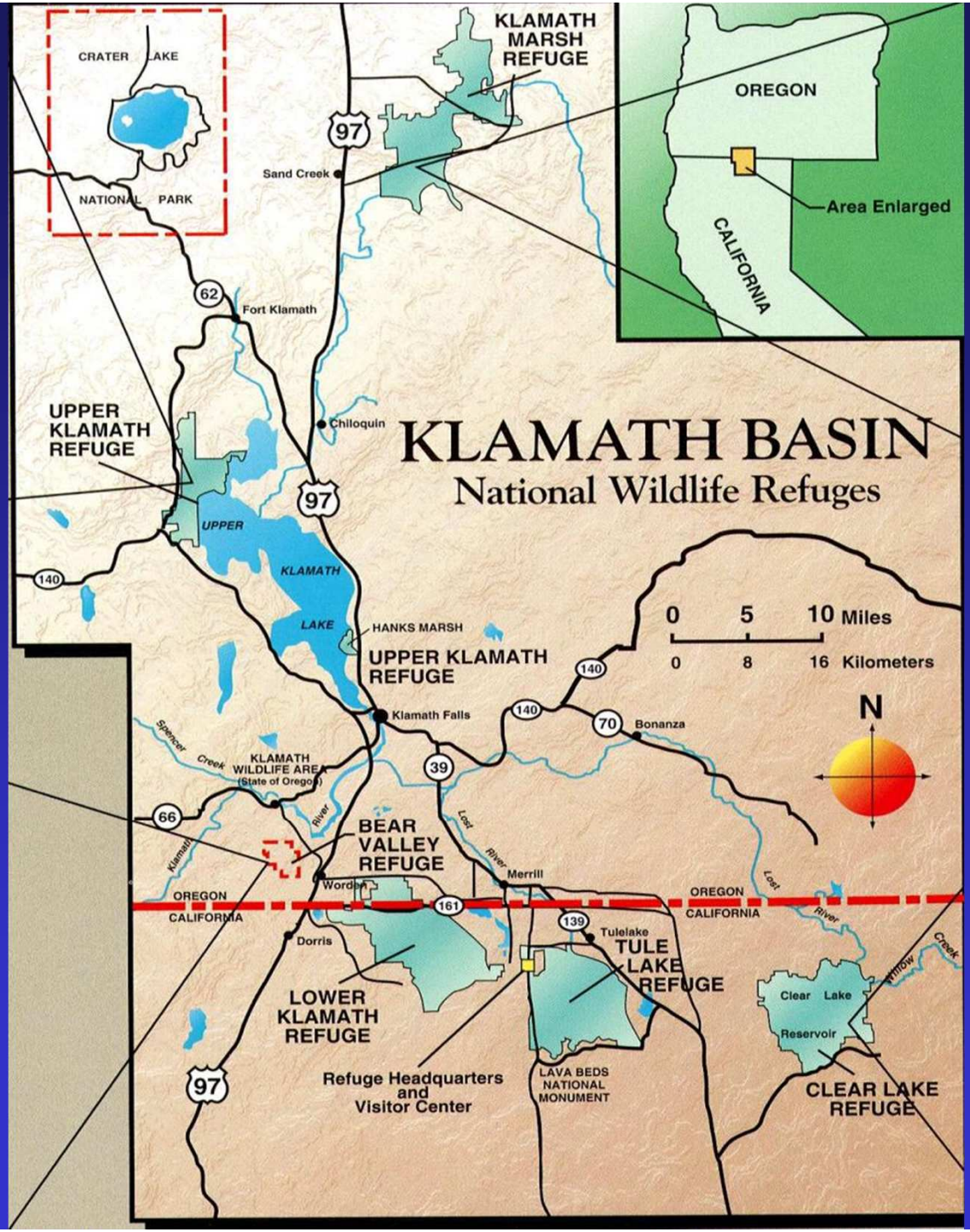
Promoting Productive Wetlands and Sustainable Agriculture in the Klamath Basin of Northern California and Southern Oregon.
“Walking Wetlands Program”

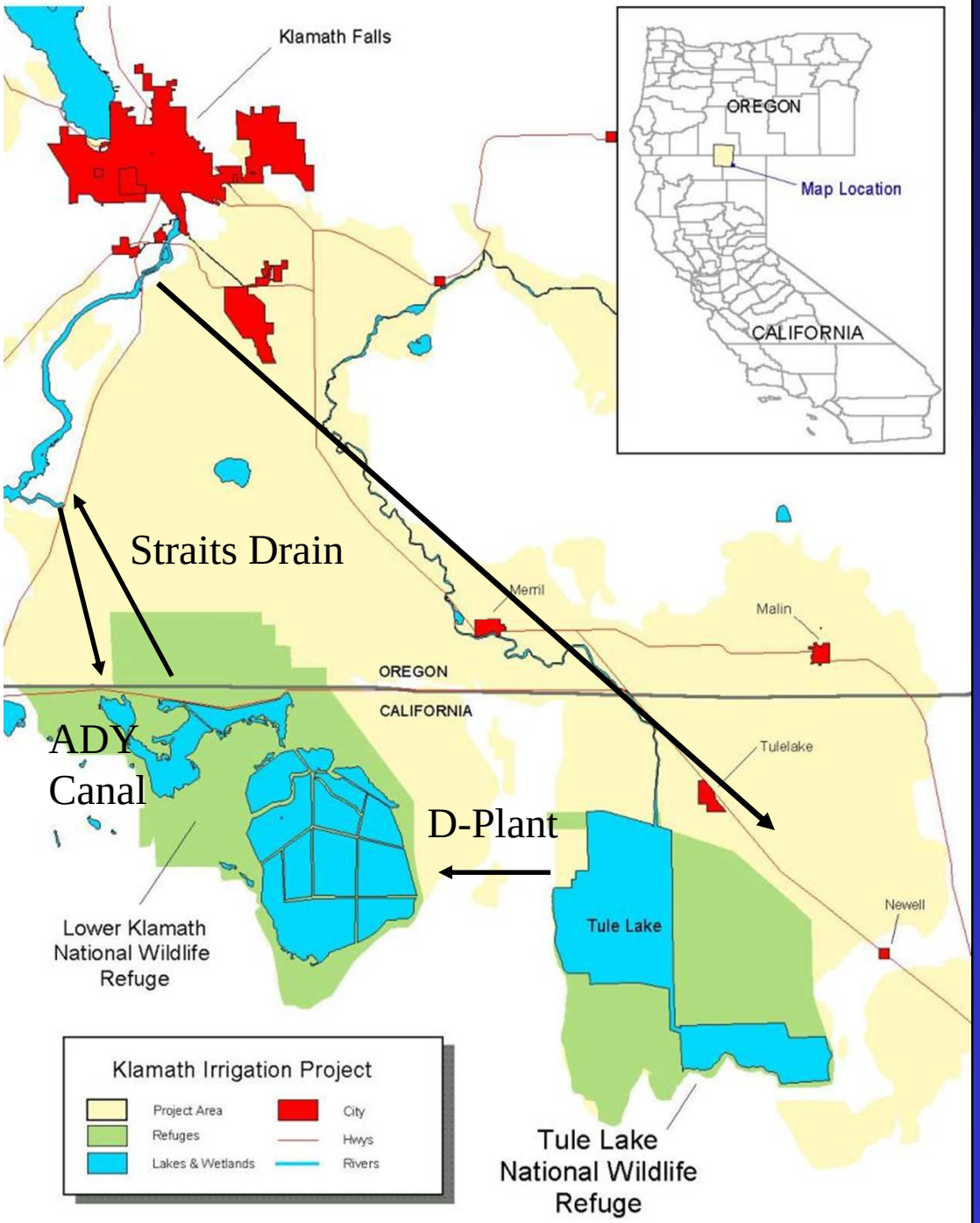
Program Cooperators

- U.S. Fish and Wildlife Service
- U.S. Bureau of Reclamation
- Tule Lake Irrigation District
- Klamath Water Users Association
- California Department of Fish and Game
- Ducks Unlimited
- U.S. Geological Survey
- University of California, Davis
- Natural Resource Conservation Service
- University of Washington, Seattle
- California Waterfowl Association



