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*Kakotlatano 'xw xa kwakwax'mas*:\*  
Documenting and reclaiming plant names and words in  
Kwakwala on Canada's west coast

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This paper describes the process and outcomes of a project focused on community-centred reclamation of plant-based knowledge in the Kwakwala language from previously published materials as well as new documentation with Kwakwala-speaking Elders. The paper describes our research process resulting in the documentation of 300 plant word names and phrases, starting with 135 plants with names and words in Kwakwala that had been documented between the late 19th and early 20th century by Franz Boas and George Hunt, subsequently added to and enriched by community members and academics. An audio-visual dictionary of these plant names and associated phrases is now available through the FirstVoices web portal ([http://bit.ly/LDC\\_FirstVoices](http://bit.ly/LDC_FirstVoices)).

The corresponding author initiated the work and then further developed the research in collaboration with Kwakwaka'wakw fluent speakers, linguists, biologists, and the U'mista Cultural Society. The project has stimulated interest among community members who provided valuable feedback on the different ways in which this research can be further accessed and then delivered. The paper concludes with some structured reflections on how to proceed in community-led research projects such as this. The authors see further opportunity for continued cross-disciplinary and community-based research.

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\*Translation: "We are going to learn about plants".

**1. Introduction**<sup>1</sup> The Kwakwakaʼwakw (‘Kwakwala-speaking peoples’) have lived surrounded by forests within their traditional territories for thousands of years in what is now identified as the province of British Columbia in Canada. Their ancestral language, Kwakwala, is at risk of being lost for future generations (Boas 1895; Turner & Bell 1973; FPCC 2014). Despite the severe endangerment of the language, there is tremendous interest in reclaiming and revitalizing Kwakwakaʼwakw knowledge found in the Kwakwala language (FPCC n.d.; FPCC 2014). To this day, the Kwakwala language continues to be a key marker of heritage, cultural identity, and continuity for community members.

The language contains and conveys relevant Indigenous knowledge systems and traditional wisdom, and serves as the vehicle of transmission for stories about Kwakwakaʼwakw ties to the land, which appeal to younger generations who enjoy hearing their language spoken and used (Shaw 2001; Goodfellow 2005; Kovach 2009). Historically, the most critical forest-based resources for the Kwakwakaʼwakw have been plants and trees, as the community depended daily on a wide range of flora for shelter, transportation, clothing, food, medicine, and ceremony (Boas 1966; Turner & Bell 1973; Stewart 1984). Kwakwala language about plants demonstrates a complex and intimate knowledge of land, ecology, ocean, and forests, and the interconnect-edness between plants, animals, environment, and people. Looking closely at the complex structure of Kwakwala words can also reveal aspects of the history of Kwakwakaʼwakw interactions with neighbouring First Nations (Turner 2014). Some literal translations of words explain the properties of plants, and how to prepare them for food or medicinal uses. To Kwakwakaʼwakw, plants are more than inanimate objects or resources: they hold spirits. Many plants play important supernatural and spiritual roles in Kwakwakaʼwakw ceremonies (Nasby 2003; Lyall 2016). With this in mind, the corresponding author, Andrea Lyall, a community member who is also a graduate student, initiated this research to support the maintenance and reclamation (Leonard 2012)<sup>2</sup> of Kwakwala language relating to plants known within Kwakwakaʼwakw territories and those of neighbouring First Nations. This paper describes the process, methods, and outcomes of the project that emerged from her effort to expand community access to knowledge of plant names in Kwakwala.

At the beginning of the project, the FirstVoices platform hosted 34 plant names in English and Kwakwala, some with an associated image of the plant and an audio file that allowed users to hear the name of the plant pronounced by a fluent speaker (FirstVoices 2013). With the Uʼmista Cultural Society, the corresponding author applied to the First Peoples’ Cultural Council for funding to realize the goal of adding 300 newly recorded plant word names and phrases, photos, and audio files to

<sup>1</sup>Gilakas’la (‘thank you’) to Kwakwakaʼwakw Elders and fluent speakers Audrey Wilson, Douglas Scow, Billie Peters, Hazel Dawson, Annie Joseph, Alfred Coon, and Edward Dawson for invaluable work with the audio files for the plant dictionary; Patricia A. Shaw for advice and assistance learning Kwakwala orthographies; the Uʼmista Cultural Centre for their partnership on the FirstVoices project; all participating botanists and plant photographers; and funding from the First Peoples’ Cultural Council and Social Sciences and Humanities Research Council of Canada.

<sup>2</sup>We adopt Leonard’s definition of *language reclamation* as “a larger effort by a community to claim its right to speak a language and to set associated goals in response to community needs and perspectives” (Leonard 2012:359).

the FirstVoices website.<sup>3</sup> The grant supported honoraria for fluent Kwakwala speakers and travel costs associated with the project. In Kwakwala, the word *k̓wala'yu* means 'my reason for living', referring to the next generation. In the context of this article, this word refers to Kwakwaka'wakw children who are the underlying motivation for the project: the importance of teaching our *k̓wala'yu* about their heritage, language, and culture so that the identity of the Kwakwaka'wakw can continue. The ultimate reason for documenting, reclaiming and revitalizing the Kwakwala language in this community-led project is to ensure that the language endures for generations to follow.

**2. Research principles and methodologies** Our research design is grounded in honouring principles of Indigenous research methodologies. The 4 R's of *Respect*, *Reciprocity*, *Responsibility*, and *Relevance*, initially outlined by Kirkness & Barnhardt (1991) as foundational principles for universities seeking to support and serve Indigenous students, have since been applied to many other contexts as values guiding Indigenous research methodologies. In the context of our research, we interpret these terms in the following ways: *Respect* refers to our respectful engagement with the Kwakwaka'wakw and their knowledge about plant names and terminology. *Reciprocity* refers to our intention for the research process to first serve community goals and needs, as well as strengthening relationships between and within communities and academic institutions. *Responsibility* refers to our awareness of the importance of Indigenous knowledge and the responsibility that we have been given to serve as temporary stewards in the process of sharing it more widely with community members and beyond as appropriate. In this, we remain accountable to the Kwakwala speakers and Elders who shared their knowledge with us, to the many generations of community members who have and will access this knowledge, and to the institutions that offer professional homes for us. Community support is primary, essential, emergent, and always evolving.

