



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Memorandum: **A.R.M. Loxahatchee National Wildlife Refuge Quality Manual for EVPA (Consent Decree Compliance Monitoring) and Refuge's Enhanced Water Quality Monitoring Program**

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This memorandum, plus applicable portions of the South Florida Water Management's (SFWMD) "Field Sampling Quality Manual" document (incorporated herein by reference), is intended to serve as the A.R.M. Loxahatchee National Wildlife Refuge's **Field Sampling Quality Manual** for the EVPA and the Refuge's Enhanced Water Quality Monitoring programs. This memorandum provides Refuge-specific additions to the current SFWMD "Field Sampling Quality Manual" (Version 2.0; 01/03/05).

For the EVPA program (Consent Decree compliance monitoring program), SFWMD trains refuge staff involved with sample collection and processing (and they perform regular audits). This level of training has been incorporated as part of the training for the Enhanced Water Quality Monitoring program.

In addition, there are multiple levels of uniformity between EVPA and the Enhanced Water Quality Monitoring programs beyond the virtually identical Standard Operating Procedures. First, refuge staff regularly participate in both monitoring programs. Second, water quality grab samples collected for both programs are processed by Refuge staff, and analyzed and QA/QC'd by the SFWMD lab. Third, the SFWMD project managers for the two programs work extensively together.

Refuge-Specific Additions to the SFMWD **Field Sampling Quality Manual**:

- The refuge has a specific training checklist for water quality sampling (Attachment 1)
- The Helicopter Safety section in the SFWMD **Field Sampling Quality Manual** (Section 5.15.1) is supplanted by the U.S. Department of Interior helicopter safety training as outlined at the DOI Aviation Management website: <http://www.oas.gov/>

- Department of Interior has rigorous powerboat and airboat training requirements to operate either craft. Additionally, the Refuge has a 40-hour drive time training requirement before final “checkout” as an airboat operator working in the Refuge interior.
- Any changes from standard operating procedures or the quality manual are to be documented and reported to others in the Refuge organizational structure relevant to water quality monitoring.
- Refuge organizational structure relevant for WQ sampling programs is given below. Staff conducting water quality monitoring projects have the following hierarchy (as of March 2005) for reporting:
 - Wildlife Biologist
 - Deputy Refuge Manager
 - Refuge Manager

As with the SFWMD **Field Sampling Quality Manual** periodic assessment of this content will occur with appropriate updates made in future versions.

Attachment 1: Training Checklist for Water Quality Project (3/15/05)

Trainee Name: _____

Please initial and date each item when you have read and feel you understand the document, completed the training, or feel completely comfortable performing the activity on your own. Have your supervisor, project manager, or trainer verify that you have successfully completed the training. *Items in blue italic are documents that should be read.*

Boat Certification and Operation

	Date Completed	Trainee Initials	Verified
Motorboat Operators Certification Class (MOCC)	_____	_____	_____
Airboat Certification	_____	_____	_____
Overview of Whaler operation	_____	_____	_____
Checkout on Whaler	_____	_____	_____
<i>I have read and understand the airboat manual</i>	_____	_____	_____
Overview of airboat operation	_____	_____	_____
40 hours airboat driving (attach log sheet)	_____	_____	_____
Final Lox checkout on airboat	_____	_____	_____
I can go out the sign line and back without a GPS	_____	_____	_____
I understand how to file a float plan	_____	_____	_____
I have received instruction on and understand			
Refuge radio operation and procedures	_____	_____	_____
I understand the gas/oil procedures	_____	_____	_____

Helicopter

B3 Training	_____	_____	_____
Instructions and demonstration on getting in and			
Out of the helicopter in the marsh	_____	_____	_____
M3 Training- If supervising others only	_____	_____	_____

Hydrolabs

<i>I have read and understand the users manual</i>	_____	_____	_____
<i>I have read and understand the Refuge SOP</i>	_____	_____	_____
Training by hydrolab representative	_____	_____	_____
Training in the field by refuge staff	_____	_____	_____
I understand how to retrieve and redeploy sondes	_____	_____	_____
I understand how to fill out the field calibration sheet	_____	_____	_____
I understand how to download files in the field	_____	_____	_____
Using the Surveyor	_____	_____	_____

