

Alaska Small Mammal Working Group: 2025 Annual Meeting Notes

11 April 2025 – 10am to 12pm Alaska Time

Attendees: Twenty-four scientists and land managers from various universities, state, and federal agencies that are involved in conducting research on small mammals in Alaska.

For more information, please visit the [Alaska Small Mammal Working Group web page](#).

Presentations

2025 State Wildlife Action Plan (SWAP)

Julie Hagelin, Alaska Department of Fish and Game, Threatened, Endangered and Diversity Program

- State Wildlife Grant (SWG) Funds – support actions that support Species of Greatest Conservation Need (SGCN)
- Goal – to keep species off the Endangered Species List
- Mid-May to mid-June 2025 – 30-day public review
- October 1, 2025: 2025 SWAP revision due
- 136 mammals are on the 2025 SGCN list out of a total 364 taxa
- Small mammals (<5kg) – 74 taxa (39 species, 35 subspecies), ~70% are micromammals
- Criteria for SGCN List – Threatened or Endangered, Alaska Species Ranking System, Stewardship Species, Culturally Important
- List is deliberately broad and flexible to justify SWG funds for projects on species
- How AK Small Mammal Group can help the SWAP:
 - Public participation during 30-day public review
 - Descriptions of priority research and survey efforts
 - Descriptions of conservation actions
 - Conservation Plans (e.g., AK shorebird and landbird groups)
 - Research, Monitoring, Habitat Management, International Collaboration, Education and Outreach (<10% of project cost)
 - What are the broad priorities/objectives to include for Small Mammals?
 - Research
 - Monitoring
 - Habitat Management
 - International Collaboration
 - Education and Outreach

Regional variation in habitat preference and climatic drivers of collared pika distribution

Kailey Meacham, MS Student, University of Oklahoma

- Collared Pikas are a relatively understudied compared to other species
- Objectives: Identify habitat preferences and regional variation in climatic drivers of occurrence
- Habitat – climate, geomorphic, landcover (new classification that is more accurate at classifying Talus)
- Predicting Rangewide Occurrence – climate and habitat model was best model
 - Collared Pikas prefer talus, warmer winter temperatures, cooler summer temperatures, less precipitation, less solar radiation, smaller talus patches and areas closer to the talus edge
- Regional Variability – some differences by region in best model (e.g. climate, SW aspects), preference for drier areas in places that receive heavy precipitation, and preference for wetter areas in places that receive light precipitation

Abstract: Conserving and sustaining viable populations of species of concern requires knowledge of habitat requirements and use. Despite fine-scale variation in species ecologies throughout the distribution, many management efforts apply studies from other regions or closely related species to develop local action plans, leading to a mismatch between idealized outcomes and realities. The collared pika (*Ochotona collaris*; found in Alaska and northern Canada) is considered a species of concern due to its reliance on specialized alpine habitat and presumed susceptibility to climate change. However, little is known about specific habitat requirements for the species and generalizations are often made, presuming that collared pikas have the same needs and threats as other pika species such as the American pika. Here, we analyze habitat preferences across the species' range by comparing the environmental conditions of pika occurrence points to the environmental conditions of surrounding available area to assess regional differences in habitat use and climate response. As part of this effort, we developed a novel landcover map, which classifies landcover relevant to alpine mammals with ~15% greater accuracy and talus, specifically, with 9-15% more accuracy than existing landcover surfaces. Our habitat preference analysis indicates a range-wide preference for small talus patches, areas close to the talus edge, areas that receive warmer winter temperatures, cooler summer temperatures, less solar radiation, and less annual precipitation. While landcover level preferences remain constant geographically, climate preferences vary regionally. Northern populations exhibit a negative relationship between occurrence and high summer temperature and positive relationship to precipitation. In contrast, central populations exhibit a negative relationship to precipitation and southern populations exhibit a negative relationship to both precipitation and high summer temperatures. Our results indicate key differences in habitat preference and climatic threats compared to other pika species and between collared pika populations. This study is among the first to analyze regional variation in habitat use of the collared pika, finding evidence that different regions have

different habitat preferences and climatic drivers. We also identify key differences in habitat requirements and climatic threats between collared and American pikas, highlighting the importance of conducting species and region-specific studies to inform conservation goals.

