CORaL network
Community Organized Restoration and Learning

Formative Evaluation Year 3

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Executive Summary

During Year 3 of implementation, the CORaL Network demonstrated substantive progress toward the first three grant goals by advancing a pathways-based, community-engaged approach to science learning, workforce development, and research translation across the Exxon Valdez Oil Spill (EVOS)–impacted region. In addition to documenting outcomes, the Year 3 formative evaluation intentionally includes critical analysis for each goal, offering practical, incremental recommendations designed to strengthen effectiveness, equity, and sustainability rather than redirect the project's core strategy. Collectively, these recommendations point toward greater institutionalization of practices that are already emerging and showing promise.

Goal 1: Culturally Responsive Science Outreach and Public Use of Knowledge
Progress toward Goal 1 is evidenced by the consistent co-creation of science outreach that integrates Indigenous ways of seeing and knowing and Western science as valued knowledge worlds, or "knowledges." The Network has adopted the term "Expert" to refer to the people who carry these knowledges and knowledge cultures into their understandings. The group feels the term Expert refers to trusted individuals who possess knowledge or subject matter experience, whether from an academic institution or from a lifetime of living in a land or culture. In doing so, this perspective aims to prevent knowledge perspectives from becoming juxtaposed and avoids assigning value to where and how knowledge develops.

Based on this positionality, the group is now monitoring programs to connect this approach with how increased public utilization of EVOS-related knowledge is emerging. Community festivals, symposia, museum-based learning, and adult education forums are now positioning science as a shared community resource tied to everyday decisions about stewardship, restoration, and resilience. Participation data indicate broad regional reach, with particularly deep proportional engagement in small and rural communities, and shows promise to grow over time.

The critical analysis for Goal 1 affirms the strength of culturally grounded, co-created programming while identifying opportunities for incremental improvement. Recommendations emphasize moving from event-based success toward sustained practice by formalizing cultural co-design protocols, expanding local cultural facilitator roles, and converting episodic engagement into longer learning cycles. The overall direction of these recommendations is to embed cultural responsiveness structurally across programs so that trust, relevance, and utilization of EVOS-related knowledge are sustained regardless of staff changes or funding cycles.

Goal 2: Youth Pathways to Science Professions
Under Goal 2, CORaL partners strengthened community-based pathways that allow youth to encounter science as a lived, place-based activity rather than a distant profession. Programs spanning elementary through high school provided authentic experiences in data collection, field research, engineering design, and public presentation, often connected directly to local ecosystems and ongoing research. Inclusive, culturally grounded approaches contributed to gains in confidence, leadership, teamwork, and safety awareness, reinforcing science as a collective civic responsibility.

The critical review of Goal 2 outcomes recognizes the effectiveness of these pathways while offering targeted recommendations for refinement. The general direction of improvement focuses on deepening youth voice, shifting from participation toward co-design, and strengthening civic and leadership dimensions of learning.

Recommendations call for modest additions such as youth advisory structures, participatory research cycles, and longitudinal tracking to better document pathways over time. Rather than expanding programs broadly, the emphasis is on improving quality, agency, and continuity within existing youth experiences.

Goal 3: Scientists as Community Partners

Progress toward Goal 3 is demonstrated through a pathways strategy that repositioned scientists as embedded community partners across digital platforms, community events, cultural competency learning, immersive co-learning environments, and workforce-linked contexts such as mariculture. These repeated, relational engagements supported both community learning and professional growth among scientists, including increased cultural humility, ethical awareness, and a shift toward facilitation and shared accountability. Long-term research and monitoring programs were increasingly translated into usable community and educational assets.

The critical analysis for Goal 3 affirms the pathways model while recommending incremental steps to strengthen accountability and durability. The overall direction of these recommendations emphasizes formalizing practices that are already emerging, including clearer shared governance expectations, CARE-aligned data stewardship, competency-based supports for scientist partners, and structured reflection focused on identity, power, and positionality. The intent is not to add new pathways, but to make existing ones more explicit, measurable, and resilient.

Goal 4: Network Capacity Building

In Year 3, the external evaluators at Headwater People observed early-to-mid formative indicators that the CORaL Network is building the kinds of capacities envisioned in the proposal, while still actively refining how that capacity is organized and sustained. Through structured observations and recurring discussions with partners, the evaluator documented increasing use of shared protocols, more consistent meeting practices, and a regular qualitative “temperature check” that functions as an emerging mechanism for tracking trust, collaboration, and network health over time. Partners’ reflections suggest growing skill and confidence in working across organizational boundaries, especially in balancing care for capacity limits with meaningful contribution. Process evaluation documented skill improvement in meetings that employed culturally grounded approaches (e.g., language-inclusive tools, compensated local knowledge roles, and intentional bridging of Indigenous and Western knowledge). These Year 3 process outcomes should be understood as promising signals of continued improvement, rather than settled achievements, in a network that is still maturing its routines, roles, and shared expectations.

Goal 5: Leveraged Regional Resources

Headwater People also found preliminary evidence that CORaL partners are beginning to leverage EVOSTC-funded resources through more intentional cross-partner alignment. The evaluator’s notes point to multiple emerging mechanisms that can enable “greater-than-sum” impact over time, including improved collaborative structuring of shared planning spaces (annual meetings and structured workshops), increasing clarity about collective identity and public messaging (elevator pitch work), and practical visibility tools (mobile booth kits and a centralized website) that show promise to reduce perceived fragmentation for audiences seeking programs and resources. Program examples and partner-reported learning shifts (e.g., stronger attention to culturally responsive practice and increased participant interest in culture/history/community in some contexts) are best interpreted as early indicators of the network’s

potential to produce integrated outcomes, with continued testing, tracking, and refinement still needed to demonstrate durable cross-project synergy at scale.

Goal 6: Self-Sustaining Network Development

From a developmental evaluation perspective, Year 3 findings reflect a network in active formation. Headwater People reported on observed increases in attention to the enabling conditions of sustainability, consistency, accountability, leadership, and shared infrastructure. While promising, the partners also revealed gaps that remain unresolved and will require deliberate planning as the team moves into the fourth year of the project. Evidence drawn from observations and confidential partner discussions suggests that the network has begun to stabilize certain operating rhythms (clearer agendas, repeatable meeting structures, shared tool links, and increased transparency), and that partners are increasingly willing to "stay at the table" through difficult conversations. These are important midstream indicators of relational durability. At the same time, the evaluator documented open questions about long-term funding pathways, role clarity, and the level of executive leadership engagement that will be needed to carry the network beyond the grant.

Tentatively, Year 3 findings indicate that CORaL is achieving the first three grant goals while using formative evaluation to guide continuous improvement. Across all goals, recommendations consistently point toward institutionalizing co-creation, strengthening local leadership and shared governance, and deepening learning quality rather than expanding scope. This approach positions the network for sustainable impact as the remaining goals are advanced in the next phase.

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CORaL Progress Goal 1: Culturally Responsive Science Outreach:

Science outreach is relevant, co-created, and culturally responsive to our regional communities, leading to increased public utilization of available knowledge related to the EVOS.

The CORaL Network's programming in the past year is moving the communities closer to achieving this goal by improved practices that bring Indigenous Knowledge and Western science together across multiple public-facing programs. Community events, cultural partnerships, and shared communication platforms ensured that science outreach reflected local values and strengthened cultural connections. Elders, scientists, and educators co-designed learning experiences that made EVOS-related science both more accessible and more meaningful for the region.

Outcome 1: Culturally Responsive Science Outreach

The project reports document that CORaL achieved culturally responsive outreach by combining Indigenous Knowledge and Western science across multiple public-facing programs, ensuring that science outreach reflected local values and strengthened cultural connections. The report explicitly states that elders, scientists, and educators "co-designed learning experiences" so that EVOS-related science became both accessible and meaningful for communities throughout the region. This approach positioned local cultural knowledge and scientific research as interdependent resources, rather than competing ways of knowing, and established a shared platform for inquiry and stewardship.

This culturally grounded approach is particularly visible in the Ocean Sciences Festival and the Seward Science Symposium. As described in the report, these events were not simply science fairs; rather, they were gatherings that underlined the network's commitment to Expert knowledges in which Western science and Indigenous Knowledge "work in tandem to activate communities that can be involved in restoration and recovery across the Exxon Valdez Oil Spill (EVOS) impacted regions." These gatherings offered space for dialogue, career exploration, community pride, and intergenerational participation, and they demonstrated that culturally informed program design increases both interest and trust.

Culturally responsive design was also built structurally into the AKSEA teacher–elder–scientist collaborative model. According to the report, teachers from multiple EVOS-region communities worked for six months alongside elders and scientists to co-create marine science lessons explicitly anchored in regional phenomena. The report further notes that the program prioritized relationship-building, shared vocabulary, and values discussions, resulting in a "sense of belonging, connectedness, and empowerment." This intentional structure embedded cultural guidance into curriculum development rather than treating it as an add-on, demonstrating that co-creation changes both process and outcome.

The renovation and reopening of the Alutiiq Museum and Archaeological Repository (AMAR) provided another example of culturally responsive co-creation translated into infrastructure. The project report details that 3,400 square feet of new space were added, specifically to expand community Expert co-created education and collections exhibit redesign made possible through CORaL funding.The resulting increased visitation, and development of a resource that "*fulfills a need to educate our community about the history and living*

culture of the Alutiiq/Sugpiaq people." By treating facility design as community co-created content, AMAR created a venue where culture and science intersect in daily educational practice.

These examples, directly documented in the project reports, show a consistent pattern: culturally responsive engagement occurred because programs were intentionally co-created, rooted in local identity, and designed to honor community knowledge alongside scientific inquiry.

Outcome 2: Increased Public Utilization of EVOS-Related Knowledge

The second outcome documented in the reports concerns how programming moved communities beyond awareness toward meaningful and practical use of EVOS-related knowledge. The report repeatedly highlights that communities expressed interest not only in hearing about current science but in understanding "how they can help with data collection; citizen science." In response, programs emphasized ways that residents, students, and local leaders could contribute directly to monitoring, restoration, and decision-making.

For example, the Ocean Sciences Festival created opportunities for more than 300 students and community members to interact directly with scientists, agency partners, and CORaL organizations. Participants explored topics such as fish passage, harmful algal blooms, mariculture, and emergency preparedness; they also engaged in hands-on learning activities that encouraged questions and conversation. According to the project narrative, this setting "created an atmosphere of curiosity, empowerment, and collaboration." Importantly, the festival made EVOS-related science intelligible in everyday terms, allowing people to see clear connections to food systems, safety, and environmental change.

Similarly, the Seward Science Symposium extended learning beyond presentations by inviting residents to view films and discuss real restoration choices. During the "Fins and Floods" screening, organizations openly asked the audience for input on where flood-mitigation and fish-passage funds should be directed. As documented, residents were encouraged to identify high-priority areas based on lived experience. This illustrates utilization: scientific knowledge becomes a shared public tool used to influence real local planning decisions.

The project reports also describe communication products created to ensure that research is usable by broad audiences. The seabird outreach project, for instance, translated complex ecological research regarding eagle disturbance and murre colony decline into a visual illustration designed for museums, tour boats, and digital distribution. This resource was explicitly developed "so [communities] know what is happening and why," illustrating a pathway where research becomes accessible, discussable, and applicable for residents, visitors, policymakers, and educators alike.

Ongoing adult learning spaces, such as Tuesday Night Talks in Cordova, further strengthened science utilization. The talks provided structured yet conversational forums where community members could learn about Gulf Watch Alaska monitoring, mariculture initiatives, wildlife research, and policy topics such as the Oil Pollution Act. The report notes that attendance grew as the schedule was adapted to community needs, suggesting strong ongoing demand for EVOS-relevant knowledge when presented in formats that allow reflection and dialogue.

Taken together, the documented activities show a clear trajectory: information was not simply disseminated. Instead, communities were continually invited to use EVOS-related knowledge to interpret environmental change, participate in stewardship, shape restoration priorities, and strengthen regional resilience.

Participation and Regional Reach:

Drawing exclusively from tallies provided in the post-program reporting forms, participation during the reporting period totaled well over 4,000 documented engagements across the EVOS-impacted region. These engagements include more than 300 participants in the Cordova Ocean Sciences Festival, approximately 350 participants across the festival and Seward Science Symposium combined events, 3,039 visitors to AMAR (including at least 371 youth), between 120 and 195 participants in World Oceans Day activities, several hundred participants across Tuesday Night Talks, and significant numbers of students and families through Seldovia Science Fridays and Aleutian outreach programs. These recorded figures demonstrate that programming reached a geographically dispersed population while maintaining deep, local relevance.

Critical Analysis & Strategic Recommendations

Strengthening Culturally Responsive Science Outreach

Critical Insight: The formative reports from all programs demonstrate strong progress toward culturally grounded outreach, especially where Elders, teachers, and scientists co-create programming (e.g., AKSEA), and where events intentionally practice convergent knowledges. However, cultural responsiveness currently depends heavily on individual teams, single events, or one-time convenings. Sustaining it requires deepening structures that ensure culture is continually embedded across projects, not only showcased at select events.

The AMAR renovation illustrates for the network what happens when cultural relevance becomes built into infrastructure. They are witnessing visitation increases, higher levels of learning outcomes, and increased trust. Other programs could benefit from building or reporting on similar institutionalized practices in relation to this project goal.

Recommendation 1 — Formalize Cultural Co-Design Protocols Across Programs

Pathway alignment: Co-creation, Expert Knowledges, Relationship-Based Design

Develop and use a standard co-design framework that every program adopts when working with communities. This would include:

- early consultation with Tribal and cultural partners
- shared decision-making roles for Elders and local educators
- explicit inclusion of cultural values and language in curriculum design
- reflection sessions documenting what cultural lessons shaped program delivery

This standardization would prevent culturally responsive engagement from becoming situational or personality-dependent and would make it replicable region-wide.

