowl and other species of wildlife and provide protein-rich invertebrate food sources necessary for breeding and molting.

Shallow water areas are flooded to an average depth of 6 to 18 inches of water. "Puddle ducks" that "tip" to feed like mallard, pintail, and teal cannot feed effectively on the seeds and invertebrates found on pond bottoms if the water is deeper than 18 inches. The optimum feeding depth for these ducks is 5 to 12 inches. Water depth requirements for foraging shorebirds range from 0 - 1.5 inches (mudflats) for smaller species such as dunlin and sandpipers to 3-5 inches for black-necked stilts and avocets. Consideration for shorebirds can be addressed during the design and construction phase of shallow water areas by providing flatter side-slopes of 8-10:1 for islands, levees, and swales. It is important that flooding levels of shallow water areas managed as brood ponds be static throughout the nesting season in order to prevent inadvertent flooding of nests that may have been established during low-water or dry periods.



Shallow Water Areas for Wildlife Conservation Practice Jobsheet 646 and CP9



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Shallow water areas managed for brood ponds are typically flooded during mid-winter and drained or dried during mid-summer to provide habitat for waterfowl broods and to promote the production of invertebrate foods necessary for breeding birds and other wildlife.

The presence of summer water encourages emergent vegetation such as cattails and tules to establish in shallow water areas. These emergent plants are needed by broods for escape cover, but should not be allowed to completely fill shallow water areas. Approximately 30-75% (50% is optimal) of the shallow water area should support emergent vegetation.

WATER MANAGEMENT

DIKES (356) and STRUCTURES FOR WATER CONTROL (587) are generally needed to allow management of shallow water areas for optimal wildlife benefits. Dikes for shallow water areas may follow Specification 356 (DIKES), however, if the shallow water area is expected to be temporary, the construction costs associated with DIKES (356) may not be appropriate. Dikes for shallow water areas shall have a minimum top width of 4feet, a minimum height of 0.5 foot above the maximum depth of the shallow water, and side slopes shall be no shallower than 5 horizontal to 1 vertical. More gradual side slopes (up to 10:1) are desirable, as they provide increased variability in water depths, which leads to a wider variety of wildlife foods being available.

Material to construct the dikes will be obtained from the shallow water area. Uneven topography in pond bottoms will maximize habitat diversity and benefit a wider range of species. Any excess material not needed for dike construction may be used to create islands within the shallow water area. Island side slopes should be very gradual (minimum 5:1).

Most shallow water areas will require two structures for water control – one at the water inlet, and one at the outlet. Interconnecting channels and ponds may be excavated 18-30 inches deep and graded with a positive slope from inlet to outlet to facilitate water retention and drainage, shall be constructed between the structures. Areas able to maintain water depths of 30 inches or deeper will prevent the encroachment of emergent vegetation within the shallow water area.

Shallow water areas for wildlife must provide water for at least 4 months of the year. Flooding may occur in fall to provide loafing habitat for wintering waterfowl or may be delayed until mid-winter if the primary purpose is brood water habitat. Drawdown of water should usually commence by July 15th to allow time for vegetation management before cooler weather and fall rains begin. Slow flooding and drawdowns (over 2-3 weeks) are preferred because they increase invertebrate production and vegetation diversity. Recommended minimum flooding periods for the North Central Valley CREP are February 15 through July 15.

VEGETATION MANAGEMENT

Shallow water areas managed as brood ponds typically need periodic maintenance to achieve desired ratios of emergent cover to open water. Maintenance is performed after the water is drained in summer during late July or early August. Prior to PRESCRIBED BURNING (338), vegetation should be crushed using the flat sides of a disk, roller or other suitable implement. Crushing is used to help isolate those areas selected for burning and should be performed in a mosaic pattern in order to simulate natural landscape appearances. Disking, mowing and other

means used to manage vegetation on wetlands and associated uplands will be conducted in accordance with conservation plan narratives, attached practice requirement sheets and as prescribed during annual status reviews. If burning is used, the shallow water area should be protected from uncontrolled fire using FIREBREAKS (394A). Burning of emergent vegetation should be followed by disking in order to ensure effective, long-term control. Once the area has been burned, disking is necessary to expose subsurface tubers and rhizomes to the hot sun for 2-3 months to prevent tillering and growth of new plants.

OTHER MANAGEMENT CONSIDERATIONS

The presence of summer water may produce mosquitos. The landowner shall consult with the local Mosquito Abatement District to ensure that timing and duration of water applications is compatible with approved pest and disease control practices.

The ability to completely drain the shallow water area is important for several reasons. In addition to preventing excessive growth of emergent vegetation, draining seasonal wetlands, as opposed to allowing water to gradually evaporate, can help to reduce the accumulation of salts and guard against the spread of botulism and other waterfowl and shorebird diseases.

Prior to construction of shallow water areas, landowners should check with their local county planning departments to ensure proper compliance with local grading regulations and permit requirements.

Excavation of shallow water areas may require compliance with National Historic Preservation Act procedures and further consultation on the potential presence of cultural resources. NRCS will ensure that cultural resource issues are addressed prior to construction.



Flat-sloped edges of loafing islands and levees ensure a wider zone of critical water depth necessary to address shorebird feeding requirements.



Summer brood water provides an important source of invertebrate food supplies needed by both adult and juvenile waterfowl as well as protection from predators.

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Shallow Water Areas for Wildlife Specifications

IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO OBTAIN ALL NECESSARY PERMITS AND/OR RIGHTS, AND TO COMPLY WITH ALL ORDINANCES AND LAWS PERTAINING TO THIS INSTALLATION.

Installation shall be in accordance with the following drawings, specifications and special requirements. NO CHANGES ARE TO BE MADE IN THE DRAWINGS OR SPECIFICATIONS WITHOUT PRIOR APPROVAL OF THE NRCS TECHNICIAN.

1. Wildlife Species or Habitats Planned _____

2. Drawings No. _____

3. Practice Specifications _____

4. Dike Specifications _____ Width _____ Height _____ Slopes _____ ; _____

5. Flooding Date _____

6. Drawdown Date _____

7. Special Requirements _____

8. Special Maintenance Requirements _____