Small mammal foraging and fungi in the Alaska Boreal forests

Phil Manlick – USFS Pacific Northwest Research Station & Ryan Stephens – University of New Hampshire

- Shift from 1920 to 1990 where fungi are important for small mammals
- Are they actually consuming fungi or is it coming via increased omnivory/insectivory
- Ectomycorrhizal fungi (EMF) – do small mammals provide ecosystem services in the form of EMF spore dispersal in conifer or mixed forests?
- 2024 pilot field sampling at Bonanza Creek – 154 red-backed voles out of 163 small mammals
 - Mature vs. young black spruce
 - Mixed hardwoods and white spruce
- Preliminary results suggest extremely high spore loads with both truffles and mushrooms present in GI tract
- Next steps
 - Link fungi in scat to what we are seeing on tree roots
 - Overall diet – use stable isotopes to assess diet over the summer
 - Determine how diets vary across time and habitat

The AKVEG Map: A Flexible Approach to Statewide Vegetation Mapping

Amanda Drogolini – Alaska Center for Conservation Science

- Collection of geospatial products – harmonized vegetation plot data and remotely sensed data to inform foliar cover, surface features and existing vegetation type layers
- Foliar cover maps – 10m resolution, ecologically detailed maps of abundance of species or species aggregates
 - Continuous maps of foliar cover - range from 0 – 100
 - E.g., wetland sedges, sphagnum moss
- Use in wildlife research:
 - Reflects ecological reality of what matters to wildlife – species or species groups of plants
 - Plant communities are a function of plant composition and structure
 - Stacking foliar cover maps allows us to look at plant communities
 - Customizable to meet specific project needs (e.g. foodscape of moose)
- Version 2 launched in late 2024
 - Better performance under the hood
 - Expanded map region

- Included 4x more field plot data
 - Added additional species and aggregates
- 23 foliar cover maps are currently available, Amanda will share a spreadsheet with the information for downloading data

Discussion

SWAP Priorities

What are the broad priorities/objectives to include for Small Mammals?

- Research
 - Small mammals as central to forest regeneration (ecosystem services) and forest harvest/management
 - Linking small mammals/hares to fire, forest recovery, keystone prey/herbivores
 - Fire, recreation opportunities, king salmon conservation (Sentinel species DoD lands)
 - Abiotic factors, parasite, pathogen analysis – multi-species interactions, zoonotic issues? Stressors exacerbating the situation...
 - Advance of spruce bark beetles – impacts to tourism, wildlife, forest health/harvest, risks along hiking trails. Changes in understory, fungal work, etc. Link to fire safety or community safety.
- Monitoring
 - Small mammals as biomonitoring, before and after development (good subjects for contaminants)
 - Statewide monitoring for small mammals – time series to fill data gaps, understand change
 - Expansion of permanent monitoring stations around the state/NEON – collect ancillary data, can we add systematic vouchering, swabs, etc?
 - Population dynamics, shifts over time with live monitoring
 - Incidental mortalities going to places where they can be accessed by additional studies.
- Habitat Management
- International Collaboration
- Education and Outreach
 - Alaska Teen media institute – make videos, involve youth

Officers

Discussion of new officers for positions of president and vice-president. Interest from three members to contribute to leadership in the coming year(s), including Kassie Colson, Sarah Swanson, and Laura Knutsen. Andrew Hope will follow up with these people to discuss timeframe and positions.

Meeting adjourned at 12:30pm (may budget for more than a two-hour slot for future years).

Additional Notes

Prior to the 2025 meeting, Laura Knutsen with National Ecological Observatory Network sent the following blurb with a request to distribute to members.

Note: Laura's email was redacted from the online version of these minutes.

My name is Laura Knutsen, and I currently work as a Field Ecologist for the National Ecological Observatory Network (NEON). While NEON is a nationwide project, I lead the small mammal sampling protocol for Alaska, based out of Fairbanks. I got my introduction to small mammals in Alaska in 2019 working for Becca Rowe of the University of New Hampshire to trap voles on the North Slope and in Nome. After completing my master's at UAF, I started with NEON in late 2023 leading their mark-recapture data collection. We trap at 5 sites throughout the state: Caribou-Poker Creeks Research Watershed, Healy, Delta Junction, Toolik Field Station, and Utqiagvik. The aim of NEON is to collect publicly available data over the 30-year life of the project. In Alaska, we currently have about 8 years of data at our sites. While we face some challenges with trying to follow a nationwide protocol in Alaska, we have been able to revise some of our methods to have better success with trapping. Part of my interest in the small mammal working group (beyond having a soft spot for voles) is curiosity about what data other researchers are most interested in. My hope is to make the NEON data more usable to the AK scientific community. I can link the NEON Data Portal and biorepository (where our collected samples are stored and can be requested for scientific use) below. Additionally, I want to let everyone know about the NEON Research Support Services (NRSS), which allows PIs to request additional data collection or sampling using NEON labor. For example, in 2024, a PI out of Penn State requested that NEON collected oronasal and anal swabs of mammals during normal processing to be tested for SARS-CoV-2. Thanks, and please reach out to me if you have any questions or comments! I'm looking forward to watching the recorded meeting and hearing more about everyone else's work.