

GIS Internship with the U.S. Fish and Wildlife Service



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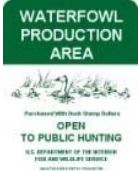




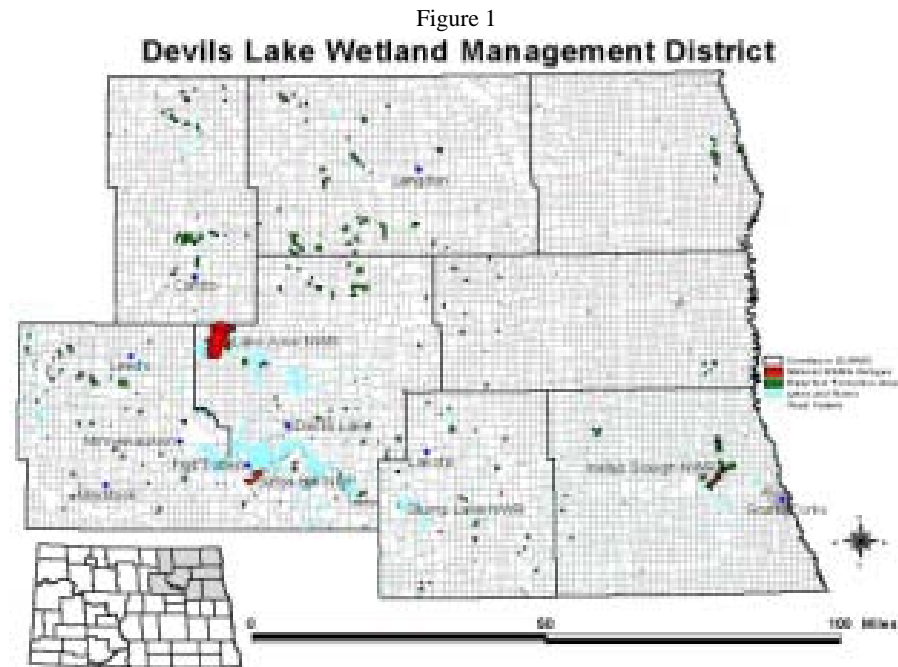
Today's Presentation

- **About the Devils Lake Wetland Management District**
- **GIS and Refuge Land Management**
- **The Internship**
- **Map Deliverables**

About the Devils Lake Wetland Management District



- Over 45,000 acres of wetlands and other wildlife habitats, 209 WPA's
- Northeastern North Dakota counties of:
 - Towner
 - Cavalier
 - Pembina
 - Benson
 - Ramsey
 - Walsh
 - Nelson
 - Grand Forks



About the Devils Lake Wetland Management District

- This includes:
 - Lake Alice National Wildlife Refuge
 - Sully's Hill National Game Preserve
 - Kelly's Slough National Wildlife Refuge
 - 11 easement refuges
 - 154,000 acres of wetland easements
- Responsible for the management, inventory, and maintenance of \$53 million in property
- **The District's goal is to preserve and improve wetland and upland habitat to increase waterfowl and wildlife population**

GIS and Refuge Land Management

- Refuge Land Geographic Information Systems (RLGIS)
 - extension created in ESRI ArcMap 9.3
 - maintains and organize refuge land data
- The Features, Units, Monitoring (FUM) geodatabase
 - cultural resources
 - refuge facilities
 - transportation systems
 - monitoring sites
 - water management structures
 - hydrology features
 - management units

GIS and Refuge Land Management

- Utilizes mobile GIS technology in which data can be collected in the field and transferred to a GPS field computer or Trimble Unit
- The feature classes that I used the most were:
 - Water Management Line
 - Water Management Point
 - Fence
 - Signs/Postings
 - Gate and Access
 - Building Point
 - Property Point

The Internship

- **This job was created from Stimulus Money**
- WPA's in Cavalier, Towner, and Benson Counties, and GPS-ing various property features using the Trimble unit
 - I GPS-ed and took a photo of each dike, ditch plug, water control structure, boundary sign, and predator fence
- Then once in the office, I downloaded the field data off the Trimble GPS unit

The Internship (Cont.)

- Next, I input an asset number and corresponding image using a hyperlink in ArcGIS 9.3 as part of the inventory
- The final product created was a map showing the various property features with each assigned asset numbers (See Figures 2, 3, and 4)

GPS-ed Property Features



GPS-ed Property Features (Cont.)



Wildlife



Photo credits: All Ducks Unlatched

Conclusion

- It allows government officials to make more informed decisions about land management
 - such as haying, grazing, prescribed burns, and farming
- Also had the opportunity to participate in:
 - Vegetation monitoring
 - Bird surveys
 - Avian influenza searches
 - Biological control of noxious weeds
 - Water sampling with other biological science technicians
- Overall, the GIS Internship was a great experience

Acknowledgements

- Cami Dixon at the U.S. Fish and Wildlife Service
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- Dr. Rundquist at the University of North Dakota
- Dr. Todhunter at the University of North Dakota

Sources

- The Devils Lake Wetland Management Pamphlet
- The RLGIS Manual: An Introduction to RLGIS. First Edition. USFWS. Tab 15 FUM Geodatabase Review. Date Accessed <08/20/2009>
- Figure 1 was created by the USFWS, Figure 2,3, and 4 by Tina Cummings
- Photographs were taken by the U.S. Fish and Wildlife Service

Any Questions?



Photo Courtesy of Ducks Unlimited