Q&A

Q&A with Anne Salomon and Kii'iljuus Barbara Wilson: Tides of change and resilient communities

Prof. Anne Salomon, distinguished professor of applied marine ecology and social-ecological system science at Simon Fraser University, along with Dr. Kii'iljuus Barbara Wilson, adjunct professor at University of British Columbia, cultural advisor at Simon Fraser University, and Haida Kuuljaad (Boss Lady) of the Cumshewa Eagle Clan, recently engaged in a discussion with *One Earth* on the challenges and successes in building coastal community resilience. The views expressed by Salomon and Kii'iljuus are their own and do not necessarily reflect the positions of Simon Fraser University, University of British Columbia, or the Haida Nation.

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Could you first explain the role of the ocean to coastal Indigenous People across the Pacific Ocean?

K.B.W.: The Pacific Ocean is our "common bowl." Our food, medicine, and life came and continues to come from the ocean. We are Ocean People. Our old stories tell us that our *kuuniisii* (ancestors) came out of the ocean. Among the Haida people, our ancient laws of *yahguudang* (respect), *'laa guu ga kanhllns* (responsibility), *isda ad dii gii isda* (reciprocity), *gina 'waadluxan gud ad kwaagid* (interconnectedness), and the ability to *tll'yahda* (make things right) live within us and guide our relationship with the ocean and all its occupants. These ancient laws teach us how to be kind, caring, and responsible parts of the environment. Similar laws are held by coastal Indigenous People across the Pacific Ocean. Today, when disrespect, harm, unnecessary destruction, or overharvesting happens under colonial law, it is necessary and important to *tll'yahda*.

Can you comment on the importance of ocean policies in the context of coastal community resilience?

A.S.: Equitable ocean policies and resilient coastal communities can only be achieved by acknowledging and upholding the relationships, responsibilities, and rights of Indigenous people to their territorial waters. This means revitalizing and respecting ancestral laws, governance systems, decision-making authority, knowledge, care-taking practices, and objectives of Indigenous people, the original proprietors of the ocean prior to settler-colonial laws.

To what extent has the overexploitation of fisheries, or resource exploitation more broadly, and associated governance (or lack thereof) impacted the resilience of coastal communities?

K.B.W. and A.S.: Along Canada's Pacific coastline, the imposition of the colonial Fisheries Act in 1868 resulted in the commercial overexploitation and local collapse of several culturally important fisheries, including butter clams, northern abalone, Pacific Herring, and salmon, for example. The local depletion of these fisheries prevented their use and access by place-based Indigenous communities, causing the erosion of social-ecological resilience, nutritional health, livelihoods, and overall well-being among many coastal First Nations. Once the Act was established, maximizing fisheries yield for profit rendered sustainable food fisheries secondary. Colonial fisheries policies and practices outlawed ancestral Indigenous care-taking activities that once existed along the entire coastline. For example, Indigenous wooden fish weirs, stone fish traps, and terminal fisheries concentrated at the mouths of rivers were banned. The colonial fishing practice of targeting large-sized individuals eroded the population structure and long-term viability of many fisheries,

unlike ancestral Indigenous fishing practices that were size and sex selective. For example, unlike the colonial practice of targeting large halibut, ancestral halibut hooks were designed specifically to capture medium-sized halibut, leaving large breeders free to spawn and small halibut to grow for future catches.

Well before the Fisheries Act, however, a series of papal bulls (decrees) issued by the Roman Catholic Church, based on the now-discredited legal concept of *Terra nullius* (nobody's land), justified the dispossession of Indigenous lands and waters around the world. Along with settler-colonialism, the deliberate introduction of diseases led to epidemics diminishing Indigenous populations worldwide. Across the Pacific Ocean, this led to the erosion of complex Indigenous marine tenure systems, extensive trade networks, and highly productive mariculture innovations such as fishponds, clam gardens, octopus houses, and estuarine root gardens. Not only were these innovations a source of food but they were also a source of identity, a place to generate and transfer knowledge, and an epicenter where community relationships were fostered. Fortunately, many of these sea garden technologies are being revitalized today across the Pacific Ocean. Yet in Canada, despite recent modernizations to the Fisheries Act, commercial fisheries and industrial aquaculture continue to contribute to the capital gains of private, national and international companies at the expense of local food security and food sovereignty.

