

# Sierra Nevada Network Lake Monitoring Protocol

## SOP 5. Field Season Preparations

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### Revision History Log

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #

## SIEN Lake Monitoring Protocol

This SOP describes field season preparations. Although field season does not begin until May or June, preparations should begin as early as October. The protocol lead and logistics technician are responsible for winter preparations. Crews will start in approximately June. The timeline of preparation activities and responsibilities is presented in Table SOP5.1. Preparation activity details follow.

**Table SOP 5.1.** Field season preparation timeline.

Timing	Prep Activity	Responsibility
October	1. Label sample bottles for next season	Logistics Tech & Crew
December	2. Coordinate shared tech positions with protocol leads and park staff (may continue into Feb.)	Protocol Lead
	3. Announce seasonal positions	Protocol Lead
January	4. Submit research permit	Protocol Lead
February	5. Hire and finalize shared crews	Protocol Lead
	6. Arrange seasonal housing	Protocol Lead
March	7. Plan wilderness trip itineraries	Protocol Lead & Logistics Tech
April	8. Order any final equipment needs	Protocol Lead (sampling equip.) & Logistics Tech (backcountry equip.)
	9. Create and print site maps	Logistics Tech
	10. Make dorm reservations	Logistics Tech
	11. Send welcome letter to field techs	Protocol Lead
May	12. Start coordinating food and equipment caches	Logistics Tech
June & July	13. Training	Protocol Lead
	14. Prepare data sheets and equipment for the season	Crew
August	15. Prepare and finalize extensive survey itineraries	Crew
	16. Order supplies for next season	Protocol Lead
Prior to each trip	17. Prepare equipment and logistics required for individual site visits.	Crew

### 1. Label Sample Bottles for Next Season

In addition to completing post-season activities in the week or two after field sampling is completed, field crews also are involved in preparations for the following field season. The logistics technician is responsible for creating the labels, which involves updating the label spreadsheet, and importing it into the MS Access labels database, and printing the labels for the entire field season. The protocol lead will provide the quantity, type, and locations of qa/qc samples. The excel and database files are located at:

J:\sien\I\_M\monitoring\water\admin\forms\labels.

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The field crews then label the sample bottles and organize them in ziplock bags, by site, for the following season.

### 2. Coordinate Shared Technician Positions

Field technicians' time are shared with other protocols and/or park projects. The protocol lead must coordinate time and workloads with other protocol leads and park staff well in advance. It is anticipated that lake technicians will also perform field work for the Rivers and Streams protocol, once it is implemented. Additional shared opportunities include the Meadow Ecological Integrity protocol and park air and water resources projects. Division of workload, schedule, and budget should be well-documented, approved by, and distributed to involved supervisors and network coordinator. Refer to the Protocol Narrative, Section 6: Personnel Requirements and Training for details on technician requirements (e.g., number and type). Coordination should be initiated by December, but might take until February to finalize when projects and budgets fall into place.

### 3. Announce Seasonal Positions

Seasonal positions should be announced in December. The Sequoia and Kings Canyon Human Resources office provides hiring and administration functions for the network. The network may also hire off of park applicant lists; this may often be the case when sharing field crews with park projects. Applicants are required to meet the general qualifications for these roles (Table SOP 5.2). Note, there may not be a crew lead every year—this will vary by year and park depending on needs, qualifications of applicants, and crew dynamics. Field technicians should be comfortable traveling and working in remote wilderness areas for extended periods of time. They must have a high level of physical fitness and be proficient swimmers.

**Table SOP 5.2.** Qualifications for lake protocol positions.

Role	Qualifications
Crew Lead	Meets basic requirements for a GS-6 bio/phys/hydro tech. Has strong wilderness travel, leadership, and field sampling experience. Water sampling education and/or experience required. Prior experience in the Sierra Nevada or working for a similar monitoring program is highly desirable. High level of physical fitness. Proficient swimmer.
Crew Member	Meets basic requirements for a GS-5 bio/phys/hydro tech. Backpacking and field sampling (ideally water sampling) experience desirable. High level of physical fitness. Proficient swimmer.

### 4. Submit Research Permits

In Yosemite, all NPS employees must apply for and carry a research permit. The protocol lead should submit the permitting paper work in January. The process may be completed over the internet at: <http://science.nature.nps.gov/research/ac/ResearchIndex>. Sequoia and Kings Canyon does not require NPS employees to apply for and carry research permits. However, a Wilderness minimum requirement analysis must be completed. Previous seasons permits can be found on the SEKI network at: J:\sien\monitoring\_projects\water\admin\permits\.

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### **5. Hire and Finalize Shared Crews**

A detailed plan for sharing crews should be completed by February and seasonal cert lists should be available by now. Crews should be hired by late February, early March at the latest. Consider qualifications in Table 2 when selecting technicians.

### **6. Arrange Seasonal Housing**

The protocol lead, working with park staff, should start securing seasonal housing as early as February. The exact timing will be dependent on the park housing office's schedule; however, since housing is always tight, we should be prepared when they are. Housing needs will vary by year and crew. Ideally, the Yosemite crew will be housed at Tuolumne Bug Camp. The Sequoia/Kings crew has the option of staying in the dorm and White Mt. Research Center when they are in the frontcountry. If they prefer a seasonal house at Ash Mt., one can be requested.