Recommendation 2 — Expand Regional Cultural Facilitator Roles

Pathway alignment: Distributed capacity & local leadership

The success of Seldovia Science Fridays — particularly after hiring a local informal educator — shows that place-rooted educators bridge trust and continuity. Expanding this model would allow each EVOS-region hub to develop its own cultural liaison who:

- Connects local history, language, and science
- Recruits community voices into programming
- Ensures events reflect the cadence and priorities of the place

This spreads capacity rather than centralizing cultural expertise at only a few institutions.

Recommendation 3 — Convert Engagement Moments into Long-Term Learning Cycles

Pathway alignment: Iterative adaptation & community ownership

Large community events successfully spark connection — but the reports also show they tend to be episodic. Following each event, implement:

- Follow-up workshops in schools
- Seasonal community check-ins
- Reflection circles with partners
- Ongoing storytelling (podcasts, exhibits, newsletters)

This shifts participation from "attending an event" to "joining an ongoing learning journey."

Increasing Public Utilization of EVOS-Related Knowledge

Critical Insight: The network is highly effective at sharing information. Festival booths, public talks, and art-based science communication successfully explain complex topics such as harmful algal blooms, seabird stressors, and salmon passage. Residents clearly value this — events grow when designed well, and participants ask to stay involved.

However, the evaluation suggests that moving from awareness to action works best when programs explicitly invite participants to apply knowledge, as seen in the "Fins and Floods" sessions where community members helped identify restoration priorities. This approach should become routine rather than exceptional.

Recommendation 4 — Build Participation Pathways into Every Public Program

Pathway alignment: Citizen science & stewardship pathways

Every outreach activity should answer the question: "Now that I understand this, how do I help?"

Examples include:

- Sign-ups for monitoring projects
- Follow-up training sessions
- Links to local reporting tools
- Community data-collection activities

- Youth internships connected directly to EVOS-region research

This ensures science is not only learned — it is put into practice.

Recommendation 5 — Develop Translation Toolkits for Each Scientific Priority

Pathway alignment: Communication infrastructure

The seabird illustration project proves that visual tools democratize science. Replicating this success, each major research theme (spill recovery, mariculture, oil-pollution policy, heatwave impacts, etc.) should produce:

- visual explainers,
- short audio stories,
- social-media micro-lessons,
- educator mini-modules, *and*
- versions for tour operators.

This turns EVOS science into everyday community knowledge, accessible to residents, visitors, and decision-makers alike.

Recommendation 6 — Institutionalize Feedback Loops that Show Community Impact

Pathway alignment: Learning-from-practice & accountability

Participants repeatedly express curiosity about whether their engagement leads to real-world change. Build evaluation cycles that report back to communities:

- "Your feedback helped fund X restoration site."
- "Data from student monitoring informed this management action."

Demonstrating visible impact reinforces motivation, deepens civic participation, and increases trust in science as a shared public asset.

Participation at a Glance

Well over 4,000 people were documented as participants in at least one CORaL Network supported program across the region, including:

- 300+ at the Cordova Ocean Sciences Festival
- ~350 combined festival/symposium participation across events
- 3,039 AMAR museum visitors (371 youth)
- 120–195 at World Oceans Day
- 375–450 adult participants through Tuesday Talks
- 90+ children and youth engaged in Seldovia Science Fridays; *and*
- an uncounted number of students and community participants across Aleutian outreach visits and reached through cruise partnerships, distance learning, and seabird outreach publications

Goal 1 Overall Impacts

To characterize how well CORaL has reached its service communities for Goal 1 (culturally responsive, co-created outreach that increases use of EVOS-related knowledge), we compare documented participation from the formative report with Census/ACS population data for key communities in the EVOS-impacted zone.

Taking the census baselines together with the documented program counts, several patterns emerge:

1. **High proportional reach in small and remote communities.**
   In places like Seldovia, Atka, and Nikolski, CORaL-supported programming has reached a majority of youth and a substantial fraction of total residents in a single year, often through culturally co-created activities that closely fit the spirit of Goal 1.
2. **Meaningful but partial reach in mid-sized hub communities.**
   In Cordova, Seward, and Kodiak, the network has produced hundreds to thousands of engagements per year, corresponding to the equivalent of roughly 10–30% of local residents when counted as "touches."
3. **Emerging reach in larger or more diffuse populations.**
   In Unalaska and more broadly across borough-scale populations, programming creates footholds but still reaches modest shares of the population annually.
4. **Strong alignment with culturally responsive and utilization-focused goals.**
   Where reach is deepest, programs are co-created, rooted in Indigenous knowledge, and designed to help people use information, not just receive it.

Characterization of Coverage for Goal 1

Using census baselines, CORaL can reasonably claim that for many core communities, programming reached:

- A large majority of local youth in several small communities
- Significant recurring subsets of adults in hub communities
- A broad mixed audience equivalent to over half the Kodiak population (AMAR)

At the same time, larger hubs and dispersed populations remain relatively lightly served in proportional terms, indicating a continued need to expand programming.

Forward Projections: Applying Diffusion of Innovation theory

Diffusion of Innovation (DoI) theory explains how new knowledge spreads through closely knit social networks (Rogers, 2003). In rural and Tribal contexts, where trust, reciprocity, and observation guide communication, innovation is often driven by early adopters whose knowledge diffuses outward through respected leaders, kinship networks, schools, and institutions. Research confirms that diffusion is particularly strong in communities with dense social ties and shared identity, while adoption varies depending on inequities and institutional barriers (Greenhalgh et al., 2004; Valente, 2010; Dearing, 2008).

Foundational psychological research supports this theoretical grounding, showing that learning is social, participatory, and cumulative (Bandura, 1977; Vygotsky, 1978; Lave & Wenger, 1991). Behaviors spread through networks (Centola, 2010; Christakis & Fowler, 2007), especially when knowledge is co-created and

culturally grounded (Jull et al., 2015). Therefore, **applying DoI to CORaL** suggests that culturally responsive science outreach seeds early adopters whose practices gradually normalize at the community level.

Applying DoI in culturally responsive programs is especially promising because co-creation embeds learning within community values rather than presenting information as externally imposed. Research shows culturally relevant STEM programs increase engagement and uptake (Thomas et al., 2023; Ferri, 2024), while traditional Western science instruction often struggles to diffuse across diverse cultural contexts. Co-created programs reduce barriers to adoption and enable adaptation within community networks.

Based on this, we examined the program outcome reports to understand gained learning, diffusion effects, and likely outcomes if recommendations are implemented. These projections found that:

- Youth audiences in small and remote communities gained repeated, local, identity-anchored learning experiences that likely produced conceptual understanding of ecosystems and stewardship. They function as knowledge brokers and behavior influencers. Continued co-designed programming is expected to normalize science-based stewardship across generations.
- Engaged adult audiences experienced dialogue-based learning, becoming opinion leaders who spread knowledge in civic and informal settings. Participation pathways will likely convert more informed adults into active stewards.
- Broad mixed audiences experienced episodic awareness and emotional engagement, helping spread legitimacy beyond local contexts. Follow-up tools can turn episodic exposure into sustained learning.

On this basis, we believe that the CORaL Network funding has seeded early adopters across communities. With recommended improvements, **DoI** predicts communities will increasingly normalize EVOS-related science use in decision-making.

Summary: Advancing Goal 1 Through Collaborative Pathways

CORaL's strength lies in operating as a regional network rather than a single organization. Partners collaboratively designed programs that were culturally grounded, scientifically rigorous, and widely accessible. Programming reached more than 4,000 documented engagements. The emerging pathways collaborative structure amplified impact beyond what individual institutions could achieve.

Recommendations: including embedding cultural co-design, expanding local leadership, creating continuous learning cycles, and formalizing participation pathways will lead to deepened knowledge gain and stabilize the emerging progress witnessed in year 3 of this funding. By institutionalizing culturally responsive outreach and ensuring EVOS-related knowledge remains usable, CORaL strengthens Goal 1 outcomes, advancing a sustained, region-wide model of community-engaged science.

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CORaL Progress Goal #2: Youth Pathways to Science Professions

Regional youth participate in community-based pathways to science professions, building diversity among Alaska's scientists and reinforcing an emerging community-based approach to future science and restoration projects.

Across the EVOS impacted region, CORaL partners worked together to ensure that young people encounter science **as something that lives in their own communities**, not distant careers unrelated to their daily lives. In this formative phase of testing, partners worked to improve the layered learning experiences for students from elementary school through late high-school internships. These programs offered opportunities to experience roles traditionally held by professional scientists: collecting data, monitoring wildlife, presenting research, and making stewardship decisions that matter to the marine wildlife near their homes. These community-based pathways into science professions created embedded learning in real places and real responsibilities.

Community-based pathways connected youth to real science roles

Building on the two-year front-end program design phase, in this third year, CORaL partners worked to refine programs to fit the local realities where the programs are being delivered. This year's work focused on solving barriers such as limited access to childcare, transportation challenges, access to boats, and limited rural education time. PWSSC's Discovery Room and Science & Snacks for example ensured elementary students had recurring science experiences that connected directly to local research, while also offering after-school pickup so families could participate more easily.

CACS and PWSSC collaborated to give students immersive field experiences on boats in Seldovia and Kachemak Bay, where researchers from USGS and other collaborators joined youth in seabird observation, oceanography, and coastal monitoring. These learning environments reinforced that research happens in the same places students live.

At the high-school level, ASLC's SeeBird/COMPASS program continued to refine program delivery authentic participation. Students collected 2025 data to support long-term waterfront studies by participating in transects along Seward's Resurrection Bay shore path, contributing data to a long term study by ASLC and the National Park Service. These students did some exploratory data analysis and participated in a public presentation about their learning outcomes and the impacts of these experiences on their career futures. This example illustrated a founding principle of the CORaL program, youth opportunities to meaningfully contribute to active science systems rather than simulations.

Meanwhile, PWSSC's ROV Challenge gave students the chance to work as "engineers in training," designing vehicles that respond to spill-prevention scenarios. This reinforced the way marine technology, engineering, and environmental protection intersect. Collectively, these efforts formed a **reinforcing pathway**: early curiosity, applied field learning, research mentorship, and leadership.

Building diversity in Alaska's future science leadership through inclusive approaches

Diversity in Alaska's future science workforce grew because partners prioritized **place-based inclusion** as a design principle. AMAR's cultural archaeology camps, built in partnership with Tribes in Afognak and Old Harbor, showed how cultural identity and stewardship naturally open doors to scientific thinking. Youth learned that archaeology, heritage, and preservation are forms of science deeply tied to community wellbeing. Results at the conclusion of 2025 demonstrate that participation demand has remained consistently high.

Alaska Sea Grant's **Coastal Connections Camp (CCC)** refined programming in 2025 to support youth leadership growth within communities. Middle-school participants from Kodiak, Seward, Valdez, and Whittier experienced hands-on science, outdoor skill-building, and group leadership practice. Many of the participants expressed a desire to return as assistant leaders. Pre/post data revealed measurable growth in safety awareness, facilitation skills, and confidence, suggesting that this part of CORaL's collective impact is building competencies among youth that translate into professional readiness.

Partners also supported Chugach School District programming in Whittier, Tatitlek, Chenega, and at the Voyage School where these culturally grounded approaches integrated place-based science into regular school experiences. Analyzed together, at this phase in program refinement, results are now showing that partners have shifted from more traditional transfer of knowledge into programs that celebrate youth's cultural identities as part of their potential to meaningfully be part of scientific work. In all four cases, reports demonstrated that building science environments where local culture, family ties, subsistence practices, and conservation values were welcomed, centered, and resulted in higher perceived value for the programming.

Youth engagement reinforced a community-based model for future restoration where partners co-lead, share resources, and respond to local needs

Youth programming under Goal #2 also functioned as a training ground for community-based restoration governance. Across the suite of program offerings, this assessment demonstrated that most programs emerged directly from community requests: families sought meaningful summer programs, rural educators asked for archaeology and cultural education, and residents expressed interest in learning-centered community events.

This responsiveness catalyzed collaborative behavior across organizations. For example, ASLC's World Oceans Day brought together eleven regional partners, including local tribal organizations and regional conservation agencies, all presenting alongside one another, to create an alcohol-free community gathering focused on stewardship, science, and culture. Similarly, AMAR's rural school outreach demonstrated how coordinated logistics, shared curricula, and local liaison support could extend programming across remote communities more efficiently.

Common threads revealed in the program assessment reports demonstrated strong growth in leadership, communication, problem-solving, and teamwork, skills required to manage monitoring projects, engage stakeholders, and support culturally grounded restoration planning in the future. We conclude that these

CORaL youth programming contributed to advancement of science knowledge is a collective civic responsibility.

Critical Review, Pedagogical Analysis, and Recommendations

At this stage in the CORaL Network's evolution, the outcomes seem consistent with recent research findings about high-quality, place-based and community-engaged STEM pathways. Unlike some of the frictions and logistical challenges identified in the front-end exploratory phases of program design, the formative phase of the community-based learning programs are now refining delivery, with results suggesting opportunities to deepen youth voice and equity in ways that can result in greater long-term impact.

Youth across partner programs participated locally grounded science experiences that connected environmental concepts to real ecosystems, restoration issues, and community life. In some cases, repeated contact reinforced learning, while other light-touch experiences exposed youth to potential that may not have lasting impacts, even though they may have offer Such place-based approaches are shown to increase relevance, motivation, and conceptual understanding, particularly for rural and underserved youth (Boz et al., 2025; Mercier et al., 2025).

For the citizen science activities reviewed for this project found that youth were exposed to science content and, in some cases, were able to practice authentic scientific processes. Data collection and data gathering investigations, presented findings, and engaged with scientists, resource managers, and cultural knowledge holders. These features reflect best-practice models in environmental civic science, where youth see science as a public tool for addressing community needs and shaping collective futures (Gallay et al., 2021). More recent work, however, has suggested that when student-focused citizen science programs allow the youth to define for themselves evident problems, collect, analyze, interpret, propose action steps and policy solutions, are also more likely for students to feel empowered as science thinkers who move data to action (Flanagan et al, 2021). The civics aspects of these programs continue to show promise for refinement in the future years if the program planners incorporate more self-directed reflection and youth action planning.

