



# Threats to Heritage in Cultural Keystone Places: Fitting Western Concepts into Gitxsan Legal Orders and Laws

Ardythe Wilson Dimdiigibuu<sup>1</sup> and Chelsey Geralda Armstrong<sup>2\*</sup>

<sup>1</sup>Wilp Guutginuuxs, Gisgaast, Hazelton, Canada. <sup>2</sup>Historical-Ecological Research Lab, Indigenous Studies, Simon Fraser University, Burnaby, Canada.

\*chelsey\_geralda@sfu.ca

**Abstract** Resource extraction poses significant threats to cultural heritage sites and landscapes across British Columbia (BC, Canada), particularly in Gitxsan Territories, where people's values are often overlooked in archaeological heritage management and consulting contexts. This research explores how Gitxsan legal orders and stewardship principles can contribute to conserving and restoring culturally and ecologically significant places—crucial work in the face of ongoing colonial policies and an increasingly changing climate. Cultural landscapes, characterized by the *Lax'yip* (Gitxsan *Wilp*/House Territories), provide a foundation for understanding long-standing stewardship practices and relationships that underscore cultural and environmental values and well-being. A key challenge, however, is how to effectively represent these landscapes to outsiders who may not share the same cultural connections to the land or understand Gitxsan heritage, histories, laws, and protocols. Reviewing these tensions in the context of resource extraction in one Territory, Lax Xsin Djihl, *Wilp*/House histories and stewardship practices are routinely ignored by archaeological consultants, leading to the destruction of cultural heritage. Evocative metaphors, such as cultural keystone places, may offer a way to convey the ecological and cultural realities of Territories for Gitxsan Houses, fostering a broader understanding and deeper regard for Gitxsan cultural heritage within archaeological regulatory frameworks.

Received November, 15, 2024

Accepted July 10, 2025

Published December 1, 2025

OPEN ACCESS

DOI 10.14237/ebl.16.2.2025.1914

**Keywords** Archaeology, Cultural Keystone Place, Gitxsan, Heritage Management, Indigenous Governance

**Copyright** © 2025 by the author(s); licensee Society of Ethnobiology. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International Public License (<https://creativecommons.org/licenses/by-nc/4.0>), which permits non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Introduction and Background

Cultural Keystone Places (CKPs) are recognized by scientists and community-based researchers as landscapes that play a critical role in maintaining the health and well-being of people, while also supporting biologically and/or functionally diverse ecosystems. Coined relatively recently (Cuerrier et al. 2015), the concept is an extension of previous iterations of “cultural landscape” literature from the 1990s that spurred a re-examination of policy and research challenging the nature-culture divide in conservation biology, and pointed to the role of people (usually Indigenous peoples) in enhancing, protecting, and stewarding local biodiversity, with implications for landscape ecology, planning, and assessment processes (Anderson 1996; Posey 1999; Rössler Chief 2006).

Cultural Keystone Places are also a natural follow-up to work led by ethnoecologists contemplating cultural aspects of the ecological keystone species concept. Paine's work on the “first” keystone species, the ochre sea star (*Pisaster ochraceus*) in the Pacific Northwest, described it as a top predator in coastal intertidal systems, observing that, relative to their abundance, ochre sea stars were significant drivers of the structure and function of intertidal systems (Paine 1969). Building on this, Nabhan and Carr (1994) described desert ironwood (*Olneya tesota*) as an ecological and cultural keystone of the Sonoran Desert, owing to its relatively unique and pervasive role in Tohono O'odham and Seri foods, medicines, and technologies, and its role in creating desert microhabitats with its nitrogen fixing capabilities and dense canopy structures that safeguard understory soils from drought.



The concept of a “keystone” species emerged from the disciplines of ecology and conservation biology. As such, it is a derivative of the principles and theories from those fields, with an emphasis on concepts such as diversity, competition, and resilience (Cottee-Jones and Whittaker 2012; Davic 2003). When the qualifier of “culture” was added, it was meant to be treated as a complex intersection of ideas and theories from Indigenous epistemologies, human ecology, and ethnoecology—the notion that we could simply add “people” to the ecological keystone concept was anathema to those considering its integration (Ellen 2006; Garibaldi and Turner 2004). Instead, the “cultural” qualifier was intended to highlight the role that people have in shaping and maintaining distinct species and/or landscapes. It also illustrated how those species and/or landscapes in turn bring into being cultural praxes and shape healthy communities for the people sustained by them. For example, while a particular species might not have tremendous significance to a western-trained conservation biologist, it could be a significant driver of cultural practices with cascading effects on peoples’ language, intergenerational knowledge transmission, cultural cohesion, renewal, and well-being, reflected and reproduced on the same lands with emergent “conservation” results for other biota and entities (Bonifácio et al. 2016; McCarthy et al. 2014). This aspect of the concept is critical—a recent policy analysis found that the majority of Cultural Keystone Species identified in Canada to date have no form of protection under the Canadian Species at Risk Act, precisely because of systemic naïveté among regulators and conservation institutions (Lukawiecki et al. 2024).

Conversely, and despite best intentions, the Cultural Keystone Species/Place concept has, in some cases, unintentionally sieved through people’s deeply relational and cosmogeneologically tethered perspectives in a way that separates a single species or place from broader homelands. Distilling inimitably relational and place-based entities, like a single species or landscape, into acronyms like CKS or CKP (see also Wyndham 2017) or force-fitting Indigenous epistemologies and ontologies into western concepts of ecosystem functioning and diversity misses the point of the “cultural” qualifier. For example, some critics argue that the Cultural Keystone Species literature does not go far enough in integrating ecosystem processes (Coe and Gaoue 2020). While this point is valid according to their data, they fail to

grasp the reason for the integration of people/culture in the first place—not as a one-way template (cultural preferences fitting into ecological principles) but as a metaphorical parallel for understanding the significance of an ecological entity outside of ones’ own culture (Cuerrier et al. 2015).

Similarly, some archaeologists fail to comprehend how the places they survey are deeply tied to the broader landscapes that form part of people’s cultural histories; places instilled with meaning, memory, and value that extend beyond the discrete boundary of a single archaeological site. The Cultural Keystone Place concept, explored here, might be useful to archaeologists to epitomize bidirectional (dare we say reciprocal) feedback between people and place that represent values and worldviews not readily meaningful to outsiders (Wolverton et al. 2023). Cuerrier et al. (2015) refer to Cultural Keystone Places as an “evocative metaphor” for helping non-specialists, such as archaeologists or conservation biologists, understand the importance of people-place relationships and they highlight how these realities need more attention in both environmental and heritage conservation and management (see also Reyes-García et al. 2022).

In this research, we explore how the Cultural Keystone metaphor is useful for illustrating the role that the *Lax’jip* (Territory) plays in Gitksan legal orders, worldviews, heritage, and Territorial realities. We consider how, for some Gitksan *Humilp* (Houses), governance structures and stewardship values and practices are enacted within and in relation to the *Lax’jip*. As keystone places for people, animals, plants, and fish relations, the *Lax’jip* is a significant place for biocultural health and renewal. Archaeologists, like conservation biologists, should better understand where history and heritage sit in the greater Territorial realities of Gitksan places and cultural infrastructures. We suggest that adopting the Cultural Keystone Place approach in archaeology and heritage management could aid in addressing or reshaping harmful heritage policies and conventions, but only if this Eurocentric framework is presented within a Gitksan context—and not the other way around.