### **7. Plan Wilderness Trip Itineraries**

Trip itineraries must be planned early in the year to allow plenty of time to coordinate logistics. It is recommended the protocol lead and logistics technician consult with park staff who have extensive experience and knowledge of wilderness travel routes. For the first four years, staff need to determine if a site is safe to access. If a site is identified as unsafe, it is replaced with the next oversample. Once itineraries are developed, any housing, camping, food cash, or other logistics that require advanced planning should be coordinated. Crew schedules from previous years can be found on the SEKI network at:

J:\sien\I\_M\monitoring\water\operations\crews\schedules\. Route maps from prior trips can also be found on the network: J:\sien\I\_M\monitoring\water\operations\backcountry\_trips\route\_maps

### **8. Order any Final Equipment Needs**

The majority of the equipment will have been ordered the prior summer. However, the protocol lead and logistics technician should make sure any final equipment needs are taken care of in April.

### **9. Create and Print Site Maps**

Site maps are printed in color on water proof paper for each site visit. If a site has not been visited than the logistics technician will create a new map. Existing maps are located on the SEKI network at: J:\sien\I\_M\monitoring\water\admin\forms\data\_sheets\SiteMaps. Completed maps for SEKI are stored in the file cabinet in the Research Center conference room and for YOSE in the Lake file folders at the Bug Camp Lab.

### **10. Make Dorm Reservations**

Reservations at the Ash Mt. dorm should be made as soon as possible, particularly for the month of June. Space will likely be needed for the Yosemite crew during the lake training week and for SEKI throughout the season (assuming they opt for dorm housing). The SEKI crew may also be staying at the White Mt. Research Station (WMRS) in Bishop. Space is less of an issue at the WMRS; however, reserving in timely manner is still suggested.

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### **11. Send Welcome Letters**

Welcome letters are emailed to new and returning field technicians. These include a general welcome, a schedule and 'what to expect' for the first pay period, an equipment checklist describing what they are responsible for bringing and what NPS provides, backcountry food recommendations, and driving directions to their initial park destination (i.e. El Portal Resources offices, Ash Mt. Research Center). Templates can be found on the SEKI network:

J:\sien\I\_M\monitoring\water\operations\crews\pre-season.

### **12. Food and Equipment Caches**

Food cache options should have been originally identified when the wilderness itineraries were drafted in February. However, actually coordinating may begin as early as May and continue through September. Typically, food caches are piggy-backed onto existing backcountry stock and helicopter flights. For example, backcountry ranger station mobilizations and trail crew re-supplies.

Sampling equipment is cached at Dusy Basin in a box that is stored with the USFS amphibian research crew camp.

### **13. Training**

A multi-day training is conducted prior to the first index sampling trip. Training is coordinated by the protocol lead. I&M and park staff are key participants in the training. Refer to SOP #3: Staff Training for training requirements and details.

### **14. Prepare Data Sheets and Field Equipment**

The crew is responsible for preparing all equipment at the beginning of the season. This includes:

1. Photocopy blank field data sheets and chain-of-custody forms.
2. Unpack and inventory field gear.
3. Clean and test that all sampling equipment is working properly. Put new batteries in electronic equipment.
4. Calibrate meters (refer to corresponding SOPs and Users Manuals for instructions).

### **15. Prepare and Finalize Itineraries for Extensive Surveys**

The crew inventories and prepares backpacking and sampling equipment for the extensive surveys. Gear is organized ahead of time for all August and September trips to the extent possible. Wilderness itineraries were planned during the winter season. Crews should finalize these plans including making changes based on individual crew abilities and current wilderness conditions. Wilderness travel itineraries are completed and submitted to the protocol lead (note: this may also be completed earlier in the season, for example, in conjunction with the training). Wilderness travel forms are located at:

J:\sien\I\_M\monitoring\water\admin\forms\safety\wilderness travel

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### 16. Order Supplies for Next Season

The protocol lead is responsible for ensuring sampling equipment is ordered. The equipment is ordered in August for the following field season. Often SIEN's administrative technician can assist in making these purchases. Equipment lists are included in the SOP #8: Water Sampling Methods. There is a spreadsheet on the SEKI network that contains information for ordering, including the vendor, catalog number, contact information, and approximate prices. Refer to J:\sien\I\_M\monitoring\water\admin\fiscal\Equip\_ordering\EquipLakes\_heard\_date.xls. Once the glass fiber filters arrive, they need to be sent to the lab where they will be pre-combusted and returned.

The logistics technician is responsible for ordering additional backpacking equipment as needed.

### 17. Prior to Each Sampling Trip

Crew members complete the following preparation tasks prior to a site visit:

1. Test equipment and calibrate instruments. Refer to SOP 4 (QAPP) for calibration frequency and acceptance criteria.
2. Make sure equipment is disinfected before going into the field.
3. Pack sampling equipment. Refer to SOP 8 for the equipment checklist.
4. Pack day hiking or overnight backpacking equipment.
5. If traveling overnight, make sure a backcountry travel itinerary has been submitted to the protocol lead and supervisor (if different).