KLAMATH BASIN • National Wildlife Refuges •

Klamath Irrigation Project



Established via Executive Order in 1928

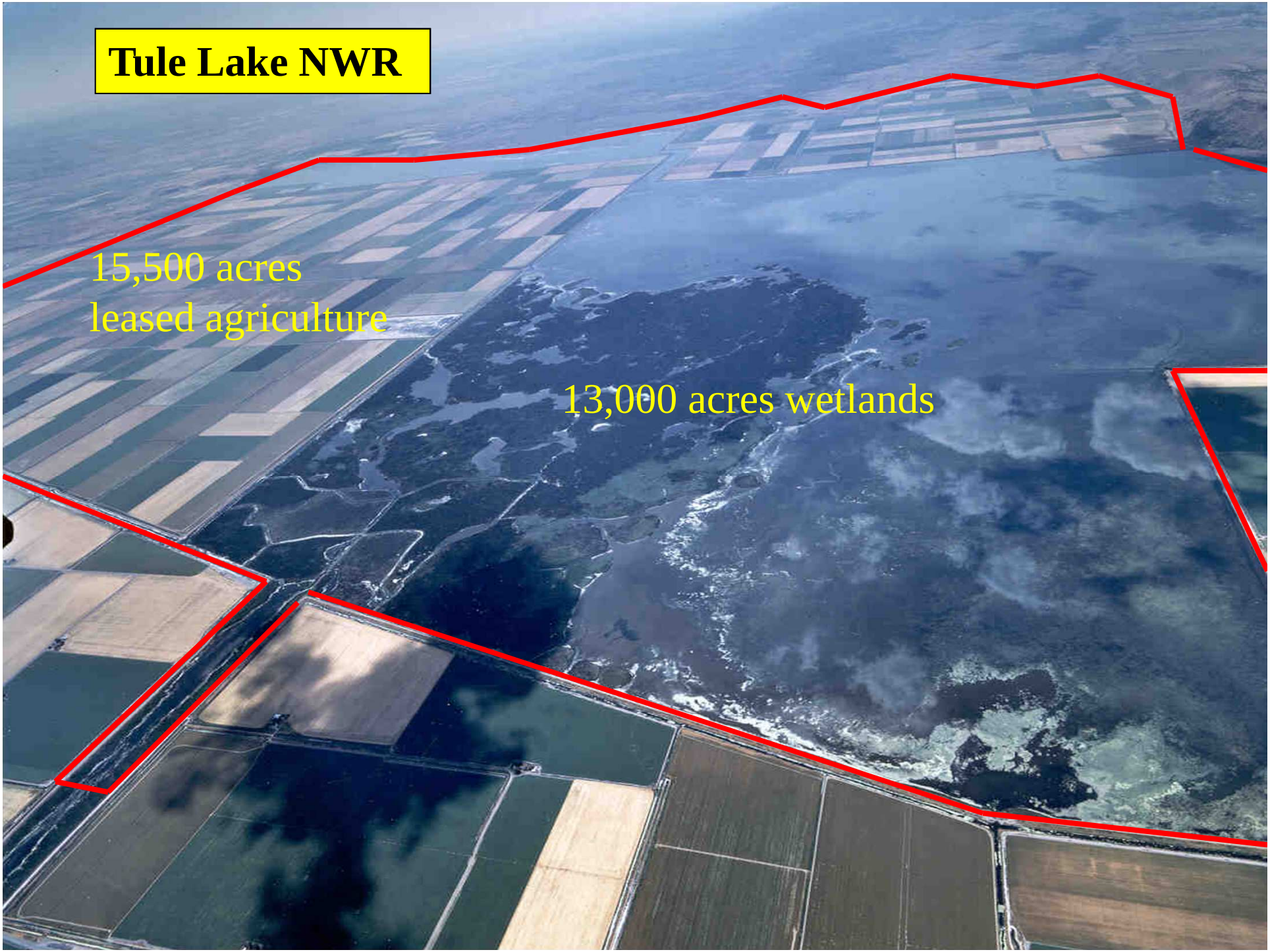
"…as a refuge and breeding ground for birds."

However, lands had already been withdrawn for reclamation purposes.

Large waterfowl populations (4-6 million) in the 1950's and the desire to homestead areas of the Refuge led to conflict over the future of Tule Lake Refuge.

Kuchel Act of 1964

- Changed dedication of lands to wildlife conservation.
- "…for the major purpose of waterfowl management, but with full consideration to optimum agricultural use that is consistent therewith."
- "…continue the present pattern of leasing the reserved lands…"


Tule Lake NWR
15,500 acres
leased agriculture
13,000 acres wetlands

Resource Declines

(Since passage of Kuchel Act)

