

Dr. Nancy Turner  
**Hakai Chair of Ethnoecology**  
University of Victoria  
*2013/2014 Year in Review:*



*Linum  
vulgo*

*montanum Luteum  
Nancolahui.*

*Fragaria Chilensis  
fructu maximo, foliis  
carnosis, hirsutis  
vulgo fruilla.*

*N. Guérard le fils fecit*

*Strawberry du Chili dessinée d'après nature.*



“Medicine Talker” pendant, carved by Ian Reid from devil’s club wood (*Oplopanax horridus*), presented to Dr. Turner by Jennifer Carpenter at Memorial potlatch for Cyril Carpenter in July, 2014 at Bella Bella, BC. Pictured here against a devil’s club plant.



## Introductory Comments from Dr. Turner

This year, again, I want to express my deepest gratitude to all those people and organizations that made my year so satisfying and productive and who contributed so much to my research and other endeavours. I especially appreciate the continuous support of Dr. Eric Peterson and Christina Munck through the Tula Foundation and Hakai Institute. Their extraordinary energy and enthusiasm, and their vision for the Hakai program of research and community engagement on the central coast of BC, have changed the face of research on our coast, facilitated knowledge exchange, strengthened Indigenous communities, and reinforced the widespread communication of ongoing research and results. The Hakai Research Exchange 2014 meetings hosted by Tula and University of Victoria Faculties of Social Science and Law at the Winspear Centre, Sidney on October 24th was a wonderful reflection of the synergies in research that the Tula Foundation has created. Researchers from UVic, SFU, UBC, UNBC and even further afield, together with research partners and participants from the Straits Salish, Hulqumi'num, Kwakwaka'wakw, Heiltsuk, Wuikinuww, Kitasoo/Xai'xais, and Nuxalk Nations spent the entire day sharing plans, ideas, concepts and findings from their research. In particular, the work of many students and postdoctoral fellows was highlighted through talks and posters. I was so touched and impressed by the entire event, and was delighted to witness the presentation to Eric and Christina and the Hakai Institute of the BC Parks' Community Partner of the Year Award for 2013 at this event.

For our work at Hauyat and Roscoe Inlet in Heiltsuk territory, I want to acknowledge in particular, with gratitude and appreciation, Jennifer Carpenter, Kelly Brown, Chief Harvey Humchitt, and Laurie Whitehead and all of the wonderful HIRMD staff. Thanks also to Dr. Chris Darimont and Kyle Artell of the Hakai-Raincoast Lab for helping us with transportation on our trips this summer. I also extend my deepest thanks and respect to our friends, teachers and collaborators in the Nuuchahnulth, Haida, Gitga'at, Nisga'a, Tahltan, Tsilhqot'in, Nlaka'pamx, St'at'imx and Secwepemc communities. Sarah Tarnopolsky and Samantha Krzywonos of the Faculty of Social Sciences, External Relations and Development Office, have been very supportive, and since both are heading into new positions, I would like to both thank them for their help and wish them all the best in the future. Dr. Peter Keller completed his term as Dean of Social Sciences, but has been a constant source of support in my work. I also would like to welcome our new Dean, Dr. Catherine Krull, and thank her for her help and interest as well. Thanks, too, to our new Director of our School of Environmental Studies, Dr. Karena Shaw, and to our past directors, Drs. John Volpe, Peter Stephenson and Eric Higgs for all their support. We are just completing our Social Sciences and Humanities Research Council of Canada (SSHRC)-funded research, "Bringing the Food Home," with Dr. Nancy Mackin as co-investigator, and I wish to acknowledge the support of SSHRC for my research over many years. Finally, my indefatigable Research Manager for my Hakai Chair position, Pamela Spalding, has done so much to help me and support my work over this year; I often tell her I don't know what I ever did before she came! Dr. Jonaki Bhattacharyya is just completing her Hakai post-doctoral work, and Dr. Darcy Mathews is just beginning his, having completed his doctoral dissertation this past summer (2014). Congratulations to both of you. Fiona Hamersley Chambers has now begun her doctoral program on berry gardens and wild berry cultivation, and Pamela Spalding will be starting hers in May, focusing on the role of ethnoecology in policy and decision-making around Indigenous peoples' land rights and occupancy. Best of luck in your future endeavours to Jonaki, and welcome to Darcy, Fiona and Pamela!



*Nancy J. Turner*



## 2. Research Team

### Jonaki Bhattacharyya, PhD Environmental Planning, Hakai Post-doctoral Fellow

Dr. Bhattacharyya received her Masters of Environmental Studies and PhD in Environmental Planning from the University of Waterloo, Ontario. Her doctoral research focused on the cultural and ecological relationships between free-roaming horses and local people in Tsilhqot'in territory, especially the Brittany Triangle and Nemiah Valley. She has professional experience with environmental research, assessment, planning and outreach with private and non-profit agencies, and continues to actively work with Tsilhqot'in First Nations and other NGOs. Her publications focus on integrating cultural frameworks in land and wildlife management. Jonaki's research integrates qualitative social science with other scientific methods to support trans disciplinary inquiry and analysis.



Dr. Jonaki Bhattacharyya, Hakai Post -doctoral fellow, Environmental Studies, UVic

### Darcy Mathews, PhD Archaeology Hakai Post-doctoral Fellow

Mr. Mathews received his PhD in Anthropology at the University of Victoria researching funerary ritual and ecological context in the formation of precontact burial cairn and mound cemeteries on the southern tip of Vancouver Island. His doctoral research was supervised Dr. Quentin Mackie. Henry Chipps and the chief and council of the Scia'new First Nation of Beecher Bay (Metchosin) assisted Darcy's archaeological studies. Darcy has worked extensively as a professional archaeologist in British Columbia and also teaches archaeology at UVic. He is also currently writing a book based on his doctoral research.



Dr. Darcy Mathews, Hakai Post-doctoral fellow, Environmental Studies, UVic

### Fiona Hamersley Chambers, Hakai Doctoral Student

As a doctoral student in the School of Environmental Studies, Fiona is particularly interested in how humans and plants have co-evolved, to the benefit of both. She has always been passionate about plants, perhaps because she was fortunate to spend her childhood in the bush and in two First Nations' communities (Nitinaht and Penelakut) here on the BC coast. She holds an MA (UVic), Masters of Environmental Design (UCalgary), and MSc Environmental Change and Management (Oxford). Fiona is multilingual and has worked and travelled extensively. As a full-time farmer since 2004 with a small seed company (www.metchosinfarm.ca) she has a unique and practical perspective on this important research area.



Fiona Hamersley Chambers, Hakai Doctoral Student, School of Environmental Studies, UVic.