### Cultural Keystones in Gitksan Contexts

The Skeena River watershed in northwestern British Columbia (BC, Canada) encompasses over 55,000 km<sup>2</sup> of lands and waters, comparable in size to Costa Rica or Slovakia. The watershed is, for its size, one of the biggest producers of all five species of Pacific salmon



in North America, and a substantial portion constitutes Gitksan homelands—a large ethnolinguistic group of decentralized polities organized by *Huwilp*. The *Wilp* (House) is the predominant unit of social, political, and territorial organization both in the past (before the imposition of British and Canadian law) and in the present. In the landmark *Delgamuukw and Gisday Wa v. The Queen* (1997) court case, the Supreme Court of Canada recognized Gitksan (and neighbouring Wet'suwet'en) Title is distinct from other forms of property ownership and that *Huwilp* never extinguished this Title to the crown. Gitksan Title extends beyond Lockean “land-use” benchmarks to encompass the rights and responsibilities to the land, including the right to manage access and trespass, and to steward accompanying resources according to the social/spiritual/ecological needs of the *Wilp* (Mills 1994; Monet and Wilson 1992). While the *Delgamuukw* decision did not lay out the framework for the BC government's obligations to consult and/or acquire consent for resource extraction in *Wilp* Territories (a massive source of revenue for the province), the case did imply the government has a duty to consult and accommodate Gitksan *Huwilp* before making decisions that affect their *Lax'yip* (Sterritt 2016). This duty to consult pertains to environmental and heritage permitting, and across BC, archaeologists are required to consult with relevant First Nations prior to permitted work (case law reinforces the duty to meaningfully consult, see Hickey 2021).

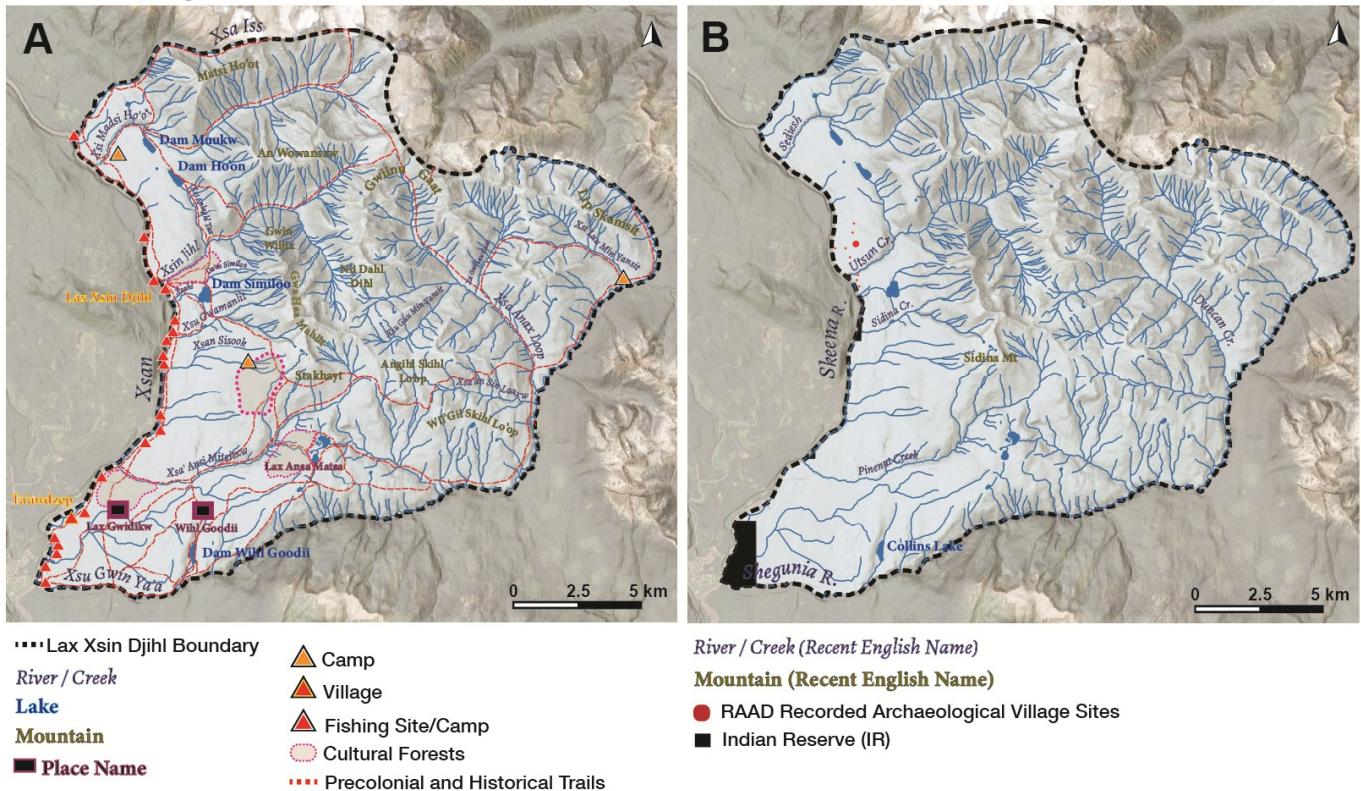
Over the last 80 years, the Skeena River watershed has been variously impacted by outside industries, with mismanaged clear-cut logging, mining, and more recently, with frontier-like expansion of widespread natural gas infrastructure development (Bishop and Shaw 2022; Davis 2015; Drushka 1985). The impacts of industry have aggressively accumulated over the last few decades, with major tributaries of the Skeena River consumed with sediment and debris flows from erosion (from clear-cut logging and logging roads), pollution, and social/health impacts disrupting kin networks and major wildlife resources, including salmon, a major source of food for people (Gottesfeld and Rabnett 2008). This tipping point is ushering in irreversible implications for *Wilp* Territory use, access, and management of foods and medicines, all of which are compounded by increasing influences from mega wildfires and climate change.

*Huwilp* are highly decentralized political units that have a robust hereditary governance structure led by *Simgigyet* (Chiefs) and *Sidigim Haanak'* (Matriarchs). The *Wilp* is based on matrilineal lineages and ranges in size from 20 to upwards of 600 members per *Wilp* (Daly 2005). Hereditary leadership is inherited by virtue of compartment, reflecting an individual's standing under Gitksan law; their attention to cultural preservation, stewardship of lands, and their advocacy for the rights of their people (Gisday Wa and Delgam Uukw 1992). Usually, more than one candidate is groomed to take on such positions, and values like the intimate knowledge of the history of the *Wilp* and *Lax'yip* and the ability to interact and communicate with other *Huwilp* and Nations are of paramount importance. As Mary McKenzie (*Wilp* Gyoluugyat) remarked in her 1987 expert testimony, “In Gitksan law you have to work yourself up to become a Chief. You don't get a Chief name just if you want it today... It doesn't work that way. [A] Chief has to work himself up to become a head Chief” (British Columbia Supreme Court 1987:218).