As we outline in this paper, we also acknowledge responsibility for the sensitivities that inevitably arise from a research process conducted amidst a history of ongoing colonial trauma. We use the principle of *Relevance* to inform our choice of a research question and project that engages with community goals and interests, and as a way of guiding us and continually ensuring that our approach draws on protocols specific to the context of the Kwakwaka'wakw with whom the research was conducted. Finally, we also make use of the principles of research grounded in *Relationality* and *Research is Ceremony* (Wilson 2008), and a research agenda which contributes to goals of self-determination, mobilization, and transformation, as we recognize that Indigenous ways of knowing are not static, but adapt with changing conditions (Smith 1999; Barnhardt & Kawagley 2005). This approach may challenge some of the *a priori* assumptions, values, and methodologies underlying Western academic approaches to scientific knowledge (Smith 1999). Throughout this article, as in the research itself,

<sup>3</sup>The U'mista Cultural Society (U'mista) is a Kwakwaka'wakw-led non-profit organization based in Alert Bay, British Columbia. U'mista co-manages the Kwakwala web resources and talking dictionary for FirstVoices with the First Peoples' Cultural Council.

we refer to these principles as we outline the work in which we engaged, the approach we took, and the lessons learned through this project.

In speaking of the importance of relationships and relationality in an Indigenous approach to research, Wilson (2008) outlines the importance of positionality. We thus introduce ourselves below to offer some context to our collaboration. How do we each situate ourselves within this research, and how does this positionality influence the work we do?

First, Andrea Lyall. My First Nations heritage is through my mother, the late Louisa Lyall (née Coon), a first language speaker of Kwakwala and member of the Kwakwaka'wakw Nation. I am of half-English descent and grew up in an urban context, in Coast Salish traditional territory (present-day Victoria and the lower mainland B.C.). By training and occupation, I am a professional forester with over 20 years of work experience. In my career, I have worked directly with over thirty First Nations in North America, including as a participant in research projects. I am now a doctoral student in the Faculty of Forestry at the University of British Columbia (UBC) on the unceded, ancestral, and traditional territory of the Musqueam people. My research focuses on the Kwakwaka'wakw's knowledge and relationship with the forests.

I had not considered studying my heritage language until I read Kovach's *Indigenous methodologies: Characteristics, conversations, and contexts* (2009) in which she outlines how central language is to Indigenous peoples' knowledge systems: "Language is a primary concern in preserving Indigenous philosophies, and it is something that must be thought through within research epistemologies" (59). At the outset of this project, I asked myself whether I could contribute to language reclamation and reconfigure my research in a way that would be useful to the Kwakwaka'wakw. As the only known Kwakwaka'wakw professional forester, I reflected back to when I began to learn tree and plant names in English and Latin in 1998, the same year that *The living world: Plants and animals of the Kwakwaka'wakw* was published (Pasco, Compton, & Hunt 1998). With no training in linguistics at the time, I was unable to read the U'mista orthography, meaning that I could not make sense of the Kwakwala names for plants described in that publication. Since then, I have always considered it a limitation that I only understood forests from a Western perspective (through English and Latin), but not in my mother's first language. As a way to understand Kwakwaka'wakw and Indigenous knowledge about the forests in which I worked, I set out to learn Kwakwala names for the plants whose names I already knew in Latin and English, many of which I could quickly identify from my time walking through the woods.

Second, Harry Nelson. I am an economist who has worked on forest and natural resource issues with an emphasis on policy. I have also had the opportunity to work with Indigenous peoples on a periodic basis since I completed my first graduate work when I became involved with researchers at Harvard University examining how certain American Indian tribes were pursuing self-determination strategies through the Harvard Project on American Indian Economic Development (HPAIED), where I worked on projects with the Crow (Montana) and the Ktunaxa, Gitga'at, and Metlakatla First Nations (British Columbia). Independently, I have worked with the

Ahousaht, Carrier Sekani, Kitselas, and Tla-o-qui-aht in British Columbia where each community was reasserting their decision-making authority over their affairs. Since 2008, I have been a faculty member in the Faculty of Forestry at UBC and have examined the applicability of those findings to the Canadian context. Andrea Lyall initially approached me with the idea of a directed study to learn plant names in Kwakwala, and this community-engaged project emerged out of that initial exploration.

Third, Daisy Rosenblum. I am a settler scholar of Catalán, German, and Ashkenazi Jewish descent, raised in the unceded territories of the Lenape people (a.k.a. New York City), now living on Musqueam territory and working in the First Nations and Endangered Languages Program at UBC. I work on the multi-modal documentation and description of Indigenous languages of North America, with an emphasis on methods, partnerships, and products that contribute to community-based language reclamation. Over the past decade, I have worked with Kwakwaka'wakw communities to document Elders' knowledge of their territories in the Kwakwala language and have worked to find ways to share this knowledge with younger generations. Andrea Lyall and I share an interest in finding ways to support the ongoing maintenance and reclamation of the Kwakwala language through place-based intergenerational sharing of traditional ecological knowledge.

Fourth, Mark Turin. I am a linguist and anthropologist, and I have been working in collaborative partnership with Indigenous communities in the Himalayan reaches of Nepal, India, and Bhutan for over 20 years, supporting community-led initiatives to document, protect, and revitalize spoken language and cultural traditions. Since 2014, I have been working and living on the traditional, ancestral, and unceded territories of the Musqueam people as a faculty member at the University of British Columbia. I met the corresponding author Andrea Lyall during my first week in Vancouver, and her advisor Harry Nelson shortly after that. My principal contribution to this article has been to situate the research within a wider disciplinary context of Indigenous-language work that is inherently – and necessarily – multi-disciplinary and multi-modal.

In working together, we have practiced the relationality outlined by Wilson (2008) and sought to create opportunities for beneficial interdisciplinary reciprocity and learning. This group of four authors reflects just one aspect of a much larger intergenerational team of contributors including Kwakwala-speaking Elders and other community members and academics whose expertise, knowledge, and contributions we gratefully acknowledge.

Reclaiming Kwakwaka'wakw knowledge about plant names in Kwakwala required a multidisciplinary collaboration that included linguists, botanists, photographers, foresters, community members, and community agencies. An essential first step in developing this research was talking to twenty community members including Kwakwaka'wakw Elders, harvesters of plants, hereditary chiefs, staff working with forestry and finance, elected chiefs and councillors, and carvers of *wilkw* ('Western red-cedar'). The community members with whom the corresponding author spoke agreed that the reclamation of plant names in Kwakwala was a worthy project and encouraged us to continue. The research itself, as well as the reclamation project that ensued, were

designed to be as relevant to the community as possible by having both questions and goals shaped by community input in an iterative process. Critical to conducting the research project was meeting with eight fluent Kwakwala-speaking Elders and recording our research with them.