Another core aspect of youth advancement is contributing through self-actualization as a science capable thinker or social actor, operationalized as science identity (Carlone & Johnson, 2007). While these programs did not use the metrics for measuring science identity, program feedback suggested that many programs offer a nascent opportunity to foster early markers of "science identity," leadership, and stewardship responsibility. Program leaders report that youth shared self-awareness of gains in confidence, teamwork, safety, and communication, while parents and partners express strong demand and appreciation for programming. These outcomes are consistent with literature documenting that youth participation in community-based and participatory science strengthens agency, leadership skills, and intention to pursue STEM pathways (Ballonoff Suleiman et al., 2021; Anyon et al., 2018).

At this stage of refinement, youth programming is working to address several latent gaps limiting full achievement of this target. First, the evaluation materials rarely disaggregate outcomes by race, ethnicity, or community. Given persistent inequities in environmental literacy and access to STEM opportunities (Harris et al., 2025) and the persistent under-funding of STEM learning and marine science across Alaska (Fraser et al, 2025), understanding who benefits and how, will be an essential refinement for the next generation of youth-targeted community programming. Secondly, most reported outcomes at this phase indicate short-term indicators rather than long-term trajectories that will result from repeated contact over many years. Without

alumni tracking or longitudinal indicators, claims about "pathways" remain suggestive rather than causal — a limitation frequently noted across participatory and informal STEM fields (Ozer, 2024).

Critical review of the pedagogical approach

To develop recommendations for the next phase of formative refinement of the CORaL suite of programs, we analyzed program delivery as a pedagogical strategy to develop recommendations for the next phase of advancement. Multiple pedagogical strengths are evident already and only require minor adjustment to achieve the stated goals based on the program's learning strategy. First, the programs consistently use place-based and experiential learning. Students engage with local wildlife, fisheries, archaeology, and restoration issues through hands-on fieldwork and community contexts. Research indicates that this type of learning deepens environmental attachment and supports culturally responsive practice (Boz et al., 2025; Gallay et al., 2021).

Second, the programs are collaborative. Schools, science institutions, Tribal entities, parks departments, community nonprofits, and researchers share resources and instruction. As anticipated in the grant proposal, this networked approach mirrors successful "civic science" frameworks in which multi-sector partnerships reinforce authentic participation and community relevance (Gallay et al., 2021).

Third, the materials suggest an emerging commitment to Indigenous knowledge systems and relational worldviews. This direction resonates with Indigenous education frameworks and the Expert Knowledges model, described in the literature as ***"two-eyed seeing,"*** emphasize weaving Indigenous and Western knowledges for ethical and ecological decision-making (Posner, 2024; Learning for a Sustainable Future, n.d.). However, many program narratives have yet to explicitly name these frameworks or document how Elders and Indigenous educators participate in governance, co-creation, and delivery that is witnessed as parity. In some cases, these were science-forward, and in others culture-forward, knowledges presented in parallel rather than presenting an expanded knowledge horizon. Prior research demonstrates that Indigenous-led co-design, rather than consultation, produces stronger cultural alignment and youth outcomes (University of Alaska, 2017). And in these cases, we believe opportunities and partnerships are present, but may require additional investment to fully achieve a co-design paradigm.

Finally, the pedagogy evident in the outcome reports from across the CORaL programming efforts demonstrates growing attention to youth leadership. Youth present research, acting as mentors, and developing their own facilitation skills. While powerful, most initiatives still appear adult-designed, with youth primarily occupying participant roles rather than co-designer or co-researcher positions. Youth participatory action research (YPAR) literature shows that deeper youth co-creation strengthens agency, critical thinking, and commitment to civic engagement (Anderson, 2020; Ozer, 2024).

In short, CORaL's pedagogical model is contemporary, ethically grounded, and well aligned with current evidence, yet it is poised to move further toward co-created, youth-led, and Alaska Native voice as learning guides.

Recommendations: Advancing youth voice and co-created community programs

1. Transition from youth participation to youth co-design: Establish youth advisory councils and integrate co-design processes across programs. Youth should help define questions, evaluate effectiveness, and

shape dissemination. YPAR research shows that these roles deepen learning, civic identity, and agency (Anderson, 2020; Anyon et al., 2018).

2. Embed youth participatory research cycles in program structure: Encourage youth to investigate community environmental problems, co-create with them ways of using existing and novel data to collect and analyze, and expand time and effort on understanding how to design and present recommendations to local decision-makers as part of the learning path. Doing so shifts learning from content acquisition to meaningful civic engagement (Flanagan et al., 2021; Gallay et al., 2021; Ozer, 2024).

3. Expand multimodal student-voice practices: Consider how to embed storytelling, art, media, and participatory exhibitions as legitimate scholarly outputs. Multi-modal formats capture emotional, cultural, and relational dimensions that traditional surveys miss (Renold et al., 2024).

4. Strengthen Alaska Native leadership and the weaving of knowledges and ways of knowing: Name Alaska Native epistemologies explicitly (Alutiiq, Sugpiaq, Eyak), create shared governance structures that highlight Tribal partners (AMAR, CRRC, Chugachmiut) and Elder roles or Culture Bearers (Experts) in all programs, and integrate language, seasonal knowledge, and land-based practices as Expert core learning components across all touch-points with youth (see: Posner, 2024; University of Alaska, 2017).

5. Build relational pedagogy intentionally: Schedule additional time in the programs for reflection circles and documentation, relationship building, and mutual support that will be a legacy of youth work. Trust-centered environments are foundational for authentic youth voice (Lee, 2024).

6. Adopt participatory evaluation: Invite youth to analyze data, identify themes, recommend improvements, and choose their path for bringing those outcomes into the awareness of policy makers or community influencers. Participatory evaluation increases rigor and strengthens youth ownership (Anderson, 2020; Ozer, 2024).

7. Expand equity-driven evaluation measures: Add validated items for science identity, civic efficacy, empathy toward wildlife, and environmental literacy — constructs linked to long-term STEM engagement (Carlone & Johnson, 2007; Harris et al., 2025; Gallay et al., 2021).

8. Track alumni longitudinally; Implement light-touch tracking through annual messages or partnerships with schools and student alumni through parent-communications channels that can be followed over the years that youth move into careers or higher education. Longitudinal follow-up is critical for documenting pathways (Ozer, 2024).

9. Invest in staff training: The CORaL Network may also consider their own professional development programming as useful outcomes that can benefit all program leaders and facilitators, inviting expert learning opportunities with leaders in Youth Participatory Action Research, youth–adult partnership, trauma-informed practice, or those leading in culturally sustaining pedagogy. Adult readiness is often the greatest barrier to youth-led work (Ballonoff Suleiman et al., 2021).

10. Formalize access supports as equity strategies: Continue offering transportation, food, stipends, and flexible scheduling, and frame these access opportunities explicitly as inclusion practices linked to program goals (Boz et al., 2025; Mercier et al., 2025).

Cumulative Reach (Documented Minimums Present in the Data)

From the data provided, CORaL programming directly reached at least:

- **90+** high-school students in long-term seabird research
- **71** middle-school participants in Coastal Connections Camp (plus 6 new youth leaders)
- **70** youth in archaeology and culture camps
- **130** students through rural school outreach
- **37** youth on science boat expeditions
- **120–195+** World Oceans Day participants (unclear on % youth)
- **13 schools/teams** engaged through the Tsunami Bowl

Confirmed minimum: more than 500 regional youth and young adults, with many more students participating in year-round Discovery Room lessons, after-school programs, summer sessions, ROV builds, and paid internships where specific counts were not reported — meaning the true impact may include other students not counted.

Summary Impacts for Goal 2

CORaL Network partners strengthened community-based science pathways by ensuring youth across their sites encounter science as something rooted in their own places, cultures, and responsibilities rather than as distant careers. Project impact reports describe intentionally layered experiences from elementary engagement through high-school internships, affording the region's youth opportunities to step into authentic scientific roles such as data collection, wildlife monitoring, engineering design, analysis, and public presentation. Examples across partners show how learning was embedded in real ecosystems and real decisions: elementary students accessed recurring, locally relevant science through after-school programs designed around family needs; middle- and high-school youth worked alongside researchers on boats, shorelines, and monitoring sites where they live; and older students contributed directly to long-term datasets and public reporting. Collectively, these experiences reinforced a core CORaL principle: youth pathways are strongest when science is practiced as a lived community activity tied to stewardship, restoration, and local decision-making.

At the same time, CORaL partners advanced inclusive approaches that are shaping Alaska's future science leadership by centering culture, place, and belonging as assets rather than barriers. Programs grounded in cultural archaeology, Indigenous knowledge, and place-based leadership demonstrated that identity, heritage, and stewardship naturally open doors to scientific thinking and sustained engagement. Middle-school leadership camps and culturally grounded school partnerships showed measurable growth in confidence, safety awareness, facilitation, and teamwork, while high demand and repeat participation signaled perceived value among families and communities. Across youth programs, partners responded directly to community requests and modeled shared governance, co-leadership, and resource sharing, reinforcing science as a collective civic responsibility.

Taken together, these outcomes indicate that CORaL's youth programming is moving beyond traditional knowledge transfer toward a community-accountable model in which youth learn to carry, apply, and return knowledge in ways that support long-term restoration, stewardship, and resilient coastal futures.

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CORaL Progress Goal #3: Scientists as Community Partners

Scientists are active partners in communicating and fostering STEM skills in communities where Long-Term Research & Monitoring, Mariculture, and Restoration projects are integrated with community-identified needs.

Goal #3 outcomes were produced through a Program Pathways approach that intentionally distributed scientist engagement across multiple, reinforcing contexts that are community-based, culturally integrated, linked to community educational experiences, and aligned to professional goals of the scientists. The pathways strategy was developed by the team to:

- **Avoid one-off engagement:** Scientists encounter communities repeatedly across pathways, allowing trust, familiarity, and accountability to develop over time.
- **Align learning with practice:** Cultural competency, facilitation, and weaving Indigenous and Western knowledges are learned through application, reflection, and observation—not solely through training.
- **Support professional transformation:** Scientists are not only delivering STEM content; they are reshaping how they understand expertise, professionalism, and responsibility.
- **Build resilience into implementation:** If one pathway is disrupted (e.g., an event is canceled), others continue to sustain engagement and outcomes.
- **Ensure equity and relevance:** Different communities and scientists enter the network through different pathways, increasing accessibility and inclusion.

The Program Pathways approach implemented in year three sought to define an infrastructure that makes relational science possible. It enables scientists and their content to move fluidly between research, education, culture, and community life while maintaining coherence, shared values, and accountability to the larger CORaL Network goals.

In the following section, we outline the logic model linking pathways to grant Goal 3:

1. Website & Digital Presence Implementation Mechanism: Network website, information kiosks, shared marketing kits, and monthly newsletters create consistent visibility and access to scientific work across partner communities. **Contribution to Goal #3:**

- Normalizes scientists as accessible, ongoing community members rather than episodic experts.
- Extends the reach and lifespan of research outputs into classrooms, public spaces, and informal learning environments.
- Supports translation of long-term research into shared community assets.

2. Community Sharing Implementation Mechanism: Repeated, relationship-based engagement through festivals, science talks, symposia, and community celebrations that integrate culture, science, and education. **Contribution to Goal #3:**

- Positions scientists as conversation partners within community life.

- Builds trust and familiarity through repeated contact rather than one-time outreach.
- Supports STEM identity development and career awareness through relational exposure to scientists.

3. Cultural & Competency Learning Opportunities Implementation Mechanism: Indigenous-led training (e.g., CANP), cultural orientations, Elder storytelling, language integration, and subsistence learning opportunities. **Contribution to Goal #3:**

- Builds scientists' cultural humility, ethical awareness, and understanding of Indigenous research protocols.
- Shifts professional norms away from extractive research toward relational accountability.
- Supports trust-building and long-term partnership in Alaska Native contexts.

4. CCE Implementation Mechanism: Structured, immersive learning environments where scientists, staff, Elders, and learners co-participate in fieldwork, reflection, and applied problem-solving. **Contribution to Goal #3:**

- Creates conditions for scientists to practice facilitation, listening, and co-learning.
- Reinforces the weaving of knowledges as a lived practice rather than a conceptual framework.
- Produces parallel learning outcomes for scientists and staff alongside youth outcomes.

5. Community Science & Outreach Implementation Mechanism: Curriculum co-creation (AKSEA), science festivals, research showcases, workforce-linked mariculture programming, and communication training for scientists. **Contribution to Goal #3:**

- Aligns scientific expertise with community priorities, workforce pathways, and stewardship needs.
- Positions scientists as applied collaborators and translators of knowledge.
- Demonstrates the relevance of science within local economic and cultural systems.

6. Iterative Adaptation Implementation Mechanism: Collaborative Learning Series, internal observation (WORMS), annual meetings, and communication committees for reflection and continuous improvement. **Contribution to Goal #3:**

- Ensures that scientist engagement evolves in response to community feedback and staff learning.
- Reinforces reflection as core pedagogy for scientists and staff.
- Sustains professional growth beyond single events or trainings.

Multiple, reinforcing pathways create repeated, relational opportunities for scientists to practice partnership, cultural humility, and applied engagement. Through these pathways, we believe durable shifts in professional identity and community trust are consistent with Goal #3 objectives.

