Standard Operating Procedure (SOP) 1: Preparations for the Field Season

Protocol for Monitoring Small Mammals

Central Alaska (CAKN) Inventory and Monitoring Network

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The main Narrative for the Protocol for Monitoring Small Mammals in Central Alaska (CAKN) Inventory and Monitoring Networks is available from the NPS Inventory and Monitoring Central Alaska Network website (http://science.nature.nps.gov/im/units/CAKN/) and the Natural Resource Publications Management website (http://www.nature.nps.gov/publications/nrpm/

SOP 1 – Preparations for the Field Season

Standard Operating Procedure #1
Version 1.0 (September 2018)

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
Add rows as needed for each change or set of changes associated with each version.					

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SOP 1.0 – Introduction

This SOP describes how to prepare for the field season for Small Mammal live-trapping and mark-recapture surveys, except where specific tasks are covered by other SOPs. Pre-season field tasks include 1) obtaining permits and IACUC approval; 2) scheduling personnel; 3) hiring interns through Student Conservation Association (SCA), Volunteers in Parks (VIP), Youth Conservation Corps (YCC) or seasonal biological technicians (SOP 6); 3) preparing equipment and data notebooks (SOPs 2-5, and 6); 4) training, backcountry and bear safety requirements (SOP 3); and 5) data collection (SOPs 2 and 7).

SOP 1.1 – Obtaining Permits

Required permits for the Small Mammals survey include: 1) NPS Institute of Animal Care and Use Committee (IACUC) approval, and 2) NPS park compliance and research permits from Denali National Park and Preserve (DENA). All must be obtained before conducting Small Mammals surveys within DENA. The permitting processes for the NPS IACUC require at least 120 days prior to the project start date but more time lead time is always better as the IACUC only meets once per month to review projects. If possible, try to complete the IACUC review in February, March or April prior to field work in August. Once summer hits in Alaska, many parks are conducting projects and the IACUC may become inundated and overwhelmed with projects to review. DENA requires at least 90 days prior to the project start date. Applications for park permits can be submitted online through PEPC, and will be reviewed by the park compliance team. Special permission is required from DENA to carry a firearm during the project. This is obtained through the lead law enforcement ranger at DENA and requires a two month lead time. The project PI(s) must ensure that permits are obtained well in advance of survey operations to avoid delays in collecting data. They must also ensure that all personnel have or are scheduled for appropriate training prior to conducting surveys (see SOP-5).

SOP 1.2 – Scheduling Personnel

Up to 6-10 people can be scheduled (or hired) to conduct the data collection and field work for the Small Mammals surveys in DENA. Project staff used in the past have included YCC, SCA, VIP, and STEP interns, undergraduate and graduate students, biological technicians and biologists from network or park staff and from collaborators from other agencies and non-governmental agencies. A ratio of three experienced crew members to each new crew member is desirable. Having a larger field crew improves trap-checking efficiency and mitigates mortalities by getting animals out of the traps more quickly. Hiring and arrangements for crew members (SCA, YCC, VIP, etc.) should be in place 3-6 months prior to field work. See SOP 6 for details on required paperwork for SCA, VIP, and YCC crew members.

Invitational travelers, including VIPs, require Invitational Travel Authorizations approved by both the YUGA superintendent and the Alaska Regional Office 3-6 months prior to field work. This approval will allow VIPsto claim backcountry per diem and will provide insurance coverage for worker's compensation (if injured on the job) and travel while in the field.

If field crew members are related to NPS employees, they will not be allowed to claim backcountry per diem or any entitlements that will appear as if the crew member is unduly benefitting from the government. Special permission is required from the Alaska Regional Office for those volunteers to participate in the field work.

Project staff will be hired and/or scheduled for a 10-day period in mid-August, targeting August 12. The week prior to the field work, some of the field crew will take a day trip to DENA to flag plots. The

Friday before field work begins, an all-day training on field methods, scientific data collection, animal handling, logistics and field gear will occur for 8 hrs. Surveys will occur the following Monday through Sunday, which includes travel in government vehicles (GOVs) to and from DENA and training on site. After surveys are completed, at least 3-4 interns or technicians should be scheduled for demobilizing gear and washing traps. At least two interns or technicians should be scheduled for fall to proof and format data to prepare it for analyses.

All crew members (not related to NPS employees) camp at the study site and may be reimbursed backcountry per diem ($25/day) for food expenses (no lodging, regular per diem or group food costs or arrangements are needed).

SOP 1.3 – Scheduling GOVs

Reservations for two large GOVs seating 6 people each and with capacity for field gear should be made in April or May to ensure availability. Reservations are made on the YUGA Google calendar. If no GOVs are available at YUGA, vehicles maybe reserved through DENA or rented. The GOV configuration that is optimal is a Suburban or pickup with an enclosed back o keep field gear from getting dusty or rained on during the 2+hr drive to DENA.

Arrangements with DENA Alaska Regional Communications Center (ARCC) for parking the GOVs in the upper C-camp parking lot in DENA for the week should be made in May. To submit the request for parking the GOVs, go to the ARCC Field Travel and Emergency webpage and get the most current version of the "Backcountry Accountability" form (these are updated annually and the incorrect versions will not be accepted): https://sites.google.com/a/nps.gov/arcc-region/home/formsresources. The make, model, color and license plate number for each GOV being parked is required. After completion, submit all forms to ARCC via: arcc_submit_forms@nps.gov. An example of a recent version is in Appendix 1. ARCC will not accept forms submitted in other ways. A week prior to field work, send an email reminding ARCC that GOVs will be parked at the upper C-camp parking lot while and conducting field work.

SOP 1.4 – Preparing Equipment

Major categories of equipment preparation include electronic survey equipment preparation (readers, GPS units, PIT tags, walkie-talkies, satellite phones, SPOT, iPads), and data collection equipment organization (field notebooks, tagging equipment, traps, etc.). More details on each of these are listed in SOPs 2, 3, and 6. Appendix 1.2 provides an example of a trip report for the Small Mammals surveys with very specific details of trip and field gear preparation.

