SAMPLE COLLECTION PROTOCOL

POLARIS PROJECT AQUATIC SURVEY

22 JUNE 2011

I. OVERVIEW

This document outlines the protocol for the **collection** of water samples for the Polaris Project Aquatic Survey. It is intended to be used in the field when collecting samples.

II. EQUIPMENT AND SUPPLIES

Take the following to the field when sampling

-Field Data Sheet and clipboard (*1 per sampling location*)
-YSI Pro-Plus meter (with calibrated temperature, specific conductivity, dissolved oxygen, pH)
-GPS (set to read decimal degrees)
-1 liter wide-mouth HDPE bottle (may be mounted on pole to extend away from boat or shore)
-4 liter HDPE carboy (*1 per sampling location*)
-Cooler for temporary sample storage
-Pencils, Sharpies, Labels

III. SAMPLE COLLECTION

As described below, the specific sampling procedure will vary depending on the system being sampled. In all cases, a 4-liter water sample will be collected for processing in the laboratory. If the sample cannot be returned to the laboratory within 12 hours of collection, arrangements should be made for initial processing of the sample in the field.

A. River Sampling By Boat

Prior to collecting any samples, the pole-mounted 1-liter sample collection bottle should be rinsed 3 times with river water. The 4-liter HDPE carboy should also be rinsed 3 times with river water.

Samples should be collected from the center of the channel (or location of maximum depth and flow) at ~0.5 m depth. Use the pole-mounted 1-liter HDPE bottle to fill the 4-liter sample carboy. Label the carboy (using the labeling conventions described in Section IV) and place in cooler for return to the laboratory. Carefully note on the Field Data Sheet the precise location where the sample was collected (important for linking water chemistry to remotely sensed data).

At the same location as where the sample was collected, use the YSI Multi-Parameter meter to measure water temperature, specific conductivity, pH, and dissolved oxygen (also at 0.5 m depth). Record this information on the Field Data Sheet.

NOTE: The YSI meter takes several minutes to warm up and the pH measurement takes ~10 minutes to stabilize. Take your time – accurate pH measurement is very important. The YSI can

be warming up while the water sample is being collected. In slow moving water, gently but continuously move probe through the water. If not, oxygen readings will drop over time.

B. Stream Sampling from Shore

The sampling protocol is identical to that described above for sampling rivers by boat, except that the 1-liter HDPE sampling bottle will be used to collect four 1-liter samples from shore. The sampling bottle should be attached to a pole to get away from the immediate shore (except in small streams). As above, the 1-liter samples should be combined into the 4-liter sample carboy.

Note: If at all possible, large rivers should be sampled by boat unless safety is a concern (ice conditions, for example).

C. Lake Sampling

The sampling procedure is similar to that described above, except that samples and YSI measurements will be collected from the center of the lake, at 0.5 m depth. If that is impossible (for example, no raft), samples may be collected from shore using the sampling pole to extend away from shore. Carefully note on the Field Data Sheet the precise location where the sample was collected (important for linking water chemistry to remotely sensed data).

IV. SAMPLE LABELING SCHEME

All Aquatic Survey samples will be labeled according to the following scheme:

Group-Location-Date-Time

-Each group will be designated by a 1 letter code (the Aquatic Survey letter code is "A")
-Each location will be designated by a 2-4 character code (we need to develop a location key)
-Date will be designated by a 6 number code (mmddyy)
-Local time (in 24 hr format) will be designated by 4 numbers
    -Note: time written on sample bottle should match time written in field book

So, a sample collected by the Aquatic Survey group from the Kolyma River on July 23, 2011 at 2:15 pm would be labeled: **A-KOL-072311-1415**