Training Session for US Fish and Wildlife Service on the National Spatial Reference System/GNSS/Real-Time Positioning

April 5-7, 2011

April 5, 2011

8:30 – 9:00am   Overview and Welcome, Kendall Fancher

9:00 – 10:15   Overview of the National Spatial Reference System, Dave Doyle

- Including introduction to datums (importance of relating land elevations to local water levels/tidal datums)

10:15 – 10:30am   Break

10:30am – Noon   Continued, Overview of NSRS, Dave Doyle

Noon – 1:30pm   Lunch

1:30 – 3:00pm   Discussion and comparison of RTK, Digital Leveling and Static GPS: What are the main tools available for positioning and what are the precisions you can achieve with them? What are the best tools for various locations/situations?

- Open with time for participants to describe their requirements for and applications of accurate heights
- Bill Henning, Charlie Geoghegan and Dave Doyle will give brief overviews of RTK, Digital Leveling and Static GPS, respectively
- Panel discussion/Q&A with Dave Doyle, Bill Henning, Charlie Geoghegan and Galen Scott

3:00 – 3:15pm   Break

3:15 – 4:00pm	Continuation of discussion and comparison of RTK, Digital Leveling and Static GPS
4:00 – 5:00pm	Questions/Time for individual Refuge representatives to discuss challenges they face at their facilities

April 6, 2011

8:30 – 10:00am	Designing a Survey Plan for Your Refuge/Geospatial Infrastructure of Sentinel Sites, Galen Scott, Kendall Fancher

- Geospatial Infrastructure for Sentinel Sites Overview, Galen
- Recon, Datasheets and Local Network Installation, Kendall

10:00 – 10:15am	Break

10:15 – Noon	Continued, Designing a Survey Plan for Your Refuge/Geospatial Infrastructure of Sentinel Sites, Galen Scott, Kendall Fancher

- Site Assessment & Network design, using example from the audience, Galen
- Hands on discussion of network designs for individual Refuges: Small groups to review imagery/maps and/or Google Earth to look at specific Refuges and start the process of assessing sites, database searches, ID potential gaps and planning to fill gaps (Galen, Kendall & others as needed)

Noon – 1:30pm	Lunch

1:30 – 3:00pm	Overview of high precision GPS and collection of GPS data outdoors, Bill Henning

- What is the best elevation accuracy expected with GPS, in an open salt marsh setting? in a forested setting?
- How can I optimize this for creating some kind of benchmark on the refuge, which won't be to publishable,

NGS benchmark standards because a refuge can't afford leveling techniques?

3:00 – 3:15pm   Break

3:15 – 5:00pm   Hands-on time with Static GPS units, Dennis Lokken, Bill Henning, Doug Adams, others

April 7, 2011

8:30 – 10:30   Overview and use of the Continuously Operating Reference Station (CORS) network and the Online Positioning Users Service (OPUS), Bill Henning

- Obtaining accurate positions using static data collection sessions
- Description of CORS information and its various applications, how to access CORS information, and how to use publicly available utilities for <u>processing GPS data</u>. Flavors of OPUS.

10:30 – 10:45am   Break

10:45 – noon   Overview of RTK data collection and its applications, Bill Henning

- How can I optimize vertical precision and accuracy when using rover receivers to get topographic positions?

Noon – 1:30pm   lunch

1:30 – 4:00pm   Hands-on time with RTK equipment

4:00 – 5:00pm   Wrap-up, remaining questions