### Pamela Spalding, MA, Anthropology, Hakai Research Manager

Pamela worked for several years in the provincial government on issues such as First Nations' traditional use studies and land use and treaty negotiations. She joined Nancy's team in 2011 and helps support Nancy's research, writing, speaking engagements and travels. Pamela received her BA in Anthropology from UBC and her MA in Anthropology from UVic. She is commencing her doctoral research with Dr. Turner in May 2015 where she will be examining the potential role of Indigenous plant knowledge and environmental values as the loci of aboriginal rights and title and the applications of this knowledge subset in treaty negotiations and provincial land and resource planning.



Pamela Spalding, Research Manager, Environmental Studies, UVic.



### 3. Research Partners

#### Jennifer Carpenter, MA, Anthropology, Heiltsuk Nation

Jennifer Carpenter has been a member of the Heiltsuk Nation since 1975, resident in Bella Bella, B.C and working full-time for the Heiltsuk since 1974, primarily in the areas of research and development. She is currently Culture & Heritage Manager at Heiltsuk Integrated Resource Management Department (HIRMD) of the HTC and has also been the Director of the Heiltsuk Cultural Education Centre (HCEC) for many years. She has extensive experience representing the HTC on regional, provincial and national committees. She is a key coordinating figure for the many facets of the Hakai research project in Bella Bella and is managing the development and direction of the community component of this research. Together with Nancy and Dr. Dana Lepofsky (Department of Archaeology, Simon Fraser University), Jennifer has developed and organized a multi-disciplinary research project focusing at Hauyat on the north coast of Hunter Island in Heiltsuk territory—an area of longstanding cultural use and occupancy).



Jennifer Carpenter, with Skyelar and Xvnis, on the boat expedition to search for the berry gardens at Roscoe Inlet.

#### Dana Lepofsky, Ph.D., Professor in Archaeology, Simon Fraser University

Dr. Dana Lepofsky is interested in the in the social and ecological impacts of past human interactions with their environment. Dr. Lepofsky incorporates diverse technical and methodological approaches in her research, including household archaeology, regional surveys, paleoethnobotany, and detailed paleoecological studies. She is collaborating with the Jennifer Carpenter and the Heiltsuk First Nation, and Nancy Turner on the Hunter Island Project, investigating Heiltsuk management of and interactions with the Hauyat watershed. She is directing the work of her PhD student Julia Jackley on this project. Julia, with Heiltsuk archaeologists Elroy White and Josh Vickers, conducted archaeological surveys of the watershed in the summer of 2012 and 2013. Dr. Lepofsky has also conducted significant archaeological research on clam gardens and herring populations.



Dr. Dana Lepofsky and Dr. Sarah Rudas at the Hakai Research Exchange in Sidney, BC in October 2014.

#### Nancy Mackin, PhD, Architect AIBC, LEED AP, Adjunct Professor, University of Victoria

Dr. Mackin has a PhD from the University of British Columbia in Architecture, Landscape Architecture and First Nations Studies. She also holds a Masters of Advanced Studies in Architecture, UBC, and a BA (Music) from University of Western Ontario. She practices her love of architecture and teaches in communities throughout northwestern Canada, with a focus on landscapes and building designs of Indigenous peoples. Nancy has been collaborating with Dr. Turner on a SSHRC funded project, *“Bringing the Food Back Home: Indigenous Food Systems and Place in Western Canada, a research project on ethnoecological renewal of traditional plant foods,”* for the past few years. In this project, also funded through a grant from Health Canada, she has been working with the Gwich’in First Nation on the reconstruction of moss houses traditionally built by Gwich’in women when they are on the land obtaining food. This research was shared during an intensive ethnobotany course delivered by Dr. Mackin, Dr. Carla Burton and Dr. Turner in the Nass Valley in June.



(from left to right) Dr. Nancy Mackin with Australian scholar, Emma Woodward, and Nancy Turner at the *Wilp Wilxo'oskwhl Nisga'a* Course—Biology 350: Ethnobotany in the Nass Valley.



## 4. Major Research Activities

### Changing Landscapes: Ethnoecological insights into change, resilience & continuity on the Central Coast of BC

Within this overarching theme, a research project focusing on the cultural landscapes and seascapes of Hauyat on the north coast of Hunter Island, has been ongoing for the past several years. It is entitled *Mountain Top to Ocean Floor: The Eco-cultural History of Hauyat*. This research project is a collaborative effort with Jennifer Carpenter of the Heiltsuk Nation (Heiltsuk Integrated Resource Management Department-HIRMD) at Bella Bella, Dr. Dana Lepofsky (Department of Archaeology, Simon Fraser University), and Nancy Turner at the School of Environmental Studies, University of Victoria, together with their students and associates.

This project, within the field of ethnoecology (the study of cultural ecological knowledge), is part of ongoing and projected work to examine the complex web of relationships among people, plants, animals and ecosystems along the central coast, extending back over the past several thousand years and projecting into the future. It also fits into Dr. Turner's broader research on the BC Coast and in the Interior on past, present and future importance of plants and habitats for Indigenous Peoples, and the interrelationships and processes that people have developed to enable continued use of lands, waters and resources in culturally relevant and sustainable ways. The underlying hypothesis of this research at and near Hauyat (and elsewhere in Heiltsuk territory) is that many of the current ecosystems there – from clam gardens, to riverine salmon harvesting areas, to estuarine root gardens, to crabapple groves (and later, fruit orchards), to berry patches and cedar and yew stands – have historically anthropogenic origins or influences, reflecting integrated management practices that may well date back over millennia. In particular this research examines how various human resource management and production systems (for food, clothing, shelter and transport) fit together into an integrated whole – ultimately supporting large numbers of very creative and active people along the central coast for hundreds of generations. Furthermore, these resource areas must have interconnected seamlessly, allowing past human populations to produce and process diverse, substantial, relatively predictable and culturally mediated foods, materials and medicines. How, when and where these systems were established are important questions in understanding humans' place in coastal ecosystems. Answering these questions will help determine how, today, resources and resource habitats might be enhanced, rather than diminished and damaged, particularly in the face of climate change.

Photo credit: Raincoast



## 2013/2014 Research Season:

### Jonaki Bhattacharyya, Hakai Post-Doctoral Fellow--Research Progress

Jonaki's post-doctoral fellowship commenced on October 15th, 2012 under the joint supervision of Dr. Nancy Turner and Dr. Chris Darimont. She began with a loosely defined topical and regional scope for the research. The scope and focus of her research project were developed through an iterative process of community consultation, site visits, literature review and discussion with interested academic partners. Focusing in Heiltsuk territory, she developed the research project and process in collaboration with Heiltsuk Advisors and community contacts, and with guidance and support from academic advisors, the Applied Conservation Science Lab at the University of Victoria, and associated members of the Hakai Network at Simon Fraser University. Guidance and advice regarding her approach to research with the Heiltsuk people was also generously provided by Pauline Waterfall, and Jessie Housty (*Qqs*). Two significant aspects of this research are the reflexive approach to the research process, and the amount of time spent living with Heiltsuk families in Bella Bella, which support the common goal of doing research that creates a positive experience and contribution to the Heiltsuk people, the Hakai research community, and beyond.