SOP 1.5 – Preparing Data Notebooks for Data Collection

Please refer to SOP 2 regarding the setup of data fields in data notebooks for field data collection. See SOP 7 for information on data collection and field work.

SOP 1.6 – ARCC Requirements for Daily Communications

Communications will comply with all applicable policies and regulations issued by the Department of the Interior (DOI), National Park Service YUGA (Yukon-Charley Rivers National Preserve and Gates of the Arctic National Park and Preserve) backcountry and safety policies, DENA backcountry and safety policies and the Alaska Regional Communications Center (ARCC) communications and safety policies.

At the time of writing for this protocol, the ARCC requires twice daily check-ins with two-way communication devices. The Small Mammals crew will call in each morning from the Rock Creek camp

at 10 am (after the first trapping session) and at 6 pm (prior to the 8 pm trapping session). Calls will be made by either cell phone, satellite phone or park radio. We will use the PI's (Melanie Flamme) YUGA Radio Number to identify our project: **349**. ARCC DENA Radio Number is: 700. Below is an example of how to make the call to ARCC,:

- **Radio Calls to ARCC**
  (Example: Radio: "700 (seven hundred=ARCC), this is YUGA 349 (three-hundred forty-nine) at Rock Creek Checking in for the Small Mammals crew

-**Satellite or cell phone check in:**
  (Example: "Hello, this is YUGA 349 (three-hundred forty-nine) at Rock Creek checking in for the Small Mammals Crew.

Our SPOT device is programmed with the ARCC email address as well as the CAKN Program Manager, YUGA Chief of Resources and DENA liaison email addresses. Each night after we return from the 8 pm trapping session, a SPOT message is sent to ARCC signaling we are all ok and back in camp for the evening.

SOP 1.7 – Personal Protective Equipment (PPE) and Field Safety

This field work requires handling wildlife, inclement weather and backcountry camping in rugged terrain and where bears may be present. Personal protective equipment (PPE) is worn to enhance safety of personnel. Personal protective equipment required for handling small mammals includes nitrile gloves, to mitigate transmission of zoonotic diseases. Gardening gloves will be provided for handling the metal traps to keep hands warm and prevent scratches from the metal traps. CAKN will provide the gloves and bleach wipes, hand sanitizer and soap and crew members will wash hands after each trap check and prior to handling food. CAKN will provide each field crew member with a pepper spray to be worn at all times for bear safety. The pepper spray will be stored each night in the vestibule of their tents. Each crew member will bring layers of warm, wicking clothing, sun hat, sun glasses, gloves, warm hat, full rain gear, rubber knee boots and hiking boots for inclement weather and backcountry camping. CAKN will provide a fully stocked first aid kit for the field crew. We will check in with the backcountry ranger station at C-camp prior to heading to Rock Creek camp so the rangers know we are in the field and the field crew knows the location of the ranger station in an emergency.

SOP 1.7 – Pre-season Training

Please refer to SOP 3 regarding training.

Appendix SOP1.1 – Alaska Regional Communications Center Backcountry Plan Form

Email Form or send to arcc_submit_forms@nps.gov

NPS ARCC BCI V 5.0.1 11/11/2015

ARCC **Backcountry Itinerary**	Dates of Mission ▦ to ▦	Check-In Times AM Check-In: PM Check-In:	Radio Identifier: (Use when contacting 700.)	Park:

Leader

Trip Leader Name:	Supervisor Name:
Trip Leader Phone:	Supervisor Phone:
Trip Leader Sat (# or Name):	SPOT/PLB (Serial # or Name):

Party Information

Party Member Name:	Party Member Clothing Color:

Equipment Carried:

- ☐ Compass
- ☐ Radio
- ☐ Whistle
- ☐ Space Blanket
- ☐ Signal Devices
- ☐ Avalanche Beacon
- ☐ Weapon(s):
- ☐ Tent (describe:) Tent Color:
- ☐ GPS Fly Color:
- ☐ Pack (color:)

Transportation

- ☐ Aircraft (You MUST file a flight plan.) N-Number:
- ☐ Motor V. (You MUST file a float plan.) Name:
- ☐ Car or Truck — Make: / Model: / Color: / Plate: / Location:
- ☐ Foot
- ☐ ATV
- ☐ Ski/Snowshoe
- ☐ Snowmachine
- ☐ Dog Sled
- ☐ Packraft/Raft
- ☐ Kayak/Canoe

Color/Descriptions:

Days of Fuel:

Days of Food:

Num. of Dogs:

Mission

Mission purpose and objectives:

Risk

Risk management considerations (glacier travel, river crossings, helicopter operations, etc.):

Dead Spots

Describe any potential radio dead spots:

Detailed Itinerary

Comprehensive Itinerary (Use next page for additional legs, detailed route information, via points, camps, etc):

	Leg - Start	Leg - End	Additional Information
1)			
2)			
3)			
4)			
5)			

Dispatch

Primary Dispatch	Dispatch Transfer Information		Brief Comment (Use next page for additional details):
	Transfer To ARCC:	Transfer From ARCC:	
ARCC	Date: *Time:	Date: *Time:	

*Use 24-hour time.

PHONE: (907) 683-9555 **EMAIL: DENA_CommCenter@NPS.GOV** **FAX: (907) 683-9640**

Sat Phone: 8816-3145-8390

Clear Form

to

Email Form or send to arcc_submit_forms@nps.gov

NPS ARCC BCI V 6.0.1 11/11/2016

ARCC **Backcountry Itinerary**	Dates of Mission to	Check-In Times AM Check-In: PM Check-In:	Radio Identifier: (Use when contacting 700.)

