Supporting Bee Conservation in Alaska through Community Science

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Bureau of Land Management (BLM)

- BLM’s mission is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

- The BLM manages 10% of surface land and ~30% of the minerals in the US.
  - In Alaska, 70 million acres of forests, mountains, wetlands, glaciers, lakes, rivers, and tundra.

- Department Of Interior Priorities:
  - Working to conserve at least 30% each of our lands and waters by the year 2030.
    - We will work to protect biodiversity, slow extinction rates and help leverage natural climate solutions...
Pollination

• What is pollination?
  • Transferring pollen from the female to the male part of a flower to produce viable seeds

• Who are our pollinators?
  • Bees, flies, butterflies, moths, beetles, wasps, hummingbirds
  • Alaska – 104 known bee species, including 22 bumblebees

• Pollinators are critical
  • Ecosystem function
    • Next generation of plants
    • Food for wildlife
    • Ecological web
  • Subsistence resources
    • Berries
    • Healthy ecosystems for game
  • Farm and garden pollination
    • Pollination services for crops
Pollination

- Many data gaps!
  - New species recently discovered
  - Rural/remote regions
  - What we lack...

- Without proper information it’s difficult to:
  - Conserve pollinators
  - Manage habitat
    - assess impacts / threats
    - restore habitat
  - Make endangered species listing decisions
Monitoring in the Arctic and Boreal Forest

- Remote
- Vast
- Expensive
- Difficult field conditions
- Little current info / no baseline
Alaska Bee Sampling
Alaska Bee Atlas

- Statewide plan and protocol to:
  - Sample for bees around Alaska using consistent methodology
  - Gather associated habitat data
  - Provide information for all to use
  - Non-lethal sampling options
- Sampling May-Aug
- Sampling techniques
  - Aerial netting
  - Pan Trapping and Blue Vane Traps
- Fits into national and international bee monitoring efforts
- Cost effective and collaborative
  - Pilot- 2020
  - Federal and State biologists- 2021
  - Community Science pilot- 2021
  - Open to community scientists- 2022
Sampling Priority

Habits of Interest
- Alpine
- Arctic tundra
- Floodplains
- Post burn areas
- Meadows
- Forest margins
- Sand dunes
- Grasslands

Percent of Cells by Priority

- 69%
- 18%
- 7%
- 6%
Community Science Plan

• Interagency collaborative effort
• Training: “Citizen Science Workshop: Focus on Pollinators” by Schoodic Institute in Spring 2021

• Alaska Bee Atlas – Community Science Plan
  • Goals
  • Stakeholders
  • Project Planning and Timeline
  • Job Description
  • Communication Plan
  • Budget / Funding
  • Resources
  • Data Management
Community Science Plan: Goals

**Overarching Goals:**

- More information on the diversity, distribution, and habitat and floral associations of bees to make informed decisions
- Make informed assessments of the conservation status of species

**2022 Goals:**

1. Initiate 2 new community science projects to have 4 total
2. Train 4 new community science project leaders to have 8 total
3. Engage 8 new community science volunteers in field work
4. Sample 8 locations using community science

**Annual Goals:**

1. Obtain post-field season evaluations from all community science participants
2. Host a post-field season data summary session for community science participants
3. Review and revise the plan each fall. Compile lessons learned from the field season
4. Secure additional funding for the following year
Community Science Plan: Workflow

**TEAM BEE-LASKA PROJECT PLANNING**
- Contact leaders of stakeholders to gauge interest
- Quantify commitment: sampling location, sampling events, sapling timing, potential methods (traps/nets), logistics
- Integrate iNaturalist: AK Bee Atlas Project (optional-dependent on stakeholder)
- Training: online (1 hr) / in person (3 hrs)
- Provide materials, instructions, identification guides
  - Sampling supplies are ready for distribution by ACCS. Identification guides need to be created for some stakeholders.

**STAKHOLDERS:** Native Plant Society, Jensen-Olson Arboretum, CCSC, ABG

**Field Sampling**
- Database incoming data: data form and sample processing
  - (1 technician: 3 hr/sample)
- Data Review/Identifications
  - (1-5 hrs/sample event)
- Receive Data/Samples
  - Coordination for local drop off: Juneau, Fairbanks, Anchorage. All other samples to be mailed.

