



IMPORTANCE OF BIODIVERSITY FOR FIRST PEOPLES OF BRITISH COLUMBIA

**WRITTEN BY NANCY J. TURNER
FOR: THE BIODIVERSITY BC TECHNICAL SUBCOMMITTEE
FOR THE REPORT ON THE STATUS OF BIODIVERSITY IN BC
SEPTEMBER 2007**

Importance of Biodiversity for First Peoples of British Columbia

Nancy J. Turner, Professor, School of Environmental Studies,
University of Victoria
September 2007

Written for the Biodiversity Technical Subcommittee for *The Status of Biodiversity in BC*

First Nations of British Columbia have relied on – and helped to sustain – biodiversity in their home territories for at least 10,000 years and probably even longer. Over 30 linguistically distinct indigenous groups have resided here, often in dense populations, especially along the coast and the major river systems. Many of these peoples still live in communities within their original territories. Although they have distinctive languages and cultural traits, they also share many similarities in their cultural practices. Anthropologists recognize three major cultural areas in the region: Northwest Coast, Interior Plateau and Sub-boreal divisions.

Traditional diets, based on a combination of salmon and other fish, shellfish, marine and land mammals, gamebirds and birds' eggs, and a range of plant foods, from berries and other fruits to green vegetables, root vegetables, and the inner bark of trees, as well as some mushrooms, have nourished and sustained people over generations (Turner et al. 1985; Turner and Davis 1993; Turner 1995, 2006). Plants, fungi, and animals have also provided a wide range of important material resources: wood for fuel, construction, canoes and implements; sheets of bark and fibrous materials for canoes, cordage, mats, basketry and clothing; pitch for waterproofing and glue; kelp for fishing line and containers; shells, bone and antler for knives, chisels and points, and a host of other substances for dyes, stains, waterproofing, cleansing, and protective scents (Turner 1998). Plants, and some animals and fungi as well, also provide people with a host of medicines for maintaining health and treating injuries and ailments of many kinds (Hunn et al. 1998; Andre et al. 2006; Turner and Chambers 2006). Not only is biodiversity important in food systems, technology, and medicine, but plants, animals and fungi are also prominent in First Nations' belief systems, art, songs and ceremonies (Turner 1988, 2005). Ceremonial species and those featured in art and narrative are often the same ones that had practical application (Garibaldi and Turner 2004). The richness of Northwest Coast First Peoples' intense connections with biodiversity is reflected perhaps most famously in their world-renowned artforms representing stylized animals, birds, fish and other beings, in



Caption: *Fragaria chiloensis*

magnificent wooden sculptures, totempoles, masks and dishes, as well as in exquisite jewelry and paintings (cf. Holm 1965, 1990; MacDonald 1996). These designs represent key figures in the histories of families, clans and individuals; their immense power and compelling form can be said to symbolize the depth of humans' reliance on biodiversity.

Food species alone comprise at least 100 animal species and 150 species of plants. Material or technology species number at least 100, and medicinal species probably 300 or more across the different nations and regions of the province. Thus a total of about 400-500 species (some are used for more than one purpose) are named and utilized or have had specific cultural importance for First Peoples of the province. As well as these, many others – including many attractive wildflower species that might not be named individually but are nonetheless recognized and distinguished – have overall importance. The knowledge of the ecological and morphological characteristics of plants and animals is immense in First Nations' knowledge systems. Many species serve as ecological or phenological indicators in peoples' seasonal rounds. The flowering of certain plants, the songs of certain birds, or the appearance of certain types of butterflies or other insects, are signs of seasonal change or of the time for some important harvest event (Turner 1997; Lantz and Turner 2003).

Some plant and animal species are so important and well known that different varieties and strains at the sub-specific level are recognized and named. For example, the Gitga'at of Hartley Bay recognize and name at least six different varieties of Pacific crabapple (*Pyrus fusca* Raf.). The Nlaka'pmx (Thompson) and Stl'atl'imx (Lillooet) of the southern Interior name and utilize five or more different varieties of Saskatoon berry (*Amelanchier alnifolia* Nutt.) (Turner and Thompson 2006; Turner et al. 1990).