This research originally focused on a place-based pilot study of animal-human-plant relationships in estuarine root gardens at Hauyat, on North Hunter Island. The initial study site was chosen in response to consultation and the interests of research partners. Hauyat has significant areas of root plants consistent with the root garden environments that are focal to Dr. Nancy Turner's current research project, and it is also of primary interest to the Heiltsuk Cultural Liaison with HIRMD, Jennifer Carpenter. However, early research results indicated little active memory or forthcoming knowledge of root gardens at Hauyat, among contemporary Heiltsuk community members, including elders interviewed. Hence, in consultation with Heiltsuk advisors and research collaborators, the research topic and interview foci were broadened to explore Heiltsuk cultural connection to animals and place, with specific reference as appropriate to Hauyat (north Hunter Island), Clatsja (Roscoe Inlet), and other places of family importance to interview participants.

Paralleling this broadening of the research topic, remote cameras were also placed in two new locations this year. Coastal Guardian Watchmen and HIRMD staff requested to be involved in placing the cameras this year, and recommended that in addition to Hauyat, cameras be placed at Clatsja. Placing cameras in two locations provided a basis for comparison of animal presence and activity between the two locations, which is of particular interest given the absence of bear activity on north Hunter Island, and the cultural importance of both sites. Cameras were set up in April 2014, checked and repositioned in June 2014, and removed from sites in September 2014. Video footage is currently under review and analysis.

In keeping with the exploratory nature of this pilot study, in-depth, open-ended interviews were conducted with six Heiltsuk Elders in Bella Bella. These interviews included approximately 11 hours of recorded time (totalling approximately 40 hours one on one), plus two or more follow-up visits with each participant and the research interpretation of the qualitative data was verified in follow-up visits. Dr. Bhattacharyya conducted site visits to Hauyat and other field study sites (e.g. Gullchucks Channel, Roscoe Inlet) in spring, summer and fall seasons. Additional research involved continuing review of literature and cultural documentation as well as a one day group workshop and discussion with Heiltsuk cultural specialists who live in the lower mainland (see p 9). All research data will be analyzed and reported for Summer 2015.



From top to bottom: Dr. Bhattacharyya and Field Assistant Jessica Brown in Shirl and Robert Hall's home, Bella Bella; Young grizzly bear examines remote camera, Clatsja (Clatse) near Roscoe Inlet; Remote camera placed near trail at Hauyat, north Hunter Island; Coastal wolf, remote image from Clatsja (Clatse) near Roscoe Inlet.



## Five Hundred Years of Residency, Resilience, and Forest Management Practices at Calvert Island

Darcy Mathews, Hakai Post-Doctoral Fellow, School of Environmental Studies (UVic)

As a post doctoral fellow Darcy will conduct an inventory-landscape scale research project on Hunter and Calvert islands, focusing on the archaeology and human ecology of the poorly known latter half of the Holocene. This research will complement the ongoing archaeological research of Dr. Duncan MacLaren, with Elroy White and other colleagues (Hakai Ancient Landscapes Project) in the region. Working with the Hakai Ancient Landscapes Project, Darcy looks forward to bringing a greater understanding to the cultural history of this part of the British Columbia coast. His research will emphasize integrating the traditional archaeological approach with an emphasis on cross-disciplinary and collaborative research regarding the multitude of ways in which people shaped, interacted with, and maintained terrestrial, intertidal and marine ecosystems on the central coast over the last five millennia, including in the legacy of culturally modified trees (CMTs).

Focusing on the area centred around Calvert Island, he will study the long-term dynamics of dwelling within this place, and the deep history of past forest utilization and management practices as a site of cultural resiliency over the last half of the millennium. Culturally modified trees are a living legacy of forest use, and encompass a wide range of practices, including collecting Western redcedar bark, felling trees for houseposts and canoes, and collecting house planks from standing trees. These modifications may also provide a precise tree-ring chronological record. This fine-grained temporal resolution, combined with the form of tree modification and where those modifications happened on the landscape, are the material and spatial record of forest utilization practices. Paired with radiometric dates collected from the top strata of village sites in the area, and triangulating with community traditional use knowledge, these data allow us to consider the historical relationships between forest management practices and residency around Calvert Island.

Clockwise from top right: Processing radiocarbon samples from Starfish Island shell midden village deposits (credit: Darcy Mathews); Andrew Trant increment coring a rectangular bark strip, EJTa-4 (credit: John Maxwell); Redcedar culturally modified tree with house planks removed, EJTa-26 (credit: John Maxwell)



## Hauyat Day Workshop in Vancouver

A one day workshop was held at Simon Fraser University (SFU) on January 24th, 2014. Referred to as “Hauyat Day” the meeting was collaboratively organized by Jennifer Carpenter at HIRMD, and academic participants from SFU and the University of Victoria (UVic). The cultural landscape of Hauyat is a focal point for a number of research projects, and a place where many contemporary Heiltsuk elders spent summers as children, engaging in traditional ways of life with their families. The purpose of Hauyat Day at SFU was to bring together Heiltsuk community members who live in the Lower Mainland area of BC, to share memories, knowledge, research interests and reflections relevant to Hauyat, the much-used area around Fanny Cove on north Hunter Island, just south-east of Bella Bella, Heiltsuk participants from the Lower Mainland included: Dennis Carpenter, Beverly (Gerry) Carpenter, Steve Carpenter, Beverly Brown, Pam Brown, and Dawnda Joseph. Organizers were present from HIRMD (Jennifer Carpenter), SFU (Dana Lepofsky, Ken Lertzman, Julia Jackley), and UVic (Nancy Turner, Jonaki Bhattacharyya). Also in attendance were Heiltsuk researcher (Elroy White), consulting researchers (Nicole Smith, Gerry Lawson), Hakai staff (Laurie Wood), and Tula Foundation (Eric Peterson and Christina Munck). The full day was audio recorded, with audio files shared among participants who requested them.

The day included introductions, presentations on research projects, reflections and memories shared by Heiltsuk participants, with lots of time for open discussion and sharing. Initial shyness among some participants soon changed to open enjoyment. The event allowed for memories shared by individuals to trigger discussion between Elders and evoke other memories. Some younger generation Heiltsuk attendees expressed thanks for the opportunity to learn things they had not heard about previously, even from their own parents. All participants appreciated the opportunity to hear expertise and memories from community members living in the Lower Mainland, who are often left out of community research that takes place in Bella Bella. Several participants expressed interest in follow-up meetings.