Through the work, the corresponding author developed a literature review, a 46-page dictionary of plant names and words summarizing Kwakwala from three previously published documents and one community dictionary, and a draft 100-page visual dictionary with high-resolution photographs of all the plants with the names in Kwakwala. The draft copy of the visual dictionary was shared with speakers to help them identify plants and create audio recordings of their pronunciations of names and phrases in Kwakwala. This image-led process resulted in the addition of 300 words and a few phrases to an existing online dictionary hosted by FirstVoices, a free web-based application with the name of the plant in English and Kwakwala, including pictures taken of the plants, together with an audio file of the plant name pronounced by a speaker. Further work included the development of a draft set of flashcards created as a potential resource for community members to share this interdisciplinary knowledge.

**3. The history of Kwakwala language decline and alienation** To situate our research, it is important to consider how and why the Indigenous knowledge of plant names in Kwakwala has receded within the context of broader patterns of language shift among the Kwakw̓ak̓a'wakw.

From the 1820s through to the 1920s, smallpox and influenza epidemics decimated Kwakw̓ak̓a'wakw populations, resulting in catastrophic and dramatic depopulation. Overall, the Kwakw̓ak̓a'wakw population fell from a pre-contact high of 8,500 to 1,029 in 1924 (Galois et al. 1994). Along with physical extermination and in many cases relocation of Indigenous peoples in Canada, the government introduced educational and administrative policies intended to extinguish Indigenous knowledge in language and culture (Shaw 2001; TRCC 2015a; Pine & Turin 2017). The federal government of Canada alienated the surviving Kwakw̓ak̓a'wakw from their lands through repressive policies such as outlawing the potlatch system, a central part of the Kwakw̓ak̓a'wakw culture, from 1884 to 1951 (Tennant 1990; Lyall & Borona 2019). In the 1860s, Joseph Trutch, the Chief Commissioner of Land and Works of the Crown Colony, designated pre-confederate British Columbia as *terra nullius* ('empty lands') and designated less than 0.4% of the land-base as Indian Reserve land (Lyall & Borona 2019).

Forced relocations of communities such as the Tlatlasik̓w̓ala, G̓us̓g̓imuk̓w, Gwa's̓ala, and 'Nakwaxda'x̓w Nations continued into the 1960s and 1970s, removing peoples from the territories that had sustained them for thousands of years, and relocating them in the territories of other Nations, where they had no inherited rights to the resources that surrounded them. To this day, First Nations consider most of British Columbia to be unceded traditional territory (British Columbia Treaty Commission 2017). The topic of the Indian Land Question and how to address the dispossession and occupation of unceded lands in most of British Columbia and many other parts

of Canada remains an unresolved source of ongoing tension; treaty negotiations are mostly unsettled (and in some cases, not accepted) among most First Nations (Tenant 1990; Wilkes et al. 2017).

Canada's residential school system became a central driver in the national policy to eliminate Indigenous peoples' rights, history, and cultural values (Regan 2010; TRCC 2015a). Speaking Kwakwala became stigmatized when Kwakwaka'wakw children attended residential school, sometimes year-round, in Alert Bay or Port Alberni on the coast of British Columbia. The federal government funded these schools, and they were run by the Anglican and United churches, respectively. St. Michael's Residential School in Alert Bay operated from 1929 to 1975, while Alberni Residential School operated from 1890 to 1973 (FNESC 2014). In these schools, as in residential and day schools across Canada, children were physically and verbally abused for speaking their language (TRCC 2015b:50). Survivors of this experience, now Elders, regularly summarize the experience simply by indicating how many years they attended as if they had served a prison sentence: "I went for 13 years" or "I went for six years" (*pers. comm.*; TRCC 2015b). This oppression resulted in many Kwakwaka'wakw Indian residential school survivors becoming what some linguists describe as *silent speakers* or *rememberers* (FPCC 2014), unwilling or unable to transmit their language and culture to their children.

The cumulative impact of the systemic and systematic oppression outlined above is that many of the Kwakwaka'wakw continue to be alienated from their language as well as their traditional lands. The central research goal of this project – to reclaim plant names in Kwakwala and encourage their use among younger generations – reflects goals shared among many Kwakwaka'wakw peoples. There is a growing consensus among community language activists and scholars that language reclamation projects will necessarily draw on diverse approaches, informed by what is appropriate for a given place and time (Hermes et al. 2012). We return to this history in our discussion of the potential emotional impact of this type of research.

**4. Kwakwala speech communities and internal variation** Kwakwala belongs to the Wakashan language family. It is spoken fluently by fewer than 150 first language speakers, among a population approximating almost 7,000 Kwakwaka'wakw people (Rosborough 2012; FPCC 2014). There are five dialects of the Kwakwala language recognized today: the *Kwakwala*<sup>4</sup> dialect spoken by people in Gilford Island, Knight Inlet, Alert Bay, Kingcome Inlet, and Fort Rupert; *Likwala* spoken in Campbell River and Cape Mudge; *Tlat̓asikwala* spoken by a few remaining speakers in north Vancouver Island; *Nakwala* spoken by the 'Nakwaxda'xw, and increasingly merged with the dialect of the Gwa'sala, sharing the Tsulquate Reserve near Port Hardy; and *Gutsa* spoken by people from Quatsino (Pasco et al. 1998). A large proportion of Kwakwala documentation and revitalization efforts, including this research, have focussed on the Kwakwala dialect (Pasco et al. 1998). We refer the reader to Siemens (2016), Shaw et al. (2011), and Cadwallader & Rosenblum (2013), among others, for documentation and description of other dialects.

<sup>4</sup>One of the five dialects of contemporary Kwakwala shares the name Kwakwala with the language.



**5. Previous documentation of plant knowledge in Kwakwala** The first step in developing a Kwakwala plant dictionary was a comprehensive analysis of the existing Kwakwala documentation of plant names and terminology, produced as a literature review by the corresponding author. Lyall compiled lists of Kwakwala plant names drawn from the following four documents: (1) *The ethnobotany of Southern Kwakiutl Indians of British Columbia* by Nancy Turner and Marcus Bell (1973); (2) *The living world: Plants and animals of the Kwakwaka'wakw* by Juanita Pasco, Brian Compton, and Lorraine Hunt (1998); (3) *Traditional ecological knowledge: Nun'wa'kola Cultural Society Kingcome Inlet, British Columbia* by Ryan Nicolson (2002); and (4) the FirstVoices Kwakwala iOS application and associated online dictionary prepared by the U'mista Cultural Society in partnership with the First Peoples' Cultural Council (FirstVoices 2013). Subsequently, information was drawn from additional resources, including Boas and Hunt's *Ethnology of the Kwakiutl* (1921) containing extensive information about gathering and preparing plants, Turner's two-volume *Ancient pathways, ancestral knowledge: Ethnobotany and ecological wisdom of the Indigenous peoples of the Northwest Coast* (2014), Boas' *Kwakiutl grammar* (published posthumously in 1947 by Harris & Yampolsky (eds.)) and Boas' unpublished dictionary (1948, Yampolsky (ed.)), among others.