Biodiversity at the broader scale of community or ecosystem variation is also critically important to First Nations. People routinely accessed different habitats, with different groups of resources, from the ocean and valley bottoms to the high mountaintops. Generally residing in permanent winter villages situated along the coast, or along rivers and lakeshores, they would, and still do, travel to different sites throughout their territories, as various seasonal resources came available. People also traveled and interacted with other groups, and through trade and intermarriage, were able to access resources from beyond their own homelands (Turner and Loewen 1998; Turner et al. 2003). In many cases First Peoples have maintained and enhanced plant and animal populations and productivity and increased habitat diversity through resource management strategies that, as a result, yield a greater variety and abundance of foods and materials (Turner 2001). Early Europeans arriving in various parts of British Columbia were struck by the tremendous richness of the fisheries, the game, berries, and other traditional resources that were under First Nations' stewardship. For example, James Douglas, arriving on southern Vancouver Island at the site near where he would build Fort Victoria, was struck by the

majestic park-like appearance of the landscape, with oak groves and extensive fields of lush clover, camas and other flowering plants (Turner 2005; Deur and Turner 2005).

Caring for and maintaining biodiversity was not only essential for First Peoples' survival, they saw it as part of their cultural responsibility. Animals, fish, trees and other plants, all were regarded in traditional worldviews as generous relatives, willing to give themselves to people within a reciprocal system that demanded proper care and respect in return. Children were raised in traditional indigenous society with the understanding that all of the animals and plants had their own societies, and had powers given to them by the Creator to influence human lives in positive or negative ways, depending on whether the humans were worthy and behaved properly towards them (Turner et al. 2000; Senos et al. 2006; Turner 2005; Turner and Berkes 2006).

Unfortunately, erosion of biodiversity in various parts of the province has severely impacted First Peoples and their traditional food systems. Declines and loss of traditional resources, from salmon and abalone, to berries and root vegetables, has been a source of great concern. Major changes to traditional food systems have occurred in part as a result of environmental deterioration, and this in turn has resulted in health problems and cultural loss in many communities. It is important to note that in most cases, First Peoples have not themselves been the cause of biodiversity loss. Exceptions are when they have participated in harmful and unsustainable commercial harvesting practices driven by external markets, as in the hunting of sea otter and northern fur seal during the fur trade era. Nevertheless, First Peoples' lifeways have been directly and consistently impacted by declining populations of game, salmon and other fish, loss of forest cover, and loss of access to their traditional landbase. It is difficult to assess the extent of their loss in quantitative terms. Only a handful of the 400-500 species used directly could be considered currently "at risk" in the formal definition of this term. Nevertheless, according to the testimony of many elders who have witnessed tremendous change in our landscapes over their lifetimes, the majority these species are not as productive or as common as they once were. One account of this loss is from late Pacheedaht hereditary chief Queesto (Charles Jones) of the Port Renfrew area, who died in February, 1990 at the age of 113. He attributed his longevity to "proper food," including elk, deer, beaver and salmon: "We always had plenty of game for food," he recalled. "It was no trouble at all to get all the meat and fish you wanted at any time. You could just live right off the land. ...Ever since logging came, there's been no more deer or wolf or elk or beaver. They've all disappeared. Maybe they've been killed off, or maybe they've just moved on to somewhere else. We don't know where the animals have gone." (Jones 1981). Fortunately, these losses are now more widely recognized, and many efforts are ongoing to renew and restore ecosystems and cultural systems (Senos et al. 2006; Turner 2005; Turner and Turner 2007).

