



Healing the Shallows: Nuučaanul Principles as a Blueprint for Coastal Restoration

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Coastal ecosystems like eelgrass (*Zostera marina*) meadows and mangrove forests are functionally analogous, tropical-temperate counterparts. As shoreline foundation species, both stabilize sediments, attenuate wave energy, and provide critical nursery grounds sustaining biodiversity and livelihoods. Under colonial management frameworks, however, these productive nearshore zones face severe degradation from industrial exploitation, causing habitat fragmentation and physical dispossession of coastal Indigenous communities. To address these crises, this paper evaluates how the Ka:yu:'k't'h' / Che:k'tles7et'h' First Nations (KCFN) utilized an Indigenous-led Guardian Model to reverse legacy industrial damage at ʔotso:s (Hankin Cove) on Vancouver Island, British Columbia. Methodologically, this community-based case study pairs localized Indigenous Knowledge (IK) with Western marine science. Crucially, the restoration design deploys a novel transplant method that screens for historical and cultural contexts before environmental factors, using a low-tech approach engineered to maximize community inclusivity. Empirical data were gathered through ancestral oral histories, multi-generational ecological mapping, and continuous environmental monitoring of a former industrial log dump transitioned into a thriving marine garden. Guided by nuučaanul sacred principles—*ʔiisaak* (Respect), *ʔuu-ʔalth-uuk* (Taking Care Of), and *hišuk iš ʔawak* (Everything Is One)—empirical results demonstrate a profound 90% transplant success rate, proving that prioritizing ecosystem function over raw shoot density creates a more resilient nearshore habitat. Specifically, *ʔiisaak* honours multi-generational oral histories to drive precise IK site selection over short-term industrial metrics; *ʔuu-ʔalth-uuk* structures the active Guardian Model by scaling up community-led monitoring, localized enforcement, and inclusive, intergenerational youth stewardship; and *hišuk iš ʔawak* secures comprehensive ecological justice by linking physical shoreline reclamation directly to community self-determination, cultural revitalization, and Indigenous Food Systems. Ultimately, this case study provides a powerful, translatable socio-ecological blueprint for global coastal conservation—including tropical mangrove systems in Sri Lanka demonstrating that nearshore environmental reclamation is intrinsically linked to the revitalization of Indigenous jurisdiction, collective unity, and cultural well-being.

Keywords: *Coastal Restoration, Eelgrass Meadows, Nuučaanul Sacred Principles, Indigenous-Led, Ecological Justice*