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## List of Recommended Critical Field Equipment/Spare Parts

### Field Data Measurements

1. Multiprobe Sensor Instrument and various analytical probes/accessories (may have capability of unattended, automated monitoring at hourly intervals over at least a 24-hour period).  
Possible options include:
  - X Hydrolab Surveyor 3/H20, Surveyor 4/minisonde, or Surveyor 4/datsonde 4
  - X Hydrolab Datsonde 3 or 4
  - X YSI 610DM/YSI 600 XLM Minilogger
  - X YSI 650 MDS
  - X YSI 600XL
  - X Long cord (and short cord) for multiprobe instrument(s)
  - X YSI internal thermometer for water temp
  - X All Maintenance Parts, Electrolyte Solutions, pH storage solution, etc. for Multiprobe Sensors
  - X Back-up Multiprobe Sensor in working condition
2. Turbidity meter (i.e. LaMotte 2020)
3. Weather Radio
4. Pocket Calculator
5. Flow Meter/Top-setting Wading Rods/Digital Counter (i.e. Scientific Instruments Digimeter)/100 ft. Measuring Tape
6. Digital Camera
7. Global Positioning System (GPS)

### Water Sampling

1. Plastic Buckets with Rope
2. Battery-powered or Car-converter-powered Peristaltic Pump (needed only for depth integrated sampling and filtrations)
3. TM clean in-line filters (0.45 micron, disposable)
4. Powder-free Nitrile Gloves
5. Polyethylene Gloves (wrist and shoulder long)
6. Clean plastic sampling device (beaker) on extendable sampling pole
7. Pre-printed labels with station info
8. See table with sample bottles/containers in water sampling SOP
9. Metals-in-Water Kit: Plastic bottles, tubing, syringes, syringe filters, metals-free water and filters for metals-in-water sampling prepared by the laboratory
10. Chlorophyll filtration kit (manifold, pump, filters etc.)

## **Sediment Sampling**

1. Modified Van Veen grab, cleaning reagents for cleaning grab, davit (for boat)
2. Polyethylene/Polycarbonate Scoops (pre-cleaned at laboratory)
3. Homogenizing jar and stirring rods
4. Labels with station info
5. See table with sample bottles/containers in sediment sampling SOP

## **Biological Sampling**

1. "D" or "Y" Frame Kick Net (mesh size < 800µm x 900µm)
2. Surber Sampler
3. Seines (short 6-10' 1/8-inch mesh; long 20-25' 1/4-inch mesh)
4. Gill Net
5. Backpack Shocker - Smith Root Type VII or equivalent (for regions where conductivity allows use) and Extra Battery
6. 5-Gallon Plastic Buckets
7. Chest Waders
8. Heavy Weight Rubber Gloves for Shocking
9. Non-conductive Dip Nets for Fish (both medium and small mesh sizes)
10. Glass Jars/Vials for Biological Specimens
11. Ethyl Alcohol
12. Isopropyl Alcohol
13. Rose Bengal
14. Formalin
15. Forceps
16. Lopping Shears for Snag Samples
17. Sorting Sieves (U.S. Std. Sieve No. > 20)
18. Sorting Trays for Benthics
19. Mason Jar Lids (for isolating sub-sample in sorting tray)
20. Fish Measuring Board
21. Heavy Weight Aluminum Foil (for shipping tissue samples)
22. Plastic Bags (for shipping tissue samples)
23. Trawl (for coastal regions)
24. Plankton Net
25. Compound Microscope
26. Dissection Microscope

## **Habitat Assessment**

- < Map Measuring Wheel or Planimeter
- < Clinometer
- < Densimeter
- < Optical Range Finders (short and long distance)
- < Survey Range Pole
- < Long Tape (100 meters)

## Other Office/Field Equipment

- < Refrigerator/Freezer
- < Ice Machine, Ice and dry ice Delivery, supply Contract
- < Boat/Motor/Trailer/PFDs – Refer to “Minimum Health and Safety Guidelines” Appendix H, for a boating safety checklist.
- < Battery Charger
- < Waders

## Shipping

- < Insulated coolers
- < Cube ice/blue ice/dry ice
- < Duct tape (for sealing coolers)
- < Packaging tape (for taping labels)
- < Prewritten FedEx labels/ shipping tags
- < COCs (prewritten, if possible)
- < Bubble wrap/ packaging foam
- < Zip bags for COCs

## Health and Safety

Refer to “Minimum Health and Safety Guidelines” (Appendix H) for a list of essential equipment.

## Personal and Travel Equipment and Supplies

- < Rain gear
- < Change of clothes
- < Heavy Duty Flashlight
- < Cell phone and charger
- < Maps
- < Hiking Boots
- < Extra batteries
- < Contact phone numbers
- < Sun glasses/ sun block/ hat
- < Drinking water
- < Work gloves
- < Insect repellent
- < Backpacks/ tote bin for carrying gear

Additionally, all necessary forms, calibration logbooks, procedures manuals, equipment instructional manuals, and identification manuals for biological specimens will be kept on hand by all SWAMP personnel.