## Return to Hauyat

During this field season, Nancy revisited Hauyat and other sites on Hunter Island. She reviewed earlier plant surveys and checked for evidence of animal/plant interaction. Fiona Hamersley Chambers discovered a significant patch of stinging nettle (*Urtica dioica*), with seemingly stingless and unusually tall stalks (pictured here) which she will investigate further as it may indicate past cultivation. UVIC Anthropology graduate student, Aurora Skala, joined the field trip to assist her study of the region’s rock art, and was a welcome addition to the July field excursions. Also joining them on the trip was Kyle Artell, Raincoast Conservation biologist and PhD candidate.



left to right: Bear browsed skunk cabbage (*Lysichiton americanus*) at Hauyat; Fiona Hamersley Chambers holds a 2.5 metre long stinging nettle (*Urtica dioica*) (possibly culturally modified); Aurora Skala and Nancy Turner next to a culturally modified western redcedar (*Thuja plicata*) at Hauyat.



## Berry Garden Research at Hakai Beach Institute

Nancy first learned about “berry gardens” from the late Cyril Carpenter, Heiltsuk community member and cultural specialist at Bella Bella. Nancy was travelling with Cyril to Koeye in April 2002. Sitting in the wheelhouse of his boat as he piloted it along the channel, Cyril talked about how, when he was about 10 years old, his grandmother, Bessie Brown, had pointed out a wide, bushy ledge beside a waterfall at Roscoe Inlet, somewhere, he said, between Clatse (*Thacza*) and Shack Bay. “That’s where we had our berry garden,” she told him. She explained how people coming to fish for salmon in the fall and to visit their traplines would camp on the beach below there, and would cultivate the berry bushes by digging fish remains and animal remains, as well as ashes from the fire and clam shells, around the roots of the berry bushes. The mist from the waterfall, and the predictable sunshine patterns also helped to promote the growth and productivity of the berries. They also transplanted berry bushes to this site, to make them more accessible. She told him that you could just pull the berries off the bushes by the handful, they were so prolific. Cyril’s description of berry cultivation, confirmed by Pauline Waterfall, who heard about them from her grandmother, Beatrice Brown, were the inspiration behind initial berry garden experiments begun at Hakai Beach in 2013 (with permission from Eric Peterson and Christina Munck, and from Jennifer Carpenter, to base our work on her late husband’s recollections and teachings), in which a pair of salmonberry bushes served as treatment and control for fertilizing with fish guts (see 2013 annual report). This project was only the beginning, however.

The Berry Garden research was expanded this year to include Nancy’s doctoral student, Fiona Hamersley Chambers. Fiona is now leading the berry garden experiments for her PhD studies. Despite the major



from left to right: HIRMD Lands Manager, Laurie Whitehead, Archaeologist Aurora Skala, and Fiona Hamersley Chambers at Roscoe Inlet



Alaska blueberry (*Vaccinium alaskaense*) and red huckleberry (*Vaccinium parvifolium*) and below views from the boat trip along Clatse Inlet in late July and at the village site *Xvinis*.



role historically played by berry resources in diet, landscape management, economy, culture and ceremony of Northwest Coast First Peoples, these species remain relatively unstudied and underappreciated in the literature and scientific research. Fiona's work will help us to better understand and characterize the scientific study of First Nations' 'berry gardens' on the BC Northwest Coast, by examining evidence of these along the Central Coast, such as identified by the late Cyril Carpenter at Shack Bay. Using berry test plots at Hakai, Fiona is compiling and scientifically assessing the major traditional management techniques, such as pruning and fertilizing, employed in this cultivation. Her dissertation question is, 'To what extent, and in what ways, did Northwest Coast First Peoples manage their berry resources?' She hopes that studying Cyril's Berry Gardens and emulating the Berry Gardens Cyril described will give us a better understanding of how First Peoples practiced cultivation on the Northwest Coast. As well, she will examine other potential historic berry gardens up and down the coast, and scientifically study other known cultivation techniques such as pruning and fertilizing. Another important goal of her research will be engaging with the Heiltsuk community, through working with youth and Elders, about the related cultural aspects of berry gardens (ethnoecological restoration) and applying this knowledge and experience to broader issues regarding physical health and cultural revitalization.

Nancy and Fiona with Jennifer, her grandchildren, Laurie Whitehead and her crew from HIRMD, and a few others undertook a boat expedition in late July in search of the lost Berry Gardens discussed by Cyril Carpenter and Pauline Waterfall. They took two boats from Bella Bella and explored the east coast of Roscoe Inlet between Clatse and Shack Bay. The crews had an informative trip where they identified many different berry and other plant species. As the boats moved to Shack Bay they landed and conducted plant surveys of two sites while one of the boats continued north on to Ripley Bay. The second crew ascended a waterfall and found a site with berries that seemed to meet Cyril Carpenter's berry garden description best.



Berry garden experiment at Hakai Beach Institute. Above: Fiona Hammersley Chambers displays the various berry species she is using for her test and control berry plots.; Planting a test plot with fish entrails; far left clockwise. UVic Environmental Studies students David Norwell and Julia Fisher help plant the berry bushes in the test and control plots, while Fiona mixes up fish entrails to use as fertilizer.





For the past few years, Drs. Turner, Mackin and Burton have delivered (Biology 350) for the *Wilp Wilxo'oskwhl Nisga'a* (WWN), in the Nass Valley. In addition to the regular academic requirements, this week long course involves field trips with Nisga'a elders, hands on exploration of plant technology and learning how to pit cook. Here Millie Azak from *Gitwinksihkw* shows how a salmon is prepared for pit-cooking by first wrapping it in skunk cabbage (*Lysichiton americanus*) leaves.

## Bringing the Food Back Home

Nancy Mackin has collaborated with Dr. Turner on a SSHRC funded project, *“Bringing the Food Back Home: Indigenous Food Systems and Place in Western Canada, a research project on ethnoecological renewal of traditional plant foods,”* for the past few years. This research focused on the inextricable links between traditional food systems that sustain human health and traditional management systems that sustain ecological integrity, and how the associated knowledge systems can be retained, communicated and restored, through practices of ethnoecological restoration and ethnobotanical gardens. Mackin, Turner and several graduate students have documented knowledge of Indigenous food systems, harvesting and processing technologies, and traditional resource management practices, underlying belief systems and associated language, as well as investigating ancient and recent patterns of knowledge acquisition and exchange. This investigation into Indigenous food systems and traditional land and resource management systems in western Canada, built upon previous SSHRC-funded research and, more recently on Turner’s Killam research fellowship (January 2008-December 2009) and Hakai Research Chair support, as well as through a series of Health Canada research grants to Dr. Mackin and colleagues.