Each of the four documents noted above draws information from a range of sources. Significantly, they are all products of research partnerships with fluent speakers of Kwakwala, who contributed their knowledge of the forest and the plants within it to these documentation projects. Pasco, Compton, & Hunt (1998) acknowledge over ninety Kwakwala speakers, with men and women equally represented among the knowledge-keepers cited, suggesting that both men and women alike hold detailed knowledge of plants, although subareas of expertise and gender-specific expertise may emerge with further research.

Three of the above sources include information about uses of plants (Turner & Bell 1973; Pasco et al. 1998; and Nicolson 2002); the U'mista online dictionary offers audio files of plant names in Kwakwala. Turner & Bell (1973) is the most comprehensive, identifying 135 plants with Kwakwala names and words drawn from seven works by Franz Boas, George Hunt, and David Grubb in Kwakwala, Latin, and English.<sup>5</sup> The knowledge of plant harvesting and preparation contained in Boas & Hunt (1921) likely drew significantly on knowledge shared by Hunt's first wife Lucy Homiskanis, (*Tlalili'lakw* 'Born to invite guests'), a Kwakwaka'wakw woman from Fort Rupert (Boas & Hunt 1921:45; Berman 1991).

Turner, an ethnobotanist who has worked with several First Nations across British Columbia for much of her career, has developed long-standing relationships with Kwakwaka'wakw knowledge keepers who carry in-depth knowledge about the plants in their territories. For the 1973 paper, she and Bell discussed plants with fluent

<sup>5</sup>Franz Boas, an American-German anthropologist, worked with the Kwakwaka'wakw from the 1880s to the 1940s. His primary research partnership was with George Hunt, a community-based researcher of Tlingit and Scottish descent and a fluent speaker of both Kwakwala and English, who was born and raised in Fort Rupert. Hunt worked with Boas to gathering extensive documentation of Kwakwaka'wakw culture in the Kwakwala language.

Kwakwala speakers and verified the information that had been recorded by Boas and Hunt in previous generations.

Lyall compiled Kwakwala plant names from the four documents into a single 46-page list including Kwakwala names, English common names, and Latin names for each plant. Working with linguists, she transliterated divergent orthographies into the U'mista writing system so that the product would be compatible with the FirstVoices platform where the work was to be shared.<sup>6</sup>

Many entries include names for subparts such as berry, stem, shoot, leaf, and roots. Functional products made with the plant are also included. For example, Turner & Bell (1973:299) noted over 40 words associated with Western red-cedar. Turner & Bell's document describes additional cultural information, such as that for *i'amdza'nu* known in English as 'wild lily of the valley' (*Maianthemum dilatatum*), whose berries are called 'frog berries' because it was believed that frogs ate them (1973:273).

**Figure 2.** Wild lily of the valley *i'amdza'nu* 'belongs to the frogs'. (Photo credit Andrea Lyall)



Many plant names are derived forms. For example, *i'ams-*, the root word from which *i'amdza'nu* is derived, is a verb which means 'to pick the fruit of the wild lily of the valley', combined with a nominalizing suffix *-a'nu* meaning 'plant'. Some plant names are more complex and demonstrate descriptive combinations of morphemes, such as *kakamxwala'mas* 'eagle down plant' known in English as 'cotton-grass' (cf. *kamxwa* 'eagle down') (Turner & Bell 1973:272; Turner 2014:129). We

<sup>6</sup>In this paper, we use the U'mista orthography for Kwakwala words, with the exception of an excerpt from Boas. The U'mista orthography can be found at <http://www.firstvoices.com/en/Kwakwala/alphabet>.

reflect further on the significance of these plant names and how they may illuminate Kwakwala worldviews in §7.

In comparing early documentation with later documentation, we can see that Kwakwala plant names are not always consistently associated with the same English and Latin names in a one-to-one association. In some cases, this inconsistency results from changes in the English and Latin classifications of plants; the entry provided for *ĩams-* in Boas' 1948 dictionary is 'to pick the fruit of *Unifolium dilatatum*' (Boas 1948:171), while the currently accepted Latin name for the 'false/wild lily of the valley' is *Maianthemum dilatatum* (Pojar & MacKinnon 1994:103), indicating a shift in the genus to which the species has been assigned.

However, there may not be a one-to-one correspondence from a single plant species classified by botanists to a single Kwakwala name for other reasons (Compton 1993; Turner 2014). Linnean and Kwakwaka'wakw classifications reflect different taxonomies and different relationships with flora. A group of plants identified as separate species according to English or Latin classifications may not be associated with a unique name in Kwakwala, grouping them based on similarities of function. Ferns of quite varied appearances (*Blechnum spicant*, *Polystichum munitum*, and *Adiantum pedatum*) carry the same generic name for 'ferns', *salq'idana* (Turner & Bell 1973; Compton 1996). However, several ferns with edible and ceremonially useful parts are further differentiated in Kwakwala, such as *łakwa'yi*, the rhizomes of licorice fern, which hunters and berry pickers held in their mouths to prevent hunger or thirst (from *łakw-* 'to gather licorice fern' [*Polypodium glycorrhiza*]; *łakwa'gnu* 'licorice root plant'; and *łaxla'x'wid* 'to eat licorice fern') (Boas 1931; Turner & Bell 1973; Compton 1996). Ferns are also grouped with mosses – also used for cleaning, insulation, and cushioning, under the generic term *gams* – perhaps acknowledging their shared functions. Mosses and lichens are then also grouped together with a different generic term, *p̄algms*. Two native species of strawberries (*Fragaria chiloensis* and *F. virginiana*) that are similar in appearance and function (both eaten raw when fresh) share the same name *lagu*. These point to taxonomic differences between the Kwakwaka'wakw classification of plants and other systems.