Year Goal #3 Outcomes Assessment

Formative evaluation results from program refinement in year 3 demonstrated that the CORaL Network Programs are progress toward achieving the Goal #3 shift from presenting scientists as distant experts toward scientists as embedded community partners who actively communicate, co-learn, and foster STEM skills in places where research, mariculture, and restoration intersect with locally identified needs across the EVOS impacted zone. Coding across the uploaded outcomes reports reveals that this goal is operationalized as a networked set of practices repositioning scientific work within community spaces, cultural contexts, and applied problem-solving environments. The impacts documented by program facilitators consistently emphasized relationship building, mutual accountability, and the integration of scientific knowledge with local and Indigenous knowledge systems.

Across the program outcome reports, evidence of impact clusters into five interrelated outcome domains: (1) co-creation of STEM learning with scientists and community knowledge holders; (2) increased visibility and accessibility of active research within community and youth spaces; (3) mariculture as a workforce-linked STEM pathway grounded in regional economies; (4) cultural competency and trust-building among scientists working in Alaska Native contexts; and (5) long-term research programs translated into usable community and educational assets. And all achieved through the pathways model for program delivery.

In addition, evidence from the CCE program outcomes served to highlight intersections with scientists, CORaL core members, and career learners further indicates that this shift is not limited to community-facing impacts, but also produces substantive learning outcomes for scientists and CORaL staff themselves, most evident in how they understand expertise, facilitation, professionalism, and accountability within Indigenous and place-based contexts.

Co-Creation of STEM Learning with Scientists and Community Knowledge Holders

During the Year-3 formative refinement phase, CORaL observed the continued emergence of co-created STEM learning environments in which scientists worked alongside educators, Elders, and local knowledge holders as equal contributors. Two programs, the Alaska Knowledge, Science, and Education Alliance (AKSEA) led by Alaska Sea Grant, and the CCE program implemented across the CORaL Network, were intentionally designed to model this approach and therefore serve as exemplary cases for this reporting.

AKSEA assembled interdisciplinary teams composed of two teachers, one scientist, and one Elder from communities including Homer, Cordova, Valdez, Anchorage, and Kodiak. These teams addressed a clearly articulated community need: strengthening connections among educators, researchers, and knowledge holders to create learning experiences grounded in marine-related anchoring phenomena specific to the EVOS impacted region. Rather than positioning scientists as content deliverers, the program design required shared terminology development, values dialogue, and collaborative lesson building.

Formative findings from CCE staff outcomes show that similar co-creative conditions produced parallel learning for staff and partner scientists. Staff reflections document a shift away from “expert performance” toward facilitation, listening, and holding space as core professional competencies. Scientists and staff reported learning that not knowing, especially in Indigenous contexts, can be an ethical stance, and that effective STEM learning emerges through relational presence rather than content transmission.

These learning conditions were supported through the Intern Institute and Community Science & Outreach pathways, particularly through reflection-based facilitation practices embedded in the CCE Intern Institute and the Collaborative Learning Series. These structures supported scientists in moving from expert roles into co-designer and listener roles, aligning professional learning with community-centered outcomes.

AKSEA and CCE produced both tangible and intangible outcomes during this refinement phase. Tangible outcomes included place-based lesson plans focused on marine heatwaves, sockeye salmon structural change, and climate solutions that integrated data, art, and storytelling. Intangible outcomes, documented across participant and staff reflections, included increased belonging, empowerment, and connectedness. For scientists and staff, these outcomes also included greater confidence in collaborative design, cultural humility, and shared accountability to communities beyond the life of a single project.

While AKSEA and CCE provide the clearest illustrations because they were explicitly designed to advance Goal #3, the Goal 3 portfolio-level assessment finds evidence of these same co-creation dynamics—scientists working relationally with educators, Elders, and communities—emerging across the broader range of CORaL programs reported during this period. Together, these findings indicate that co-creation is not isolated to a single initiative, but is becoming an increasingly consistent feature of how scientists engage as community partners across the network

Increased Visibility and Accessibility of Active Research in Community & Youth Spaces

During the Year-3 formative refinement phase, CORaL observed continued growth in the visibility and accessibility of scientists and active research within community-centered events that reach youth, families, and broader audiences. One exemplary case—the Ocean Sciences Festival in Cordova, coordinated by the Prince William Sound Science Center with CORaL network partners—was intentionally designed to advance this outcome and therefore serves as a clear illustration of progress during this period.

The festival brought active researchers into Cordova High School for a multi-day event attended by approximately 300 students and community members. Coding of planning notes and reflections shows that scientists were not positioned as lecturers, but as conversation partners, engaging with students through booths, scavenger hunts, and passport activities that encouraged dialogue rather than passive consumption.

Formative findings from CCE staff outcomes indicate that these same engagement formats also functioned as learning environments for scientists themselves. Staff reflections highlight that structured reflection before and after public engagement was essential for helping scientists interpret why their work mattered locally, recalibrate communication styles, and recognize the emotional and relational dimensions of STEM engagement.

These learning conditions were supported through the Community Sharing, Intern Institute, and Iterative Adaptation pathways, particularly through reflection-based facilitation embedded in the CCE Intern Institute and the Collaborative Learning Series. Together, these pathways supported scientists in shifting from content delivery toward relationship-centered communication and responsive engagement.

While the Cordova festival provides the clearest case because it was explicitly designed to support this Goal #3 indicator, the portfolio-level Goal 3 assessment finds additional evidence of increased scientist visibility and relational engagement across a range of CORaL programs reported during this period. Collectively, these

findings indicate that community-based science engagement is becoming more intentional, more relational, and more embedded within everyday community spaces across the network—advancing both STEM learning and scientists' own capacity to engage ethically, humbly, and responsively.

Mariculture as a Workforce-Linked STEM Pathway Embedded in Community Needs

During the Year-3 formative refinement phase, CORaL observed continued growth in mariculture-related programming as a pathway for linking science learning to local workforce and livelihood needs. Two exemplary cases, the **Mariculture Conference of Alaska** and the **Kodiak Kelp Festival**, were intentionally designed to advance this Goal 3 indicator and therefore serve as clear illustrations of progress during this period.

These events brought scientists into direct collaboration with farmers, processors, Tribal leaders, educators, and community members. Coding of planning documents and reflections shows that researchers were positioned as applied collaborators who engaged in conversations about sustainable kelp farming, economic diversification, cultural use of seaweed, and stewardship responsibilities tied to regional ecosystems.

Formative findings from **CCE staff outcomes** indicate that participation in these applied, community-facing contexts deepened scientists' understanding of workforce relevance, accountability, and the limits of purely technical solutions. Scientists and staff reported learning to situate data and research findings within broader conversations about livelihoods, cultural continuity, and stewardship.

These outcomes were supported through the **Community Science and Outreach** and **Community Sharing** pathways. Conferences, festivals, and workshops were intentionally designed as hybrid spaces where research, traditional knowledge, workforce development, and community priorities could be addressed together. This pathway configuration supported scientists' learning by placing technical expertise inside real economic and cultural systems and reinforced Goal 3's emphasis on applied, community-responsive science.

While the mariculture conferences and festivals provide the clearest examples because they were explicitly designed to support this outcome, the **portfolio-level Goal 3 assessment** finds additional evidence of scientists engaging in workforce-linked and community-embedded STEM activity across the broader range of CORaL programs reported during this period.

Cultural Competency and Trust-Building Among Scientists in Alaska Native Contexts

During the Year-3 formative refinement phase, CORaL continued to document shifts in how scientists engage with Alaska Native communities, with the **Coastal Alaska Native Perspectives (CANP)** training led by the **Chugach Regional Resources Commission** serving as a key purpose-built example.

Researchers who participated in CANP reported gaining skills necessary to work respectfully within Alaska Native villages. These included understanding cultural protocols, the role of Elders, and the importance of aligning research priorities with community needs. **CCE staff outcomes** further show that these experiences catalyzed professional learning through reflection on Western norms of professionalism, urgency, and authority that are misaligned with Indigenous-led approaches.

Scientists described this learning as a paradigm shift. They reported increased awareness of extractive tendencies in Western research models and greater commitment to Indigenous-led research practices. Staff

reflections indicate that these shifts were strengthened through repeated, embodied practice and observation over the course of the program.

These outcomes were implemented through the **Cultural and Competency Learning Opportunities** pathway, which included CANP, cultural orientations, Elder-led learning, and Indigenous language and history integration. The **Iterative Adaptation** pathway reinforced these experiences through observation, reflection, and ongoing learning rather than one-time training. Continued participation in community events, intern programming, and collaborative learning spaces helped embed cultural humility into scientists' ongoing professional practice.

While CANP provides the clearest case because it was explicitly designed to support this outcome, the **Goal 3 portfolio-level assessment** identifies additional evidence of culturally grounded and relationship-based engagement across other CORaL programs during this period.

Long-Term Research Integrated into Community and Educational Assets

During the Year-3 formative refinement phase, CORaL documented progress in integrating long-term research and monitoring programs into community-accessible and educationally relevant assets. Two key examples, the Gulf Watch Alaska program and the Herring Disease Research Project, illustrate how scientists collaborated across agencies to synthesize decades of data into forms usable by managers, educators, and communities.

These programs provided publicly accessible data portals and classroom-ready resources that enabled research findings to be used for education, stewardship, and management. CCE staff learning outcomes indicate that staff increasingly see themselves as stewards and translators of these long-term research assets who are responsible for helping communities interpret, contextualize, and carry this knowledge forward.

These outcomes were supported through the Website and Digital Presence and Community Science and Outreach pathways. Online portals, symposium presentations, science festivals, and classroom resources extended the reach and lifespan of scientific data beyond academic audiences and into community and youth spaces. These pathways allowed scientists to engage as educators and collaborators who support the practical use of research in local contexts.

While Gulf Watch Alaska and the Herring Disease Research Project offer the clearest illustrations because of their explicit design for public and educational use, the Goal 3 portfolio-level assessment finds broader evidence of long-term research being shared, translated, and used across the CORaL Network during this period. Together, these findings show that long-term monitoring is increasingly functioning as a shared regional asset that supports both community learning and relationship-based science.

Emerging Research for Future Integration into Community and Educational Assets

In 2025, CORaL Researcher, Rosemary Aviste published her doctoral dissertation, *Why Good Intentions Aren't Always Enough: Social Identity and Misalignment in Bridging Knowledge Systems in Science Collaboration (Aviste, 2025)*. Undertaken as part of the CORaL Research and Evaluation team and supported through external funding from Pennsylvania State University in 2025. As part of the outcomes fostered through this grant program, Aviste's research makes a substantive contribution to advancing CORaL Goal 3 by

clarifying how scientists can function as active, reflexive partners in community-engaged STEM learning when research is embedded within community-identified priorities.

This mixed-methods research with Western-trained marine scientists and Alaska Native knowledge holders in the EVOS impacted zone, demonstrates that long-term research and monitoring, mariculture development, and ecological restoration efforts are most effective as STEM learning pathways when scientists attend not only to technical expertise, but also to their own social identities, positionality, and power within intercultural collaborations

A central finding of the dissertation is that many scientists express strong support for integrating Traditional Ecological Knowledge with Western science, yet often retain control over research framing, timelines, and definitions of success. This dynamic can unintentionally limit community-driven STEM capacity building and constrain opportunities for shared learning. By identifying these patterns, Aviste provides actionable guidance for CORaL partners seeking to strengthen Goal 3: scientists must be supported in developing epistemic humility, reflexivity, and a willingness to reconceptualize what it means to "do science" in Alaska Native contexts

The dissertation is especially relevant for workforce-linked STEM pathways such as mariculture and restoration, where scientific knowledge is directly tied to livelihoods, stewardship responsibilities, and cultural continuity. Aviste shows that when scientists approach these domains as learners alongside community members, rather than as neutral experts, collaborations are more likely to foster durable STEM skills that communities can adapt and carry forward. These findings align closely with CORaL's emphasis on integrating research with community-identified needs rather than treating engagement as an add-on to technical projects.

Finally, the work underscores that responsibility for transformation must rest with scientists and institutions themselves. Aviste cautions against placing the burden of education or identity work on Alaska Native partners, instead arguing for scientist-facing training, mentorship, and reflective practice embedded within regional research infrastructure. In doing so, the dissertation provides both a theoretical foundation and practical direction for supporting scientists as ethical, humble, and effective partners in advancing community-rooted STEM learning under CORaL Goal 3.

Cumulative Impact of CORaL Progress Goal #3 *(learning outcomes)*

Taken together, the coded evidence across the document and the CCE staff outcomes indicates that CORaL Progress Goal #3 has produced a cumulative impact that extends beyond community learning to include **measurable professional growth among scientists and staff**. Scientists across the network are increasingly positioned as trusted partners, visible community members, co-educators, and applied problem-solvers.

For partner scientists, learning outcomes include:

- increased cultural humility and ethical awareness,
- redefinition of expertise toward facilitation and listening,
- deeper understanding of the weaving of knowledges as a daily practice,
- and sustained accountability to relationships that extend beyond individual programs.

The cumulative impact is a regional ecosystem in which scientific work is more culturally grounded, socially accountable, and responsive to community-identified needs—supporting both ecological recovery and the professional development of scientists and staff working within the Exxon Valdez Oil Spill–impacted regions of Prince William Sound, the Chugach Region, and Kodiak

Critical Review of the Outcomes

The Goal 3 report documents a coherent "pathways" infrastructure designed to move scientists from episodic outreach toward repeated, relationship-based participation in community life (digital presence, community sharing, cultural competency learning, CCE immersion, community science/outreach, and iterative adaptation). This design aligns well with peer-reviewed guidance that effective co-production is iterative, relational, and evaluated as a process rather than a single product (Meadow et al., 2015; Norström et al., 2020). The report also demonstrates progress across five outcome domains: (1) co-created STEM learning with Elders/knowledge holders and educators, (2) increased visibility/accessibility of active research, (3) mariculture as a workforce-linked STEM pathway, (4) cultural competency and trust-building (e.g., CANP), and (5) translation of long-term monitoring into usable community assets. Collectively, these outcomes reflect boundary-spanning practice: scientists engaging across research, education, and decision contexts in ways that increase uptake and shared problem-solving (Bednarek et al., 2018). These outcomes are reinforced by the findings from Aviste's (2025) theory-driven explanation for why "good intentions" can still produce misalignment: scientists may support TEK–WSK integration while retaining epistemic control over framing, timelines, and success criteria. Aviste's emphasis on identity, positionality, and power helps interpret why the report's strongest impacts appear in settings that slow down expertise-performance and create structured reflection (e.g., CCE, collaborative learning series).