As part of your "Coastal Voices" initiative, you've worked in partnership with Indigenous communities in Alaska and British Columbia with respect to the "fall and rise" of sea otters. Can you tell us more about the case, especially regarding the role of broader marine resource management, including that of keystone species?

K.B.W. and A.S.: Once extirpated from the NE Pacific Ocean by the colonial maritime fur trade in the 18th and 19th century, the previously endangered sea otter—kuu in Xaayda (Haida), K̓wak̓waƛ in nuučaan̓uł (Nuu-chah-nulth), and q̓asá in Hílzaqvl̓a (Heiltsuk)—has recovered in parts of its former range due to colonial conservation policies and political pressure. Despite their cascading effects as keystone shellfish predators, federal endangered species legislation and management plans define sea otter recovery objectives in isolation of other ocean species affected by this trophic cascade, including people. In fact, federal recovery efforts fail to recognize over 10,000 years of co-existence between people, sea otters, and shellfish that existed prior to the incursion of settler-colonial law. Today, with the recovery and protection of this keystone predator, well known to locally deplete shellfish in abundance and size, access to shellfish for food by coastal First Nations is profoundly diminished. Thus, current sea otter conservation measures violate constitutionally protected Indigenous rights to food fisheries, contradict ancestral Indigenous laws, and undermine the United Nations Declaration on the Rights of Indigenous People, which has been ratified into law in Canada and the province of British Columbia specifically. To date, Indigenous knowledge, objectives, and decision-making authority has not been equitably included in federal recovery planning for sea otters in Canada.

Fortunately, Indigenous Hereditary leaders across coastal British Columbia are reinvigorating their knowledge and governance of sea otter-human relationships through Coastal Voices, an initiative formed in 2013 among Hereditary Chiefs' Councils of the nuučaanuł (Nuu-chah-nulth), Haíłzaqv (Heiltsuk) and Xaayda (Haida), representing 17 coastal First Nations spanning three quarters of British Columbia's coast. As a research collective, Coastal Voices aims to restore resilient, respectful, and reciprocal coastal ocean relationships that support Indigenous food sovereignty and persistent sea otter populations amid climate change and political rhetoric. Guided by Indigenous Hereditary leaders, we assemble Indigenous knowledge, archaeological records, and ecological field data to illuminate coastal ocean relationships through multiple lenses. We hold listening circles to disrupt scientific hegemony and transdisciplinary workshops to span the boundaries among distinct worldviews and diverse academic disciplines. We co-design quantitative models to peer into alternative futures and inform contemporary equitable management decisions. Lastly, and importantly, we revitalize ancestral stewardship practices, such as clam gardens, to restore the social-ecological roles and responsibilities performed by Indigenous people for millennia and actively steward resilient relationships among, people, sea otters, and their shared invertebrate prey.

(Re)building coastal resilience requires collaborative efforts. Could you explain to our broad readership what transdisciplinary research, in the context of your work, looks like, and why it is essential to help enhance resilience in coastal communities?

K.B.W. and A.S.: Coastal Voices was formed to inform ocean policies and governance arrangements that better reflect social-ecological relationships and the knowledge systems, values, and decision-making authority originally held by coastal First Nations. We are comprised of a Steering Committee of Indigenous Hereditary leaders and cultural advisors, and a research family of Indigenous and settler scholars, practitioners, and artists. By bringing diverse experts together, we aim foster systems thinking and democratize ocean science and policies.

Our transdisciplinary research collective is intentionally guided by a Steering Committee of Hereditary leaders because they are contemporary rights holders and descendants of the original, deep time leaders responsible for managing the relationships between people, lands, and waters prior to the incursion of settler-colonial laws. By upholding ancestral Indigenous governance principles, protocols, and authority, this approach models a unique way to create policy-relevant science that supports Nation-to-Nation environmental governance and equitable research and knowledge transfer processes that align with ancestral governance and the United Nations Declaration on the Rights of Indigenous People (UNDRIP). This approach elevates Indigenous traditions, knowledge, and governance authority in marine science and its application in decision-making.