**PHASE KEY**
- Planning
- Project prep
- Implementation
- Results
- Use

**AK Bee Atlas Website**
- (Under development- 80 hrs)

**iNaturalist**

Generate "buy in" and confidence. Incorporate feedback to refine AK Bee Atlas
How to Get Involved?

Opportunities for Involvement

- For older students, garden clubs, conservation groups, etc.

CS Project Leader

- Engage pre-existing group or make new team
- Coordinate with project leads
- Ensure community scientists are supported
- Coordinate sample submission

CS Volunteer

- ~5 hour commitment
- Training provided
- Materials provided

Community Scientist Job Description

Learn about the roles and responsibilities involved with being a community science local project leader through the job description below.

Job Title: Community Science Local Project Leader

Department/Group: Alaska Bee Atlas

Job Code/Req#: 

Location: Flexible within Alaska

Travel Required: Not required, but optional

Level/Salary Range: None, most equipment provided

Position Type: Volunteer

HR Contact: Justin Fullerson, Project Coordinator

Date Posted: XXXX, XXXX

Will Train: Applicants

Yes, training required

Posting Expires: YYYY, YYYY

External Posting URL: (TBD – Bee Atlas website)

Internal Posting URL: (TBD – Bee Atlas website)

Applications Accepted By:

Email: Project Coordinator: Justin Fullerson, jf@alaskascience.org

Subject Line: Alaska Bee Atlas Community Science Project Leader Application

Mail: n/a

Role and Responsibilities:

- The Alaska Bee Atlas is looking for members of the public interested in leading local bee surveys. Learn more about insect pollinators and the important role they play supporting Alaska’s wildlife and ecosystems. Volunteer scientists would work with pollinator experts to implement the Alaska Bee Atlas. Responsibilities include:

  - Attend online training (1 hour) and in-person training (3 hours, May or June 2023) or other times if requested
  - Assist setting up pasture bee traps, under supervision of an expert
  - Actively collecting bee samples using a bait trap
  - Collaborating with the group to identify flowering plants in the area
  - Inventorying, metrics collected in the traps
  - Conduct at least one independent sensing event (as detailed in the Alaska Bee Monitoring Manual) (summer 2023)
  - Coordinate and organize volunteers and supplies (provided) for additional sensing event through communication with Alaska Bee Atlas Project Coordinator (summer 2023)
  - Plan and coordinate additional sensing event (summer 2023)
  - Submit metadata datasets samples to Project Coordinator within two weeks
  - Ongoing communication with Project Leader

Qualifications and Experience Requirements:

- Ages 15 and up
- Personal transportation to access sampling locations
- Must be able to relocate assets, including taping or staging assets

Preferred Skills:

-
Supporting Bee Conservation

- Providing information on potential impacts of actions and inform land management decisions in order to maintain bee populations, habitat, and pollination services.

- Documenting bee occurrence and diversity statewide with natural history data to inform conservation status.

- Using funds efficiently to gather information over a large area.

- Engaging the public to increase understanding of the ecological role of pollinators and the importance of their conservation.
More Alaska Pollinator Info

- ACCS Pollinator Page (AK Bee Atlas and much more): [https://accs.uaa.alaska.edu/wildlife/pollinator-diversity/](https://accs.uaa.alaska.edu/wildlife/pollinator-diversity/)
- Pollinator 101: [https://www.fws.gov/pollinators/#ff](https://www.fws.gov/pollinators/#ff)
- Alaska Pollinator Blog Series:
  - Bees: [https://alaskausfws.medium.com/alaskas-100-bees-a97ccf90be07](https://alaskausfws.medium.com/alaskas-100-bees-a97ccf90be07)
  - Flower Flies: [https://medium.com/usfws/alaskas-wanna-bees-1651e59d118e](https://medium.com/usfws/alaskas-wanna-bees-1651e59d118e)
  - Hummingbirds: [https://medium.com/usfws/alaskas-fast-and-furious-3c9a62e64b5d](https://medium.com/usfws/alaskas-fast-and-furious-3c9a62e64b5d)
- Alaska’s Bumblebees Atlas Obscura article: [https://www.atlasobscura.com/articles/alaska-bumblebee-pollinator-bee-atlas](https://www.atlasobscura.com/articles/alaska-bumblebee-pollinator-bee-atlas)
- AK Bee Atlas TV segment on Wildlife Nation with Jeff Corwin (to air on ABC winter 2022)
Thank You!

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