The SSRHC research helped identify changes in Pacific Northwest Indigenous People’s diets and to promote healthier food systems through many different venues: courses and lectures (57 public lectures & presentations), many community workshops and feasts, participatory harvesting and cooking events, posters, conference papers and symposia (approximately 40 Conference presentations (4 keynotes) by Turner and over 32 student presentations), and publications in both academic and popular realms (a total of 28 papers in peer reviewed journals co-authored -- many with FNs, 8 books authored or co-edited, 9 book chapters in peer reviewed books, and over 14 other reports). Six master’s theses and one doctoral dissertation have been completed as part of this research. Research was publicized through APTN (Leigh Joseph), 12 media interviews & two blog posts by Turner, and various other courses and media venues. Perhaps the biggest overall contribution has been to the finalization of Turner’s most recent two-volume book published by McGill-Queen’s University Press (2014), *Ancient Pathways, Ancestral Knowledge*. The funding helped Dr. Turner contribute internationally, to the Indigenous Peoples’ Food Systems for Health project through FAO (Food and Agriculture Organizations), headed by Dr. H. Kuhnlein, and a special edited book published in India, and a co-authored article with colleagues in New Zealand and another with European and Turkish colleagues. This funding also helped to coordinate all of this research (including field notes into a proper archival space), where it can be managed according to appropriate protocols and accessed for future research.



## Short Courses and Workshops

Dr. Turner had several opportunities to help deliver courses and workshops in ethnobotany, ethnoecology and slow food. In the June she participated in a workshop titled *Visioning the Future of Kelp Forest, Sea Otter and Human Interactions*, held at the Hakai Beach Institute, Calvert Island. In July she taught a group of young *Kitasoo/Xai'Xais* students in a field course in Ethnobotany, and then again another ethnobotany course (*Biology 350*) for the *Wilp Wilxo'oskwahl Nisga'a* (WWN), the post-secondary Nisga'a educational institute of British Columbia (with N. Mackin and C. Burton) in October. She also delivered a three-day course in ethnoecology for *Università degli Studi di Scienze Gastronomiche* (University of Gastronomic Sciences), Pollenzo, Italy, and gave a pit cook demonstration to employees of the Mountain Equipment Coop at the Wildwood Centre near Ladysmith, BC.



Clockwise from top: students Alyssa Mason and Natasha Mason from the *Kitasoo/Xai'Xais* ethnobotany field school in July; Margaret Edgar, Barbara Wilson and Bonnie McCay take a break from the Kelp/Otter workshop on the beach at Hakai in June; students from the *Wilp Wilxo'oskwahl Nisga'a* ethnobotany course in October carry foliage for pit cook; Mountain Equipment Co-op staff and staff members of the Ecoforestry Institute gather wild plants for a nourishing tea at a pit-cook demonstration event at Wildwood Centre in October.



## Gitga'at Climate Change Project

Global climate change has been well studied and there is little doubt that it will not only intensify in the future, but that it is already underway. Combined, locally made records of temperature, precipitation, weather anomalies and changes in species abundances will help people to recognize the effects of climate change, and therefore to better adapt to climate change, and possibly to counteract some of its negative effects. Gitga'at community members collectively travel widely over the lands and waters of their territory on the north coast of BC and along Douglas Channel, and make many important observations on a day-to-day, seasonal and annual basis of health and abundance of culturally important species, unusual weather events and other environmental indicators. The Gitga'at Climate Project hopes to incorporate the community's observations and interpretations in a systematic way into a "community knowledge bank" with local information that can be accumulated and analyzed over time. The information in this bank, when taken as a whole, will reflect not only major changes, but small-scale, incremental changes to species and environmental features that are of importance to the Gitga'at. Dr. Turner is advising on the establishment and methodology of the community knowledge bank for environmental change observations and insights. She visited Hartley Bay in February to participate in community meetings held to help set the direction of this research, and plans to visit this community again in January 2015.



The village of Hartley Bay. Taken during Dr. Turner's trip in February, 2014.



Gitga'at elder and Cultural leader, Helen Clifton, receives a Community Achievement Award from Judith Guichon, Lieutenant Governor of British Columbia, at Government House in Victoria in May 2014.



## 5. Writing Projects

The past twelve months continued to be a very busy time for Dr. Turner's writing and publishing projects. Her major book project, *Ancient Pathways, Ancestral Knowledge: Ethnobotany and Ecological Wisdom of Indigenous Peoples of Northwestern North America* was finalized and published in June 2014. In it, she establishes a methodological model, combining a long-term view, from the late Pleistocene to the present, of the changes in ethnobotanical systems (including plant management, classification, uses, distributions, and exchange) for a large, complex and important region. She follows Indigenous inhabitants over time and through space, defining a paradigm of sustained resource use, and highly sophisticated management, documenting how these peoples actively participated in their environments, managing and cultivating their valued plant resources and maintaining and enhancing key habitats that supported their dynamic cultures for thousands of years.

### New publications

*Ancient Pathways, Ancestral Knowledge: Ethnobotany and Ecological Wisdom of Indigenous Peoples of Northwestern North America.*

2014. McGill-Queen's University Press. Montreal, QC. (2 volumes)

"The Food/Medicine/Poison Triangle: implications for traditional ecological knowledge systems of Indigenous Peoples of British Columbia, Canada." pp. 1-31 in: *Social-Ecological Diversity and Traditional Food Systems: Opportunities from the Biocultural World*, edited by Ranjay K. Singh, Nancy J. Turner, Jules Pretty, and Victoria Reyes-García. Indian Council of Agricultural Research, New Delhi, India.

*Social-Ecological Diversity and Traditional Food Systems: Opportunities from the Biocultural World.* 2014. Singh, Ranjay K., Nancy J. Turner, Victoria Reyes-Garcia, and Jules Pretty, eds. New India Publishing Agency: New Delhi, India.

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"Comparing instrumental and deliberative paradigms which underpin the assessment of social values for cultural ecosystem services." 2014. Raymond, Christopher M., Jasper O Kenter, Tobias Plieninger, Nancy J Turner, and Karen Alexander. *Ecological Economics*, 107 (2014), 145-156.

"Biocultural conservation of marine ecosystems: Examples from New Zealand and Canada." 2014. Stephenson, Janet, Fikret Berkes, Nancy Turner and Jonathan Dick. *Indian Journal of Traditional Knowledge*, 13(2), 257-265.