I understand how to download files in the field			
Using the laptop			
I have read and understand the file QA process	_____	_____	_____
I know who to call if I have problems	_____	_____	_____
Check out in field by refuge staff on:			
1. Sonde retrieval and deployment	_____	_____	_____
2. Completion of calibration sheet	_____	_____	_____
3. Downloading files using surveyoer	_____	_____	_____
4. Downloading files using laptop	_____	_____	_____
5. File QA	_____	_____	_____

Thalmedes (water level recorders)

<i>I have read and understand the users manual</i>	_____	_____	_____
<i>I have read and understand the Refuge SOP</i>	_____	_____	_____
Training by Thalmedes representative	_____	_____	_____
Training in the field by refuge staff	_____	_____	_____
I understand how to retrieve and redeploy the units	_____	_____	_____
I understand how to fill out the field data sheet	_____	_____	_____
I understand how to download files in the field			
Using the laptop	_____	_____	_____
I have read and understand the file QA process	_____	_____	_____
I know who to call if I have problems	_____	_____	_____
Check out in field by refuge staff on:			
1. Thalmedes retrieval and deployment	_____	_____	_____
2. Completion of field data sheet	_____	_____	_____
3. Downloading files using laptop	_____	_____	_____
4. File QA	_____	_____	_____

YSIs

<i>I have read and understand the users manual</i>	_____	_____	_____
<i>I have read and understand the Refuge SOP</i>	_____	_____	_____
Training by YSI representative	_____	_____	_____
Training in the field by refuge staff or Paul McCormick	_____	_____	_____
I understand how to retrieve and redeploy sondes	_____	_____	_____
I understand how to fill out the field calibration sheet	_____	_____	_____
I understand how to download files in the field			
Using the laptop	_____	_____	_____
I have read and understand the file QA process	_____	_____	_____
I know who to call if I have problems	_____	_____	_____
Check out in field by refuge staff on:			
1. Sonde retrieval and deployment	_____	_____	_____
2. Completion of calibration sheet	_____	_____	_____
3. Downloading files using laptop	_____	_____	_____

4. File QA

EVPA

I have read and understand the EVPA SOP for field sampling

I have read and understand the EVPA SOP for lab analysis

I have read and understand the DEP guidance

For water quality sampling as it applies to EVPA

I have received and understand training in field sampling

I have received and understand training for lab Analysis

I have completed training and documentation As specified by SFWMD (attach copy of training Documentation)

I know who the SFWMD contacts are for the EVPA Flights and lab use.

Computer

I have successfully completed the DOI IT Training

I have been given instructions on the organization and use of the refuge computer network

I have been given instructions on the organization and use of the NPS computer network (Not applicable to all- if applies you must sign NPS form)

I understand the file backup protocols for

- 1. Water quality project files
- 2. Files I am responsible for on the share drive
- 3. All files on my PC

I understand how to and how often to update my Virus protection software

General

I have read the Enhanced Water Quality Work Plan and understand the importance and Purpose of collecting these data

I have read the project description for the EVPA Sampling and understand the significance of Collecting the data for water quality compliance

I understand the procedure for data and file Documentation	_____	_____	_____
I understand the importance of maintaining data Integrity by not modifying original data or entering Unproofed data into a proofed data set	_____	_____	_____
I know who to contact if I have questions on Procedures for the EVPA sampling or the Enhanced Water Quality sampling	_____	_____	_____
I understand the format and timelines for the monthly summaries	_____	_____	_____
I understand that external requests for information on The Enhanced Water Quality project should be Cleared through the Everglades Program Team	_____	_____	_____
<i>I have read and understand the Biology Project Procedures</i>	_____	_____	_____
<i>I have read the Refuge CCP</i>	_____	_____	_____
<i>I have read the current version of the Biology Workplan and the previous year's accomplishment report</i>	_____	_____	_____
<i>I have read the last 3 years of the refuge narrative</i>	_____	_____	_____
I understand the purpose of and importance of attending the monthly refuge staff meetings and biweekly Bio meetings	_____	_____	_____

GPS

<i>I have read and understand the Garmin GPS manual(s)</i>	_____	_____	_____
I have been shown where the waypoint files are For:			
1. EW trail across the refuge (sign line + airboat trail)	_____	_____	_____
2. Off limits points			
3. Water quality sample locations (both EVPA And enhanced	_____	_____	_____
I can upload and download waypoints to the GPS	_____	_____	_____
I understand that waypoints left in the GPS may be deleted by the next user	_____	_____	_____
I understand how to navigate using GPS waypoints	_____	_____	_____
I feel comfortable navigating to all sampling sites	_____	_____	_____