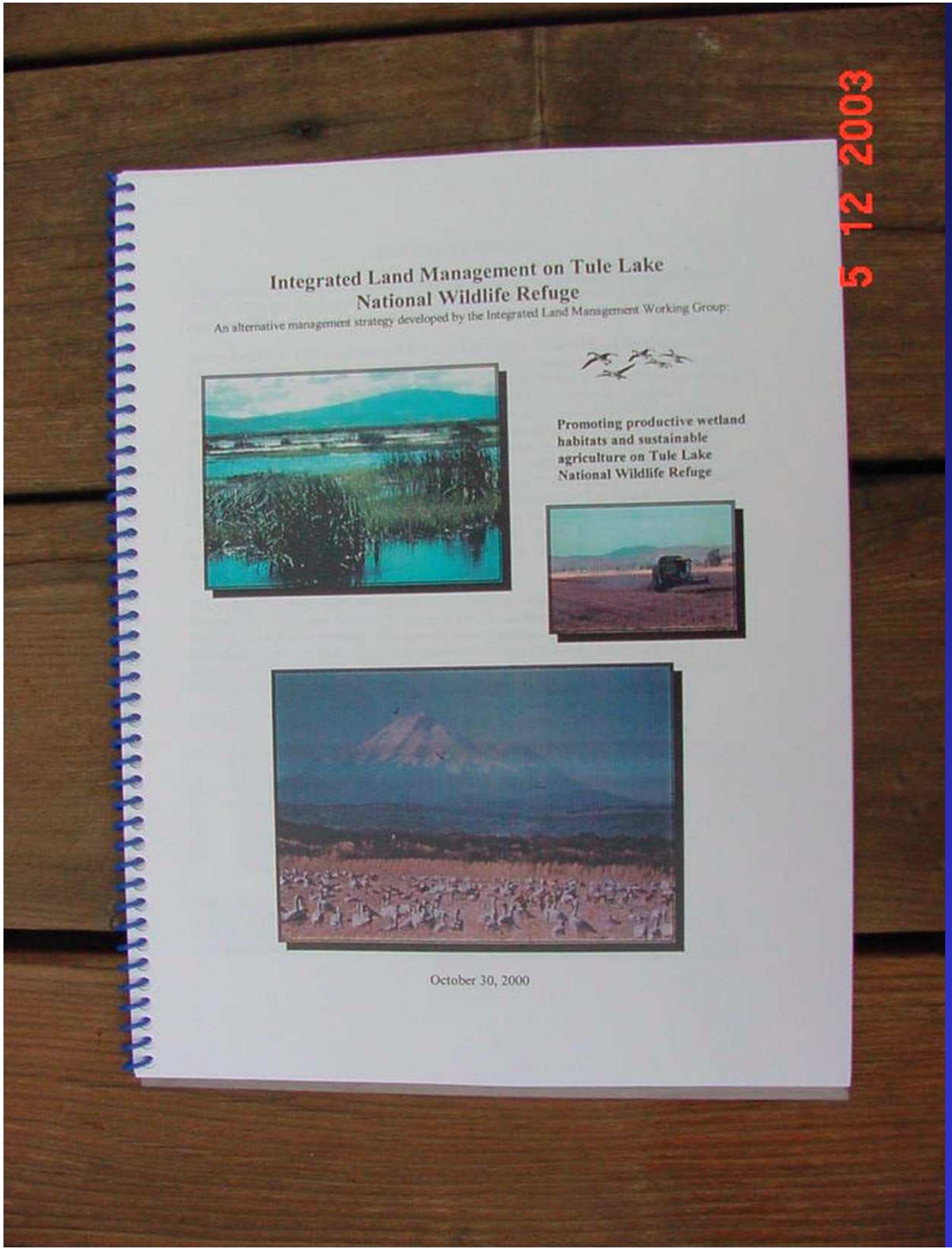
- Endangered species use.
- Waterfowl use.
- Colonial waterbirds.
- Wildlife and habitat diversity.
- Agricultural values.

Why?

Stabilized water levels

Sedimentation

Continuous farming



Integrated Land Management Plan

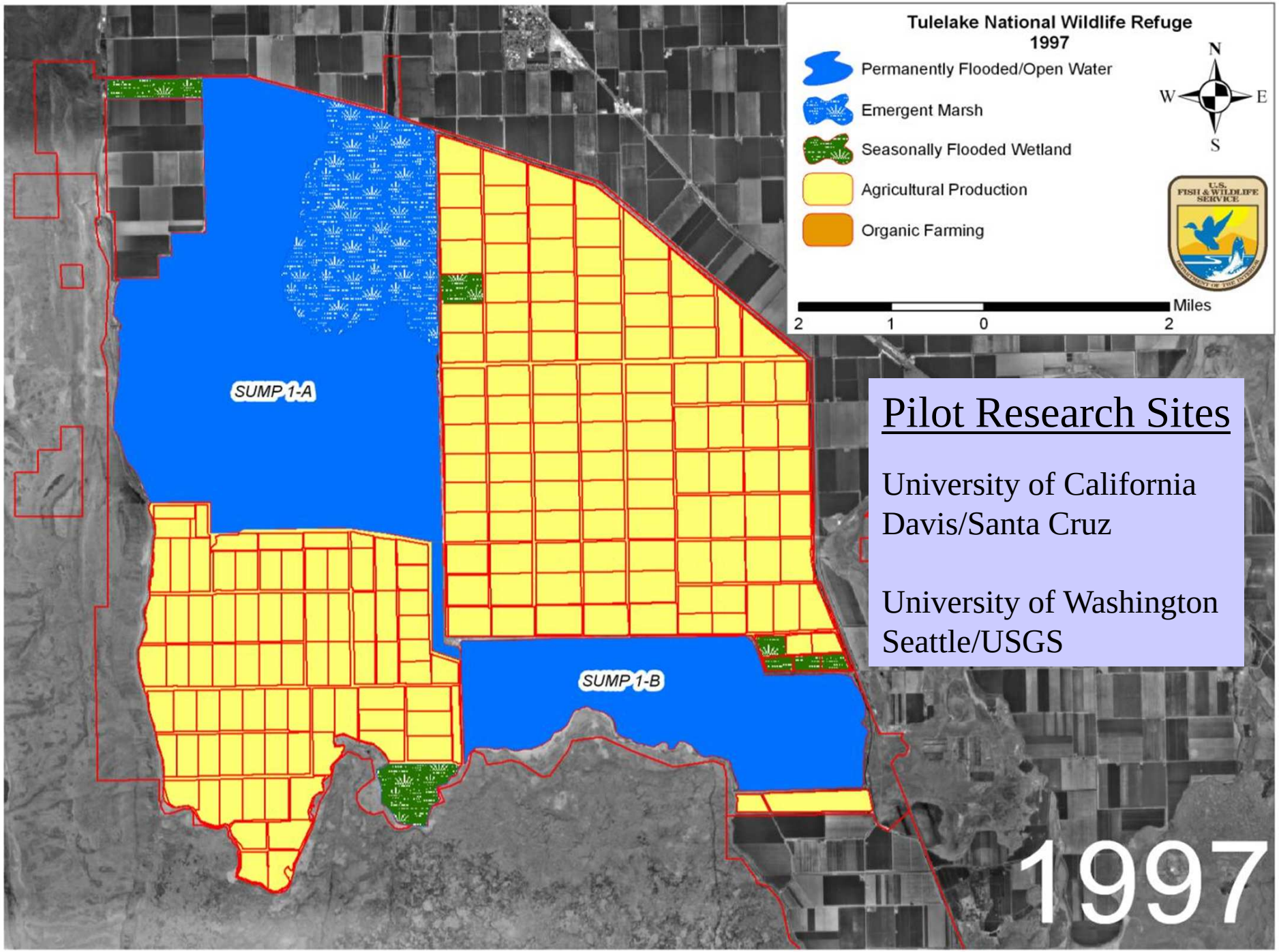
U.S. Fish and Wildlife Service
U.S. Bureau of Reclamation
Tule Lake Irrigation District
University of California
California Waterfowl Assoc.

Concept:
Proper mix and management of agriculture and wetlands could be developed to promote multiple resource values.