Government bureaucrats and industries typically divide the Skeena River watershed into sub-basins or management units like “Timber Supply Areas”. However, the Territorial boundaries that delineate *Wilp*-owned territories in the middle and upper Skeena River watershed have been established for thousands of years (Monet and Wilson 1992). These boundaries, often following river systems, heights of land, and drainage divides, define the limits of the *Lax'yip* and constitute the political and economic parameters of the lands and waters that are the responsibility and prerogative of the relevant *Wilp* (Porter and Barry 2016).

One of us (Dimdiigibuu, Ardythe Wilson; Armstrong is a settler researcher) belongs to *Wilp* Guutginuuxs (Gisgaast, Fireweed Clan). The *Wilp* has legal title (both under Gitksan and Canadian law) to the *Lax'yip* called Lax Xsin Djihl, a roughly 310 km<sup>2</sup> area, with the southern boundary following the Shegunia River and the western boundary seamed along the Skeena River (Figure 1). The boundaries that define Lax Xsin Djihl are so irreparably binding that, like for all *Huwilp*, Guutginuuxs has exclusive rights to protect and enforce entry, access, use, and trespass to any outsider. As Johnson (2010) and others have pointed out, if an individual shoots a bear in their *Lax'yip* and the bear runs off into another *Wilp*'s *Lax'yip*, it is no longer their bear. The

## Lax Xsin Djihl



**Figure 1** *Wilp* Guutginuuxs *Lax'yip*, Lax Xsin Djihl is a Cultural Keystone Place. **A** Lax Xsin Djihl according to *Wilp* histories and records and **B** Lax Xsin Djihl according to recent colonial histories and records.

complexity of this decentralized system is evident by the fact that even within these strict ownership and Title laws, all *Huwilp* have a responsibility to confer and engage with one another on any decisions that could affect another Territory (e.g., upstream or downstream). In the Delgamuukw court case, Hereditary Chiefs explained, in the words of Neil Sterritt Sr., "...it would not be fair for a house to benefit exclusively to the detriment of the other house that has suffered damages...all of the people must get together...so that no one benefits excessively, and no one suffers a great loss" (Sterritt 1988:8149).

There is no doubt that individual *Lax'yip* are, for *Wilp* members, Cultural Keystone Places. Consider Lax Xsin Djihl for *Wilp* Guutginuuxs—the *Lax'yip* courses with unique cultural histories and meaning that are exclusive to *Wilp* members. There are extensive historical and ethnographic data, interviews, and oral histories compiled by House members and researchers that denote specific *Wilp* names for rivers, creeks, berry camps, berry burning areas, fish camps, and other place names—many of which are ignored,

undermined, or misunderstood by archaeologists and environmental practitioners (Figure 1).

The cultural attention afforded to specific locales, not captured in colonial gazetteer names, exemplifies more personalized relationships to the landscape that outsiders often overlook. From large river systems like Xsu Gwin Ya'a to upland headwaters of second and third order creeks like Sin Laaxw, Xsu guu Min Yansit, and Xsi Gwi Luu Gaat, the latter of which have no English name equivalents. Gitksan toponyms and place names not only facilitate the transmission of land-based knowledge—which in turn is crucial for biodiversity conservation and stewardship (e.g., Dawson et al. 2021; Reyes-García et al. 2019)—the names and attendant *adax* (laws/stories) are also the deeds to the land and form the basis for Gitksan cultural continuity. Consider *sim maa'y* (the "one" or "true" berry; black huckleberry, *Vaccinium membranaceum*), widely considered a Cultural Keystone Species for many communities in the Pacific Northwest (Shores et al. 2019). As a major food staple and trade commodity, black huckleberry fields were



cultivated through controlled burning, fertilization, and pruning (Johnson 2000; Trusler 2002). For Gitksan and Gitanyow, black huckleberry “was traditionally and is still the most highly valued plant” (Johnson 2019:145; People of ’Ksan 1980). Berry camps and berry burning locales feature prominently in Lax Xsin Djihl (e.g., Lax Ansa Matsa), illustrating how stewardship and management of the Territory was enacted by the *Wilp*, through the labour and know-how that was, and is, tied to use rights and responsibilities to keep the *Lax’yip* productive for *Wilp* members.

#### *Cultural Heritage in Lax Xsin Djihl*

During two field surveys in 2023 and again in 2024, we re-examined historically cultivated *sim maa’y* landscapes in Lax Xsin Djihl, such as Lax Ansa Matsa, a berry area on an upland plateau south of the upper Xsa’ Ansi Mitsitxw. Prior to colonial fire bans, these upper-elevation sites were routinely burned (likely on decadal scales), resulting in extensive ericaceous subalpine shrub field complexes (Trusler 2002; Trusler and Johnson 2008). The lack of fire under colonial policies has resulted in the encroachment of coniferous trees, including amabilis fir (*Abies amabilis*), subalpine fir (*Abies lasiocarpa*), western hemlock (*Tsuga heterophylla*), and scattered lodgepole pine (*Pinus contorta*). Climate change impacts resulting in increased seasonal variability in these sub-alpine landscapes, owing to decreased seasonal snowpack and melting glaciers [within 70 years most of BC’s glaciers will be gone (Clarke et al. 2015)] has also contributed to local food system disruptions, with staples like black huckleberry routinely being described as “puny” or “sick” (Armstrong 2022).

Impacts to Guutginuux’s food sovereignty and heritage in the *Lax’yip* are also under threat from irreversible impacts brought on by oil and gas infrastructure development. Currently, a proposed natural gas pipeline is being proposed that would bisect the entirety of the Territory, crossing every Skeena River tributary in Lax Xsin Djihl. The access road to Lax Xsin Djihl, which would be used by oil and gas developers, is an ancient trail still in use today by many *Huwilp* who access their territories annually. Compressor stations proposed for the pipeline on this ancient trail will emit volatile organic compounds and greenhouse gases and generate significant noise pollution affecting wildlife in the Territory (e.g., mountain goat, bear, deer, waterfowl, and resident birds; see Boyle et al. 2017; Francis et al. 2011).

Moreover, there are considerable risks of explosions and air and water contamination given the large amount of sediment and pollution associated with natural gas transportation lines (Payne et al. 2017; Shoghl and Pazuki 2024).

Ongoing research and local experiences show how cumulative effects—from colonial policies enacting coercive fire bans and fishing bans to contemporary oil and gas development and displacement of people from lands—are impacting the productivity of, and peoples’ access to, staple foods like berries (Black Elk and Baker 2020; Muir 2022), salmon (Newell 1993), caribou (Santomauro et al. 2012), medicines (Turner and Turner 2008), as well as peoples’ access to heritage sites, spiritual and ceremonial sites for purification, cleansing, cremation, and training in healing and arts (see also Horowitz 2022). As a result of this complex interplay of impacts, felt and experienced at different scales and in different pulses, experts argue that regulatory management strategies ought to be tailored to the legal customs of each *Wilp* within the context of their own *Lax’yip* (Johnson 2019; Porter and Barry 2016). In effect, decision-making in Cultural Keystone Places should be made and defined by the people who have explicit cultural, historical, and legal ties to those Places (see also Ignace and Ignace 2020).