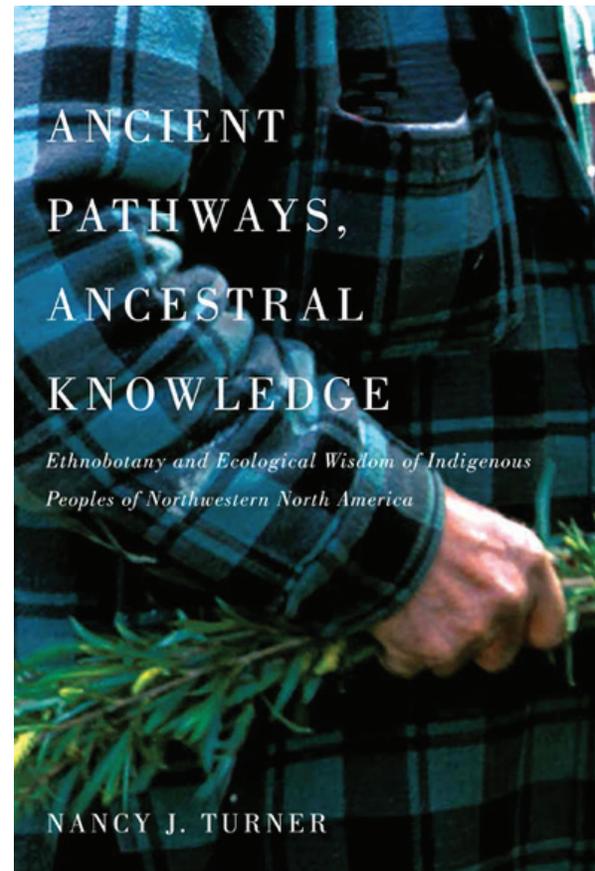
*Ethnobotany in British Columbia: Plants and People in a Changing World. BC Studies* 179 (Autumn 2013), Special Issue, co-edited with D. Lepofsky:

"Introduction to Ethnobotany In British Columbia: Plants and People in a Changing World," Lepofsky, Dana and Nancy J. Turner. *BC Studies*, 179, pp. 9-12.

"Subsistence and Resistance on the British Columbia Coast: Kingcome Village's Estuarine Gardens as Contested Space," Deur, Douglas, Nancy J. Turner, Clan Chief Adam Dick (Kwaxistalla), Daisy Sewid-Smith (Mayanilth) and Kim Recalma-Clutesi (Oqwilowgwa). Fall 2013. *BC Studies*, 179, pp. 13-38

"Plant Management Systems Of British Columbia First Peoples," Turner, Nancy J., Douglas Deur and Dana Lepofsky. *BC Studies*, 179, pp. 107-134.

"Plants in Language and Classification Among BC First Nations," Turner, Nancy J., Carla Burton and Jan van Eijk. *BC Studies*, 179, pp. 135-158.



“Conclusions: the Future of Ethnobotany,” Turner, Nancy J. and Dana Lepofsky. Fall 2013. in *BC Studies*, 179 pp. 189-209

“We might go back to this; Drawing on the past to meet the future in northwestern North American Indigenous Communities.” Turner, Nancy J. and Pamela Spalding. 2013. *Ecology and Society*, 18(4), p. 29. URL: <http://www.ecologyandsociety.org/vol18/iss4/art29/> Special issue on “Traditional Ecological Knowledge and Resilience in the context of Global Environmental Change”, edited by Erik Gómez-Baggethun, Victoria Reyes- García, and Esteve Corbera.

## Other Publications

Wilms, Johanna and Nancy J. Turner (2014). *Aromatic Oils in Coniferous Trees of the Central Coast of British Columbia*. Report Prepared for Heiltsuk Integrated Resource Management Department (HIRMD), Bella Bella, and Hakai Institute and Tula Foundation, Heriot Bay, Quadra Island, BC.

Turner, Robert D. and Nancy J. Turner. (2014). *Book Review of John Clarke, Explorer of the Coast Mountains*. *BC History* 47 (1), 45-46.

## In Press

Cuerrier, A., Turner, N.J., Gomes, T., Garibaldi, A. and Downing, A. “Cultural Keystone Places: Conservation and Restoration in Cultural Landscapes”, In press *Journal of Ethnobiology*.

Saskia Wolsak and Nancy J. Turner. “Ethnobotanical Plant Collectors in northwestern North America.” *Plant Collectors of the Pacific Northwest (Western Canada, Washington, Oregon, Idaho and Montana)*, edited by Art R. Kruckeberg.



Taking a break from the Sea Otter-Kelp ecosystem Workshop at Hakai West Beach: Drs. James Estes, Anne Salomon, Jane Watson, Linda Nichol, Robert Paine, Bonnie McCay, and Nancy Turner.



## 6. Presentations and Major Events

### November 2013

“Not Just Any Old Place”: Importance of ecological diversity in Indigenous Peoples’ resource use and management in British Columbia. Department of Anthropology. Graduate Colloquium, University of Victoria.

“Only in Canada”: History, Ecology and Culture of Edible Wild Plants of First Peoples in Western Canada.” Department of History, Shannon Lectures 2013, “Grub and Grog”: Food and Drink in History. Carleton University, Ottawa. November 15, 2013.

“Our Food is Our Medicine”: Traditional Plant Foods, Traditional Ecological Knowledge and Health in a Changing Environment. Graduate Student Master Class, Department of History, Carleton University, Ottawa. November 15, 2013

“It’s so different today”: Climate Change and Indigenous Lifeways in British Columbia, Canada. Department of Geography, seminar, Concordia University, Montréal, QC. November 29, 2013

### January 2014.

January 30 2014. Emcee for Governor General Royal Society of Canada lecture (Patrick Keeling) and RSC reception, University of Victoria.

Co-organized a workshop for Heiltsuk Band members living in lower mainland to discuss their recollections and knowledge of Hauyat, Hunter Island, in Heiltsuk territory (with J. Carpenter, D. Lepofsky, J. Jackley, J. Bhattacharyya), Hakai House, Simon Fraser University.

“Adopting a Root”: The Role of Indigenous Peoples in extending plant distributions in Western Canada. Department of Geography, seminar, UVic. January 31, 2014.

Presenter and discussant in panel “Making it Real: Going beyond including traditional knowledge in watershed management, towards shared leadership in watershed governance” in Watershed Governance Forum hosted by Cowichan First Nation, Duncan, BC. January 29, 2014

### February 2014

“Some Ideas for Collaborative Research with the Gitga’at Community.” Workshop on collaborative research, Gitga’at Nation, February. 19-22.

### March 2014

“A well-managed Lea”: First Peoples, Plants and the History of Victoria. Lecture to Friends of Government House, Victoria, BC. March 3, 2014.