Where the project is strong relative to the literature:

1) The pathways model matches best practice for co-production and actionable science: The reports describes redundancy (multiple pathways), repetition (non-one-off contact), and reflection (iterative adaptation). These features are consistent with recommendations for producing usable, community-relevant science through deliberate co-production and "boundary objects" that serve multiple users (Beier et al., 2017; Meadow et al., 2015; Norström et al., 2020).

2) Weaving of Expert knowledges is positioned as practice, not rhetoric: The reports emphasize weaving Indigenous and Western knowledges for ethical and ecological decision-making *(*as lived practice in immersive, relational contexts (CCE; Elder-led learning; reflection cycles). This is consistent with scholarship arguing that weaving Expert knowledges succeeds when it avoids "integration as assimilation" and instead supports plural coexistence, shared authority, and ethical knowledge mobilization (Leonard et al., 2022; Reid et al., 2020).

3) Workforce-linked mariculture programming is a credible STEM pathway: Linking mariculture learning to livelihoods, stewardship responsibilities, and local economic futures reflects a key mechanism in the co-production literature: relevance is sustained when knowledge is embedded in decisions and material needs rather than treated as abstract literacy (Norström et al., 2020; Räsänen et al., 2024).

Areas for improvement recommended by peer-reviewed literature (since 2015)

1) Move from "participation" to shared governance and sovereignty-aligned decision rules: The report documents co-creation and cultural competency growth, but it is less explicit about who holds decision authority over research questions, data use, interpretation, and dissemination across long-term monitoring, restoration, and mariculture. Co-production frameworks emphasize that quality depends on explicit attention to power, benefit-sharing, and accountability mechanisms (Norström et al., 2020). Two-Eyed Seeing scholarship similarly warns that pluralism fails when Indigenous knowledge is treated as "data to incorporate" rather than a governance-relevant knowledge system with its own authority (Reid et al., 2020). Aviste's findings suggest that even supportive scientists may retain control unless there are clear structural expectations and accountability practices that normalize shared authority.

Practical upgrades: adopt explicit partnership decision rules (e.g., co-defined success criteria, shared agenda setting, community-vetted dissemination, and "pause" protocols when misalignment appears).

2) Add Indigenous data governance expectations to the long-term monitoring translation pathway: The reports highlight public portals and classroom-ready resources as community assets, but they have yet to articulate how data governance aligns with Indigenous rights and collective interests. Post-2015 literature on Indigenous Data Sovereignty recommends adopting CARE principles (Collective Benefit, Authority to Control, Responsibility, Ethics) alongside open-science norms to prevent extractive reuse and ensure community benefit (Carroll et al., 2020).

Practical upgrades: incorporate CARE-aligned data plans for monitoring/restoration datasets (access tiers, community review of metadata/interpretation, culturally appropriate contextualization, and agreements about downstream reuse).

3) Treat scientist learning as a competency progression with coaching, not a single training exposure: The reports indicated an area of learning claims that rely on reflection-based practice (CCE; iterative adaptation), which fits evidence that engagement capacity grows through supported practice opportunities, peer learning, and incentives—not just workshops (Kimbrell et al., 2022). Science communication training research also suggests that training increases confidence and engagement behavior, especially when paired with opportunities to apply skills and receive feedback (Swords et al., 2023).

Practical upgrades: define a CORaL "scientist partner" competency ladder (e.g., relational facilitation, co-design, cultural humility behaviors, conflict navigation, community accountability), then provide mentoring/peer coaching and observation rubrics across multiple events.

4) Build "identity work" and reflexive practice explicitly into scientist supports: Aviste (2025) indicates that identity threat and professional norms (neutrality, control, epistemic dominance) can drive subtle resistance, including narrowing TEK to observations and preserving Western framing. Recent peer-reviewed guidance on reflexivity argues that scientists benefit from structured practices that surface standpoint, values, and power in research relationships rather than "wearing neutrality as a cloak" (Phurisamban et al., 2025). Intellectual humility research also suggests humility can improve cross-divide communication and trust, particularly when complexity is communicated transparently (Vaupotič et al., 2024).

Practical upgrades: standardize pre-brief/debrief protocols (positionality prompts; "who benefits" checks; moments of misalignment; what to do next time) and embed these into pathway events.

5) Make outcomes more measurable without reverting to extractive evaluation: In summary, all of the summary reports provide strong narrative evidence of shift toward relational partnership, but it would be stronger with a small set of shared indicators tied to the pathways logic model (e.g., frequency of repeated contact; proportion of events with co-defined goals; presence of Elder/knowledge-holder authority roles; documented changes to research plans based on community feedback). Co-production scholarship emphasizes evaluating both process quality and usefulness over time (Meadow et al., 2015; Norström et al., 2020). We believe that refining the reporting system by adding these rubrics to the reporting tools will accomplish these goals.

Practical upgrades: The evaluation team recommends we add "lightweight", partnership-safe measures (short reflective logs, co-defined "what changed because of this relationship" documentation, and community-defined markers of trust and usefulness).

Conclusion: Promise and Direction for the Next Phase

As the CORaL Network enters the fourth of five years of funding, the assessment of Goal 3 indicates a credible foundation for advancing scientists' roles as active partners in community-rooted STEM learning. These data evidence demonstrate that the network is moving beyond episodic outreach toward a pathways-based infrastructure that prioritizes repetition, reflection, and relationship-building. Scientists are increasingly given opportunities to be embedded in community contexts where long-term research and monitoring, mariculture, and restoration are directly connected to community-identified needs. These efforts align closely with peer-reviewed literature on co-production, Two-Eyed Seeing, and actionable science, confirming that Goal 3 is being realized in ways that are both theoretically sound and practically meaningful.

The end-of-year assessment revealed that many scientists' participation migrated from transactional lectures toward more relational, accountable forms of partnership. Examples of co-created learning with Elders, culture bearers, educators, and workforce partners illustrate tangible shifts in how STEM knowledge is communicated, applied, and carried forward within communities. Importantly, these shifts are not limited to benefits for communities alone. This assessment revealed that some scientists are willing to engage in reflective learning and professional growth, including increased self-awareness of context, responsibility, and the limits of their disciplinary technical expertise.

At the same time, drawing on the full body of findings and the cautions raised by Aviste's (2025) dissertation study, these results make clear that the next phase of work requires greater formalization of practices that are already emerging. Without intentional structures, even well-designed and well-intended collaborations risk reproducing epistemic control through default Western scientific norms. The promise of the next phase lies in making explicit what has thus far been implicit: shared governance in research design and decision-making; CARE-aligned approaches to data stewardship that center collective benefit and authority; competency-based development for scientist partners supported by coaching and peer learning; and structured opportunities for identity work, reflexivity, and humility.

Taken together, the findings suggest that adopting these recommendations will strengthen formative evaluation by shifting attention from whether engagement occurs to how power, learning, and accountability are distributed within engagement. As the network moves into Year 4, Goal 3 is well-positioned to serve as a model for how scientists can learn with, rather than merely work in, communities. By formalizing the next set of supports and evaluative lenses, and through providing scaffolding learning opportunities for scientists who will engage through the CORaL Network partners, the project team can build on its progress to ensure that learning across the EVOS impacted zone can meet the transformative potential imagined in the initial grant proposal.

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CORaL Network Process Evaluation Summary:

This external evaluation assesses the effectiveness, broader community impact, and sustainability of the CORaL Network. The network is a collaboration of non-profit science organizations and Native Alaskan-led organizations in the Exxon Valdez Spill Area. The evaluation will culminate in a final report that tells a story of the CORaL Network and features a set of recommendations that further advance the CORaL Network beyond funding. Below is the evaluation summary that recaps the process of the CORaL Network as of right now.

Methodology:

Headwater People Consulting (Headwater People) is a body of practitioners that rely on their own ancestral, professional, and lived knowledge to bring a holistic and culturally relevant inquiry process into building a methodology for an evaluation. Specifically for the CORaL Network, Headwater People deployed a narrative inquiry process that uplifts and centers cultural teachings of the Pacific Northwest and South-Central Alaska.

In this methodology, it is important to hold positive relationships with all the partners so that they feel safe and comfortable to be able to step into a space and share their reflections as they see the CORaL Network developing. Rather than centering on an extractive practice through various forms, surveys, and conventional data acquiring avenues it centers on what it means to hold relations in a network.

At the first in-person CORaL Network meeting that Headwater People attended, it was critical to ensure that multiple staff members were present to show CORaL partners that there is genuine interest and appreciate for this work. Headwater People led long introductions that uplifted non-traditional ways of introducing the self. While it had seemed a “waste of time” or “boring” to some CORaL partners it was important to bring an authentic self into to this work. The long introductions concluded with the passing of gifts. This gifting tenant is at the core of how we incorporate cultural aspects in our inquiry process. It can also seem uncomfortable for some partners, but it showcases that different methods are uncomfortable because they are unknown to the receiver. However, there is growth because a network should be constantly ideating on new ways to make a network not only more efficient and effective but a safe space for partners themselves.

Sharing stories is another important tenant of the methodology and understanding that tangents and longer anecdotes may be just as valuable as the questions asked from the agenda. Storytelling is at the root of this framework because it not only allows to see a clearer and more relatable picture of the CORaL Network Process but allows for room to reflect and ponder how the story may be connected with network health. Additionally, due to the number of educators that make up the CORaL Network partner staff, the time allows them to apply their skills to understanding how the network is building, shifting, or shrinking through their own experiences.

Understanding that everyone’s part in the CORaL Network, whether big or small, has an impact on network health. The absence of someone considered central to the network may be felt more strongly than someone who is more peripheral, even though everyone has a role to play within a dynamic network. In either case, as evaluators, we tried to ensure that everyone’s voice was equitably heard and listened to. This approach to process evaluation assists with understanding the major power dynamics are experienced within a large network.

When assessing process and growth, imbalances can show up differently in the many network spaces. We've seen these imbalances in other networks similar to the CORaL Network or cultural coalition building can be stunted if a member's understanding of how much another person is "contributing" conflicts with that member's understanding. Yet, through the practices of cultural humility and equity, we encourage all partners to look at each member's contributions through a different type of lens, not one prioritizing Western ways of knowing, but rather, through a lens of many ways of knowing.

Evaluation Summary:

To achieve a culturally responsive evaluation, Headwater People built a framework that could account for overall evaluation goals 4, 5, and 6. To do so, Headwater People created larger thematic buckets that centered on impact, effectiveness, and sustainability all relating to the CORaL Network's health and process. The inclusion of programmatic data and outcomes are included because many partners shared these when telling a story or when they wanted to comb through the data together. This part of the evaluation process shows success of programs and pathways as illuminated in goals 1, 2, and 3 in service to this assessment of the Network process. The framework of impact, effectiveness, and sustainability was all reviewed and approved by CORaL Network Partners and we've continued to discuss those process observation through that framework. Evaluation goals 4, 5, and 6 come after this initial summary of impact, effectiveness, and sustainability to directly answer the questions posed in the external evaluation plan.

Initial Process:

Headwater People reached out to partners on a regular basis. Some partners wished to meet more frequently than others. Some partners opted into a monthly or bi-monthly conversation, a few partners decided that it would be a best use of their time to send updates via email. In either case, Headwater People always ensures that partners receive meeting agendas beforehand outlining the virtual meeting. A meeting will consist of the following: an ice breaker, a CORaL network temperature check, and new business to discuss.

The qualitative temperature check is an invaluable data asset of the process evaluation because it consistently tracks how CORaL partners are feeling in regard to the network as a whole. This temperature check relates to trust, health, and how collaborative CORaL partners are feeling as a part of the Network.

Protocols were decided amongst partners. These protocols involve the following:

- Never interview community members without pre-approval
- Be transparent about the external evaluation
- Deliver a meeting agenda before each meeting
- Take notes and share them if requested
- Keep all feedback regarding CORaL Network anonymous unless requested by the partner

Headwater People was first brought into the Anchorage in-person meeting (1/25/25 - 1/26/25), held before the 2025 Alaska Marine Science Symposium (AMSS). Headwater People attended alongside co-facilitators Ginga and Ingnin collective. Headwater People was there to meet with CORaL partners and introduce their methodology and implementation of a process evaluation.

Headwater People conducted an activity at the end of the meeting. In this activity, partners were moved into groups, each group was given a large sheet of white paper. Partners were to draw and write down individual

words that are connected to the prompt, "Where do you see the CORaL network in 5 years?" This activity aided Headwater People in understanding how the CORaL Network sees themselves despite prior missteps. The majority of the themes that came out of this activity was moving to a place where the CORaL Network could thrive together through stewardship, reciprocity, and community. It was evident that the CORaL network partners wanted to be meaningfully engaged with the network rather than being distracted or looking for a way out of the network.

Themes that emerged from this activity were:

Together, reciprocity, imagine stewardship through community opportunity, accessibility, engaged community, healthy resources that are vibrant and loving exchange, shift to equity, coming together, shift in thinking, shift to justice, respect, supportive, collaboration, interconnected, restoration, regenerative.

CORaL Process Impact

What is the impact of the CORaL network for the CORaL partners? What is impact of having a CORaL network? How are CORaL partners building each other up? This theme focuses on the CORaL partner's collective impact through dialogue and relationship building with one another. Looking for stories about CORaL partner collaboration and impact on their own organization. This section does not focus on the service communities. Rather, it focuses on the CORaL Network impact as witnessed through the reflections and documentation of CORaL partners.