Supplemental Information

Comments:

to

Appendix SOP1.2 – Example: CAKN Small Mammals Logistics/Trip Report

Prepared by:
Melanie J. Flamme
Julia P. Brice

Field Crew Members

Melanie Flamme-PI-Biologist-NPS YUGA
Julia Brice-Biological Technician-NPS YUGA
Anna Quist-Student Clerk-NPS DENA
Tyler Brose-Volunteer-West Valley High School- Student Volunteer
Patrick Knavel-Volunteer-West Valley High School- Student Volunteer
Eliza Lawler-Volunteer- Barnette Magnet School- Student Volunteer
Mariah Savoie-Volunteer- West Anchorage High School- Student Volunteer
Kumi Rattenbury- Ecologist- NPS ARCN
Stacia Backensto- Biologist- NPS ARCN
Andrea Blakesley-Air Quality Specialist-NPS DENA (project liaison)
Katie McCulla - Volunteer- Interpretive Ranger DENA (C-Camp) Volunteer



PRE-TRIP PREPARATION

-Check out ARCN and CAKN trucks on calendars in May (keep CAKN truck with topper for the week; have someone shuttle ARCN truck back to Fairbanks on first and last days).
-Inventory gear in action packers to make sure it's all there (there are inventory lists on the top of each action packer)
-Assemble all research vests
-Scan remaining pit tags from last year and add these numbers to list of new 2013 pit tag codes to be entered into PDAs for 2013 season
-Have Julia or Anna download software to update pit tag list for 2013 field season
-Load Sprint DB Pro database and pit tag codes into each PDA (Nick Bywater)
-Charge sat phone, camera, PDA and other batteries
-Submit Denali BOG to Denali Comm. Center with Emergency Contact, vehicle parking and check in information for the week
-Get emergency contact information from all crew members 2 weeks prior to field season
-Arrange for bear safety and backcountry training at Denali with Andrea Blakesley-project liaison in Denali
-Conduct bear safety, backcountry orientation, leave no trace, PDA use, data entry, small mammal sex and ID, trapping and project training at FAC week prior to trip
-Issue all field gear (tents, bear barrels, back packs, sleeping bags, sleeping pads, tarps) to each crew member prior to departure (allow enough time for folks to shop for food, pack bear barrels and get packs fitted to their backs at Beaver Sports)
-Submit permit paperwork and pick up field permit from Lucy Tyrrell prior to going into the field in Denali (4 months prior)
-Microwave all bait for 3 minutes/half gallon and subdivide into quart-sized ziplocks (labeled with date and that it's microwaved)
-Load all gear into trucks prior to departure (camping and research gear in CAKN truck; traps in ARCN truck)
-Submit DI-1 to Ginger? Monica? by August 1 for $200.00 for B&C Laundry to wash all sleeping bags, vests, gloves, fanny packs, stuff sacs at end of project for year-end (have to use cash up front and get reimbursed for this); crew will do this after returning from small mammals project in August (close to fiscal year-end so must submit DI-1 early)

Buy needed items on list including

-AA batteries (64)-for camera, headlamps, walkie talkies, park radio
-AAA batteries (64)-for pocket readers, headlamps
-9-volt batteries (40)-for mini portable readers
-Fat black sharpies (1 box-GSA)
-Fat silver sharpies-2
-Ultra fine point black sharpies (1 box-GSA)
-Blue and pink photo biodegradable flagging and Rite-in-rain spiral notebooks (1 box) and Rite-in-rain paper (Surveyor's Exchange)
-Shelled sunflower seeds for bait (10 lbs-in bird seed aisle at Fred's to be microwaved prior)
-100 gallon Freezer Ziplocs bags and 50 quart sized (GSA)
-1 box Hefty trash bags
-20 mechanical pencils (preferably colored so easier to see if dropped)

-2 gallons diesel fuel (for washing traps)
-2 boxes Planet soap and 1 jug Clorox bleach (for washing traps)
-4 rolls Handiwipes
-8 rolls TP
-2 lighters and 1 box waterproof matches
-biodegradable, phosphorous-free camp soap for dishes and washing hands
-8 pump spray bug spray (deep woods Off)
-12-15 large, black compressed gas fuel canisters for JetBoils and/or Reactor stoves (enough for 6 people for 5 days)
-1 Banana Boat Sport large sized 30 SPF sunscreen

Prepare gear

-Flag everything, especially everything in research vests
-Copy off 30 mort tags on Rite-in-rain paper
-Load list of tag numbers onto PDAs
-Set up tents and make sure nothing is missing or broken
-Test stoves and sleeping pads
-Clean water filters and test
-Microwave bait in ¼ gallon batches for 3 min each and bag into gallon-sized batches (after cooling) into gallon-sized ziplocks
-Put new 9-volt batteries in readers (requires small flat-head screw driver) and put rain suits on readers with duct tape
-Charge all 4 sat phone batteries
-Charge all PDA batteries and camera batteries
-Charge and/or replace all walkie talkie batteries
-Test all walkie-talkies and make sure they work with one another
-Replace all AA batteries in park radios (leave clam shell turned in opposite direction so batteries don't drain); check out digital radios from rangers?
-Replace PDA AA batteries and put PDAs into rain suits
-Put a piece of duct tape on front of each PDA and reader rain suit where folks can write their names
-Send email to Carl Roland and Amy Larsen to make sure giant CAKN backpacks are available for small mammal dates (Aug 12-17)
-Pack research gear, bait, camping gear, etc. into empty back packs for easy hauling into camp once personal camping gear has been schlepped in.
-Check out additional backpacks from ARCN
-Organize research vests-flag everything! Each gets:
    -2 fat Sharpies
    -3 mechanical pencils
    -1 spiral Rite-in-Rain notebook
    -1, 100g pesola with clip
    -1 roll each of pink and blue flagging (red or orange and green hard to see in fall foliage)
    -5 gallon and 5 quart-sized ziplocks
    -5 mort tags on Rite-in-rain paper
    -1 walkie talkie
    -2 vests get injection kits:
        -100 pit tags in film canister

-eyedropper of Betadine for cleaning needles
-5 new needles with plastic guards on their tips
-1 tube Betadine ointment for keeping tag in and sealing wound
-3 injectors/syringes for tags

-Organize research fanny packs-flag everything! Each gets:
-2 fat Sharpies
-3 mechanical pencils
-1 spiral Rite-in-Rain notebook
-1, 100g pesola with clip
-1 roll each of pink and blue flagging
-5 gallon and 5 quart-sized ziplocks
-5 mort tags on Rite-in-rain paper
-1 walkie talkie