“The Importance of Indigenous Ecological Knowledge in Canada: Examples from the West Coast.” Environment, Sustainability & Society Lecture Series; College of Sustainability, Dalhousie University, Halifax, NS, March 13, 2014

“Putting Ethnoecology to Work: An example of Environmental Assessment Review Testimony.” Seminar, Natural Resources Institute, University of Manitoba, Winnipeg, March 11, 2014.

Co-organized and chaired a workshop hosted by Horticultural Centre of the Pacific (Director Roger Charles) on First Nations Food Security.

“Indigenous Knowledge and Scientific Knowledge: examples from Pacific Northwest Ethnoecology.” University of New Mexico Seminar in Interdisciplinary Biological and Biomedical Sciences, Albuquerque, NM. March 26, 2014.

### April 2014

“Roots of Reflection: Spiritual Aspects of Plant Harvesting, Ethnoecological Practice and Sustainability for Indigenous Peoples of northwestern North America.” Paper presented at Colloquium, Des êtres vivants et des artefacts L’imbrication des processus vitaux et des processus et techniques (“Of Living Beings and Artefacts”), Collège de France, Musée du Quai Branly, Paris, France, April 8-10, 2014.



“Ethnobotany of the WSÁNEC’/ Saanich People.” Mount Douglas Senior Secondary School ECO Club talk, Victoria, BC.

“Wildflowers of Protection Island.” Protection Island Cultural Historical Society, AGM, Protection Island Museum, BC.

“The Cowichan Watershed: People & Plants from Valley bottom to ridgetop.” Vancouver Island University & Cowichan Watershed Board lecture, Duncan, BC, April 22.

## May 2014

“Taking it with them: Early human assisted plant dissemination in Northwestern North America” (Nancy J. Turner and Cecil H. Brown). Paper presented at Society of Ethnobiology and Society for Economic Botany joint Conference, Cherokee, NC.

“A community-designed study of the effects of mining dust on traditional plants of the Nlaka’pamux people of central-interior British Columbia”. Ann Garibaldi, Shanti Berryman, Kevan Berg and Nancy Turner. Paper presented at Society of Ethnobiology and Society for Economic Botany joint Conference, Cherokee, NC.

“Mountain Top to Ocean Floor: The Eco-cultural History of Hauyat.” Julia Jackely, Dana Lepofsky, Jennifer Carpenter and Nancy J. Turner. Poster presented at Society of Ethnobiology and Society for Econ Botany joint Conference, Cherokee, NC

“An uncultivated waste”: Balancing Cultural Ecosystem Services and Differing Values in the Salish Sea Region. Symposium: How cultural ecosystem services and associated non-material values change in relation to coastal management options. 2014 Salish Sea Ecosystem Conference, Seattle, WA.

## June 2014

Workshop participant in Visioning the Future of Kelp Forest, Sea Otter and Human Interactions, Bella Bella, BC & Hakai Beach Institute, June 16th - 20th, 2014.

Co-led traditional pit-cooking demonstration for Tsawout Seafood Festival, Saanich, B, June 14, 2014. June 2014.

June 2014. “Plants for People and People for Plants: History of Ethnobotany in Canada”. Alain Cuerrier, N. Turner, D. Lepofsky and V. Bowyer. Canadian Botanical Association meetings, Montreal Botanical Garden, Montréal, QC.

## July 2013

July 2014. Workshop on Indigenous Plants for SEAS program, *Kitasool/Xai’xais* First Nation, Klemtu, BC.

## September 2013

Delivered keynote address in honour of the 40th anniversary of environmental studies at the University of Victoria.

Taught three-day course in ethnoecology for Università degli Studi di Scienze Gastronomiche, Pollenzo, Italy

## October 2014

Skype seminar with FNST 280 Aboriginal Medicines-Picking & Preserving class, University of Northern BC (Antonia Mills)

“Learning, Sharing and Adapting: Indigenous Peoples’ Knowledge and Use of Plants in British Columbia and Beyond.” Public lecture on, *Ancient Pathways; Ancestral Knowledge* for Columbia Basin Trust and BC Interior Forestry Museum, Revelstoke, BC.

Co-taught part of ethnobotany course (Biol 350) for *Wilp Wilxo’oskwhl Nisga’a*, the post-secondary Nisga’a educational institute of British Columbia (with N. Mackin and C. Burton)

Participant in Workshop on Cultural Ecosystem Services, followup on the Salish Seas Conference, Liu Institute for International Studies, UBC, Vancouver.

Indigenous Peoples’ Food Systems for Health... British Columbia and Beyond. Public lecture for SEA (Social Environmental Alliance), with elder Joan Morris and Wil George, Songhees Wellness Centre, Victoria.

“Learning, Sharing and Adapting: Indigenous Peoples’ Knowledge and Use of Plants in British Columbia and Beyond.” Public lecture on, *Ancient Pathways; Ancestral Knowledge*. Royal BC Museum, October 9th, 2014.



# highlight

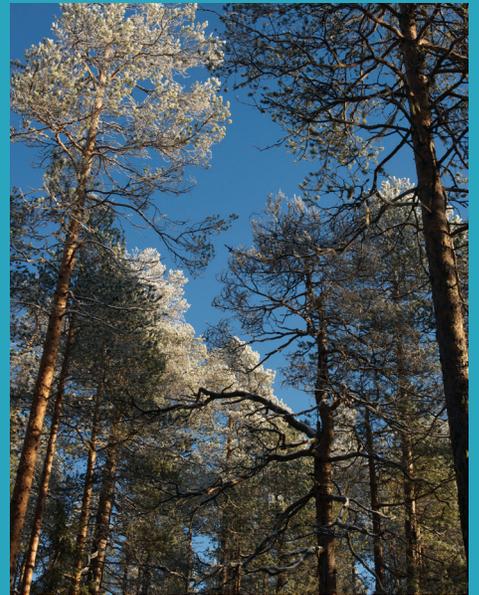
This year, Dr. Turner was asked to participate in the doctoral defense of Anna-Maria Rautio, who was a graduate student at the Swedish University of Agricultural Sciences in Umeå, Sweden. Dr. Rautio's research investigated the important role that different plants have played historically in the subsistence of Sami people of northern Fennoscandia. In particular she highlighted how plants have been overlooked as an important food source for the Sami, and she focussed particularly on the cultural significance of Scots pine inner bark (*Pinus sylvestris* L.) and garden angelica (*Angelica archangelica* L. ssp. *archangelica*). In early November 2014, Nancy and her husband Robert travelled to Sweden where they were welcomed warmly by the Swedish scholars. As well as serving as "opponent" in the doctoral defense, and giving a presentation on the broader context of Anna-Maria's dissertation and research, she had an opportunity to travel into the snowy Swedish countryside with Dr. Lars Östlund, Anna-Maria's supervisor, and observe the boreal forests and landscapes there. The similarities between North American and Northern European Indigenous human-plant relationships are striking. In particular, Nancy was intrigued by the partial harvesting techniques used by Sami reindeer herders to collect inner bark of the Scots pine for food. Even though these trees are very slow growing, the harvesting techniques are similar to those used for millennia by Indigenous groups throughout the Pacific Northwest of North America.