Key Questions:

What is the public's perception of the CORaL network?

Currently, the public's understanding of the CORaL network could be described as vague or unknown. The public here is defined by CORaL partner community members and what they feel they hear from the "general public." Recently, a revamp of the CORaL newsletter and the CORaL Network website officially launched in Q4 2025 which will likely shift this perception of public understanding. Therefore, Headwater People will be following the reception of the newsletter and recently launched website to understand how the analytics impact process and community health.

The CORaL Network has also moved forward with having a larger community presence by creating mobile booth kits. These kits are equipped with a banner, digital screen, and informational handouts. The digital screen allows CORaL partners to be able to hook their computers up to the screen and share a short PowerPoint that shuffles through CORaL events, locations, and the mission statement. These kits have been set up and given out by ASLC for the partners. This allows for CORaL partners to be sufficiently equipped with media tools when interacting with the public across the region.

During the 2025 October annual meeting in Homer, CORaL partners worked on a shared elevator pitch for discussing the network with the public. First, CORaL partners were tasked to individually respond to the prompt "**How would you explain the CORaL network to a five-year-old?**" Everyone participated and handed over their answers. While CORaL partners did not follow the direct rules of writing it to a five-year-old comprehension level, they did do something quite remarkable. All the elevator pitches were connected in some form and did not just rehash the CORaL Mission Statement. In fact, they showcased how CORaL

partners are collectively thinking about how to discuss the Network. The elevator pitches were all coded and CORaL partners were able to discuss amongst themselves, what they liked and didn't like about each elevator pitch from a small group. Finally, CORaL partners decided to move forward with this shared elevator pitch:

"The CORaL Network is a partnership of organizations focused on uplifting coastal communities and ecosystems affected by the 1989 Exxon Valdez Oil Spill . Through science education, cultural outreach, research, and hands-on experiences, the network builds and restores community partnerships. CORaL integrates Western and Indigenous Science to inform stewardship, resilience, and collaboration for future generations."

This pitch highlights the importance of location, cross cultural learning, and science outreach. This elevator pitch now serves as a launching point to continue to ideate and develop more ways of talking about the CORaL Network. As the network grows, we anticipate that the elevator pitch will grow as well.

It will also be important for the CORaL Network to be aligned on how they discuss the network with the public. There was an instance at AMSS 2026 where a college-aged person came up to the CORaL booth and said "**Oh, what is the CORaL Network? I have never heard of it**." In this moment, a CORaL partner was able to succinctly describe the CORaL Network and the communities the network serves. The person became very interested and asked about upcoming opportunities. The CORaL partner redirected them to the upcoming CANP programming, and the student took a flyer. Before leaving the student added their name on the newsletter sign-up sheet and said thank you.

What impacts do we see as a result of increased collaborations between CORaL Partners?

The Alaska Knowledge, Science, and Education Alliance (AKSEA) brings together local knowledge experts, researchers, and local school educators to co-create lessons focused on marine-related expectational stories for students to learn and be inspired. The inclusion of Indigenous knowledge holders creates a space where scientists and educators can understand and value the importance of traditional ecological knowledge (TEK). One post-reflection from an individual wrote: *"[I] learned so much more about westernized science and how to incorporate TEK within its systems and processes."*

How are these collaborations impacting sustainable restoration work in the oil spill-impacted region?

The CORaL Network collaborations are aiding in the restoration work of the oil-spill region in multiple ways. Many of the key programs are building stewardship and awareness of the region and how the oil spill has affected not only the landscape, animals, but also people. The Network partners have all acknowledged that it is equally important to discuss how Tribal people have been affected by the oil spill as any other culture or community.

How have CORaL Partners witnessed the change in relevant, co-created, and culturally responsive science outreach?

Assessing program evidence revealed that many CORaL Partners have experienced change in how they participate in creating relevant, co-created, and culturally responsive science outreach.

One instance of this was a CACS project that created a visual field guide with Chugachmiut. The animals and plants have language translations alongside them. Though this is a small part, it is an important step because

the inclusion of language is not an easy task. Language work and asking permission to use language takes a relationship with the local language keepers as well as compensation.

When the CORaL network met in Homer, they were guided by some of the CACS staff who help run the CCE program. On a beach they pulled out the visual guide and showed how they use it when their programs come to the same beach. Staff were able to pronounce the words and share them back with the CORaL partners. In these ways, there was a shift of thinking from extraction into how co-created materials between tribal organizations and CORaL partners can be achieved. It is too often that organizations find shortcuts to achieve a goal including looking up Indigenous words on Google or incorrectly citing them.

When looking at the data sets of *Charts CCC survey data, CCC Leader Training Post-Survey (Responses), 2025 CCC Leader Training Pre-Survey (Responses)* and *CCC Participant Surveys Data Coastal Connections Camp* there are many themes that pop out that address the above framework around CORaL Network Community impact. From one 2024 post-survey response for CCC Leaders the leader remarked that*: "I would have liked for there to be more integration of indigenous awareness and knowledge to be woven through more of the training, and for all the camp resources online to be shared with those who aren't necessarily running the camp."*

In regard to the question, *"Did CCC make you any more interested in the following things?"* 2024 participants answered a split majority of Definitely (n=8) and Not Really (n=8) in regard to ***Culture, History, and Community*** whereas in 2025 the majority of participants answered Definitely (n=22) and A Little (n=12). This shows a significant change in the outcomes of the data and information from CCC. These data show that there is awareness from previous comments about Indigenous awareness and knowledge to be woven into CCC. This shows a small change in relevant, co-created, and culturally responsive science outreach and a change from the 2024 leader's comment.

However, there are some clear indicators that can help improve CCC in regard to culturally responsive science outreach. From a 2025 Post-Survey Leader response, one leader noted that *"I think the least useful portion was the talk about Seward's indigenous cultures. It was interesting, but what I would have liked were suggestions on how to incorporate indigenous cultural knowledge or references into our activities, rather than just history."*

This highlights that there can be more integration on how this information about Indigenous cultures is taught through the curriculum. This additionally synergizes with a 2025 Free Response from a participant that noted they wished there was *"a little more History on the Native land"* and someone else adding, *"I would suggest there be a lot more on culture, especially native culture"* and *"More culture learning."* These suggestions are important because in the **previous 2024 Free Response information, there was no mention of Alaska Native culture at all.** This shows an increased dialogue of topics that relate back to the change in relevant, co-created, and culturally responsive science outreach.

Regarding the Participants data sets of 2024 and 2025 to the questions:

Do you feel like you have a stronger connection to the environment of the area?

Do you feel like you have more understanding of the community, culture, and history of the area?

Both answer sets had an increase in percent of positive feelings. There was a shift towards "Definitely" and "A Little" compared over the year.

In 2024, three-quarters (n=17) of participants answered "Definitely" and "A Little" when asked "***Do you feel like you have a stronger connection to the environment of the area?***" In 2025, nearly all (n=45) answered.

In 2024, two-thirds (n=15) of participants answered "Definitely" and "A Little" when asked "***Do you feel like you have more understanding of the community, culture, and history of the area****?*" In 2025, 41 of the 45 participants answered, is an increase by 1/5th from the prior year.

Regarding the CCE program, interns were asked "Through CCE, how has your understanding of place, people, and the environment transformed?" This question centers on how the CORaL Network partners have informed interns and build programs that create a larger worldview. There were seven reponses. One reflection points to how the CCE program help them understand the interconnectedness of Traditional and Western science. They wrote *"I've learned how interconnected cultural knowledge and scientific research can be, especially in a place like Alaska where traditions and ecosystems are so tightly woven together. Engaging directly with local communities, organizations, and natural environments helped me see environmental work as not just data collection—but as something grounded in respect, collaboration, and stewardship."* This is important to highlight because this reflection points at how they were able to move past *"just data collection"* and into *"respect, collaboration, and stewardship."*

Another reflection directly discussed that their understanding has *evolved "to include more regional knowledge of other Alaskan Native communities and how deep the EVOS and colonization was beyond [Prince William Sound] and Kodiak were."* Importantly, that respondent was not asked about the EVOS or Prince William Sound but inherently tied them to their answers. This helps showcase how the CORaL Network is building awareness of the EVOS to an age group that was not born when the EVOS happened.

Lastly, the strengths of bringing Traditional and Western science together are illuminated in one reflection, *"I've gained a new sense of confidence in myself and culture, with a new passion to improve my native corporation's social media account to help have my culture be more understood and shed more light on our traditions and current news. The most important thing is I went back to my hometown and made new connections and reclaimed some past negative energy and reclaimed it. making myself feel stronger than ever."* This answer reflects on how the CCE program empowered them to make a change because of the positive and inspiring teachings.

While this reflection showcases a small set of the total reflection, all reflections from CCE interns demonstrated a renewed sense of agency, belonging, and understanding of multiple ways of thinking through participating in the CCE program. These reflections support the positive impacts that the CORaL Network is achieving and showcasing how by collaborating with Traditional and Western science organizations can result in a greater depth in educational outcomes for students, interns, and participants that would not necessary be so forefront in a question that inquires generally about place, people, and the environment.

Another instance of how CORaL partners have witnessed a change is through how their community members are reflecting back the importance of the inclusion of Indigenous knowledge across the region. Specifically, in the Alaska Knowledge, Science, and Education Alliance program there has been the inclusion of three different application categories, one of which is local knowledge experts. This group is defined by their ability to bring "firsthand, relevant knowledge and community experiences to each team." Notably, local knowledge

holders are compensated at the same rate as graduate science students or scientists with a PhD. This equity in compensation is significant, as research has shown that Indigenous knowledge is frequently misunderstood, underfunded, and treated as less valuable than Western scientific expertise, resulting in Indigenous knowledge holders often being inadequately compensated for their contributions (Wheeler et al., 2020).

CORaL Process Effectiveness

What is the effectiveness of the CORaL network? This theme looks at partnerships that have been built and fostered by the CORaL network. It recognizes that the objectives are not static goals but are ever changing outcomes. This looks at overall partner's contributions to the CORaL network and the relationships that have been built by being a part of the network. Effectiveness here does not check off boxes but rather ensures a story is gathered to tell how the network has shifted goals as a response to the partner's needs.

The CORaL Network is becoming very effective at achieving their mission**. *The CORaL Network empowers our region by collaborating, learning from one another, and sharing scientific, cultural, and traditional knowledge. We foster community co-creation and responsiveness to meet the needs of our partners and their service communities.*** The ways that this has been seen through an internal and relational lens was through accountability, trust building, and CORaL Partners feeling empowered to collaborate.

Because of the variety of CORaL Network organizations including Western science and tribal organizations there were multiple times where there was a difference in understanding on how to move forward while considering everyone's needs and wishes. This showed up in the planning of events and programs. One organization might not see the implications of how actions could be harmful to other communities. At times this created tension because it is really difficult to work through the emotions in such personal and community-based work. However, through clear discussion and continual trainings that expanded the understand of how communities operate and the impacts of colonialism and extractive practices, CORaL partners are now better suited to pre-emptively understand how something could harm a community. This, unfortunately, puts a lot of weight on organizations to have to be the educator. Many times, it was described as feeling emotional and mentally exhausting. Yet, through conversations with CORaL partners it seems that there is a renewed understanding of how to move forward with best intentions and voicing concerns as transparently as possible. When CORaL partners were asked to summarize how the CORaL Network changed throughout the last year, one of the most discussed themes was clarity. One CORaL partner wrote, *"[The] ability for partners to be honest and authentic, working through issues and growth and focused on outcomes and relationships that are positive [and] sincere."* While another partner candidly wrote, *"...change in staff, change in attitude, change in involvement. Some for better and some for worse. Overall, we gained forward momentum."* And another stated, *"the conversations flow well and the individual organizations are finding natural partnerships within existing programs and creating new opportunities together."* This clarity hits upon an important element of what can make a network effective, which is time spent together and the understanding that things will become better if everyone is involved.

Key Questions:

To what extent – and in what ways – does the interactive website, community sharing, community science tools, and cultural learning opportunities work together to build partnerships and shared capacity across the region?

As of Q4 2025, the CORaL Network Website had officially launched. Previously, CORaL Network information was scattered through different organizations. To an outsider, it was confusing to track down information and how to attend specific events. The official website akcoralnetwork.com showcases the CORaL Network's extensive library of resources, programs, newsletters, upcoming events, and ways to be connected. There is information about how the CORaL Network started and its funding from the Exxon Valdez Oil Spill Trustee Council. Most importantly, there is now a live calendar that allows viewers to see which CORaL events are upcoming with links on how to attend in-person or virtually.

On the website there are additional teacher and student resources that combine CORaL resources with outside organization resources. This is a helpful tool because it allows someone who is interested in science education and outreach to have a central base to find effective and place-based resources. For example, someone may be interested in Virtual Field Trips through ASLC while a teacher may be interested in lesson plans from Alaska Waters. While these are two different organizations, one being a CORaL partner, they are all connected centrally for the public.

The Website Map of **"The communities [CORaL] serves"** includes Indigenous (Sugpiaq, Alutiiq, Dena'ina or dAXunhyuu) place names that accompany the English. Though this might seem like a small piece, this continues to uplift the CORaL Network's mission of cultural teachings and sharing knowledge. While CORaL partners might not see the direct impacts of how the place names are viewed and read, it offers a counter viewpoint that brings together both Western and Traditional science. It isn't being stated as anthropological science or research but just as a normal occurrence that the CORaL Network is prioritizing Indigenous vocabulary.

Many CORaL partners worked on the edit and launch of the website. One concern that came up was how the CORaL Network continues to update and refine the website in the future and how fair and capacity-minded responsibility is ensured. This is something that will be continued to be tracked and how the website work progresses.

How is the CORaL network being championed and shared by organizations?