Rotation of wetlands and croplands

- Wetlands:
  - -improve water quality
  - -provide wildlife/fish habitats
  - -control weeds and pests to crops
  - -enhance soil fertility

- Agriculture:
  - -provide foods for waterfowl
  - -retard succession within wetlands habitats



Pilot Research Sites

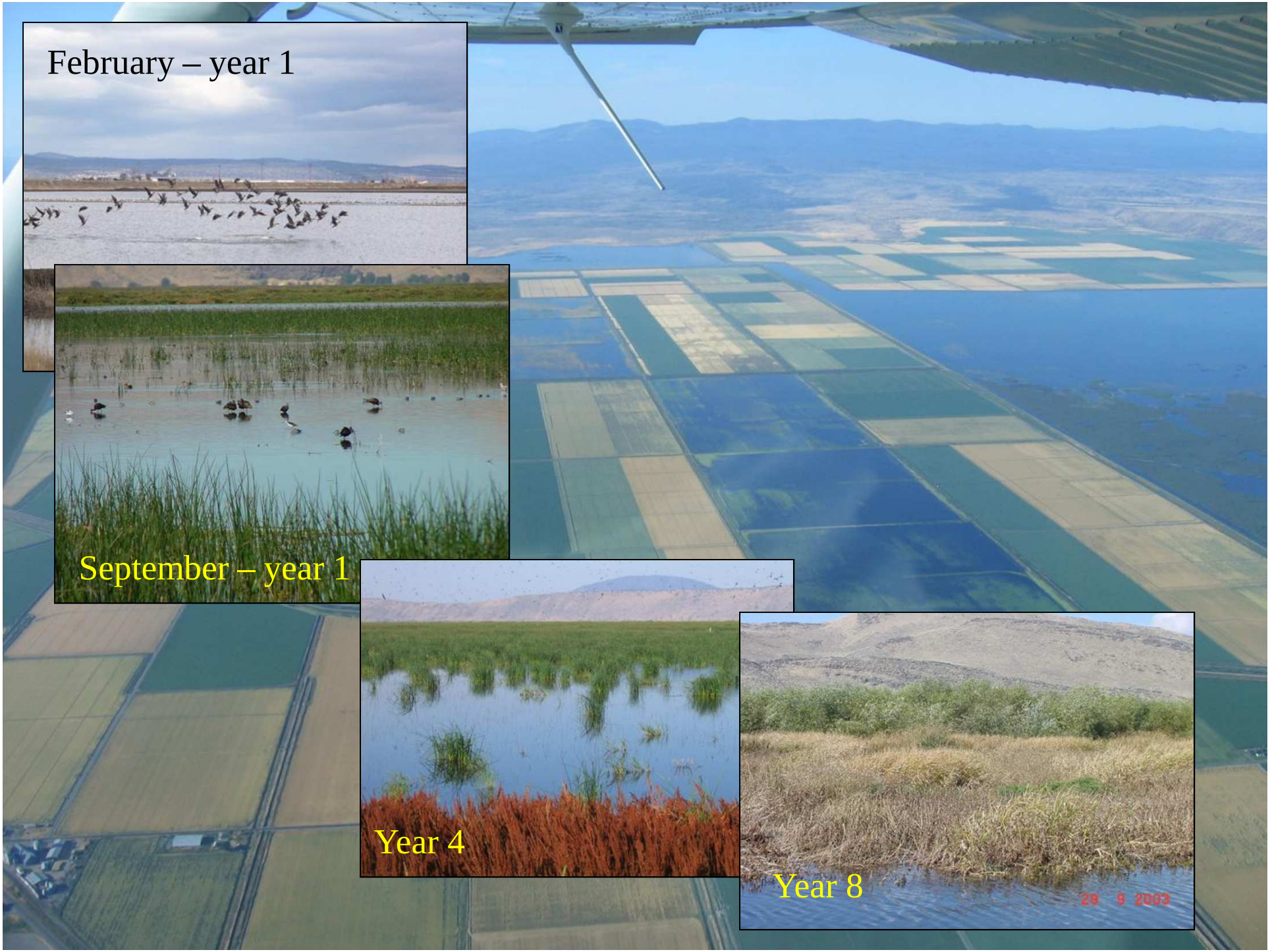
University of California Davis/Santa Cruz