-Bring at least 300 sheets of nestlets double wrapped in garbage bags
-Bring Crazy Creek chairs for all
-Bring at least 6 big backpacks for hauling in traps and gear (packs are now stored in the YUGA cache in the back, bottom shelf on the right AUG2012)
-Bring and pepper sprays (with holders) for all
-Bring tents, sleeping bags, backpacks, pads, bear barrels for all volunteers
-Optional-Have all personnel take their backpack to Beaver Sports if they desire to have it shaped for their back

Logistics and Personnel

-In May, contact Lucy Tyrrell about permits; contact her in July about picking up research permit prior to field work
-In mid July, contact liaison Andrea Blakesley to arrange required Denali training and permit pickup
-In May, contact UA Museum (new contact person now that Brandy Jacobson is gone?) to schedule small mammal ID training week prior to field work
-Last week of July, put in email request to FAPLIC for volunteers-deadline August 3
-First week of Aug, make arrangements on AK RR for getting folks to and from Denali if necessary
-In May, check out CAKN (and ARCN) truck for week of small mammals (Aug 12-17 each year)-if extra people helping out, may need to check out ARCN truck for first and last days or rent a vehicle
-Mid-July, request emergency contact information from all crew members for Denali BOG
-Last week of July, arrange with Denali Comm. Center to call in once/day, submit Denali BOG, emergency contact list
-Last week of July, organize training for week prior to field work including:
-Small mammal ID (around Aug 8)-at UA Museum
-Small mammal CAKN overview (around Aug 8)
-Small mammal data entry/PDA training (around Aug 8)
-Small mammal trapping training (around Aug 8)
-Denali training (bear safety and backcountry orientation?-around Aug 11)

Denali Backcountry Policies

-Arrange once/day check in with Denali dispatch (only 1 is necessary since in a big group of 7-8 folks and only 1 mile out of C-camp in front country vs. required 5x per day)
-Contact Andrea Blakesley to help with training arrangements as project liaison (Denali requires us to all do bear safety and backcountry orientation training once in Denali)
-Must check in with Lucy Tyrrel to get research permit-must have on my person at all times) (got copies of curation permit)
-Submit BOG to Denali Comm. Center first week of August.-First day of field work, contact Denali Comm. Center and let them know in the park and parking vehicle in C-Camp parking lot.

Flagging and Trap Hauling

Tuesday July 31-
Melanie, Julia, Anna, Tyler, Kim day-trip to Rock Creek. Sunny skies- beautiful day in Denali. Stop for Subway sandwiches. Hike in 10 Trap boxes, crazy creek chairs. Flag the trail in (excessive flagging for the girl scouts coming out on the project) and flagged upper plots (RF1 and RF2). The vegetation seems to have grown up a lot this year. Really nice having a five-person crew for this job; we were super-efficient.





TRAINING

Friday, Aug 3-9am-3pm:
In Attendance:
Melanie Flamme
Julia Brice
Anna Quist
Tyler Brose
Patrick Knavel
Eliza Lawler
Kimberly Melendez (ARCN Biotech)







FIELD WORK

Monday Aug 6-Day 1

7:00-8:00 am- Julia, Patrick, Eliza, Tyler arrive at FAC to load gear into white CAKN truck. Anna arrives with more milk jugs and gear. Mel, Julia, Eliza, Patrick and Mariah drive white CAKN truck to DENA with most gear. Anna and Tyler drive down in GOV dark green expedition with their gear and lots and lots of milk jugs (will use to make Sherman-Trap covers) Anna and Tyler will leave DENA on Friday so that they can get ready to leave for college (!) on Sunday.

8:20 am- Departed from Fairbanks

~9:00 am Kumi and Stacia leave Fairbanks in the Red ARCN truck with 4-5 backpacks full of research and camping gear. They will get a head-start schlepping this stuff into camp while rest of crew is in training.

10:30 am-All arrive in Denali. Stop for Subway sandwiches. *Eliza is vegetarian*.



11:00 am Arrive at Back Country Orientation for video and safety talk.

1:00 pm- HQ Resources Conference room for bear safety training by Pat Owen. Pick-up research permit from Lucy Tyrell. We meet Andrea Blakesley in the parking lot.

2:15 pm Stop by C-Camp to drop of directions to Rock Creek Plots for Katie McCulla (Ranger Nick Thompson's girlfriend- Interp. Ranger at Denali- interested on coming out on a trap check and learning about the project.)

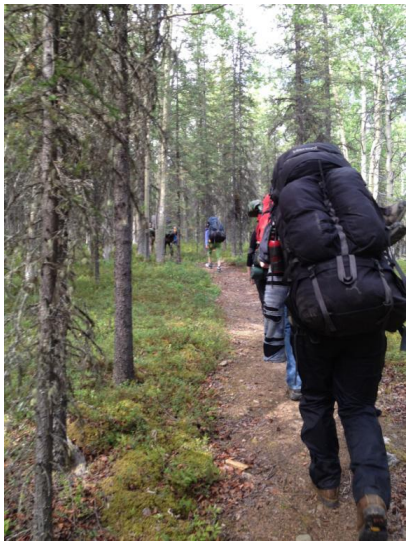
2:19 pm Arrive at the upper C-Camp parking lot. Kumi and Stacia are just leaving parking lot with their 2nd load of gear. Load up packs and start hiking gear into camp.



2:45 pm Embark on first trip schlepping gear. Meet Stacia and Kumi on their way back from trip #2. Arrive at Rock Creek plots. Set up tents, erected the new massive blue tarp.









~4:00 pm Kumi and Stacia arrive in camp with their last load of research gear in, then hike out to head back to Fairbanks with the ARCN truck.

5:00 pm Check in with Denali Dispatch, Tom Liebscher, Maggie MacCluskie and now Lucy Tyrell.

5:30 pm- All hike back to truck with empty packs for 2nd load of personal gear and milk jugs to make the rest of the trap covers. Mel gets stung on the cheek by a hornet. Kumi was stung on the leg earlier- we think there is a nest on the side of the trail- will keep an eye out for it.



6:30pm-Back to camp with second load. Everyone eats dinner.

8:00pm- Wash dishes and brush teeth.

8:30 pm- All to bed early- everyone is really tired. Mel sends the SPOT message. Increasingly overcast, warm night- rained a little bit. Everyone packed gear into Knack boxes really well and closed their bear barrels- a clean camp. Good crew!