It is striking to note that many fewer Kwakwala plant names are documented in the recent literature than what appeared forty years ago: Turner & Bell recorded 135 plant names in 1973; Pasco, Compton & Hunt recorded 40 plant names in 1998; Nicolson documented 35 in 2002, and 34 plant names were entered into FirstVoices in 2013. This dramatic decrease indicates a shift in both how the Kwakwala language is used and the way that the community relates to land. Only a few generations ago, the Kwakwaka'wakw depended on the plants from their forests on a daily basis (Boas 1895; 1930; 1931; 1935; Boas & Hunt 1921; *inter alia*). Since contact and colonization, Kwakwaka'wakw ways of life have changed considerably. Many community members were compelled, early on, to seek wage-based employment and join the market economy by working in fishing, logging, mining, and canning, which supplanted the seasonal calendar of harvesting and cultivating with an alternative schedule governed by the needs of extractive industries (Natcher 2008).

With fewer Kwakwala speakers, ongoing impacts of historical colonization (land dispossession, intergenerational trauma from residential school), and new state policies that constrain Kwakw̄ak̄a'wakw's access to the forests and oceans, it is not surprising that fewer plant names are now commonly known and used. At the same time, it is important to note the continuing relevance of individual plants and plant names. For instance, Kwakwala terminology for trees and berries is particularly resilient, reflecting the continuing value of trees and berries and everything they provide to the Kwakw̄ak̄a'wakw. Vibrant contemporary knowledge includes words and phrases that describe the various parts of the fruit and shrub, where it grows, activities to prepare it, ceremonial uses and the like. The table below highlights the resilience of such knowledge about berries within Kwakw̄ak̄a'wakw communities. We reflect further on the significance of Kwak'wala plant names and how they may illuminate Kwakw̄ak̄a'wakw worldviews in §7.

**Table 1.** Three out of the 21 berries for which Kwakw̄ak̄a'wakw have names that describe the berry, plant, and uses

Kwakwala	English	Latin
<i>k̄amd̄zuxw'mas</i>	<b>Salmonberry, plant</b>	<i>Rubus spectabilis</i>
<i>k̄amd̄zakw</i>	berry (in general)	“ “
<i>ts̄ūts̄alts̄am</i>	dark berries	“ “
<i>'ma'ma'lik</i>	yellow berries	“ “
<i>k̄wa'l̄am</i>	edible shoots	“ “
<i>n̄axw'mas</i>	<b>Salal, plant</b>	<i>Gaultheria shallon</i>
<i>n̄ak̄wal(i)</i>	fruit	“ “
<i>n̄aḡatsi</i>	plural fruit	“ “
<i>l̄an̄am̄x̄di</i>	refers to the leaves	“ “
<i>l̄an̄am</i>	leaves < <i>l̄an̄xa</i> “green” applied when used to beat soapberries	“ “
<i>n̄ak̄wad̄zu</i>	dried salal berry cakes	“ “
<i>ts̄aḡal</i>	<b>Thimbleberry, the berry</b>	<i>Rubus parviflorus</i>
<i>ts̄aḡal'mas</i>	thimbleberry bush	“ “
<i>ts̄aḡalga</i>	eating thimbleberries	“ “

In addition to recognizing and celebrating the continuing intergenerational transmission of knowledge within the Kwakw̄ak̄a'wakw despite the enormous pressures against such continuity, the process of conducting this research also highlights the importance of the transmission of knowledge from one generation of academic researchers to another: from the documentation created by Boas and Hunt in the early 20th-century to Turner and Bell in the 1970s, to the present moment and beyond. These language documentation and revitalization efforts are vitally significant to community interests and cultural reclamation. They have been guided through time by a multi-disciplinary group of researchers from both within and beyond the university. This realization helps to highlight the responsibilities of all engaged with

Indigenous-focused research – whether located in a community or in privileged university structures – to ensure that knowledge is accessible, appropriately safeguarded, and ethically transmitted.

## **6. Developing a visual dictionary of Kwakwala plant names for audio documentation**

After compiling information from previously published documentation, the corresponding author approached the U'mista Cultural Society to explore whether they would be interested in including additional plant names in the FirstVoices Kwakwala database an application developed and maintained in partnership with U'mista Cultural Society and the First Peoples' Cultural Council. U'mista agreed to partner on this project, and the First Peoples' Cultural Council approved a joint application. The project's budget provided honoraria for speakers and covered travel costs associated with the project.

The corresponding author then began preparing for the documentation process. For an entire season, she walked in the woods to take new high-resolution photographs of each of the 135 identified plants for inclusion in a visual dictionary. For rare plants, dozens of high-resolution photographs were requested and received from biologists, botanists, and photographers along with consent to use their images for the project (E-Flora 2017).<sup>7</sup> Botanists and other photographers were generally keen for their photographs to be used in this way for a language reclamation project, and many botanists additionally helped with identifying Latin names, contributing high-quality images of plants in various stages of growth throughout the year, e.g., flower, berry, bud, and dormant.

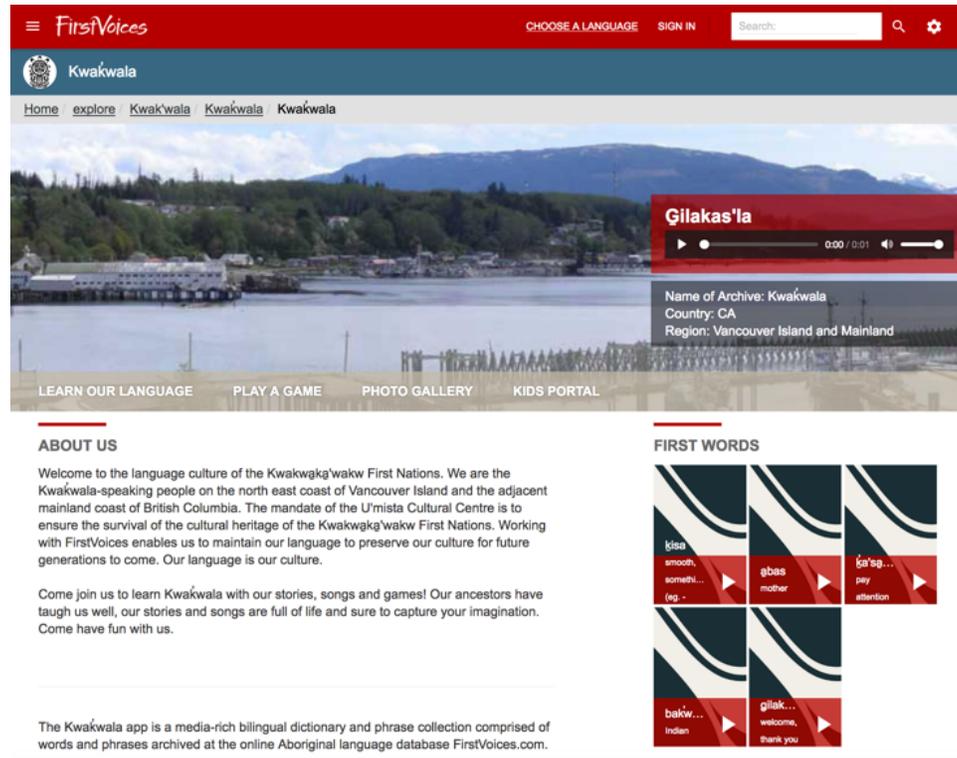
These images were used to create a single copy of a 100-page visual dictionary picture book including plant names in Kwakwala, English, and Latin. The resulting images were printed for the purpose of sharing with speakers to stimulate recognition and to facilitate the audio recording of Kwakwala names. Given mobility challenges faced by some Kwakwala-speaking Elders, and the seasonal nature of the botanical cycle, photographs became an invaluable tool for elicitation and conversation. The corresponding author also produced a copy of an associated set of draft flash cards as a potential resource for community remembering and (re)learning.

