Waterfowl Migration Flyways
Continental Waterfowl Population Trends
NAWMP
Primary and Secondary Areas of Continental Importance to Waterfowl

Central Valley

Primary
Secondary
Central Valley Wetlands Decline

4 - 4.5 M acres

~ 150K acres
Central Valley Wetlands Are Intensely Managed
Joint Ventures were formed:

- Regionally-based non-regulatory partnerships
- Science-based implementation plans
- Collaborating to conserve habitat for priority birds
Central Valley Habitat Joint Venture Hatched 1988

Management Board

• California Waterfowl Association
• Defenders of Wildlife
• Ducks Unlimited
• National Audubon Society
• The Nature Conservancy
• Trust for Public Land
• Waterfowl Habitat Owners Alliance
• California Department of Fish & Game
• U.S. Fish and Wildlife Service
Central Valley Habitat Joint Venture

1990 Implementation Plan
Nine Planning Basins

Basins of the Central Valley Joint Venture

[Map showing the nine planning basins: Butte, Colusa, Sutter, American, Suisun, Delta, San Joaquin, Yolo, Tulare]
1990 Plan Objectives

**Wetlands:**
- Protect 80,000 acres
- Restore 120,000 acres
- Enhance all existing

**Agricultural land:**
- Enhance 443,000 acres

**Wetland Water Supplies:**
- Secure 402,450 ac/ft (level 4) water for existing NWR’s and WA’s and Grasslands

*Focus: wintering waterfowl*
The CVJV Toolbox

- CA Inland Wetlands Program (WCB)
- Comprehensive Wetland Habitat Program (DFG)
- Presley Program aka CA Waterfowl Habitat Program (DFG)
- State and Federal Easement Programs (FWS, DFG)
- Farm Bill Programs – WRP, CREP, WHIP (NRCS/FSA)
- Partners for Fish and Wildlife Program (FWS)
- Resources Law Group
- NAWCA grants
- Pintail, Mallard and Wood Duck Programs (CWA)
- Central Valley Conservation Program (BOR)
- CVPIA Programs (BOR/FWS)
- Landowner Incentive Program (DFG, DU, FWS)
- Various Private Foundations
CVJV Accomplishments
1986-2008
2000 North American Bird Conservation Initiative

www.nabci-us.org

Integrated Bird Conservation in the United States
22 North American Joint Ventures
Central Valley Joint Venture
Management Board

2011

21 Management Board Members:

- 8 mgt. board partners
- 11 ex-officio members
- 1 corporation
NGO Partners

- Audubon California
- California Waterfowl Association
- Defenders of Wildlife
- Ducks Unlimited, Inc.
- PRBO Conservation Science
- River Partners
- The Nature Conservancy
- The Trust for Public Land
State/Federal/Corporate
Ex-Officio Partners

- CA Association Of RCDs
- CA Dept. of Water Resources
- CA Dept. of Fish and Game
- CA Natural Resources Agency
- CA Wildlife Conservation Board
- PG&E Corporation
- US Natural Resources Conservation Service
- US Army Corps of Engineers
- US Bureau of Land Management
- US Bureau of Reclamation
- US Environmental Protection Agency
- US Fish and Wildlife Service
- US Geological Survey
FWS Funded Coordination Office

- Coordinator: Bob Shaffer, FWS
- Assistant Coordinator: Ruth Ostroff, FWS
- Science Coordinator: vacant
- Communications Coordinator: Jill Shirley, Contractor
CVJV Mission

To work collaboratively through diverse partnerships to protect, restore, and enhance wetlands and associated habitats for waterfowl, shorebirds, waterbirds, and riparian songbirds, in accordance with conservation actions identified in the 2006 Implementation Plan.
CVJV Area of Influence
Planning Basins

Basins of the Central Valley Joint Venture

(Drainage Sources: CVJU, Baskin 2005.)
6 Major Bird Groups Addressed in the 2006 Plan

- Wintering and Breeding Waterfowl
- Wintering and Breeding Shorebirds
- Waterbirds
- Riparian Songbirds
Planning Approach – Habitat Modeling for Bird Groups

• **Energetic Models**
  Food based:
  – Wintering waterfowl and shorebirds

• **Conceptual Models**
  Limiting factors:
  – Breeding waterfowl and shorebirds
  – Riparian songbirds
  – Waterbirds
“Agricultural Constraint”

Basin Goal: At least 50% Wetlands
Ag Constraint Example: Yolo Basin
(for Wintering Ducks at Population Goals)

- Amount of seasonal wetland habitat required to meet 50% of Duck energy needs: 11,558 acres
- Current seasonal wetlands: 8,558 acres
- Wetland restoration goal: 3,000 acres

Source: CVJV 2006 Plan
Yolo Basin
(Wintering Ducks at Population Goals)

Figure 4-83. Population energy demand (blue) vs. food energy supply (red) for ducks in Yolo Basin when duck populations are at NAWMP goals. Supply with Ag

Figure 4-85. Population energy demand (blue) vs. food energy supply (red) for ducks in Yolo Basin when no agricultural food sources are available. Supply without Ag

Source: CVJV 2006 Plan
Suisun Marsh Basin
(Wintering Ducks at Population Goals)

**Source:** CVJV 2006 Plan

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**Figure 4-77.** Population energy demand (blue) vs. food energy supply (red) for ducks in Suisun Marsh if wetland seed production is assumed to be 50% of other areas of the Central Valley (283 lbs/acre).