Tuesday Aug 7-Set-Up Day, Day 2

7:40 am- Mel up.

9:00 am- Everyone awake and breakfasted.

10:30 am- Made a task-list for the day. Trained Mariah and handed out electronics and voling kits.

Electronics Assignments

Crew member	PDA	Reader	Camera
Mel Flamme	none (only 6)	Fred	iphone
Mariah Savoie	Cassandra (C)	Thelma	personal

Julia Brice	Gulliver (B)	Julia	personal
Anna Quist	Vlad (A)	Louise	personal
Tyler Brose	Ghengis (F)	Hoover (new)	none
Patrick Knavel	Marc Antoinette (D)	Ed	none
Eliza Lawler	Eloise (E)	Minerva	personal

11:00 am- Check into DENA. Crew cuts and counts trap covers until 12:00 pm. Lots of the milk jugs are still stinky- we will only put out 200 on plots (RF1 and RR2) and hike out the extras- don't want to attract bears with the odor.

12:15 pm- Mel and Julia hike out to charge iphone, take out milk jugs, and dump trash. Leave a message with Susan about Julia's time and e-mailed Beth about Anna's time. Anna takes group to RR plots to set out traps and flag while Mel and Julia are gone.

2:09 pm- Mel and Julia head back to Rock Creek Camp. Mel's pepper spray falls off of her pack on the way in.

2:25 pm- Arrive and help finish laying out traps on RR2. See Sarah Stehn from DENA botany- checking seed cones.

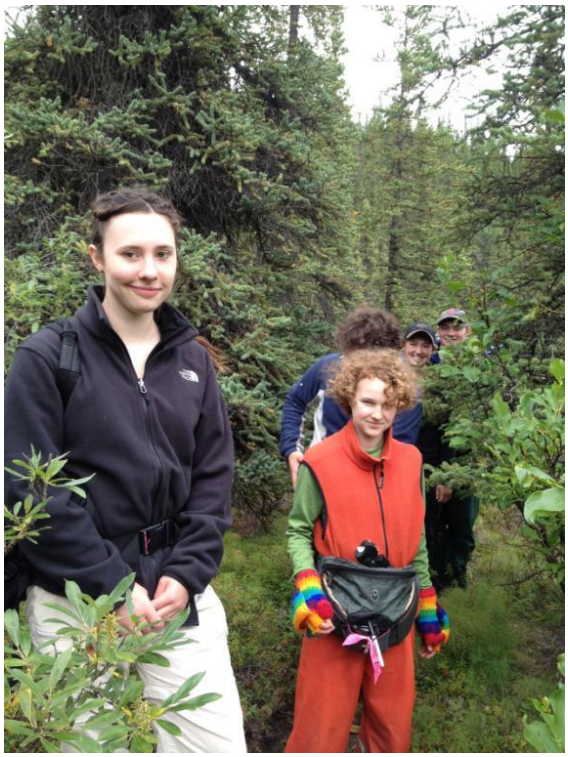
3:00 pm- Snack break

3:45 pm- Crew hikes to the upper plots. Many of the metal tags fell off from last year- we will put them back up whenever we find them. Hornet's nest RF2 line 4 (D-G) and maybe on line 8. Done around 5:00 pm.

6:00 pm- Julia, Eliza, Mariah set traps on RR1 and RR2. Trap covers on RR2- more exposed.

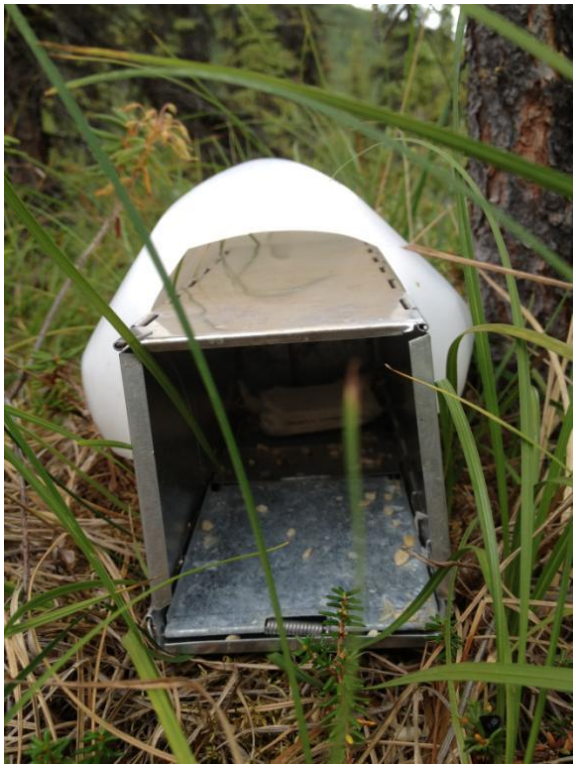
6:10 pm- Mel, Patrick, Tyler arrive at RF1 to set traps and lay out NEW trap covers (made of milk jugs- an amazing endeavor undertaken by Anna Quist). May move them to RF2 if traps there are too wet- it also takes us longer to get to RR2 and RF2- may be better to have trap covers there.

7:15 pm- Upper crew heads to RF2.










7:45 pm- Julia and Eliza finish RR1 and head up the hill to help finish RF2. Mariah stayed at camp and got the hot water going.

8:06 pm- Done with the upper plots. All traps are open.

8:15 pm- Back to camp for dinner. Refilled bait, and stored in the bear barrels. Walkie-talkies off. Assigned teams for the am. Mel will train Julia to inject so we will be on the same crew for the first few checks.

9:00 pm- Group dish washing and tooth brushing. Mel and Julia haul more water. Send SPOT message.
9:30 pm- All to bed. Updated notes.