The intersection of food sovereignty and archaeological heritage has long been underscored by Indigenous peoples and historical ecologists (Przelomska et al. 2020; Reed and Ryan 2019; Reeder-Myers et al. 2022). For example, archaeological heritage can provide a foundation for understanding Indigenous food systems impacted by colonialism (Campbell and Butler 2010; Lepofsky et al. 2015, 2020) and offers direct historical throughlines that tie specific people and food systems to specific land bases, helping with food reclamation and renewal (Joseph et al. 2022; Laluk et al. 2022; Lepofsky 2009). Recently, understanding historical-ecological food systems such as Indigenous forest gardens has helped to identify previously unknown or unrecorded archaeological features and village sites (Armstrong et al. 2023a).

#### *Compliance Regimes and Extraction in Lax Xsin Djihl*

One of the major drivers of heritage protection laws in BC are the *intangible* values of archaeological places and objects—whether these are scientific and educational values defined by the dominant power structures (e.g., archaeologists, the BC Archaeology



Branch) or the values expressed by the descendants and cultural inheritors of those places and objects. Sometimes these values align, but other times they are at odds. As such, professional archaeologists in BC recently proclaimed that, “If Indigenous peoples are denied direct and meaningful ways of engaging in decision-making concerning their cultural heritage, then cultural heritage management policies are ineffective at best, and harmful at worst” (Schaepe et al. 2020:58).

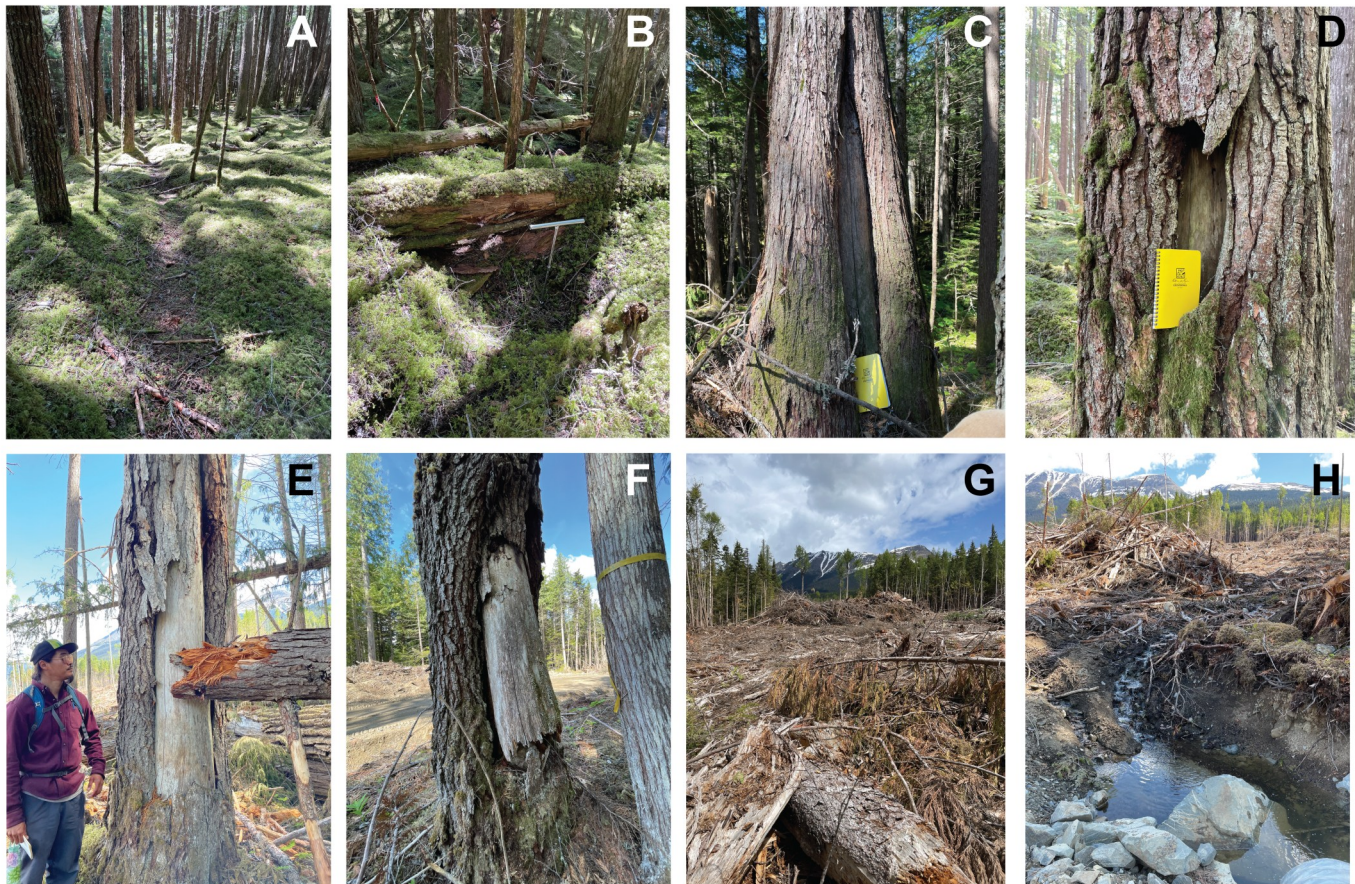
Despite this, Gitksan/Wet’suwet’en archaeological heritage is routinely undervalued or ignored in advance of large industrial projects such as natural gas pipelines in northwestern British Columbia (Armstrong et al. 2023b; Sutherland-Wilson et al. 2019). For example, archaeological assessments undertaken in advance of the Prince Rupert Gas Transmission (PRGT) pipeline in Lax Xsin Djihl concluded that over 90% of the Territory was “low potential” for archaeological heritage. Potential models are used in Archaeological Overview Assessments to estimate the likelihood of archaeological resources occurring in each project area. Archaeologists will use criteria like slope, aspect, and proximity to previously recorded archaeological sites to rank areas as Low, Moderate, or High potential for heritage resources. Based on these outputs, archaeological consultants then determine where field investigations are required in advance of land-altering activities, such as pipeline and compressor station construction.

Field investigations (or impact assessments) make up the bulk of the heritage stewardship industry in British Columbia, an increasingly lucrative sector for mostly non-Indigenous practitioners. Regrettably, there is irregular oversight when it comes to regulating this work, and Indigenous communities have little, if any, say or power when it comes to this process (see Ferris 2003)<sup>1</sup>. For example, if Guutginuuxs’ heritage record in Lax Xsin Djihl is compared with the province’s record, egregious discrepancies exist. All the consulting archaeological surveys in Lax Xsin Djihl—done in advance of two pipelines and a few logging cut blocks—amount to 24 discrete sites recorded since 1984 (Figure 1). None of the archaeological reports accompanying the recording or “interpretations” of these sites (prior to their destruction) mentions Guutginuuxs.