**Demand**

Supply with existing wetlands protected

---

**Figure 4-78.** Population energy demand (blue) vs. food energy supply (red) for ducks in Suisun Marsh if wetland seed production is assumed to be 50% of other areas of the Central Valley (283 lbs/acre), and tidal flow is restored to 5,000 acres of existing wetlands.

**Demand**

Supply with 5000 acres tidal restored
## Wintering Waterfowl* Habitat Objectives – Yolo Basin

<table>
<thead>
<tr>
<th>Habitat type</th>
<th>Strategy</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal Wetlands</td>
<td>Protection</td>
<td>For all unprotected wetlands</td>
</tr>
<tr>
<td></td>
<td>Restoration</td>
<td>11,558 ac.</td>
</tr>
<tr>
<td></td>
<td>Enhancement</td>
<td>963 ac. Annually**</td>
</tr>
<tr>
<td>Ag Cropland</td>
<td>Wildlife friendly</td>
<td>23,000 ac.</td>
</tr>
<tr>
<td></td>
<td>Easements</td>
<td>needed</td>
</tr>
<tr>
<td>Water Supplies</td>
<td></td>
<td>120,408 ac/ft***</td>
</tr>
</tbody>
</table>

*Ducks and Geese objectives integrated.
**Annual enhancement when restoration objective has been met.
***Annual water supply when restoration objective has been met.

Source: CVJV 2006 Plan
### Integrated Bird Habitat Objectives

<table>
<thead>
<tr>
<th>Habitat type</th>
<th>Strategy</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal Wetlands</td>
<td>Protection</td>
<td>For all unprotected wetlands</td>
</tr>
<tr>
<td>Seasonal Wetlands</td>
<td>Restoration</td>
<td>108,527 ac.</td>
</tr>
<tr>
<td>Seasonal Wetlands</td>
<td>Enhancement</td>
<td>23,884 ac annually</td>
</tr>
<tr>
<td>Semi-Perm Wetlands</td>
<td>Restoration</td>
<td>12,500 ac</td>
</tr>
<tr>
<td>Riparian Areas</td>
<td>Restoration</td>
<td>10,000 ac</td>
</tr>
<tr>
<td>Rice Cropland</td>
<td>Enhancement</td>
<td>170,000 ac</td>
</tr>
<tr>
<td>Ag Cropland</td>
<td>Protection</td>
<td>Selected basins</td>
</tr>
<tr>
<td>Ag Cropland</td>
<td>Enhancement</td>
<td>307,000 ac</td>
</tr>
</tbody>
</table>
Water needs for CV wetlands & winter-flooded agriculture when integrated bird habitat objectives are met.

<table>
<thead>
<tr>
<th>Basin</th>
<th>Seasonal Wetlands (acre-feet)</th>
<th>Semi-Permanent Wetlands (acre-feet)</th>
<th>Agricultural Winter Flooding (acre-feet)</th>
<th>Total Water (acre-feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>117,915</td>
<td>7,304</td>
<td>125,000</td>
<td>250,219</td>
</tr>
<tr>
<td>Butte</td>
<td>228,122</td>
<td>33,626</td>
<td>155,000</td>
<td>416,748</td>
</tr>
<tr>
<td>Colusa</td>
<td>123,930</td>
<td>32,382</td>
<td>112,500</td>
<td>268,812</td>
</tr>
<tr>
<td>Sutter</td>
<td>31,735</td>
<td>5,691</td>
<td>25,000</td>
<td>62,426</td>
</tr>
<tr>
<td>Yolo</td>
<td>58,640</td>
<td>14,948</td>
<td>7,500</td>
<td>81,088</td>
</tr>
<tr>
<td>Delta</td>
<td>121,215</td>
<td>17,234</td>
<td>72,500(^e)</td>
<td>210,949</td>
</tr>
<tr>
<td>Suisun</td>
<td>153,102</td>
<td>44,555</td>
<td>0</td>
<td>197,657</td>
</tr>
<tr>
<td>San Joaquin</td>
<td>443,374</td>
<td>70,996</td>
<td>0</td>
<td>514,370</td>
</tr>
<tr>
<td>Tulare</td>
<td>217,744</td>
<td>65,440</td>
<td>0</td>
<td>283,184</td>
</tr>
<tr>
<td>Total</td>
<td>1,495,777</td>
<td>292,176</td>
<td>497,500</td>
<td>2,285,453</td>
</tr>
</tbody>
</table>
Progress in Meeting Seasonal Wetland Restoration Objectives for Wintering Waterfowl
Bird Response since CVJV

- 300% increase in waterfowl food within the Grassland Resource Conservation District;
- 89% reduction in avian disease on Sacramento National Wildlife Refuge Complex;
- 49% increase in fall shorebird use Central Valley-wide;
- 300% Increase in bird-use days on private lands in San Joaquin Valley;

Source: CVJV 2006 Plan
More Bird Response:

- 50% more heron and egret rookeries in SJV;
- 61% increase in visitor use on Sacramento National Wildlife Refuge Complex;
- Increases in T&E species; white-faced ibis and Sandhill cranes.

Source: CVJV 2006 Plan