Training Session for NERRS on
the National Spatial Reference System/Real-Time Positioning/Digital Leveling
April 16-20, 2012

Monday, April 16

8:30 – 8:45am   Overview and welcome, Kendall Fancher and Erika Little

8:45 – 10:15am   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

10:30 – noon   Continued, overview of NSRS, Dave Doyle

Noon – 1:00pm   Lunch

1:00 – 3:00pm   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 processing GPS data. Flavors of OPUS.

3:00 – 3:15pm   Break

3:15 – 5:00pm   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?

- Bill Henning, Charlie Geoghegan and Dave Doyle will give brief overviews of RTK, digital leveling and static GPS
- Open time for participants to describe their requirements for and applications of accurate heights
- Panel discussion with Doyle, Geoghegan, Henning and Hensel

Tuesday, April 17

8:30 – 10:30am   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 march setting? in a forested setting?
- How can I optimize this for creating some kind of benchmark on the reserve (which most likely won't be to publishable, NGS benchmark standards due to cost constraints)?

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 – 1:00pm	Lunch
1:00 – 5:00pm	hands-on time with RTK equipment/break into groups, stations

Wednesday, April 18

8:30 – noon   Continued hands-on time with RTK equipment
- Rotating stations on how to use the date once it's gathered, creating DEMS, etc.

Noon – 1:00pm   working lunch – RTK Q&A Session

1:00 – 5:00pm   **Begin Digital Leveling training,** Charlie Geoghegan and/or Philippe Hensel
- Leveling Introduction
- Leveling Equipment and Setup
- Collimation Check and Field Notes
- Hands on: Collimation Check

Thursday, April 19

8:30 – noon   Geodesy and Corrections for Leveling
Leveling Specifications
Leveling Demo/Hands on

Noon – 1:00pm   working lunch – Available Open Source Tools, Jason Woolard

1:00 – 5:00pm   Vertical Datums
Leveling Wrap Up

Resetting Benchmarks
Descriptions
Hands on: Write up a mark
Introduction to WinDesc and Translev

Friday, April 20

8:30 – 10:15am   Designing a Survey Plan for Your Refuge/Geospatial
Infrastructure of Sentinel Sites, Philippe Hensel, Kendall Fancher
- Geospatial Infrastructure for Sentinel Sites Overview, Galen
- Recon, Datasheets and Local Network Installation, Kendall

10:15 – 10:30am   Break

10:30 – noon   Continued, Designing a Survey Plan for your Reserve/Geospatial
Infrastructure of Sentinel Sites,
- Questions/Time for individual Reserve representatives to discuss what they hope to achieve/challenges they face at their Reserves

Noon   Depart