Weather: Warm, overcast, and drizzly

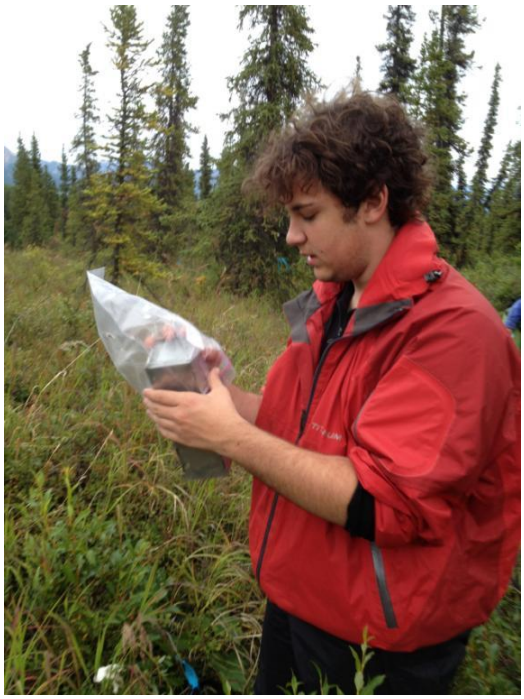
Wednesday Aug 8- Trapping Day 1

5:00 am- Rouse crew. Issue bait and nestlets. All wear rain gear- vegetation is wet from dew.

<u>Reminders for All for Trapping Day One</u>

-Turn on walkie talkies before each trap check; turn off after checks
-Bring pepper sprays with you; headlamps on 8 pm checks
-Check PDA time and date regularly (when batteries start to die or if they get cold, they get wonky)
-Check battery power in all PDAs regularly-let Mel know when at 70%.

-Make sure database is “vole” not “training” for data collection
- Rite-in-rain field notebooks (will be collecting data in both notebooks and PDAs as a backup)
-Label your PDAs with your names on duct tape
-Keep your PDA and reader all week (no switching unless you let Mel know)
-Put a few extra traps in back of your vest before each trap check to replace broken traps or missing wires
-Take lots of photos of folks working, having fun and of the critters.
-Put traps under trees and in shaded, protected places whenever possible. If traps are in exposed locations, use Coltsfoot leaves or sod to cover them and protect them from heat and rain.
-Place traps on firm ground and flush with the ground. If they wiggle around, the voles may think twice about entering them.
-No bait on top of the traps-it may attract birds and squirrels





6AM CHECK

-Lower Crew: Anna, Tyler, Patrick 6:00-7:05am
-Upper Crew: Mel, Julia, Mariah, Eliza 6:05~7:30 am

6:05 am- Start RF1. 10A CLRU escape. 9J not set and needs a cover. Missing bait and tripped traps RF1 lines 7&5. Missing nestlets on 10A RF2. Heard GRAJs on lines 3&5 RF2. Julia will be working with Mel to learn to inject this year.





7:05 am-Lower crew done with both plots. 2 captures, 1 escape.

9:00 am- Call to check in with Katie McCulla.

9:10 am- Mel and Eliza hike out to get more bait, 2 extra fuel canisters, find Mel's pepper spray, Benadryl, one sleeping bag for Patrick, and to take out the trash and charge iphone. Texted Kumi and Stacia our wish-list: Brown spray paint and scraper to repair rusting Knack boxes, Benadryl, masking tape (for bird rehab), water filters (the ones in camp are really slow).

10:45am- Mel and Eliza hike back to camp.

1PM CHECK

Lower Crew: Anna, Tyler, Patrick 6:00-7:05am
Upper Crew: Mel, Julia, Mariah, Patrick RF1 1:02 -1:32 pm RF2 1:38-1:59 pm

Weather: warm, dry overcast afternoon.

1:02 pm- Started RF1. 1 CLRU- Julia tagged.

1:38 pm- Started RF2. GRJA 3G stole nestlets and tripped trap. 7E tripped trap. No captures.

After check: Backed-up PDAs to SD and Device: "2012_vole8-8-2012NAME6am1pm". No records in Tyler's yet, so did not back his up. Picked more soap berries and blueberries. Played SET.

Weather: sunny and windy

8PM CHECK

Lower Crew: Anna, Tyler, Patrick 8:00 ~9:00pm
Upper Crew: Mel, Julia, Mariah, Eliza RF1 8:05-8:56 pm RF2 9:10-9:26 pm

8:05 pm- Start RF1. Put trap cover on 6J. Lines 3, 5, 6 traps tripped. Three new CLRUs.

9:10 pm- Start RF2. No captures. Looks like rain- covered traps well with colt's foot and moss.

10:30 pm- All to bed.

Weather: overcast

Reminders for Last Trap Check

-No extra traps, bait or nestlets needed.
-Need headlamps, extra zip locks for trash bags, processing kits and back packs
-Start with RF1 and RF2 collectively.
-Leave nubbins of flagging on the trap lines
-Throw away used nestlets but remaining bait in the traps can be dumped on the ground for the animals.
-Shake out and tap traps to remove excess bait and debris
-Fold, place into trap box and count obsessively.

Note: Data Issues

Mariah told me that her data is messed up. She realized she was typing over existing records in her PDA. Mel will double-check her notebook to enter all of her mission records. Could Nick add a warning about this in the PDAs so that once all of the fields are entered on a record, if a field is changed on a completed record a warning will pop up to ask "are you sure you want to change this data?" Eliza's

PDA battery was about to die in the field and gave the "low battery power" message. Mel was able to back her data up to her SD card before we lost power. We shut off her PDA and Mel gave her Tyler's PDA (Ghangis) to finish her entering her data into. Mel will also check all of Eliza's records to make sure they are complete since the PDA was wonky.

Afterward: Once back in the office, it was discovered that the PDA battery in Eliza's PDA was not holding a charge. Upon closer inspection it was discovered that the PDA battery is bulging/warping and is likely no longer any good. We will have to order new ones for the next field season.

Note: Skinny Voles

Most of the animals this year seem very skinny with very little subcutaneous fat and very prominent ribs, spines and shoulder blades. This made injection very difficult as the subcutaneous fat buffers the insertion of the needle. With little subcutaneous fat, the needle is more prone to pop through the skin and cause a tear so we are switching needles often to keep them sharp and prevent this from happening. Julia and Anna, the other two injectors, are saying they have noticed the same thing. What's really interesting is that many of these really skinny animals are very young juveniles, sub-adults, and adults. Usually the skinny animals are the older, larger animals that may have overwintered or started breeding at the beginning of the spring in May. This year it seems that almost everybody is skinny and in poor body condition, even the youngsters fresh out of the nest. It is really dry on the plots this year and the tundra is crunchy and the summer has been cool to cold. Perhaps this is contributing to the skinniness of the voles. The blueberries are not abundant like the last 2 years but are present and not sparse but very dispersed in their distribution. Shrubs seem even higher this year on RF1 and RF2.