The corresponding author worked with eight fluent Kwakwala-speaking Elders to record audio files for the illustrated plant dictionary. The speakers told the corresponding author that they preferred working in pairs or small groups when speaking Kwakwala with one another. On one occasion, when more than one speaker could not be present, another speaker was able to participate by conference call. The benefits of documenting language use in groups of two or more have been recognized as valuable in reclamation projects (Mithun 2001; Rosenblum & Sammons 2014; *inter alia*). The eight fluent Kwakwala speakers first reviewed the words to consider their approval of the terms to be recorded. In a few cases, a speaker of Kwakwala said, “That does not sound right”, or “We don't use those words anymore”, and the group

<sup>7</sup>E-Flora BC is an online electronic atlas of the flora in British Columbia with a photo gallery with English and Latin names, date, the name of the photographer with relevant contact information, and the location of where the plant was photographed <<http://ibis.geog.ubc.ca/biodiversity/eflora/>>.

discussed whether a word should be recorded. The speakers found both the images of the plants and the documentation of plant names in the U'mista orthography to be useful and interesting.

**Figure 3.** Kwakwala homepage on the FirstVoices website.



Audio files of recorded plant names were then edited using Audacity,<sup>8</sup> a free, open-source software tool for multi-track recording and editing, after which edited files were uploaded to servers at the First Peoples' Cultural Council. Between the fall of 2014 and the spring of 2015, 300 plant word names, including phrases, were added to the FirstVoices Kwakwala app and website.<sup>9</sup> Following these early outputs, we now anticipate that the project will continue to develop through the deepening involvement of community members, particularly speakers who are very supportive of exploring both traditional print publishing outlets and potentially more accessible approaches to digital publishing for the associated visual dictionary picture book which was developed.

<sup>8</sup> Audacity can be downloaded from <http://www.audacityteam.org>.

<sup>9</sup> The entire list of plant names with associated image and audio files can be viewed for free through the FirstVoices website: <[http://bit.ly/LDC\\_FirstVoices](http://bit.ly/LDC_FirstVoices)>.

## 7. Interrelationships between the Kwakwala language and the Kwakwaka'wakw culture

The process of documenting Kwakwaka'wakw knowledge involves more than identifying Kwakwala names corresponding to a list of plants. The Kwakwala lexicon reflects the fundamentality of the relationship between Kwakwaka'wakw people and the plants surrounding them. It is only very recently, in the last hundred years, that plants for food, medicine, fibre, and ceremony have ceased to be a daily necessity and been replaced by other materials. Certain materials such as Western red-cedar, berries, and other plants retain their central role in the heritage and culture of the Kwakwaka'wakw people.

In the Wakashan and Salishan language families of this area, plant names are often derived from verbs. Many such verbs mean 'to gather *x* plant' or they identify an action of a tool for which the plant is used. In Kwakwala, a plant name can be derived by attaching a nominalizing suffix such as *-mas* (sometimes *-ms*) with the meaning '-plant' (Boas 1947:338; Turner & Bell 1973:44).

In *Notes on the Kwakwala vocabulary*, Boas (1931:164) noted that "[n]ames of plants are derived from stems expressing the gathering of the particular plant". He provides a long list of such examples, some of which we share below.

*lEk-á* to gather cinquefoil, *lEx:sEm* cinquefoil; *sakwá* to dig bracken roots, *sāgūm* brackenroot; *lEkwá* to dig fern roots (*Polypodium*), *lEkwē<sup>ε</sup>* fern-root; *q!únsa* to dig lupine roots, *q!wá<sup>ε</sup>nē* lupine; *x-ókwa* to dig Fritillaria bulbs, *x-ókūm* Fritillaria; *ts!ēx-a* to pick elderberries, *ts!ēx-ina* elderberries; *nEkwá* to pick salal-berries, *nEk!ūle* salal-berries; *q!ēsa* to pick currants, *q!ēsēna* currant; *qōta* to pick chokecherry, *qōt!xolē* chokecherry; *qEk-á* to pick dogwood berries; *qEk!aalē* dogwood berries; *t! Emxwa* to pick gooseberries, *t!Emxwalē* gooseberry; *dzEnk-a* to gather nettles, *dzEndzEnx-LEn* nettles [...] (Boas 1931:164)<sup>10</sup>

Speaking of plants in Kwakwala, then, is not speaking of named objects in the world, existing separate from human society. Rather, the Kwakwala language of plants centers speakers' attention on relationship: how plants are gathered, and the gifts they offer.

At least 34 plants held important ceremonial and spiritual significance to the Kwakwaka'wakw (Turner & Bell 1973). For instance, cedar bark rings, *ká'nxawi* (Grubb 1977:185), are worn during specific dances during potlatches. The tips of hemlock branches, *nqmwala k'waxtlo'wa'yi* 'supernatural branch tips', are used for purification and protection in ceremony. Prayers are said before collecting tree bark or a whole tree, and the tree is referred to as 'Oh Supernatural one' or 'friend' (Boas 1935; Turner & Bell 1973).

The contemporary documentation process also illuminated continuing awareness of multidimensional Kwakwaka'wakw knowledge. While making the audio dictionary, a speaker pointed out that the root *t!amka* 'yew' sounded similar to the word

<sup>10</sup>The orthography used in this excerpt is one developed by Boas in partnership with Hunt. A correspondence table between the Boasian orthography and other orthographies can be found at: <[http://bit.ly/LDC-Nicolson\\_Werle](http://bit.ly/LDC-Nicolson_Werle)>.

for 'sledgehammer', *tlamgayu* (also used to mean 'wedge' Boas 1948:425; FirstVoices 2018).