University of Washington Seattle/USGS

Year 1 – Seasonal Marsh
Rapid establishment of wetland plants

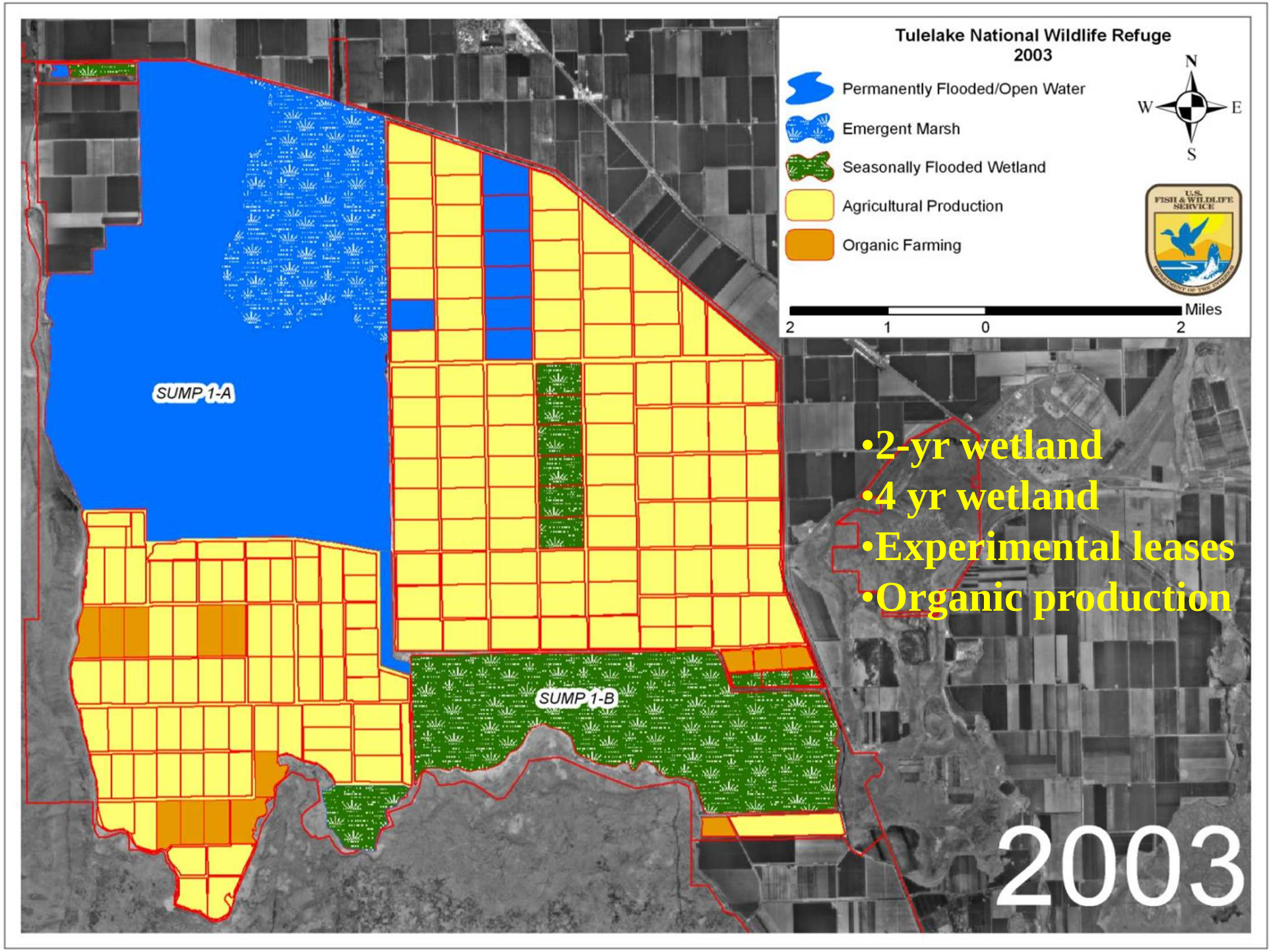
Year 2

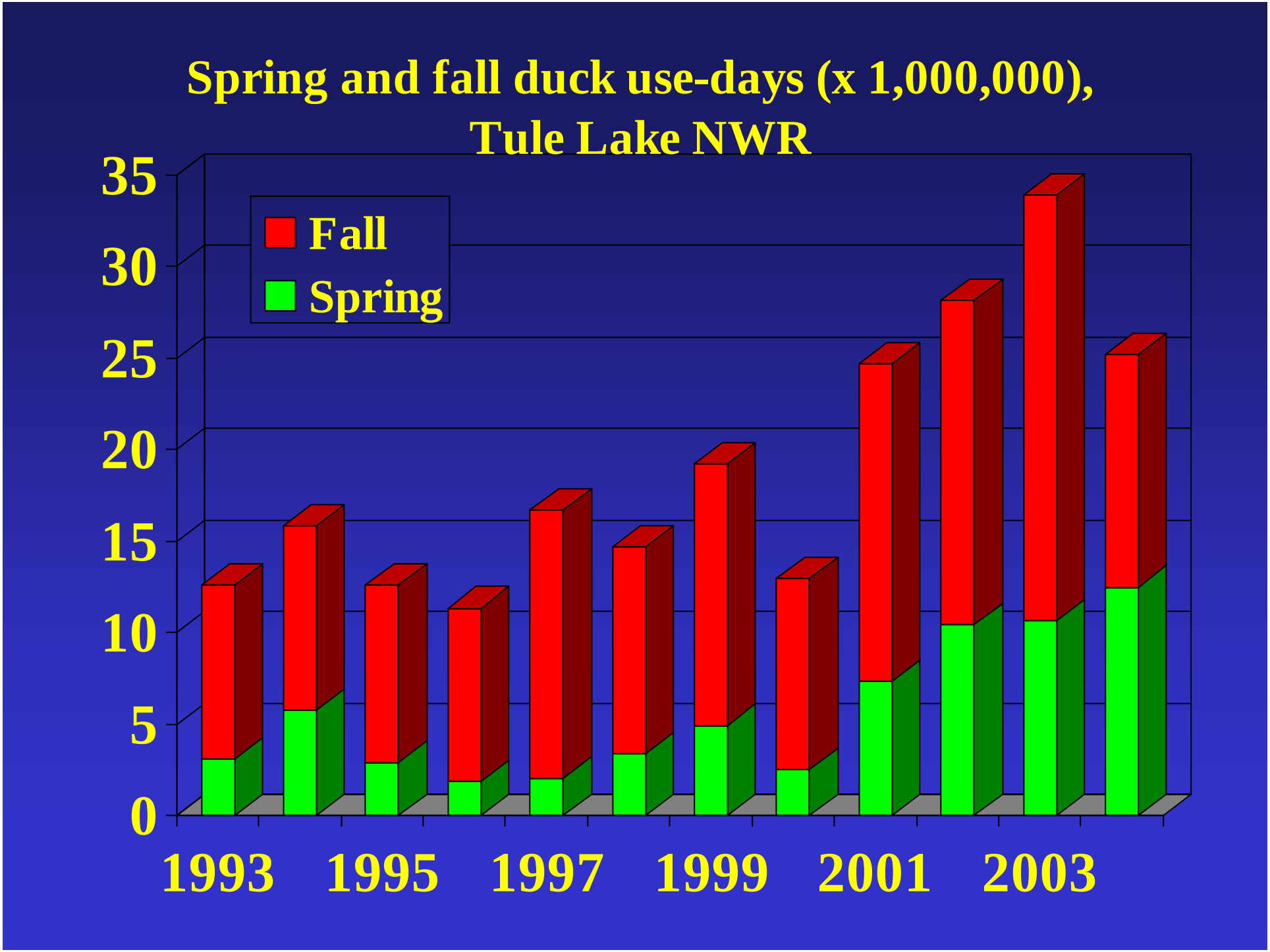
17 9 2003

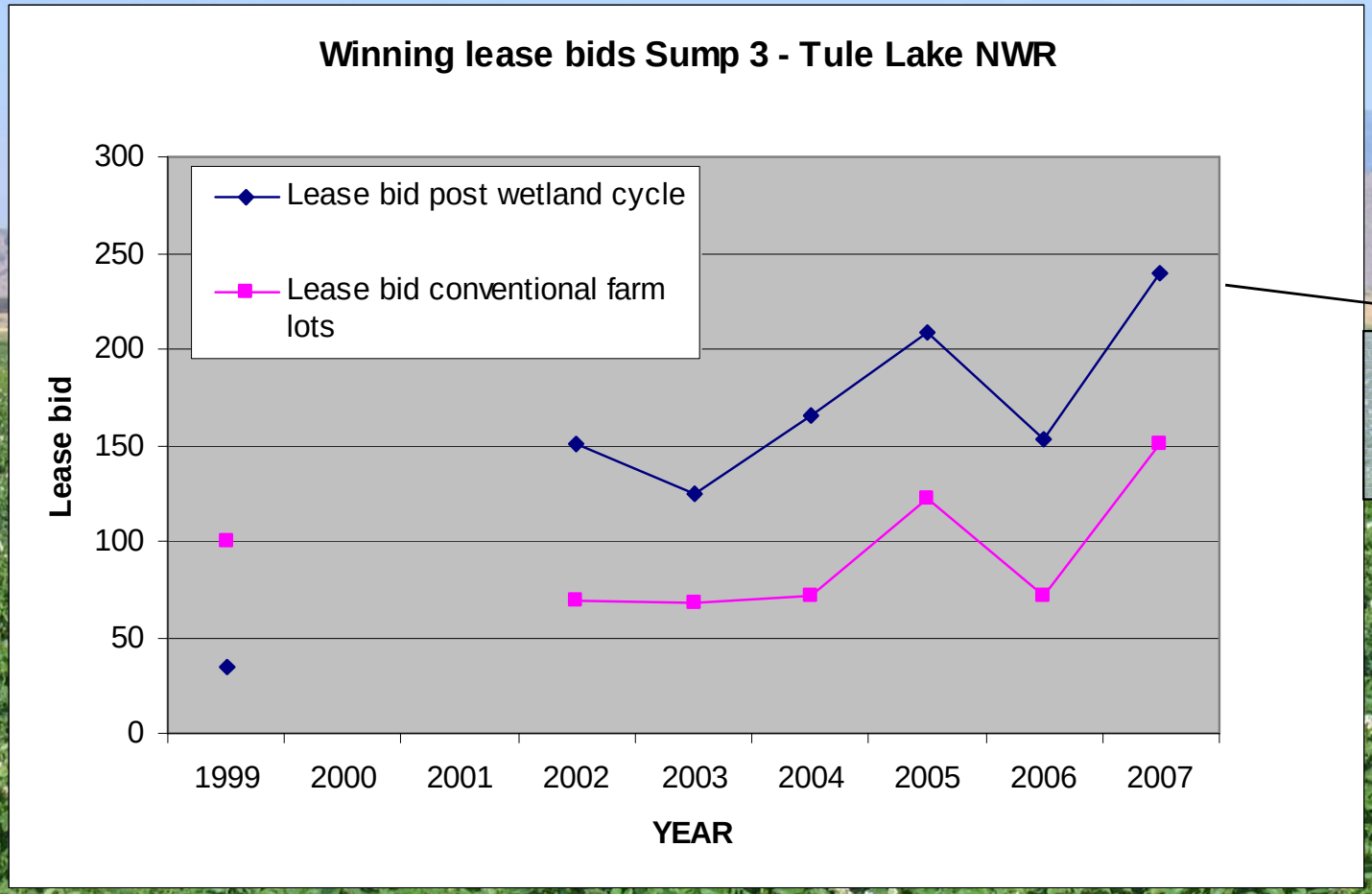

February – year 1
September – year 1
Year 4
Year 8

<u>Agricultural Benefits</u>:

Improved soil fertility and crop yields
Weed control
Control of soil pests and diseases
Cost savings of up to $250/acre
Organic production


Tulelake National Wildlife Refuge
2003
Permanently Flooded/Open Water
Emergent Marsh
Seasonally Flooded Wetland
Agricultural Production
Organic Farming
N
W
E
S
U.S. FISH & WILDLIFE SERVICE
Miles
2
1
0
2
SUMP 1-A
SUMP 1-B
•2-yr wetland
•4 yr wetland
•Experimental leases
•Organic production
2003


Spring and fall duck use-days (x 1,000,000),
Tule Lake NWR
Fall
Spring
35
30
25
20
15
10
5
0
1993
1995
1997
1999
2001
2003



21% of leased lands generate 37% of revenues.