Sunday August 12, 2012 Break Camp

7-9:00am-Crew wakes up. Mel lets them sleep in if needed. The crew breakfasts and then packs up their personal gear, leaving their tents up until the last so they can dry out after last night's rain. Julia and Mel back up bio gear from Knack boxes and pack into back packs. Mariah counts all of the trap boxes to make sure we have 480 traps and she marks the broken ones with flagging. Her father will be coming in this morning at 11am to help her pack out her gear. Patrick looks for stray items and trash around camp. Mel wipes out Knack boxes. Crew takes down big blue tarp and lays it out to dry. Once dry we will fold it and leave it in the barrel. Mel takes a picture of the Knack box to remember for next year what was stored in there. Kumi goes out with her first load.





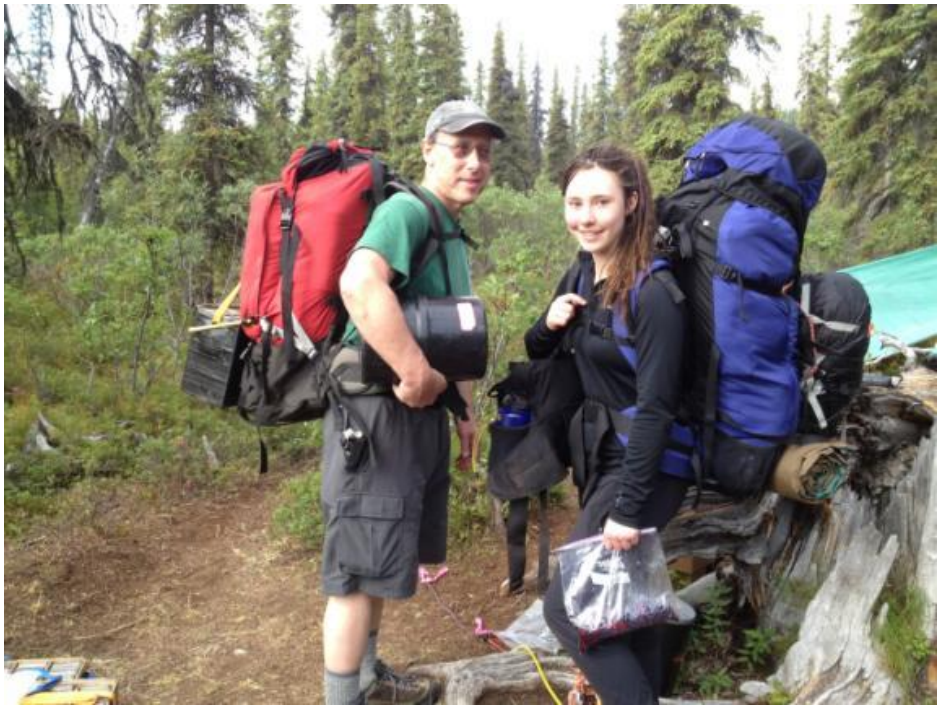


9-11am-Rest of crew up for breakfast and packing up their personal gear. Julia, Patrick and Eliza make the first trip out with their personal gear. Mel stays behind to pack up camp, stay with gear, and wait with Mariah until her Dad gets here.





11am-Mariah's Dad arrives and they depart with their load.



11:30-Kumi returns and will schlep another load to the top of the big hill. Mel departs with her personal gear and a trap box.



Monday Aug 13 De-Mobilization Day

Mel and Julia come in for a couple hours and unload truck. Spread out sleeping bags and tents to dry, put away research gear, electronics and data to Mel's office, and a stock pile of dirty vests, gloves and bags set aside for laundromat. Since it was such a dry year with so few captures, we will not need to wash traps. They look pretty good and do not have wet debris from nestlets and poo. Mel will go through the PDA and notebooks to reconcile and proof data before giving to Nick to download. Julia started working on trip report from Mel's notebook.

POST-TRIP NOTES

Indications of Low Vole Numbers on All Plots

-Some shrew captures
-Very low number of captures on each plot and all 4 plots collectively overall (under 150)
-Very few vole trails seen
-Hot weather for fall
-Dry conditions on plots (bog at bottom of RF2 almost completely dried up)-could do entire trapping session this year in hiking boots and only used rain gear one morning for dew. The tundra was crunchy, even after we had some drizzle.
-Very few large adults captured; mostly smaller animals and juveniles
-Voles in poor body condition overall and very skinny with little subcutaneous fat
-Did not catch very many pregnant females or scrotal males (mostly younger, more immature animals).

To do list for next year:

- Ask Maggie to see if we can buy a topper for the back of the white truck
Organize morts, make spreadsheet, get morts to Brandy at UA Museum and send spreadsheet to Lucy Tyrrel
- Bring sacrificial down pillow to be used as additional form of warm biodegradable bedding
-Give all PDAs to Nick Bywater to download data into new database
-Make shapefile of all plots and trap locations from new GPS locations 2012.
-Store all electronics without batteries (PDAs, walkie talkies, readers, cameras)
-Arrange to use freezer at C-camp/headquarters for morts if this is ok (quadruple bag morts and camouflage the bag.
-Continue 1/day check-ins at Denali Comm. Center after we are done with plots each day
-Communicate with appropriate DENA personnel so we don't have to replicate bear safety and backcountry training again in Denali if we've already had YUGAs training
-Set-up PDA battery charging stations at rec center in C-camp in case of really cold weather which reduces battery life.
-Walkie talkies for all-Motorolas worked great some more and will help to ensure that all lines on each plot get done-Great for communication between crews.
-Buy shelled and cracked bird feed (sunflower seeds at Fred's)-10 gallons of microwaved bait
-Buy 9-volt batteries (40) for mini portable readers and AAA batteries for pocket readers (60)
-Buy 8 spiral Rite-in-Rain notebooks.
-Buy 10 small Rite-in-Rain notebooks (fit perfectly fit inside PDA rain suits)
-Have everybody collect data both on paper on AND on PDAs