Failing to connect the physical heritage (lithic scatters, culturally modified trees, trails) in the *Lax’jip*

to the history and heritage of the *Wilp* is a disconcerting oversight. In advance of oil and gas development, most heritage sites are slated to be “altered”—that is, instead of avoided, they are mitigated (destroyed). Mitigation is a trade-off where heritage sites and objects are destroyed, but, in exchange, they are investigated and studied by archaeological consultants. However, without a basic understanding of the *Wilp*—the relevant villages, food harvesting areas, trails, camps, fishing stations, and spiritual locales—two distinct versions of history and heritage appear to be unfolding in Lax Xsin Djihl—the Guutginuuxs version and the colonial one (Figure 1; see also Estes 2019).

Industry archaeologists have so far ignored the broader *Wilp*-based history and heritage infrastructures that define, in part, Guutginuuxs’ social, political, and ecological order. Certainly, individual consultants are structurally limited (e.g., restricted budgets and timelines), and there are obvious systemic barriers to doing meaningful archaeological work for pipeline proponents (e.g., see note 1). However, archaeologists should be accountable for their work and/or the perpetuation of harms their work may be causing, particularly consultants in higher management roles (Johnson 2023). As such, the concept of Cultural Keystone Places may be one way to draw practitioners into a deeper consideration and understanding of Gitksan laws, histories, and heritage, with *Humilp* as fundamental stewards, interpreters, and drivers of heritage stewardship and decision-making. For example, some Cultural Keystone Places have been identified and promoted based on their archaeological and heritage infrastructures, which provide a meaningful connection between physical archaeological objects and places, and their social, spiritual, economic, and educational values defined by the descendants of those objects and places (Lepofsky et al. 2017; Nicholas 2010). This is especially relevant for outsiders (i.e., consulting archaeologists new to an area) who are generally unable to comprehend the dynamic histories and intangible heritage that are specific to someone else’s homelands (Greer and Strand 2012; see also Angelbeck and Jones 2019). For example, Rick et al. (2022) consider Kumqaq’ (Point Conception) as a Cultural Keystone Place for Chumash because of the profound role it plays in spiritual, cosmological, and oral traditions. This framework helped archaeologists go beyond material artifacts (e.g., typologies) to: (1) better recognize the intangible cultural values tied to Kumqaq’, (2) more



**Figure 2** Above Row: 100 m downslope of the PRGT pipeline right-of-way in Lax Xsin Djihl, a cultural forest (over 80+ CMTs) including **A** a trail and **B** cultural depressions, and **C**, **D** culturally modified trees recorded by the authors and where consultant archaeologists ascribed “low potential” for archaeological heritage. Bottom Row: another cultural forest with **E** toppled CMTs, and **F** standing CMTs with no apparent buffers. **G**, **H** Poor drainage and scraped soils resulting from PRGT construction add to the mismanagement of Lax Xsin Djihl, the Cultural Keystone Place for Guutginuuxs.

meaningfully integrate heritage data with ecological data, and (3) build a coherent framework that prioritized cultural insights.

*Wilp* records of Lax Xsin Djihl are not only crucial for interpreting archaeological heritage, but they are also critical for locating it. PRGT pipeline archaeologists noted that the pipeline crossing at Utsun Creek was “low potential” for cultural heritage. Unbeknownst to them, the Gitksan name for this creek is Xsin Djihl, the namesake of the *Lax’yip*, which indicates, at the very least, its significance and, despite the flawed models, its high potential for archaeological heritage. In 2023, we ran a field course along the southern bench of this Skeena tributary and documented a large hard-packed trail, culturally modified trees (CMTs), and clusters of cultural depressions. PRGT archaeologists had previously

spent one day surveying the area and missed the overwhelming majority of CMTs. It is unclear why, but one explanation could be that they did not look attentively enough because they were not aware of the importance of Xsin Djihl (indeed, there is a village site ~100 m downriver). More importantly, proper surveys likely weren’t conducted because archaeologists did not notify or consult the *Wilp* before (or during) their assessment process. Similarly, in 2024, we ran another field course survey in the Territory, up Xsan Sisook, and again, we located hundreds of CMTs and a trail that were either ignored or overlooked by PRGT archaeologists.

The consultant’s mismanagement of Guutginuuxs heritage was apparent across the *Lax’yip*. Culturally modified trees were so ubiquitous in the Territory that they constitute what are typically classified as “cultural



forests” (Earnshaw 2019). However, these were logged without the prior knowledge or consent of the *Wilp*. Some CMTs were left standing without any apparent management prescriptions (i.e., buffers) and logging debris and erosion from road construction were evident in the nearby creeks (which themselves were lined with CMTs, a hard-packed trail, and 3 cultural depressions) (Figure 2). This trove of physical archaeological heritage was present in places deemed “low potential” by the consultant archaeologists and would otherwise be protected under the Heritage Conservation Act.

### Final Thoughts

In the context of American cultural resource management, King (2003) previously coined the term “traditional cultural property” or TCP as part of Section 106 legislation, with the very similar purpose of helping archaeologists grapple with places deeply rooted in a community’s history, cultural practices, beliefs, and the continuity of identities. The term, although not well integrated into archaeological practice, was intended to engage mainstream practitioners with a suite of values and a deeper understanding of heritage that, until then, had been consistently overlooked (e.g., sacred sites). In that sense, the concept of a Cultural Keystone Place is not new, and so, perhaps our characterization of the *Lax’yip* as a *Wilp* keystone place is a fool’s errand. From a Gitksan perspective, it’s worth asking: do industry archaeologists and environmental managers continue to mismanage Gitksan Territories because they cannot comprehend these places? Or are there other drivers at play (e.g., financial interests, conflicts of interest)? In that case, why are the regulators not honest with us? Under Gitksan law, as well as Canadian law, it is challenging to understand how industry archaeologists continue to conduct substandard surveys (or lack thereof) of important Gitksan heritage features and landscapes. How can regulators, professionals, and proponents be held accountable to Gitksan people?

One of the reasons researchers began articulating the role and function of Cultural Keystone Places was their significance in biocultural conservation, restoration, and renewal (Cuerrier et al. 2015). However, evidence suggests that the ultimate goal of archaeological management in advance of oil and gas development in BC is not to support conservation, renewal, and management of Indigenous heritage, but

to expedite a proponent’s permit requirements to make way for development. While it is true that most consultant archaeologists are likely not aware that, under Gitksan *adawx* (laws, histories), there is not a single square inch of Lax Xsin Djihl that Guutginuux is not responsible for, the question remains: if they did know, would they care? Would it change behaviours around the misuse of potential models or the basic standards of free, prior, and informed consent when it comes to mitigating/destroying heritage?

Many *Humilp* have been working tirelessly, sometimes in addition to their full-time jobs, to “be on the *Lax’yip*”. *Wilp* Gwinnitxw has worked indefatigably for decades protecting fish and wildlife in their territories (Armstrong et al. 2024), *Wilp* Wii K’aax has invested in building cabins on their remote (fly-in only) territories for *Wilp* members to engage in land-based learning and education (antlihlxaxyip.org), and *Wilp* Luutkudziiwus/Xsimjiitsiin have spent over 15 years defending their territories from non-consensual resource extraction, while providing culture camps and land-based learning opportunities for Gitksan youth and *Wilp* members (madiilii.com). In all these cases, archaeological heritage features prominently. But the cultural and ecological significance of the *Lax’yip* appears to be a moot point to regulators and oil and gas proponents. And so, as we continue to contemplate the idea of Cultural Keystone Places, we must be mindful that the governance structures that form the basis of stewardship for those places need to be foregrounded (Goolmeer et al. 2024). While the *Lax’yip* is undoubtedly a place of intense cultural and ecological importance, critical to people’s lifeways and identities, it is Gitksan laws and governance structures that ensure these places remain cared for. Sovereignty is prior—supporting Title will ensure the protection of biocultural landscapes, providing resilient futures for *Wilp* members in the face of coercive (and increasing) natural gas development and worsening impacts from ongoing climate change.