**Figure 4.** Pacific yew, *tlamka* 'yew wood or tree'. (Photo credit Andrea Lyall)



Yew wood is one of the densest and hardest of softwood tree species, while also being bendable and rot resistant, making it ideal for making tools such as bows, digging tools, and sledgehammers. The root for *tlamka* is related to *tlamk-*, 'to split wood with wedge', and the name for the yew tree is a nominalized form meaning, 'the tree used to make a sledgehammer'. This pattern is echoed in many Salish languages, in which the word for yew is similarly derived from verbs associated with particular tools, such as *χ<sup>w</sup>e?itay'* 'wedge tree' derived from the verb 'to wedge' in *Skwxwú7mesh* (Kuipers 2002, as cited in Turner 2014), or *táχ<sup>w</sup>ətsəlp* 'bow tree' derived from a verb 'to bow' in Upriver Halkomelem combined with the suffix *-əlp* meaning 'tree, plant'<sup>11</sup> (Kuipers 2002, as cited in Turner 2014). Turner and Bell (1973) also note that "yew was used by the Kwakiutl as a measure of strength. A man who could twist a yew tree from crown to butt was considered to be very strong. A rod of yew was used by Kwakiutl men in a tug-of-war game" (Turner & Bell 1973:271). The similarity of

<sup>11</sup>The root *tl'amak* may also have been borrowed into Wakashan languages and come to mean 'to split wood with a wedge'. Kuipers (2002) argues that it is a Proto-Coast-Salish word for 'yew'.

the Kwakwala root *tlamk-* meaning 'proud' may not be a coincidence (Boas 1948:425; FirstVoices 2018).

Additional insight is gleaned from Kwakwaka'wakw plant names, allowing us to identify which plants known in Kwakwala may have been borrowed from other languages. Turner (2014:I.134) notes that "[...] some language families, such as Salishan and Wakashan, seem to have a particularly notable proportion of borrowed plant names between their languages". Two examples of such borrowed names were prominent in our documentation; both are of high cultural importance. *Naxwaskan* or 'soapberry' (*Shepardia canadensis*) is a prized berry that when whipped creates a thick foamy treat with a texture similar to whipped cream, widely enjoyed throughout the Northwest Coast. The Kwakwala name *naxwaskan* contains the Proto-Salish root *χ<sup>w</sup>us-* 'to foam' (Turner 2014:II.193) and tells of the origins of the berry in neighbouring traditional territories to the Interior where Salish languages are spoken (Pojar & MacKinnon 1994:94).

*K̓axa'min* (*Lomatium nudicaule*), known in English as 'wild celery', 'Indian celery', or 'Indian consumption plant' is widely used throughout the Northwest Coast for medicinal purposes (Turner 2014:II.132). The growth habitat is described in Pojar & MacKinnon (1994:222) as limited to Southern Vancouver Island, Washington, and Oregon, far away from Kwakwaka'wakw territories. Despite not having been described as growing in Kwakwaka'wakw territory, the medicinal uses of *k̓axa'min* are well-known among Kwakwaka'wakw, and it is a popular plant still traded for these uses. In fact, *k̓axa'min* has been observed growing in areas far north of the identified habitat area, probably through cultivation. One of the authors observed it harvested for use by a Kwakwaka'wakw expert in medicinal plants who says it has naturalized to their region and has always grown there (the expert requested personal anonymity and anonymity for the specific region in which the plant grows; Rosenblum *pers. comm.*). One possible explanation is a history of transplantation as part of the trade practices going back millennia (see Turner 2014:II.101–144 for more on this).

**8. Critical reflections on time, emotion, and evolving traditional practices** As outlined earlier, the number of plant names documented in Kwakwala seems to have declined from 135 plants (seven more were recognized but had no names) identified in Turner and Bell (1973) drawing on earlier work of Boas and Hunt, to 34 plants identified in more recent sources. Further, it is important to recognize that knowledge about plant names and uses is – in common with other forms of specialized knowledge (i.e., related to trapping, fishing, carving, etc.) – not a monolithic object possessed by an entire community. Domain-specific understanding is, and perhaps always has been, likely and perhaps even necessarily fragmented. Some community members know, and have always known, more about berries, while others are more knowledgeable about medicines, trees, or seaweeds. Nevertheless, Kwakwaka'wakw community members of all generations still actively enjoy spending time in the forests, along the shoreline, and in the water year-round, harvesting natural products to make food, medicine, and clothing according to seasonal availability and traditional ways.

Another important aspect in our work was the realization that while the documentation of Kwakwala language and traditional culture by early ethnographers such as Boas and Hunt indeed preserved Indigenous language about plant names and verbs, some fluent Kwakwala speakers noted that they do not recognize some of the words documented by Hunt and Boas (Berman 1994). By extension, an interest in documenting language should not lead us to overlook the value of the deep, embodied, and place-based knowledge about plants and forests held by many contemporary Kwakwaka'wakw community members, whether or not they are fluent speakers of the Kwakwala language. In other words, while language retention and use remain extremely important, these are not (and have never been) the only significant markers of how much community members know.

We recognize that a dictionary risks replicating Western ontologies and epistemologies by identifying and listing categories of knowledge that are prominent in dominant Euro-American thought. With the goal of developing a culturally relevant dictionary, Lyall sought to structure this visual dictionary around types of experience that are more prominent in a Kwakwaka'wakw view of the forest (i.e., function, food type, season, etc.), rather than following Linnaean classifications of plants in Latin species and genera. This research process also contributed to Lyall's method of learning Kwakwala, extending beyond plant names to understanding the grammar. The words added to FirstVoices, an audio-visual dictionary, as a digital document, is non-linear and reflects modes of importance within Kwakwaka'wakw worldview. The development of a visual and audio dictionary appears to have been a welcome first step within the community to spur other conversations in Kwakwala about the plants, forest, and sea.

This project began with a seemingly modest goal: to learn more about plant names in Kwakwala through multimedia documentation and to share the resulting knowledge with others in the community. However, when revisiting and reactivating knowledge that has been dormant for some time, it is important to remember that there are usually reasons for this silence. Through the very process of asking community members questions about culture, language, and land, complex memories can resurface that bring with them difficult and conflicting emotions. Researchers in this role must be empathetic and gentle. It is useful to be aware that the knowledge shared is not necessarily part of a lost, imaginary 'whole', but would always have been a fraction of the knowledge collectively shared, subject to variation among and between speakers depending on their life experience and exposure to cultural traditions. In our working sessions, some of the Kwakwala-speaking Elders were particularly interested in berries, other focussed on medicines, while others were former loggers who knew the trees. One speaker in our group knew how to read the U'mista orthography and was therefore able to read some words aloud to the group, a process that helped the other speakers consult one other to arrive at a consensus about whether a plant name was familiar and whether it should be recorded and included in FirstVoices.