-Assign readers and PDAs to every crew member; have them label them with duct tape
-Fixed damaged traps. Order parts and wire.
-Buy diesel, soap and bleach for pressure washer to wash traps in July
-Must reapply for project permits with Lucy Tyrell in 2013
-Contact Lucy and Andrea in July to let her them know when we're coming to arrange bear training with Pat Owen and backcountry training.
-Get more milk jugs; be specific about instructions and ask folks for specific size and kind and to rinse them out completely with hot soapy water so we can complete our milk jug mission. We have about 230 and need about 500.
-Get camo or green or brown duct tape and cover all the trap covers with it
-Add to PDA dropdown comments list: perforate, imperforate, mammaries, lactating, released-too small
-Fix shock cords on wing poles (Beaver Sports can do this)
-Submit IACUC corrections
-Get more Benadryl and Benadryl cream for first aid kit
-Go through first aid kit and check for completeness and check expiration date on all medications
-Buy two extra small tarps to cover trap boxes while stacked on upper plots
-Keep some morts to practice prepping voucher specimens, to pull tissues, to swab for
Sandy and genetics and to practice pit tagging. We can keep the newly prepared vouchers for training. Try to get 1 or 2 of each species.
-Look into larger fanny packs like Mariah's so that folks have room to carry raincoat, pepper sprays and water bottles.
-Make inventory list of gear left in the Knack box based on Mel's photos
-Bull frog tent for John Burch

Useful things to remember

-Worked really well to borrow additional ARCN back packs and pack all research gear in them at FAC warehouse so when we got to DENA we could just grab a pack and go
-Having a group of 4 or 5 people go down the week before to schlep in all traps and set up tarp and flag the upper plots worked really well as a day trip
-Having Kumi and Stacia help with schlepping gear while we were in training on first field day helped
- Many of the metal tags we set out last year fell off but were easy enough to find and tie back on.
-Assign each person a reader and PDA to use for duration of project
-Used about 120 sheets of nestlets (36/sheet)-bring out 150 next year.
-Used about 10 lbs of microwaved sunflowerseeds as bait
-Every crew member should have a working walkie talkie
-2 digital cameras (pocket-sized); can also bring 3 additional ones purchased for bird work
-Pepper sprays and holders for all-carry at all times
-Use bungees to secure blue tarp over area between logs (nice additional shelter)
-Camo, green or brown tarps for everyone's personal tent. Hides tents from public, can be easily staked down over small Tadpole tents and keeps everyone dry if it rains for the entire week
-Use flagging to ID each vest (really helpful) and fanny pack
-Use MSR Reactor Stoves instead of Jetboils because they are less prone to tip over (5 stoves enough for 8 people 3-5 meals/hot drinks/day).
-Get large fuel containers for stoves. Used 12 big canisters all week for 8 people in camp, x 3 meals/day.
- Have everyone bring stuff sacs (clear or mesh) for putting extra food, toiletries, etc. into Knack boxes-they rock. Helps to keep barrel organized (won't lose small items).

-Bring 2 water filters; gravity feed are nice
-Bring large Tupperware to store morts in so they don't get smooshed in big bear barrel-see if you can take them to freezer at headquarters again.
-Gardening gloves with thick rubber palms and fingers really handy for handling traps-protect your hands from getting scratched up and cold
-2 park radios-one for each crew to carry at all times
-Bring extra Hefty trash bags, gallon ziplocks and quart ziplocks
-Make sure to have correctly sized sat phone batteries, have at least 4 all fully charged
-Bring PDA and sat phone charger along in case we need to recharge at C-camp
-Make arrangements to be able to recharge things at rec center in C-camp
-Make arrangements to be able to park CAKN truck in C-camp parking lot
-Cell phones are good to have-they work out there, can recharge at C-camp
-Solar chargers don't work when overcast
-Small mammal ID booklet useful in field
-Everyone should have their own bear barrels (1-2 per person)
-Arrange with Denali Comm. Center for check-ins once/day (not 5 times).
-Get permits into Lucy Tyrell early (must we pick-up a research permit from her-could she mail it to us ahead of time?)
-Have all crew members take bear safety and shotgun training and YUGA seasonal training (select high-school volunteer early enough to get them involved in spring training in May and June).
-Have crew leaders so we can each take crews of new people and divide and conquer upper and lower plots
-Leave earlier on first day by 7 or 8 am (from Fairbanks) to get to Denali earlier and get started on training and hiking gear in.
-Use second half of first day (after mandatory training in Denali) to haul in gear and have crew reflag plots.
-Use first half of second day to finish re-flagging lower plots, train people and teach people trails
-Get additional help on first and last days to schlep gear (more than 4 people helpful)
-Bring out 200 additional nestlets to replace those taken by gray jays and squirrels or those ruined in wet weather
-Reiterate strongly the requirement for everyone to bring headlamps and portable alarm clocks and a watch
-Make sure time and date set accurately on all PDAs, GPSs and cameras prior to the field season
-Add an additional training just on using the PDAs by Nick Bywater and accurate data entry. Stress the importance of meticulously collecting data. Follow Ed's protocol.
-Get a PDA for each plot or assign a PDA to a person for the season to help track data discrepancies
-Assign readers and PDAs to a person for the season to help better track data discrepancies
-Buy new needles each year (need sharp needles for easier insertion of pit tags-less painful and stressful to animals and personnel).
-Reflag and number all grids and all trails. Use pink and blue flagging (red or orange flagging can be difficult to distinguish in fall when the colors change).
-Get more student volunteers through FAPLIC-worked well and local area high-schoolers
-Bring extra tarps to put over all tents in case of torrential rain. Made a huge difference in staying dry and gives additional space to hang wet gear.
-Have everyone bring 2 sets of rain gear and 5 pairs of socks!
-Have everyone bring Extra Tuffs or other knee boots and hiking boots