### Notes

<sup>1</sup>Recently, the province of British Columbia announced that all heritage permitting associated with oil and gas development will no longer be the purview of the Archaeology Branch (formerly the sole regulator of archaeological heritage management in BC), and instead is now overseen the BC Energy Regulator (previously OGC) with a dubious record of





prioritizing industry over First Nations heritage (Armstrong et al. 2023b; Sutherland-Wilson et al. 2019).

### Acknowledgments

We would like to thank all the land defenders currently working to protect their *Lax'yip*. Thank you to Steve Wolverton for the thoughtful edits on the manuscript.

### Declarations

*Permissions:* None declared.

*Sources of funding:* This work was funded in part by SSHRC (Armstrong 435-2023-0295).

*Conflicts of Interest:* None declared.

### References Cited

- Anderson, E. N. 1996. *Ecologies of the Heart: Emotion, Belief, and the Environment*. Oxford University Press, Oxford.
- Angelbeck, B., and J. Jones. 2019. Direct Actions and Archaeology: The Lil'wat Peoples Movement to Protect Archaeological Sites. *Journal of Contemporary Archaeology* 5:219–229.
- Armstrong, C. G. 2022. *Silm Da'axk: Historical Ecology and Ethnobotany in Gitselasu Lakhlyuup*. Mitchell Press, Vancouver, Canada.
- Armstrong, C. G., N. Lyons, A. McAlvay, M. Ritchie, D. Lepofsky, and M. Blake. 2023a. Historical Ecology of Forest Garden Management in Ts'msyen Lakhlyuup and Beyond. *Ecosystems and People* 19:2160823. DOI:10.1080/26395916.2022.2160823.
- Armstrong, C. G., A. Spice, M. Ridsdale, and J. R. Welch. 2023b. Liberating Trails and Travel Routes in Gitxsan and Wet'suwet'en Territories from the Tyrannies of Heritage Resource Management Regimes. *American Anthropologist* 125:361–376.
- Armstrong, C. G., J. Grenz, J. Zyp-Loring, J. LaFontaine, L. Main Johnson, and N. J. Turner. 2025. Ethnoecological Perspectives on Environmental Stewardship: Tenets and Basis of Reciprocity in Gitxsan and Nlaka'pamux (Nlaka'pamux) Territories. *People and Nature* 7:934–946. DOI:10.1002/pan3.10641.
- Bishop, E. P., and K. Shaw. 2022. The Primacy of Place: A Community's Response to a Proposed Liquefied Natural Gas Export Facility. In *Public Responses to Fossil Fuel Export*, edited by H. Boudet and S. Hazboun, pp. 177–193. Elsevier, Amsterdam, Netherlands.
- Black Elk, L., and J. M. Baker. 2020. From Traplines to Pipelines: Oil Sands and the Pollution of Berries and Sacred Lands from Northern Alberta to North Dakota. In *Plants, People, and Places: The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond*, edited by N. J. Turner, pp. 173–187. McGill-Queen's Press, Montreal, Canada.
- Bonifácio, K. M., E. M. Xavier Freire, and A. Schiavetti. 2016. Cultural Keystone Species of Fauna as a Method for Assessing Conservation Priorities in a Protected Area of the Brazilian Semiarid. *Biota Neotropica* 16:e20140106. DOI:10.1590/1676-0611-BN-2014-0106.
- Boyle, M. D., S. Soneja, L. Quirós-Alcalá, L. Dalemarre, A. R. Sapkota, T. Sangaramoorthy, S. Wilson, D. Milton, and A. Sapkota. 2017. A Pilot Study to Assess Residential Noise Exposure near Natural Gas Compressor Stations. *PLOS ONE* 12:e0174310. DOI:10.1371/journal.pone.0174310.
- British Columbia Supreme Court. 1987. Proceedings of the Supreme Court of British Columbia 1987-05-13, 2. Trial transcript. United Reporting Service Ltd., Vancouver, BC. University of British Columbia Library Open Collections. Available at: <https://doi.org/10.14288/1.0018359>. Accessed on September 6, 2025.
- Campbell, S., and V. Butler. 2010. Archaeological Evidence for Resilience of Pacific Northwest Salmon Populations and the Socioecological System over the Last ~7,500 Years. *Ecology and Society* 15:17.
- Clarke, G. K. C., A. H. Jarosch, F. S. Anslow, V. Radić, and B. Menounos. 2015. Projected Deglaciation of Western Canada in the Twenty-First Century. *Nature Geoscience* 8:372–377. DOI:10.1038/ngeo2407.
- Coe, M. A., and O. G. Gaoue. 2020. Cultural Keystone Species Revisited: Are We Asking the Right Questions? *Journal of Ethnobiology and Ethnomedicine* 16:70. DOI:10.1186/s13002-020-00422-z.
- Cottee-Jones, H. E. W., and R. J. Whittaker. 2012. The Keystone Species Concept: A Critical Appraisal. *Frontiers of Biogeography* 4. DOI:10.21425/F5FBG12533.
- Cuerrier, A., N. J. Turner, T. C. Gomes, A. Garibaldi, and A. Downing. 2015. Cultural Keystone-Places:



- Conservation and Restoration in Cultural Landscapes. *Journal of Ethnobiology* 35:427–448. DOI:10.2993/0278-0771-35.3.427.
- Daly, R. 2005. *Our Box Was Full: An Ethnography for the Delgamuukw Plaintiffs*. UBC Press, Vancouver, BC.
- Davic, R. D. 2003. Linking Keystone Species and Functional Groups: A New Operational Definition of the Keystone Species Concept. *Conservation Ecology* 7:r11.
- Davis, W. 2015. *The Sacred Headwaters: The Fight to Save the Stikine, Skeena, and Nass*. Greystone Books Ltd, Vancouver, BC.
- Dawson, N. M., B. Coolsaet, E. J. Sterling, R. Loveridge, N. D. Gross-Camp, S. Wongbusarakum, and K. K. Sangha. 2021. The Role of Indigenous Peoples and Local Communities in Effective and Equitable Conservation. *Ecology and Society* 26. DOI:10.5751/ES-12625-260319.
- Delgamuukw v. British Columbia. 1997. 3 S.C.R. 1010 (S.C.C.). Canadian Supreme Court. Available at: <https://decisions.scc-csc.ca/scc-csc/scc-csc/en/item/1569/index.do>. Accessed on September 1, 2024.
- Drushka, K. 1985. *Stumped: The Forest Industry in Transition*. Douglas and McIntyre, Vancouver, Canada.
- Earnshaw, J. K. 2019. Cultural Forests in Cross Section: Clear-Cuts Reveal 1,100 Years of Bark Harvesting on Vancouver Island, British Columbia. *American Antiquity* 84:516–530. DOI:10.1017/aaq.2019.29.
- Ellen, R. 2006. Local Knowledge and Management of Sago Palm (*Metroxylon sagu* Rottboell) Diversity in South Central Seram, Maluku, Eastern Indonesia. *Journal of Ethnobiology* 26:258–298. DOI:10.2993/0278-0771\_2006\_26\_258\_lkamos\_2.0.co\_2.
- Estes, N. 2019. *Our History Is the Future: Standing Rock Versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance*. Verso, London, UK.
- Ferris, N. 2003. Between Colonial and Indigenous Archaeologies: Legal and Extra-Legal Ownership of the Archaeological Past in North America. *Canadian Journal of Archaeology / Journal Canadien d'Archéologie* 27:154–190.
- Francis, C. D., J. Paritsis, C. P. Ortega, and A. Cruz. 2011. Landscape Patterns of Avian Habitat Use and Nest Success Are Affected by Chronic Gas Well Compressor Noise. *Landscape Ecology* 26:1269–1280. DOI:10.1007/s10980-011-9609-z.
- Garibaldi, A., and N. Turner. 2004. Cultural Keystone Species: Implications for Ecological Conservation and Restoration. *Ecology and Society* 9.
- Gisday Wa, and Delgam Uukw. 1992. *The Spirit of the Land: Statements of the Gitksan and Wet'suwet'en Hereditary Chiefs in the Supreme Court of British Columbia 1987-1990*. Reflections, Gabriola, Canada.
- Goolmeer, T., O. Costello, A. Skroblin, L. Rumpff, and B. A. Wintle. 2024. Indigenous-Led Designation and Management of Culturally Significant Species. *Nature Ecology & Evolution* 8:1623–1631. DOI:10.1038/s41559-024-02466-w.
- Gottesfeld, A. S., and K. A. Rabnett. 2008. *Skeena River Fish and Their Habitat*. Oregon State University Press, Corvallis, OR.
- Greer, S., and D. Strand. 2012. Cultural Landscapes, Past and Present, and the South Yukon Ice Patches. *Arctic* 65:136–152.
- Hickey, A. 2021. An Unsuitable Integration: The Duty to Consult and Environmental Assessments in Canada. Master's Thesis, University of New Brunswick, New Brunswick, Canada.
- Horowitz, L. S. 2022. 'Conflicts of Interests' within and between Elite Assemblages in the Legal Production of Space: Indigenous Cultural Heritage Preservation and the Dakota Access Pipeline. *The Geographical Journal* 188:91–108. DOI:10.1111/geoj.12421.
- Ignace, M., and R. E. Ignace. 2020. A Place Called Pípsell: An Indigenous Cultural Keystone Place, Minding, and Secwépemc Law. In *Plants, People, and Places: The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond*, edited by N. J. Turner, pp. 131–150. McGill-Queen's Press, Montreal.
- Johnson, L. M. 2000. 'A Place That's Good,' Gitksan Landscape Perception and Ethnoecology. *Human Ecology* 28:301–325. DOI:10.1023/A:1007076221799.
- Johnson, L. M. 2010. *Trail of Story, Traveller's Path: Reflections on Ethnoecology and Landscape*. Athabasca University Press, Edmonton, Canada.
- Johnson, L. M. 2019. *Wisdom Engaged: Traditional Knowledge for Northern Community Well-Being*. Polynya Press, Edmonton, Canada.



- Johnson, P. S. 2023. Centering Indigenous Approaches for a Better Cultural Resource Management: Lessons from the Dakota Access Pipeline. *Transforming Anthropology* 31:137–149. DOI:10.1111/traa.12256.
- Joseph, L., A. Cuerrier, and D. Mathews. 2022. Shifting Narratives, Recognizing Resilience: New Anti-Oppressive and Decolonial Approaches to Ethnobotanical Research with Indigenous Communities in Canada. *Botany* 100:65–81. DOI:10.1139/cjb-2021-0111.
- King, T. F. 2003. *Places That Count: Traditional Cultural Properties in Cultural Resource Management*. Rowman Altamira, Oxford.
- Laluk, N. C., L. M. Montgomery, R. Tsosie, C. McCleave, R. Miron, S. R. Carroll, J. Aguilar, A. Big Wolf Thompson, P. Nelson, and J. Sunseri. 2022. Archaeology and Social Justice in Native America. *American Antiquity* 87:659–682. DOI:10.1017/aaq.2022.59.
- Lepofsky, D. 2009. The Past, Present, and Future of Traditional Resource and Environmental Management. *Journal of Ethnobiology* 29:161–166. DOI:10.2993/0278-0771-29.2.161.
- Lepofsky, D., C. G. Armstrong, S. Greening, J. Jackley, J. Carpenter, B. Guernsey, D. Mathews, and N. J. Turner. 2017. Historical Ecology of Cultural Keystone Places of the Northwest Coast. *American Anthropologist* 119:448–463. DOI:10.1111/aman.12893.
- Lepofsky, D., C. G. Armstrong, D. Mathews, and S. Greening. 2020. Understanding the Past for the Future: Plants and First Nations' Land Use and Rights. In *Indigenous Peoples' Land Rights and the Roles of Ethnoecology and Ethnobotany: Strategies for Canada's Future*, edited by N. J. Turner, pp. 86–106. McGill-Queen's Press, Montreal.
- Lepofsky, D., N. F. Smith, N. Cardinal, J. Harper, M. Morris, E. White, R. Bouchard, D. I. D. Kennedy, A. K. Salomon, M. Puckett, and K. Rowell. 2015. Ancient Shellfish Mariculture on the Northwest Coast of North America. *American Antiquity* 80:236–259. DOI:10.7183/0002-7316.80.2.236.
- Lukawiecki, J., F. Moola, and R. Roth. 2024. Cultural Keystone Species and Their Role in Biocultural Conservation. *Conservation Science and Practice* 6:e13224. DOI:10.1111/csp2.13224.
- McCarthy, A., C. Hepburn, N. Scott, K. Schweikert, R. Turner, and H. Moller. 2014. Local People See and Care Most? Severe Depletion of Inshore Fisheries and Its Consequences for Māori Communities in New Zealand. *Aquatic Conservation: Marine and Freshwater Ecosystems* 24:369–390. DOI:10.1002/aqc.2378.
- Mills, A. 1994. *Eagle Down Is Our Law: Witsuwit'en Law, Feasts, and Land Claims*. UBC Press, Vancouver.
- Monet, D., and A. Wilson. 1992. *Colonialism on Trial: Indigenous Land Rights and the Gitksan-We'Suwet'En Sovereignty Case*. New Society Publishers, Gabriola, Canada.
- Muir, B. R. 2022. Consequences and Implications of British Columbia's Failed Cumulative Effects Assessment and Management Framework for Indigenous Peoples. *Environmental Impact Assessment Review* 95:e106764. DOI:10.1016/j.eiar.2022.106764.
- Nabhan, G. P., and J. L. Carr, eds. 1994. *Ironwood: An Ecological and Cultural Keystone of the Sonoran Desert*. Occasional Papers in Conservation Biology, No. 1. Conservation International, Arlington County, VA.
- Newell, D. 1993. *Tangled Webs of History: Indians and the Law in Canada's Pacific Coast Fisheries*. University of Toronto Press, Toronto.
- Nicholas, G. P. 2010. Decolonizing the Archaeological Landscape: The Practice and Politics of Archaeology in British Columbia. In *Indigenous Archaeologies*, edited by M. Bruchac, S. Hart, and H. M. Wobst, pp. 185–188. Routledge, New York.
- Paine, R. T. 1969. A Note on Trophic Complexity and Community Stability. *The American Naturalist* 103:91–93. DOI:10.1086/282586.
- Payne, B. F., R. Ackley, A. P. Wicker, Z. L. Hildenbrand, D. D. Carlton, and K. A. Schug. 2017. Characterization of Methane Plumes Downwind of Natural Gas Compressor Stations in Pennsylvania and New York. *Science of The Total Environment* 580:1214–1221. DOI:10.1016/j.scitotenv.2016.12.082.
- People of 'Ksan. 1980. *Gathering What the Great Nature Provided: Food Traditions of the Gitksan*. Douglas and McIntyre, Vancouver.
- Porter, L., and J. Barry. 2016. *Planning for Coexistence?: Recognizing Indigenous Rights through Land-Use Planning in Canada and Australia*. Routledge, London.
- Posey, D. 1999. *Cultural and Spiritual Values of Biodiversity*. United Nations Environment Programme, Nairobi, Kenya.