When faced with direct questions from a researcher, however well-intentioned, the speakers may have felt humbled or embarrassed if they struggled to remember a word or if they did not know the answer to a particular question. At the beginning of

one of the group sessions between the corresponding author and several speakers, we discussed as a group that we did not expect all of the speakers to know or remember all of the words that we were asking about. One speaker said that this happens sometimes and described the feeling using the Kwákwala word *gáxo*, for a boat which drifts away and floats adrift (also Boas 1948:249). Just like the boat that drifts but sometimes can still be recovered, speakers were happy to participate and to support when they could, even if many were somewhat overwhelmed by the scope of the 100-page visual dictionary. Despite these complicated feelings, most speakers requested a printed copy of the visual dictionary when ready.

Even for a project of this size, documenting, cross-referencing, and recording 300 specialized words in Kwákwala required dozens of people to make essential contributions. Among our contributors and participants are eight fluent Kwákwala-speaking Elders for audio recordings, three linguists for orthography and language documentation and reclamation advice, two forestry academics, 12 ethnobotanists and biologist for plant identification and photos, community-based researchers, and experts at the U'mista Cultural Society. Each participant contributed different expertise to complete the project, prompting co-operation between community-based researchers and academic researchers, between academic researchers and Kwákwala-speaking Elders, between researchers of multiple disciplines, between knowledge keepers of the past and knowledge keepers of the present, and between Kwákwaka'wakw ancestors and a present-day Kwákwaka'wakw graduate student straddling complex identities as a community member and academic researcher.

To acknowledge, engage with, and honour the 4 R's principles of Indigenous research methodologies, we took the following approach through our research. By preparing the draft visual dictionary for reference during the audio recording process, Lyall showed her *respect* for Elders' and fluent Kwákwala speakers' time. Lyall understood from reading Kovach (2009) that researchers (even Indigenous scholars and community members) need to be prepared before asking for community members' time.

Second, the time and commitment generously provided by Kwákwala-speakers and Elders was *reciprocated* with an honorarium, traditional foods, and arrangements for transportation to and from the recording sessions, as needed. In this case, providing traditional food when possible linked our research practice to the central relevance and cultural value of harvesting and preserving seasonal foods. Practicing patience and sharing meals speaks to the holistic nature of Indigenous knowledge, and the importance of interdisciplinarity and openness in avoiding further fragmenting fragile knowledge through discipline-specific boundary making.

Third, developing and sustaining relationships with and between all of these individuals has been of central importance in our work. We acknowledge the challenges, surprises and twists along the way that have added time to our journey. Kwákwala knowledge about plants had been put away for a reason, and waking it up can be disruptive, painful, challenging, and humbling. At the same time, showing pictures of plants also stirred up excitement among speakers, spurring discussion between them in Kwákwala. The success of language documentation and reclamation projects such

as this should, therefore, be measured by whether members of the community find the work *responsible* to their contemporary concerns and needs (Hermes et al. 2012; Carpenter et al. 2016).

Lastly, research grounded in purely academic concerns runs the risk of representing Kwakwala-speaking Elders' knowledge in a way that does not respect Indigenous worldviews (Rosenthal 2014; Kruijt & Turin 2017), and the output may not be as *relevant* to community concerns. Therefore, this research drew inspiration from the Kwakwala words *galgapola* 'to strengthen one another and lift each other up' and *ga'walapa* 'to all work together and help each other' (FirstVoices 2018). We strove to follow a multidisciplinary research approach that respected Indigenous knowledge systems, in this case, the Kwakwala language for plants.

**9. Reaching out, reaching in: Next steps** A diverse range of perspectives is needed to increase the domains of use for the Kwakwala language (Anonby 1999; Hermes et al. 2012; Bourget 2016; Odango 2016), one of which is knowledge of plant names and words. For the next steps of this research, we wish to continue to develop a culturally appropriate curriculum so that the language endures for the next generation. Land-based pedagogy is gaining traction by Indigenous people across Canada, as it is a fundamental way to connect with Indigenous knowledge and traditional ways of teaching and learning (Brayboy & Maughan 2009; Wildcat et al. 2014). Besides spending time in community with speakers, the most enjoyable aspect of this research for the corresponding author was walking in the woods and taking photographs of all the plants. Such outdoor pedagogies draw on ways of transmitting knowledge through narrative traditions that motivate both older and younger generations to be outside and spend time on the land (Battiste 2002). Hawaiian scholar Manulani Aluli Meyer argues that Indigenous pedagogies should include learning traditional practices in Indigenous languages: "It is no longer enough to simply learn the history or language in an academic setting – one must teach how to fish in the language, how to weave *lauhala* (pandanus leaves) in the language, how to *malama* 'aina (take care of the land) via language. It is a call to practice" (2001:129).

The list of individual plant names that we compiled could be made more useful by including a set of relevant sentence frames that support using Kwakwala in conversational contexts, beyond the simple naming of objects. In developing such sentence frames, and through more contemporary work with speakers, we wish to continue working with language teachers, Elders, speakers, and linguists to add to the resources we have developed so far. New learners and fluent speakers are interested in a hard copy of the 100-page visual dictionary book that was initially developed to show speakers pictures of the plants to elicit words and to add digital copies to FirstVoices. We want to pursue funding to publish print copies of the dictionary and distribute them throughout the school and in the broader community for language activation and mobilization purposes.

**10. Conclusion** This paper describes a language reclamation project focused on plant names in the Kwakwala language. We also describe the protocols and methods that we used in this project, and which increasingly define emergent research approaches for centering Indigenous community-defined goals in language reclamation projects. In this case, collecting and connecting Kwakwala's knowledge about plants benefitted from an interdisciplinary team of linguists, botanists, photographers, foresters, community members, and community agencies.

This praxis-based research project added 300 plant words to an existing publicly shared online dictionary, FirstVoices, together with photos and audio files. New learners and community members are telling us that they are using the online dictionary. This can be used to identify plants and support the broader community goals of knowledge reclamation about plant names and their use in Kwakwala. However, knowing how to pronounce an individual plant name, such as *wilkw* ('Western redcedar'), is not the same being able to say a full sentence, such as 'Let's gather *wilkw* for the bighouse'. To support the creation of a new generation of fluent speakers, we plan to build on this foundation by researching Kwakwala phrases and sentences about plants, and to widen access so that our speakers can hear the Kwakwala language spoken once more. Community members involved in this research see value in the project and support these next planned steps; we look forward to continuing.

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