Above: Nancy and Dr. Lars Östlund stand next to culturally modified pine (*P. sylvestris*) in northern Sweden, harvested for inner bark by Sami reindeer herders over 200 years ago.



Left: Culturally modified pine (*Pinus sylvestris* L.) in northern Sweden. Above: Dr. Anna-Maria Rautio after her thesis defence. Right: Scots pine (*P. sylvestris* L.). Next page: Lingonberry (*Vaccinium vitis-idaea*). Photo credit: Robert Turner



## 8. Society Memberships and activities

- Slow Food Vancouver Island and Gulf Islands, Honorary Advisor to the Board (2013).
- Marine Planning Partnership's (MaPP) Science Advisory Committee (member, March 2012-present)
- Hakai Network for Coastal People, Ecosystems and Management (member, Advisory Board, 2011-2014)
- International Boreal Conservation Science Panel (member, 2010-present)
- Global Diversity Foundation (President, US Board, 2010-present)
- Indian Journal of Traditional Knowledge (IJTK), Member of Editorial Board, January 2009-present
- Institute for the Preservation of Medical Traditions. Member of Advisory Board. Smithsonian Institution, Washington, DC. 2010-present.
- Society of Ethnobiology (past president, ongoing member)
- Society for Economic Botany (ongoing member; member of book award selection committee)
- American Botanical Council, (Austin, Texas), Member, Board of Trustees, July 1996-present

## 9. Awards received 2013-14

November 2014. Forest History Society's 2014 Theodore C. Blegen Award (\$500 cash prize) for best article in forest and conservation history during 2013 for Turner, Deur and Lepofsky's "Plant Management Systems of British Columbia's First Peoples," in *BC Studies: The British Columbian Quarterly*, 2013 (179): 107-134. ("Based on contribution to knowledge, strength of scholarship and clarity and grace of presentation").

November 2014. Award of Merit, 2014, for distinguished services to Ethnobiology, Ecology and Biodiversity. XII International Ethnobotany Symposio, Lima, Peru (Ronald Chaves Cardenas Secretariat).

May 30, 2014. Honorary Doctorate of Laws, University of Northern British Columbia.

May 30, 2014. Scholarly Conference and Artistic Performance Travel Grant Award (\$1250) for Society of Ethnobiology Annual Meetings, Cherokee, NC, UVic Office of Research Services.

## 10. The Year Ahead.

Dr. Turner and her team look forward to the year ahead. She'll continue her research in BC, with a special focus on the Central Coast. She has several trips planned to the Hakai area as well as to Hartley Bay, Haida Gwaii, Salmon Arm, Edmonton, Winnipeg, Castlegar, and Santa Barbara.



In Memorium

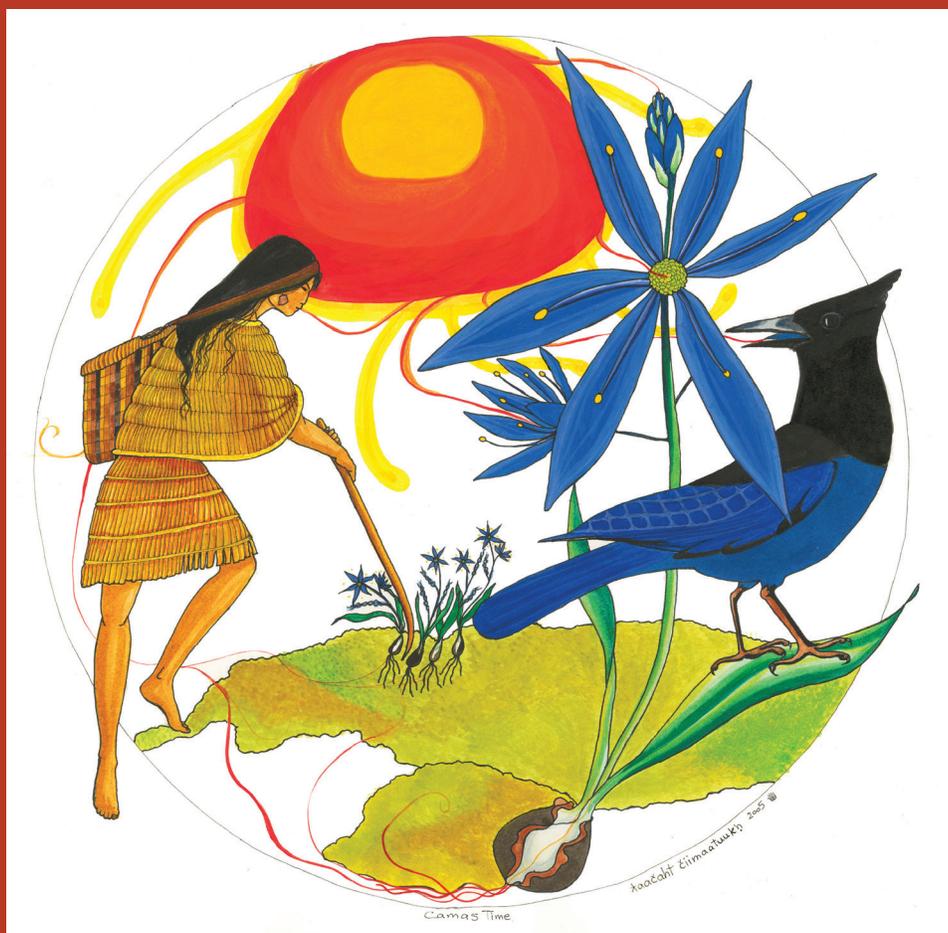
Dr. Pakki Allis Chipps Sawyer (1946-2014)

Member of Beecher Bay (Scia'new) First Nation

Artist, poet, writer, ethnobotanist, teacher... We will miss her.

# Roots of Reflection:

Spiritual Aspects of Plant Harvesting, Ethnoecological Practice and Sustainability for Indigenous Peoples of northwestern North America



Dr. Nancy J. Turner, April 10 2014

*Des êtres vivants et des artefacts*

*L'imbrication des processus vitaux et des processus techniques*

Colloque international

musée du quai Branly, Paris

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