TECHNICAL RESOURCES FOR WETLAND PROJECTS

PROJECT DEVELOPMENT
Chapter 3
Wetland Design and Development

Mickey Heitmeyer, Leigh Fredrickson, Murray Lanahan, Frank Nelson, Gary Pogue, Doug Holmers, and Wayne King

Abstract The history of efforts to design and develop wetland sites is extensive and replete with lessons, especially in the United States. This chapter provides an annotated view of the history of wetland design and development, covering key events and developments. It focuses on the evolution of wetland design and development methodologies, highlighting the importance of understanding hydrogeomorphic processes and the need for site-specific approaches. The chapter also discusses the role of wetlands in ecosystem services and the importance of preserving and restoring wetlands for environmental and human well-being.
Waterfowl Management Handbook

Habitat Management Sections

13.4.6 Strategies for Water Level Manipulations in Moist-soil Systems

13.4.8 Options for Water-level Control in Developed Wetlands

13.4.9 Preliminary Considerations for Manipulating Vegetation

13.4.13 Management and Control of Cattails

NRCS Field Office Technical Guide

Wetland Standards and Specifications

- Wetland Creation (658)
- Wetland Enhancement (659)
- Wetland Restoration (657)
- Wetland Wildlife Habitat Management (644)

NRCS Biologists, Specialists and Engineers

https://efotg.sc.egov.usda.gov/treemenuFS.aspx
Colorado Decision Support System Databases

http://cdss.state.co.us/

Water Rights Administration and Conditions

- Administrative Call History
- Streamflow Station History
- Well Permit Information
- Water Structure ID and Diversion History
- Water Rights
- Spatially Located CDSS Map Viewer
Colorado Decision Support System Databases

- Administrative Call History
- Streamflow Station History
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Partner Expertise

Partners for Fish and Wildlife

Bird Conservancy of the Rockies

Colorado Parks and Wildlife

Ducks Unlimited, Inc.
TECHNICAL RESOURCES FOR WETLAND PROJECTS

PROJECT FUNDING
The Literature

Ducks, Geese, and Swans of North America

Frank C. Bellrose

Color plates by Bob Hines

A Wildlife Management Institute Book

REVISED AND UPDATED! WITH 24 PAGES OF COLOR PAINTINGS NEVER Before PUBLISHED

WILDLIFE MONOGRAPHS

A Publication of The Wildlife Society

RESPONSE OF NESTING DUCKS TO HABITAT AND MANAGEMENT ON THE MONTE VISTA NATIONAL WILDLIFE REFUGE, COLORADO

By David W. Gilbert, David R. Anderson, James A. Singelman, and Michael R. Szynaczak

NO. 131

JANUARY 1996
GameBirds Database

https://www.pwrc.usgs.gov/BBL/homepage/datarequest.cfm
Banded Migratory Bird Origins and Destinations Locations

Figure 1. Map showing the destination of birds banded in the project region.

Las Colonias Slough Restoration Site

this map shows location and the ranked sums of band encounters for the 1,285 birds banded during the breeding season in the three 10° blocks associated with Las Colonias Slough in Mesa County, CO.
Breeding Bird Survey

CPW Wetlands Program
Species Worksheets
**Habitat Scorecard for Dabbling Ducks**

Assessment of habitat before and after restoration or management actions

**Project Name:**

**Date(s) of Assessment:**

### Emergent Wetlands, Playas, and Impoundments

<table>
<thead>
<tr>
<th>Key Habitat Variable and condition</th>
<th>Value</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant vegetation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Sedges, rushes, grasses, ferns, and aquatic vegetation</td>
<td>167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Robust wetland herbs (bulrush, horsetail, sedges, etc.)</td>
<td>153</td>
<td></td>
<td></td>
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<tr>
<td>- Open willows/shrubs, Closed canopy trees (≤10% cover)</td>
<td>62</td>
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<tr>
<td>Percent of emergent vegetation within water</td>
<td>187</td>
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<tr>
<td>21 – 50%</td>
<td>133</td>
<td></td>
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<tr>
<td>50 – 79%</td>
<td>62</td>
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<tr>
<td>80 – 100%</td>
<td>135</td>
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<tr>
<td>Predominant depth of water</td>
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<tr>
<td>4 – 8 inches</td>
<td>187</td>
<td></td>
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<tr>
<td>9 – 12 inches</td>
<td>125</td>
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<tr>
<td>13 – 40 inches</td>
<td>63</td>
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<tr>
<td>Percent submerged vegetation</td>
<td></td>
<td></td>
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<tr>
<td>≤10%</td>
<td>178</td>
<td></td>
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<tr>
<td>11 – 20%</td>
<td>125</td>
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<td>21 – 30%</td>
<td>59</td>
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<td>Interpretation</td>
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<td>- A</td>
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</tbody>
</table>

Interpretation patterns refer to the above diagram (trippled = water, solid = vegetation)

### Size of habitat

- ≤20 acres: 11
- 21 – 30 acres: 75
- ≥31 acres: 37

Total (if not possible): add all numbers in before or after columns

### Notes

1. Emergent Wetlands, Playas, and Impoundments
2. Wet Meadows, or (3) Submerged. Enter the value that best describes migratory (spring/fall) conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes. Ranges of condition are directly below each variable. If condition is outside range or not described, enter a zero.