- Przelomska, N. A. S., C. G. Armstrong, and L. Kistler. 2020. Ancient Plant DNA as a Window into the Cultural Heritage and Biodiversity of Our Food System. *Frontiers in Ecology and Evolution* 8. DOI:10.3389/fevo.2020.00074.
- Reed, K., and P. Ryan. 2019. Lessons from the Past and the Future of Food. *World Archaeology* 51:1–16. DOI:10.1080/00438243.2019.1610492.
- Reeder-Myers, L., T. J. Braje, C. A. Hofman, E. A. Smith, C. J. Garland, M. Grone, C. S. Hadden, M. Hatch, T. Hunt, A. Kelley, M. J. LeFebvre, M. Lockman, I. McKechnie, I. J. McNiven, B. Newsom, T. Pluckhahn, G. Sanchez, M. Schwadron, K. Y. Smith, T. Smith, A. Spiess, G. Tayac, V. D. Thompson, T. Vollman, E. M. Weitzel, and T. C. Rick. 2022. Indigenous Oyster Fisheries Persisted for Millennia and Should Inform Future Management. *Nature Communications* 13. DOI:10.1038/s41467-022-29818-z.
- Reyes-García, V., Á. Fernández-Llamazares, Y. Aumeeruddy-Thomas, P. Benyei, R. W. Bussmann, S. K. Diamond, D. García-del-Amo, S. Guadilla-Sáez, N. Hanazaki, N. Kosoy, M. Lavidés, A. C. Luz, P. McElwee, V. J. Meretsky, T. Newberry, Z. Molnár, I. Ruiz-Mallén, M. Salpeteur, F. S. Wyndham, F. Zorondo-Rodriguez, and E. S. Brondizio. 2022. Recognizing Indigenous Peoples' and Local Communities' Rights and Agency in the Post-2020 Biodiversity Agenda. *Ambio* 51:84–92. DOI:10.1007/s13280-021-01561-7.
- Reyes-García, V., Á. Fernández-Llamazares, P. McElwee, Z. Molnár, K. Öllerer, S. J. Wilson, and E. S. Brondizio. 2019. The Contributions of Indigenous Peoples and Local Communities to Ecological Restoration. *Restoration Ecology* 27:3–8. DOI:10.1111/rec.12894.
- Rick, T. C., T. J. Braje, L. Graham, K. Easterday, C. A. Hofman, B. E. Holguin, A. M. Mychajliw, L. A. Reeder-Myers, and M. D. Reynolds. 2022. Cultural Keystone Places and the Chumash Landscapes of Kumqaq', Point Conception, California. *American Antiquity* 87:487–504. DOI:10.1017/aaq.2021.154.
- Rössler Chief, M. 2006. World Heritage Cultural Landscapes: A UNESCO Flagship Programme 1992–2006. *Landscape Research* 31:333–353. DOI:10.1080/01426390601004210.
- Santomauro, D., C. J. Johnson, and G. Fondahl. 2012. Historical-Ecological Evaluation of the Long-Term Distribution of Woodland Caribou and Moose in Central British Columbia. *Ecosphere* 3. DOI:10.1890/ES11-00371.1.
- Schaepe, D. M., G. Nicholas, and K. Dolata. 2020. Recommendations for Decolonizing British Columbia's Heritage-Related Processes and Legislation. First Peoples' Cultural Council, Brentwood Bay, Canada.
- Shoghl, S. N., and G. Pazuki. 2024. Compressor/Pump Stations in Natural Gas Transmission Pipelines. In *Advances in Natural Gas: Formation, Processing, and Applications. Volume 6: Natural Gas Transportation and Storage*, edited by M. R. Rahimpour, M. A. Makarem, and M. Meshksar, pp. 177–236. Elsevier, Amsterdam.
- Shores, C. R., N. Mikle, and T. A. Graves. 2019. Mapping a Keystone Shrub Species, Huckleberry (*Vaccinium membranaceum*), Using Seasonal Colour Change in the Rocky Mountains. *International Journal of Remote Sensing* 40:5695–5715. DOI:10.1080/01431161.2019.1580819.
- Sterritt, N. 1988. Delgamuukw Trial Transcripts: Delgamuukw-Gisday Wa v. British Columbia. UBC Library Open Collections. University of British Columbia, Vancouver.
- Sterritt, N. J. 2016. *Mapping My Way Home: A Gitksan History*. Creekstone Press Limited, Smithers, Canada.
- Sutherland-Wilson, D., A. Spice, and C. G. Armstrong. 2019. Compliance Archaeology Fails Indigenous Peoples in British Columbia: An Example from Unist'ot'en Territory. *The Midden* 49:26–30.
- Trusler, S. 2002. Footsteps amongst the Berries: The Ecology and Fire History of Traditional Gitksan and Wet'suwet'en Huckleberry Sites. Master's Thesis, Athabasca University, Edmonton, Canada.
- Trusler, S., and L. M. Johnson. 2008. 'Berry Patch' As a Kind of Place—the Ethnoecology of Black Huckleberry in Northwestern Canada. *Human Ecology* 36:553–568. DOI:10.1007/s10745-008-9176-3.
- Turner, N. J., and K. L. Turner. 2008. 'Where Our Women Used to Get the Food': Cumulative Effects and Loss of Ethnobotanical Knowledge and Practice; Case Study from Coastal British Columbia. *Botany* 86:103–115. DOI:10.1139/B07-020.
- Wolverton, S., R. M. Figueroa, and C. G. Armstrong. 2023. Integrating Historical Ecology and



Environmental Justice. *Journal of Ethnobiology* 43:57–68. DOI:10.1177/02780771231162196.

Wyndham, F. S. 2017. The Trouble with TEK. *Ethnobiology Letters* 8:78–80. DOI:10.14237/ebl.8.1.2017.1006.