Right now, the data is inconclusive. While the CORaL Network is becoming more cohesive and visible, it is unclear how the Network is being championed by the partners' executive leadership and other non-CORaL staff. It should be reiterated that the CORaL Network's partners are quite different in size. There is only one CORaL partner who regularly attends who is a member of executive leadership team. Additionally, there has not been any discussion of CORaL organization's Board Members. This topic will continue to be reviewed and evaluated as the CORaL Network grows.

One thing that has been incredibly helpful with tracking events and successes is the Prince William Science Sound Center's accomplishments by date. Each year of the CORaL Network PWSSC has created a running document that lists each and everything that PWSSC has done related to the CORaL Network. For their "Accomplishments Year 4, February 2025-2026" PWSCC broke down from CORaL projects and committees

to community programs to outreach, documenting a small blurb of what PWSCC's role and attendance was. This relays important information that is transparent and accountable not only to PWSCC but to other CORaL members. This information is readily available in the CORaL Network's shared drive. Headwater People has recommended that the CORaL Network adopts a framework similar to PWSCC's method to ensure the capture of all CORaL Network events and collaborations that are supported by CORaL Partners .

CORaL Network Sustainability

Network sustainability is a crucial theme that aims to offer recommendations on how the CORaL Network can continue to thrive outside of the current funding. Network sustainability is about recognizing the struggles and hardships that may have been present and how the CORaL network has become stronger. Ultimately, telling a story of how the CORaL Network can continue as network in the future.

Sustainability has been on CORaL Partners minds since Headwater People was engaged. It has been a big learning curve to understand where CORaL partners are in-regard to the sustainability of the CORaL Network.

When CORaL Partners were asked to anonymously answer the question "***Where do you see the CORaL Network in 1 year?***" there were a variety of answers that illuminate key themes that can build network cohesion.

CORaL partners answered this question and responses that spilt into two different categories. There were the answers that build upon and continue the work or efforts of the CORaL Network and there were answers that highlight gaps that Partners wish to close. Many of the partners answers contained both.

For the answers that build upon existing work/effort of the CORaL Network there was a strong theme of having the CORaL Network continue to strengthen their internal relationships. Many partners noted that they would like to see how they can continue to bring up issues and work towards resolving conflict. One CORaL Partner said that they, *"...would like to see [CORaL Network] leaning even more into the challenging transformational discussions such as decolonization and trauma informed approaches."* Another CORaL partner said, *"...continuing to strength our relationships with each other and having deeper relationships with the scientists working in the region so that aspect of our work can continue to grow."* Adding to this, a CORaL partner wrote, *"[I] would like to see us much better at addressing conflicts and differences between organizations openly actively, with a mindset of "we're in this together" that encourages us to lean in and do the big sometimes heavy but really important work to work together well."*

It is evident from these quotes that CORaL is working through how to lean more into resolving conflict. This isn't happening in a vacuum but a shared understanding. At this writing, the CORaL Network is doing more to address this challenge. By being more transparent, honest, and open many CORaL partners are feeling in a better spot than they were a year ago. This evidence matches how CORaL partners are checking in through their temperature checks during Headwater People and partner individual meetings. Many partners have moved from the cold / lukewarm temperature and into the warmer side of the thermometer. Though this can change at any moment, it brings a sense of excitement and enjoyment that CORaL work is happening.

On the other side, reflections from partners that reflect a wish to close a gap include one partner writing, *"I hope to see full immersion of every organization into this network. Lot of orgs have stepped back due to chaos and trust issues. I want the collective group to work towards science outreach and education in their*

location communities." While another partner writes *"In one year, I would like to see the network able to rely on ASLC for both programmatic and admin / financial leadership."*

Six out of the nine responses there was an evident need for the CORaL network to be discussing and planning the next steps of funding. One partner noted that: *"I'm interested in what our plan for the end of the funding is and what we want our lasting impacts on the communities to be. I would love to see the Network align on a shared vision for the future and agree on steps of how to make that happen."* While another partner noted that they hope the group can: *"[hone] in on what aspects of the CORaL work should be uplifted in the last year of funding and what we want to figure out how to sustain beyond the [funding]."* While some partners plainly stated the need for funding. One partner wishing, *"self-sustained funding for medium to long term, objectives made and delivered on."* While only half of the reflections brought up the need for next steps of funding, it is clear that it is time for larger discussions with CORaL partners on how to get to the next step for Network sustainability.

Key Questions

What capacities are the most critical for sustaining ongoing partnerships and outreach activities beyond the scope of the grant timeline?

Currently, the most important capacities for the CORaL Network to be ongoing beyond the grant timeline is consistency, accountability, and leadership. Paying attention to these three principles will help support a more reliable strategy for sustainability beyond the grant funding.

Consistency in the CORaL network has looked differently over the years. Currently, the CORaL network is in a really good place because of the systems that have been put in place through conversations with the PI and partners. Through the inclusion of new a CORaL Network Project Manager, there is now a consistent presence that is a tie through for all CORaL partners and is serving to provide a foundation for institutional knowledge. This foundation is incredibly important in this network because it is now ensuring that the cultural history of this network honors past stories, outcomes, and the evolution of relationships.

There have been many cases where CORaL Network Project Manager was asked a rather difficult and nuisance question and instead of looping back to the question in the future, they were able to answer it on the spot. Without this institutional knowledge, the Network members felt that one needs to continue to reinvent the wheel time after time.

During an early conversation with a CORaL Organization one partner said that, *"The [monthly] meeting is chaotic…no flow…very ineffective. Now these meetings are just obligations. People are just checking the box by coming. We are not being directed and led."* Other CORaL partners shared this sentiment. As of July 2025,the monthly meetings are now designed to be repeatable and contain important information for CORaL partners to be engaged with. They all clearly contain time and date followed by a clickable Zoom Meeting link for participants. In all meeting invitations, the CORaL Network Mission Statement is present, reminding partners of how they should be anchored in these meetings. There are attendance and clear designation of facilitator and note-taker roles. This creates a direct line of accountability missing in the past. Another aspect of the meeting agenda that members report as super helpful for the process of understanding the moving parts of the CORaL network has been the CORaL Project Management Tool Links which appear before the opening check in question. This Tool Link provides clear pathways to the many different important documents that pertain to the CORaL Network including Partner Communication Document, Shared

Calendar Tracker, CORaL Project Proposal, CORaL Budget, CORaL Branding Guide, CORaL Project Evaluation Form, and other opportunities. Though this list is extensive, it supplies all CORaL partners with important and transparent information that is not lost through emails, Google Drive locations, and other places.

Accountability is key in a network of six organizations. In the CORaL Network, some partners have raised concerns about the need for other partners and the project PI to be more accountable. Accountability looks differently for every network. In this CORaL Network case, what accountability looks like is still evolving and forming. However, partners suggest that accountability has been improving and is an important discussion point for partners during annual meetings and their monthly meetings. One partner reflected that over the last year they have seen *"[the] ability for partners to be honest and authentic, working through issues and growth and focused on outcomes and relationships that are positive, sincere and impactful to our communities and organizations willingness to share resources."* This is important because this sentiment being shared showcases how the importance of accountability is not only a personal value for the CORaL Network internally but extends outward to all of the communities that CORaL serves.

During summer 2025, a partner brought up the need for more work to be done to focus on accountability and relationship building. This need was heard and in October 2025 Heather Sauyaq Jean Gordon, PhD of **Sauyaq Solutions, LLC** was engaged by the Network in a limited capacity to share with CORaL partners a variety of ways to recognize intersectionality, build accountability, and foster relationships. Sauyaq Solutions attended a virtual monthly meeting in November 2025 to discuss workplace accountability and assisted the CORaL network with continuing to build group agreements. This external support illuminated many different things. One thing that came up was how different CORaL partners' organizations have different workplace values. There was a realization of how each partner is bringing those values to the CORaL Network as a whole. For example, one partner organization may be smaller and have the ability to be transparent in every single action and give an equal voice to each employee that is showing up while another partner organization may be larger and have a longer chain of command that requires patience when alerting someone higher up. These differences create a new understanding of how accountability shows up in the CORaL Network because every organization has been bringing forward their previous understanding which was attached to their workplace. An indication of Network maturity is now evident in how members of the CORaL Network are now recognizing this deficiency and working to strengthen how they are accountable. The group has begun to develop methods that bring clarity to CORaL Network accountability between partner organizations. This is still very much in its infancy but at this writing is now moving towards more fruitful conversations.

Leadership within the CORaL Network has been a rocky road. For the CORaL Network to succeed past the grant timeline there will need to be an undertaking of a leadership role that guides the Network forward. Currently, the CORaL Network is being championed by all the partner organizations, but each partner's CORaL supported staffing varies. This disparity creates asymmetries in engagement and capacity across the CORaL Network. As 2025 drew to a close, partners noted how helpful it was to have a new CORaL Network project manager, but this position is not a 100% CORaL Network position but rather a split with other responsibilities at ASLC. While discussing this topic with some partners, there was a vocal push that the future for the CORaL Network will require the coordinator role that is solely dedicated to CORaL. This position would fill in the previously discussed tenants including consistency and making sure that CORaL partners are being accountable.

Additionally, the CORaL Network may have trouble surviving without the partner organization's executive leadership support. Currently, the CORaL Network is mostly staffed by science educators and researchers. Without the assistance of every partner's executive leadership the CORaL Network risks becoming lost within its partner organizations, relegated to a funding source which currently is not the case.

Are there barriers or opportunities for network sustainability and collaboration that this network hasn't considered?

Right now, many CORaL Partners are interested in continuing the CORaL Network past the EVOSTC funding. An important part of this is to begin to create a data base of future funding that would work for the CORaL Network. This would ensure that CORaL Partners that there are pathways for the CORaL Network to begin to apply for new funding. Additionally, it would be helpful for CORaL organization executive leadership to assist with searching and applying for these funds. Given the scale of this distributed network, it may take multiple grants to support the CORaL Network at current levels.

CORaL Progress Goal #4: Network Capacity Building

Regional Network collaborations across the region are supported and sustained by capacity-building activities such as cultural and communication learning opportunities, internships, and community connections.

The CORaL Network is on track to building the capacities envisioned in the proposal. The Network is beginning to create regular ways of discussing more difficult conversations internally relating to personal, community, and programmatic issues. This is really important for a Network because things can often go unsaid and spill out through drama, cliques, and factions. Currently, the Network has no signs of emerging problems that would affect the health of the network in the future.

Headwater People has been conducting regular temperature checks with CORaL partners at meetings to understand how they have been feeling with how the health of the CORaL Network is and how their relationships with their other CORaL partners are. CORaL partners have shared that there has been an overwhelming shift in how CORaL partners respond to the temperature check. If something isn't going well in the network, it shows up in the temperature check. Currently, the temperature of folks has been on the warmer side (good). Initially, when Headwater People took the first temperature check after the 2025 annual meeting in Anchorage, almost all partners were feeling cold (negative) which we attribute to their distrust of the network's processes, capacity, and accountability.

Already, the impact of the CORaL Network has been immense. Sometimes it was hard for CORaL Network partners to see the effects in real time because they are all so embedded in the work. But, the effects have been showing up in meaningful ways. When CORaL Network partners were asked what they are most proud of as a part of being in the CORaL Network, they expressed pride most strongly in the CORaL Network's relational resilience and collective commitment. Many partners describe the ability of relationships to endure periods of conflict and emotional difficulty as a major accomplishment. One partner writes that they are, *"…immensely proud that we have been able to form relationships […] strong enough to withstand some of the pretty serious conflicts we have been through,"* while another emphasizes resiliency in the CORaL Network partner's to *"have the grit to have the hard conversations and work through hard topics with lots of emotion and varying opinions."* These reflections showcase that the CORaL Network is building an internal culture that values accountability, courage, and sustained engagement over avoidance. This is especially important to highlight as a positive indicator of CORaL Network health.

Participants also express pride in the network's respect for boundaries and capacity, both at the organizational and individual level. Several reflections highlight appreciation for partners' ability to recognize limits while still contributing meaningfully. As one respondent shared, *"I am proud of the network partners being respectful of one another's boundaries and capacities […] and proud of partners' ability to apply their expertise to planning programs and events within their own boundaries."* This balance between care and contribution suggests a maturing network that is learning how to sustain participation without overextension.

Another strong theme centers on the quality and impact of the network's work particularly in science education, stewardship, and mentorship. One CORaL partner writes, *"…the environmental work and the skillset and abilities of the educators and facilitators and stewards of this network,"* and in being part of *" a network of organizations that produce impact and create value for those who otherwise would not be able to receive it."* Reflections related to intern experiences are important, a CORaL partner said being *"very proud of the really positive experiences interns have had."* These examples illustrate how the network creates value through programs, relationships and knowledge transmission.

CORaL partners are also proud of the network's integrative approach, particularly its ability to bring together Indigenous knowledge and Western knowledge. One reflection highlights, *"our opportunity to bring together Indigenous knowledge, science, and education to provide new perspectives, foster respect, and find solutions to long-time challenges together."* This speaks to the CORaL Network's important mission statement and how CORaL Partners are continuing to think about the mission of the CORaL Network.

Finally, several reflections emphasize pride in the network's persistence and continuity. Simply, *"that we are here"* emerges as a powerful statement, especially given the emotional and logistical difficulty of the work. One participant reflects that *"the process was messy, emotional, and often really hard. But we are still doing it. We are showing up,"* and another notes pride in the network's continued effort to *"allow people to grow from mistakes and try to make the most of what we can."* This helps show a deep sense of shared ownership and belief in the CORaL Network's impact and sustainability.

Trust building is a very important part of any network. Currently, trust and relationships have increasingly been built through meaningful engagement, collaboration, and in-person meeting time. What is needed for building trust in the CORaL Network right now is the continuation of 'showing up'. It is imperative for CORaL Network partners to be together for in-person gatherings to build trust and relationships. While the Anchorage 2025 annual meeting was difficult and emotionally strenuous, many partners were able to see the benefits of hashing out tough topics to gain a better understanding of the interworkings of the CORaL Network and how the network needs to move forward in the future.