Organic potatoes, Hovey Point

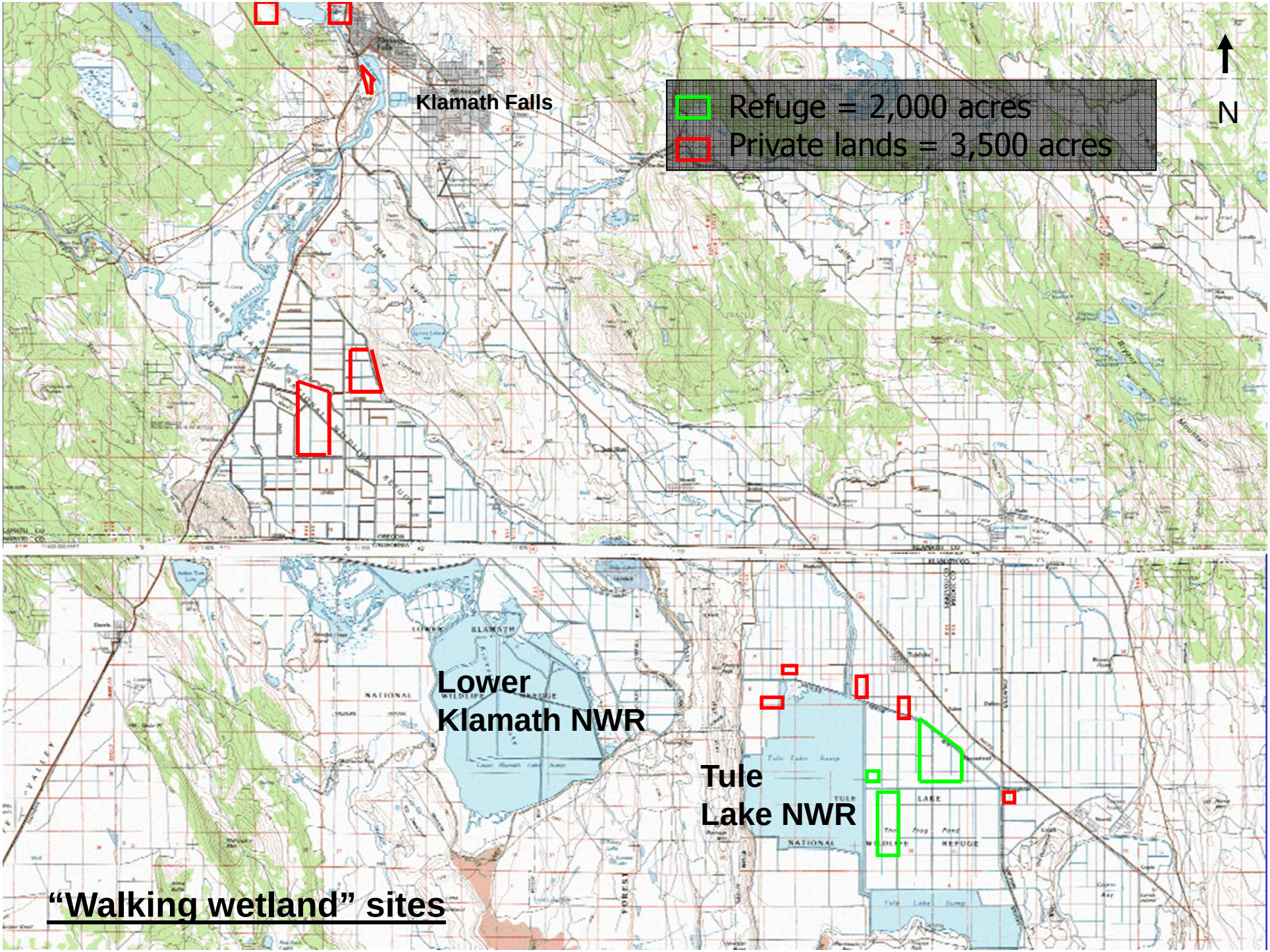
Private lands issues

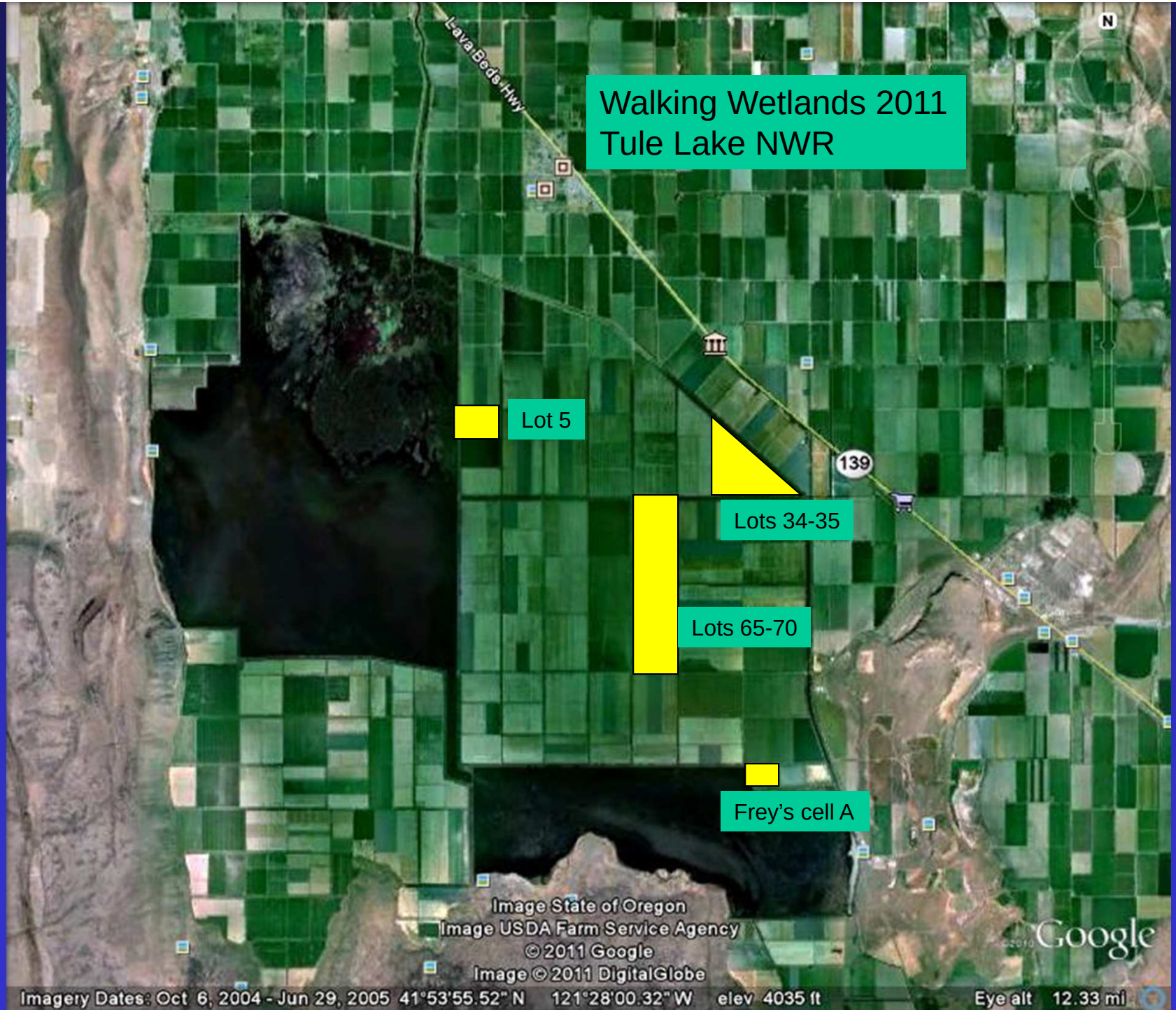
- Waterfowl damage
- Mosquitoes
- Liability
- Compensation