Our Indigenous leaders guide our research team in our approach, objectives, and knowledge mobilization activities. They are ultimately who we, as a research family, are accountable to. Like the protocols underpinning peer review and intellectual property in western

science, Indigenous knowledge cannot be separated from the people who generate and govern that knowledge. Therefore, Indigenous sovereignty in research and its application is the foundation of our collaborative work. Central to our journey together is respect for sovereign knowledge systems that, when considered simultaneously, can illuminate an improved understanding of ecologically safe and socially just solutions to coastal conservation challenges.

The Clam Garden Network appears to be a great example of successful resilience building. Could you tell our readers more about this initiative and shed some light on the broader implications?

A.S. and K.B.W.: The Clam Garden Network is is a diverse community of First Nations, academics, researchers, and practitioners from coastal British Columbia (BC), Washington State, and Alaska who are interested in the cultural and ecological importance of ancestral clam gardens. These mariculture innovations, rock walled terraces engineered by Indigenous people in the intertidal across the Pacific Northwest for at least 4,000 years, enhance the production of culturally important seafoods. As a network, we share ideas, research approaches, tools, and data to better inform our knowledge about how people used intertidal resources and ecosystems. We see clam gardens as a focal point to acknowledge and address the linked issues of food security, First Nations governance, and inter-generational knowledge sharing. We seek to deepen knowledge through collaborations that cross communities and disciplines with a hope of stimulating conversation and action that intentionally shifts power dynamics and supports Indigenous self-determination and resurgence.

Today, clam garden restoration projects are burgeoning up and down the coast, creating opportunities to exchange knowledge across communities and reconnect with traditional spaces previously inaccessible due to colonial practices. Indigenous communities from Alaska, through BC and Washington State are reclaiming clam garden technology to enhance food security and sovereignty, revive ancestral teachings, and assert rights, title, and responsibilities in coastal ocean spaces. Importantly, clam gardens are places of learning. While out on the shore, elders, youth, and other community members share teachings, observations, language, and stories about the ocean and its occupants, ancestral caretaking practices, values, and laws. Ancestral sea gardens exist across the Pacific Ocean and their resurgence in support of local food sovereignty is rapidly growing across our "common bowl."

In the context of Indigenous coastal communities, could you share your thoughts on what good governance should look like?

K.B.W.: Good governance consists of transparent actions, living your words, and remembering your words are your promise. Good governance means local decision making with everyone and everything kept in mind when making decisions. Know the territory, its long-term history, and the implications of your decisions. Siloed thinking does not work. Sharing and keeping everyone involved is the answer. Making decisions based on our old laws and stories is important.

Would you like to share any exciting forthcoming projects/initiatives with our readership?

A.S.: Kii'iljuuus and I were recently invited to prepare a statement for Canada's House of Commons Standing Committee on "Integration of Indigenous Traditional Knowledge and Science in Government Policy Development." Our statement reflected the collective voice of our colleagues working at this nexus, both Hereditary leaders and academic scholars. We called for the need to recognize Indigenous sovereignty while recognizing the value of Indigenous knowledge. We emphasized the diversity that exists among knowledge systems and that they can not be integrated but instead can be considered side by side. Lastly, we shared that Indigenous knowledge can provide solutions to the climate, biodiversity, and inequity crises upon us.

This is an exciting time because policy windows are on the horizon. Colonial governments worldwide are increasingly looking for advice on ways of including Indigenous knowledge in ocean policies. Researchers are increasingly creating and holding space to bring Indigenous and western knowledge into conversation to inform ocean policies and management. Moreover, both public and private funders are increasingly supporting innovative transdisciplinary initiatives. These are positive developments given the global extent of ancestral Indigenous laws and care-taking practices that have shaped and sustained seascapes for millennia. Yet, gaps among these positive developments exist, revealing opportunities for future collaborative work in the coming decade. For example, spatial mismatches often exist between local human-ocean processes and the siloed, centralized government institutions intended to manage them. Opportunities exist across our oceans to create and recreate Indigenous-led pathways, tools, and partnerships to elevate place-based knowledge, practices, and objectives that bypass centralized governance processes and uphold Indigenous authority and autonomy to access, govern and manage ocean spaces. These new and ancestral pathways, tools, and partnerships hold the potential to enhance coastal resilience well into the future.

DECLARATION OF INTERESTS

The authors declare no competing interests.

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