

Molly Community Science



Molly Community Science supports the development of environmental stewardship among 6- to 8-year-old children from rural Alaska Native communities. The project has two goals: (1) to learn more about how children develop environmental stewardship (which we call “environmental identity” and define as the empathy, knowledge, and skills needed to act responsibly for the environment); and (2) to work with three Alaska Native communities to co-design an intergenerational, culturally responsive science program that helps nurture children’s sense of stewardship. This project builds on MOLLY OF DENALI, a national, animated PBS KIDS series that features an Alaska Native lead character; involves Alaska Native people at every level of production; and teaches literacy, social studies, Alaska Native values, and environmental science.

Project Team and Roles

GBH, Boston's public broadcaster and producer of MOLLY OF DENALI, facilitated development of the community science program. GBH convened the co-design team and incorporated their ideas and advice into the program, which took the form of a summer camp. GBH also produced supporting media for the camp.

Researchers at South Dakota State University and University of Alaska Southeast conducted research to learn how children experience their place and environment, to explore the kind of science content and behaviors parents and community members prioritize, and to assess the camp's educational potential.

Evaluators at Goldstream Group conducted a process evaluation that documented our work with partners and a scale up evaluation that explored the potential expansion of the camp to additional topics and communities.

Educators at the Association of Interior Native Educators (AINE) facilitated the creation of the camp, including helping to structure and guide the co-design work.

Community members from Bethel, Hoonah, and Northway were instrumental in co-creating the camp. They piloted several versions with kids in their communities.

Alaska Public Media (AKPM), the statewide public broadcaster, participated in co-creating the camp, delivered local programming, and helped raise awareness about the initiative in Alaska and nationally.

Molly's Salmon Protector Camp

Molly's Salmon Protector Camp leverages the storylines and characters of the award-winning PBS KIDS series MOLLY OF DENALI to engage children in learning about salmon. The camp promotes place-based environmental science learning while centering Alaska Native values, including living carefully and seeing connections. Composed of approximately 10 hours of content, implemented over two full days or in shorter sessions over a week, the camp includes introductory videos, indoor and outdoor hands-on activities, and invites local knowledge-holders to share Indigenous and western ecological knowledge, Native language, traditional stories, and career experiences related to salmon. While originally designed for children ages 6-8, the camp curriculum is flexible and can be adapted to include slightly older or younger children, to allow siblings to participate.

Children who participate in the camp:

- Explore salmon life cycle, anatomy, habitats, behaviors, and food webs.
- Learn about the heritage and traditions of the community, including the cultural and historical significance of salmon, based on traditional ways of knowing and learning.
- Build appreciation of the relationships among plants and animals in the world around them.
- Make observations, record ideas, ask questions, and share information.

Camp Resources:

- **Camp Leader Resources:** Resources include a preparation guide and comprehensive leader notes with activity instructions and handouts for indoor and outdoor exploration. Materials include suggestions for involving Elders and scientists in hands-on activities like field trips to local salmon habitat, respectful salmon cutting demonstrations, and sharing of traditional stories and crafts.
- **Animations and Live Action Videos:** MOLLY OF DENALI animations and live-action videos get kids excited about salmon and introduce them to science topics like life cycles, habitat, and food webs while modeling respect for the environment.
- **Science Journals:** A physical science journal and a digital science journal app provide kids with opportunities to share what they learned while honing their science process skills, including observation, documentation, and reflection.
- **Salmon Protector Badges:** As kids complete activities throughout the camp, they work toward earning their very own salmon protector badge.

What We Learned

Research: In fall 2022, the project team conducted initial site visits to Bethel, Hoonah, and Northway to better understand how children relate to their place and environment, what adults think is important for children to learn, and how existing local resources could be used to create a community science program. This was followed by two rounds of iterative co-design and testing of the community science program (May 2023–August 2024). Researchers found that children: (1) enjoyed the camp, particularly the sensory-rich indoor and outdoor hands-on activities; (2) shared what they already knew about salmon while developing new understandings through video viewing and hands-on experiences; and (3) used physical and digital science journals to connect new learning with prior knowledge—an important aspect of identity development. Researchers found that adults appreciated that the camp gave children opportunities to see “real scientists using real tools” and encouraged children to see their ancestors as scientists. Adults pointed to the incorporation of Elder knowledge and traditional stories, songs, and dances as most impactful to the development of children's stewardship.

Process Evaluation: Throughout the project, Goldstream Group documented how partners and participants collaborated to co-design a community science program for children. Evaluators found that the project upheld co-design principles of equity, personal relationships, and trust and respect—while navigating challenges that stemmed from balancing capacity limitations with the need for deliberate, intentional decision-making. The report includes an implementation map to help guide other educational media producers and Indigenous communities interested in engaging in co-design. To read the executive summary, [click here](#).

Scale-up Evaluation: At the end of the project, Goldstream Group conducted a scale-up evaluation with nine Alaska-based educators in order to learn how the camp could be implemented in new communities, and to identify changes that might be needed to expand and scale the program across Alaska. Reviewers responded favorably to the materials, praising the opportunities they provided for science learning in physical environments, the innovative use of media and technology, and the strong curriculum framework, which reviewers felt could be adapted to other topics like berries or trees. Reviewers also identified potential barriers, including challenges around securing the participation of Elders and other knowledge holders, but saw the potential for media to help address some of these issues. To read the executive summary, [click here](#).

What's Next

While the full Molly's Salmon Protector Camp produced through this project remains at prototype stage, our team is seeking funding to expand, finalize, and disseminate the camp. In the meantime, we have developed the following publicly-available resources using camp materials:

- **“Salmon Life Cycle Role Play,”** an activity for classrooms, available [here](#).
- **“Celebrate Salmon Science and Salmon Culture with MOLLY OF DENALI,”** a community event toolkit, available [here](#).
- **“Harvesting Knowledge: Berry Culture, Science and Food Sovereignty with MOLLY OF DENALI,”** a community event toolkit, available in June 2006.



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