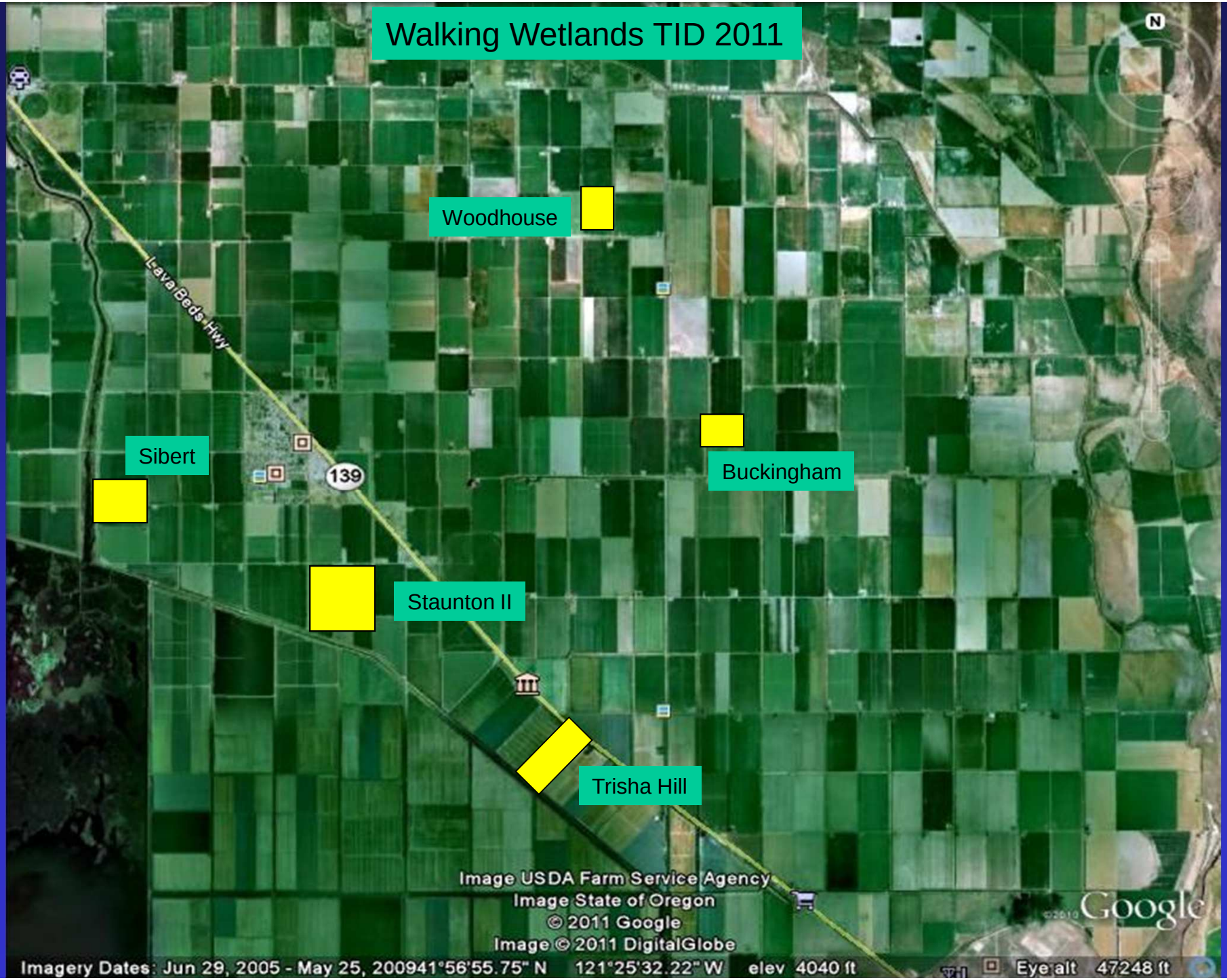
  Refuge cooperative farm lands

  NRCS Conservation Innovation Grant

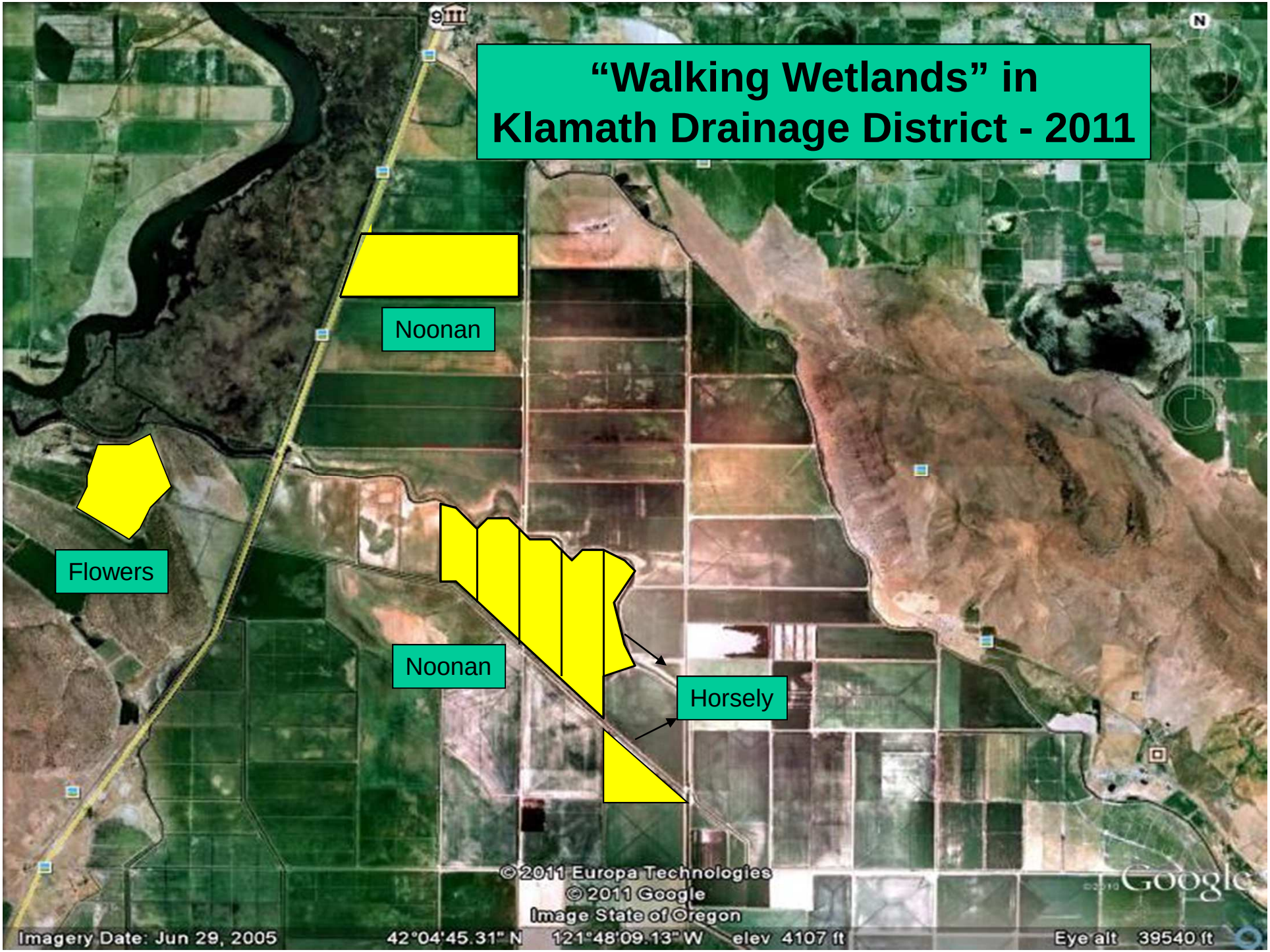
  Farm Bill programs?


Klamath Falls
Refuge = 2,000 acres
Private lands = 3,500 acres
N
Lower
Klamath NWR
Tule
Lake NWR
"Walking wetland" sites


Walking Wetlands 2011
Tule Lake NWR
Lava Beds Hwy
139
Lot 5
Lots 34-35
Lots 65-70
Frey's cell A
Image State of Oregon
Image USDA Farm Service Agency
© 2011 Google
Image © 2011 DigitalGlobe
Google
Imagery Dates: Oct 6, 2004 - Jun 29, 2005 41°53'55.52" N 121°28'00.32" W elev 4035 ft
Eye alt 12.33 mi


Walking Wetlands TID 2011
Woodhouse
Sibert
Buckingham
Staunton II
Trisha Hill
Lava Beds Hwy
139
Image USDA Farm Service Agency
Image State of Oregon
© 2011 Google
Image © 2011 DigitalGlobe
Google
Imagery Dates: Jun 29, 2005 - May 25, 2009 41°56'55.75" N 121°25'32.22" W elev 4040 ft
Eye alt 47248 ft

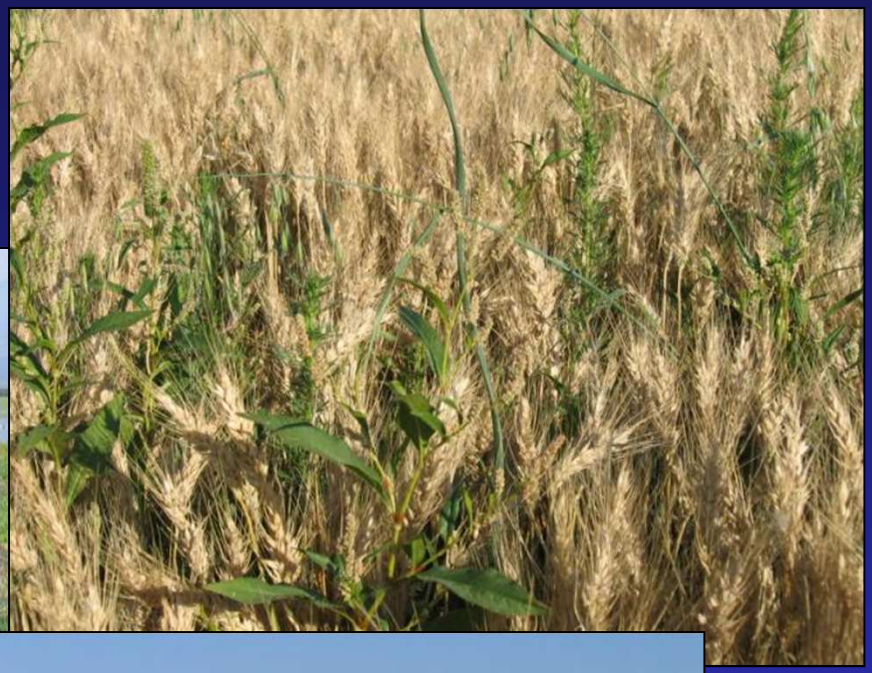
"Walking Wetlands" in Klamath Drainage District - 2011



Levee Construction

Lots 34-35 on Tulelake NWR completed in 2008

Stonehouse Field
May 2007



Summary

- Program provides additional habitat and wildlife diversity both on and off Refuge.
- Important IPM practice that increases farm productivity and flexibility while reducing inputs.
- Multiple mandates of Kuchel Act provides an opportunity to explore the integration of wetlands and agriculture to benefit the economic and ecological landscape.
- Program may have wider applicability.