Fast-forward to the October 2025 meeting in Homer, CORaL Network partners came together refreshed and excited to see one another. The three-day meeting was hosted by the CORaL Partner Center for Alaskan Coastal Studies (CACS) and a clear agenda and meeting outcomes were pre-organized and sent in advance. CACS did a wonderful job at hosting and creating an environment that was not taxing on partners. Each day was a different location in Homer Alaska. CORaL partners were able to better understand each other through this relationship building and informal downtime.

This meeting demonstrated how crucial it is for the CORaL Network to continue to meet formally in person once a year to discuss and share provisions for the future. This not only moves the direction of the CORaL Network forward but bonds CORaL partners together which is much more difficult to do over virtual engagements. CORaL partners showing up to CORaL events is also crucial for trust building. During the October 2025 meeting in Homer, it was discussed by CORaL partners of the value of sending CORaL partners to visit each other. In one discussion with a CORaL partner, they talked about how important it was to visit the Collective Alaska Native Perspective hosted by CRRC. They talked about showing up and learning additional tools and education on how to best be a partner with Alaska Native Corporations, Tribes, and organizations. We also note that in fall of 2025, there was an increased presence of CORaL partners physically showing up for each other. This continuation of showing up builds trust because it shows to other

CORaL partners that there is an appreciation for the work that is being done and that other CORaL partners are dedicating time and effort to showing up.

The addition of skill building to meetings has been incredibly important. More CORaL partners have voiced a need for having time to build capacity in a way that supports the CORaL Network as a whole. Sauyaq Solutions has been assisting with their knowledge, but this should be seen as an entry point that continues to be focused on a commitment to active skill building in the CORaL Network.

Another important way that the CORaL Network is coming together is through their annual meetings. At the 2025 annual meeting in Homer, Alaska, it was evident that the Network is striving to improve together and move forward into a place of internal relational and programmatic success. This was done through a variety of workshops that were lead and hosted by almost all the partners in the CORaL Network. Workshop #1 was "Defining Who We Are Together: Purpose, Values, Vision, and Mission". This workshop dove into organizational identity and reiterated how the CORaL network mission statement will guide the work over the next three years. Working and uplifting CORaL partner's strengths and needs was address in workshop #2 titled "From individual Impact to Collective Strength: Building a Unified Network". Workshop #3 "Network Dialogue Co-Creating Connection and Support" built off of workshop #2 but further dove into how the CORaL Network reflects on when they need support and how to voice it to the larger group as a whole. Workshop #4 Community Engagement: Centering Priorities Deepening Impact helped CORaL partners understand how to best serve all of each other's communities including scientists, educators, students, and directly with Alaska Native communities / tribes / corporations. All of these workshops went into depth in the topics they covered. These were not surface level conversations, but rather, tools that built depth for all of the CORaL partners. The CORaL Network is being proactive with the time that they have together. They are able to see the leverage points of being a collective and not only refine them but see the results in their communities and priority areas.

CORaL Progress Goal #5: Leveraged Regional Resources

EVOSTC-funded resources across the region are effectively leveraged through an active, collaborative, cross-agency network of partners so that integrated projects demonstrate greater impact than the sum of individual projects.

Headwater People has found that the CORaL Network partners are in fact leveraging EVOSTC-funded resources to create more impactful and collaborative partner spaces. One of the most important parts of this is how CORaL Partners are showing up for each other in spaces and supporting each other. One example is how some CORaL Partners attended the 2026 Alaska Marine Science Symposium (AMSS). During AMSS the CORaL Network hosted a booth that included materials and lessons from their programs. Along with sign-in sheets to be added onto the CORaL Network Newsletter. The CORaL Network hosted a science educator workshop and brought in three scientists to share the work that they are doing in Alaska. The CORaL Network facilitated and produced interactive games that involved audience participation. By doing so, the CORaL Network leveraged this AMSS space and showcased how they work is connected not only to the EVOS area but to how it is applicable to Alaska scientists and educators as a whole. This example is being used because it is the most recent event but there are many more examples where CORaL partners have come together to showcase the CORaL Network.

CORaL Visibility

The CORaL Network Website was a large lift in activating how EVOSTC-funded resources are being shared across the region. Due to the website's recent launch, the analyze of the how the website is being used and shared is in its infancy. However, information and resources that have been uploaded to the central repository showcase the depth of the CORaL Network and how engage with CORaL programs in the future.

Another 2025 success was the CORaL Network mobile booth kits. These kits were made and distributed for CORaL Network partners to be able to set up a booth with ease. All the booth materials fit inside two weather sealed cases. They include a pop-up banner, program information, sign-up sheets, and a display that can link to any computer to showcase a CORaL Network presentation. By using resources and investing in the visibility of the network, more people including community members and general public can have a lower barrier to Network engagement.

The CORaL Newsletter was another important step toward unifying how the network presents itself publicly. The newsletter goes in-depth with updates of CORaL Network programs and specifically how the CORaL Network partners are working together, reiterating what the program is and how it is connected to the CORaL Network. The newsletter provides a list of upcoming events that the CORaL Network is a part of a job posting board from CORaL Network Partners and related community organizations, links to featured resources, and a culturally relevant placed-based section that discusses a Native word of the month. This newsletter is effective because it is centered on outcomes for the larger CORaL community. It was not made for the CORaL Partners but as a way to share information and resources for everyone's benefit. This directly

showcases an effective use of collaborative resources. By having all this information in one spot rather than spread across different organizations there is attention to how collaborative this work is.

Another vital part of CORaL Visibility is the communication committee. This committee's purpose is **"to strengthen and coordinate internal and external communication across the Network and the communities we serve, ensuring consistent messaging, effective outreach, and visibility that supports engagement, collaboration, and future funding opportunities."** The goals of the communication committee include but is not limited to:

- **External Communication & Outreach**
  - Identity key events
  - Guide newsletter content and coordinate with the ASLC marketing team and apprentice
  - Shape communication that highlights Network impact and support funding opportunities
  - Develop and maintain a social media presence
- **Internal Communication & Coordination**
  - Create regular channels for sharing updates (shared calendar)
  - Support group learning and communication skill-building
- **Digital Presence**
  - Begin forward planning for communication and funding narratives
  - Monitor requests and needs for website updates and shared calendar
  - Suggest important for visibility and clarity
- **Meeting & Structure**
  - Meet monthly and assign roles (e.g., newsletter lead, web liaison)
  - Everyone has a voice at the table but is not required to attend every meeting
  - Share updates during Network and monthly meetings

This committee was constructed as a collaborative process to be more intentional and effective at increasing the visibility of the CORaL Network. These goals ensure a path that builds the health of the network for the foreseeable future.

Collaborative projects

All CORaL Network active projects have elements of CORaL Partner Collaboration. Whether that is through the co-creation of programs such as AKSEA and CCE or those that involve CORaL Partner participation through getting the word out and attending to build their own cultural awareness such as CRRC's Collective Alaska Native Perspective (CANP). When talking with CORaL Network Partners there is joy when discussing the impacts of collaborative projects with one another. The collaborations apart of the CORaL Network stretch each CORaL partners understanding of how to approach the work through engaging different community members, multi-generations, or varied cultural views. There is still an ownership of each program with the CORaL Partner who is the project manager of the program. At the stage where the network is now, this is a healthy indicator of potential future success based on a chain of transparency and accountability.

Since the CORaL Network is composed of Western and Indigenous centered organizations, there will always be a veil of protection around cultural programs. This ensures that some partners are reminded of their positions as guests on the EVOS area lands. This lends to better cultural humility and leads to meaningful

discussions. In a future evaluation summary, we anticipate having sufficient data to offer a narrative matrix showcasing each program and CORaL Network participation and reflections of the program.

Collaboration looks very different in each organization, there has not been a clear discussion of what collaboration looks like for the CORaL Network as a whole. Therefore, we recommend that the groups engaged in facilitated conversation to develop a charter that describes collaborative ways that the CORaL Network should strive to meet. This strategy can illuminate how CORaL Network partners value collaborations.

CORaL Progress Goal #6: CORaL Network Sustainability

Utilizing developmental evaluation techniques over the course of the 5-year program, the CORaL Network becomes a self-sustaining mechanism for ongoing collaborations and community-based restoration activities beyond the grant period.

Headwater People has found that the CORaL Network is on track to becoming a sustainable network outside of current 5-years of funding. In the project proposal, the CORaL Network specifically described the goal of developing the program model with an eye toward securing additional funding to support a long-term sustainable community of practice.

When Headwater People initially met the CORaL Network in early 2025, there was some skepticism on how the CORaL Network was going to continue. Tensions between partners, executive leadership, and CORaL PI were high due to inconsistent messaging, evasive answers, and financial issues that had led to not only a lack of trust but an absence of trust. Many CORaL partners were wondering why they were a part of this network if respect wasn't reciprocated in all directions. However, all CORaL partners held a shared understanding that something different had to happen and felt that interventions needed to be made. This began the initial route of building consistency, accountability, leadership through a shared infrastructure.

Monthly Meetings

Something that has been made abundantly clear to the CORaL partners is that building a network is not a sprint but a marathon. They are aware that it is easy to burn out if you don't protect and safeguard yourself first. A decline of attendance in monthly meetings would have been an easy option but instead many partners stayed through the challenging times of building a facilitation practice that aligned with everyone.

Almost all the CORaL Partners voiced an appreciation for the CORaL Project Manager appointed by the Alaska SeaLife Center in 2025. This individual made sure that meeting agendas were clearly outlined and feedback was considering before the meeting date. Additionally, new safeguards were developed that ensured a transparent process of documenting the meetings following a formal note structure. The CORaL Network decided that the person facilitating should be the same person taking notes. This has proven fruitful for the Network because the engagement of the facilitator has been more intentional and the written notes have been more robust. This new process now allows for partners who were not able to make the meeting to review and stay updated with how the CORaL Network is progressing.

The ability to trace back meeting records is important because not all CORaL Network partners have the same budgeted time on the project. While some partners may have a larger FTE allocation than others, with partners moving off contract for months at a time. The need to have the most transparent communication to feel they are reengaged with the CORaL Network once they come back on contract. Fortunately, there has not been a substantial amount of staff turnover across the CORaL Network, but when new staff members at a CORaL Network partner organization come onboard, it makes the transfer of information much easier and more efficient because all discussions are internally documented. This practice has emerged as a non-

negotiable part of the CORaL Network that ensures its survivability in the future. While the process of note taking and facilitating can change in the future, as evaluators, recommend that the centralization of information remain a must.

Centralized Data System

The CORaL Partners have decided to utilize a Google Shared Drive as a tool for storing and accessing data. This strategy is effective because it has a low barrier to entry for gathering and storing information. It can be accessible wherever CORaL Partners have internet access. In the past, the CORaL Network utilized a shared folder. Concerns were brought up with the shared folder because the shared folder only has one owner whereas the shared drive is connected to everyone who has access. This is perceived as a risk if the owner of the shared folder loses access to the folder. To resolve this risk, the CORaL Network partners worked to migrate all their information from the shared folder to the shared drive. This movement, from shared folder to shared drive, was discussed and partners understood the reason for the change.

Currently, there are 29 people connected to the CORaL Network shared drive. This includes CORaL Network Partner staff and evaluators. Each CORaL Partner has their own folder where they can upload their information, notes, photos, and data sets for everyone's view. This new centralized data system is making it easier for partners to upload and find each other's information without having to constantly email and requests. For example, if a CORaL Partner was asked last minute to do a discussion about the CORaL Network but did not have their own presentation, they could search through the Google Shared Drive to find another partner's example and use their version. It's cases like this that ensure the CORaL Network is not missing out on opportunities to share their messaging and program highlights.

The data system also aids the building of the annual report for the EVOSTC. When the report is built together through Google Documents everyone who is a part of the CORaL Network can see how changes are made and implemented. Since there is a function to add comments or suggestions, it has made it easier for CORaL Partners to understand when their voice is being or discussed. This is an important indicator of a healthy network.

After the 2025 annual report, CORaL Partners voiced that they wanted the planning of the annual report to be done earlier in the year and that there were consistent check-ins to assist with the building of the large document. This feedback was heard by Headwater People and shared with the Alaska SeaLife Center. Because of this, the annual report was in-fact discussed much earlier in the year and agreed upon dates were created and achieved. This simple process is an indicator of a healthy network because there was a concern that a pattern was going to happen, yet an intervention was placed that other CORaL Partners may had thought about but didn't want to vocalize by themselves.

Network Partners voicing a need

Headwater People has had the opportunity to discuss CORaL Network sustainability with five CORaL Network Partners. These discussions, for now, have been private conversations that open the initial conversations about whether the partner organization would like to stay part of the CORaL Network past the initial five years of funding. All the conversations have been supportive of finding additional funding and staying with the CORaL Network. Partners noted how meaningful the collaborations and programs are to their communities and to their individual selves. It appears that many partners feel ownership over the

CORaL Network and despite difficult situations, continue to be invested because of the impact they are seeing. These conversations were done in private before moving to a larger conversation in order to understand where each partner is coming from and how they see themselves in the CORaL Network in the future. Some partners want more responsibility, and some want a lesser role. It would be unhealthy to hash all that information in such a large group. There are also questions around how the CORaL Network would evolve through the involvement of new partners and programs. It is clear however that if network sustainability was brought up in early 2025, answers from CORaL Partners would be vastly different than they are today.

The next step of these conversations will not only be searching for additional grants but to capture what is working well in the CORaL Network that supports sustainability and what isn't working.

Process Evaluation References

Wheeler, H. C., Danielsen, F., Fidel, M., Hausner, V., Horstkotte, T., Johnson, N., ... & Vronski, N. (2020). The need for transformative changes in the use of Indigenous knowledge along with science for environmental decision making in the Arctic. *People and Nature*, *2*(3), 544-556.

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