References on which section is based:

Andre, Alestine, Amanda Karst, and Nancy J. Turner. (2006). Arctic and Subarctic Plants. Pp. 222-235 + references in: *Environment, Origins and Population*, Vol. 3 (D.H. Ubelaker, D. Stanford, B. Smith, and E.J.E. Szathmary editors), *Handbook of North American Indians* (William C. Sturtevant, General Editor), Washington, DC: Smithsonian Institution.

Deur, Douglas and Nancy J. Turner (editors). (2005). *"Keeping it Living": Traditions of Plant Use and Cultivation on the Northwest Coast of North America*, Seattle: University of Washington Press, and Vancouver: UBC Press. xi, 404 pp.

Garibaldi, A. and N. Turner. (2004). Cultural keystone species: implications for ecological conservation and restoration. *Ecology and Society*, 9(3), 1. [online] URL: <http://www.ecologyandsociety.org/vol9/iss3/art1>

Holm, Bill. 1965. *Northwest Coast Indian Art. An Analysis of Form*. Seattle: University of Washington Press.

Holm, Bill. 1990. Art. Pp. 602-632 in *Northwest Coast, Vol. 3* (W. Suttles, editor) *Handbook of North American Indians* (William C. Sturtevant, General Editor), Washington, DC: Smithsonian Institution.

Hunn, Eugene S., Nancy J. Turner, and David H. French. (1998). "Ethnobiology and Subsistence," Pp. 525-545 in: *Plateau*, Vol. 12 (Deward E. Walker, editor), *Handbook of North American Indians* (William C. Sturtevant, General Editor), Washington, DC: Smithsonian Institution.

Jones, Chief Charles, with Stephen Bosustow. 1981. *Queesto. Pacheenaht Chief by Birthright*. Nanaimo, BC: Theytus Books.

Lantz, Trevor and Nancy J. Turner. (2003). Traditional Phenological Knowledge of Aboriginal Peoples in British Columbia". *Journal of Ethnobiology*, 23(2), 263-286.

MacDonald, George F. 1996. *Haida Art*. Vancouver, BC: Douglas & McIntyre and Hull, Qc: Canadian Museum of Civilization.

Senos, René, Frank Lake, Nancy Turner, and Dennis Martinez. (2006.) "Traditional Ecological Knowledge and Restoration Practice in the Pacific Northwest. Pp. 393-426, In: *Encyclopedia for Restoration of Pacific Northwest Ecosystems*. (Dean Apostol, editor). Washington, DC: Island Press.

Turner, Nancy J. (1988). 'The importance of a rose'; evaluating the cultural significance of plants in Thompson and Lillooet Interior Salish. *American Anthropologist*, 90(2), 272-290.

Turner, Nancy J. (1995). *Food Plants of Coastal First Peoples*. (revised from 1975 edition, *Food Plants of British Columbia Indians*. Part 1. *Coastal Peoples*.) Victoria: Royal British Columbia Museum Handbook, Victoria, B.C.), and Vancouver: University of British Columbia Press. 164 pp.

Turner, Nancy J. (1997). "Le fruit de l'ours": Les rapports entre les plantes et les animaux dans les langues et les cultures amérindiennes de la Côte-Ouest ("The Bear's Own Berry": Ethnobotanical Knowledge as a Reflection of Plant/Animal Interrelationships in Northwestern North America). Pp. 31-48 In: *Recherches amérindiennes au Québec*, Vol. 27 (3-4), 1997. Special Edition on *Des Plantes et des Animaux: Visions et Pratiques Autochtones*, edited by Pierre Beaucage, University de Montréal, Québec.

Turner, Nancy J. (1998). *Plant Technology of British Columbia First Peoples*. (Revised and Reissued Handbook, orig. published in 1979 by B.C. Provincial Museum.) Vancouver: University of British Columbia Press and Victoria: Royal British Columbia Museum.

Turner, Nancy J. (2001). "Doing it Right": Issues and Practices of Sustainable Harvesting. (earlier version presented to Non-Timber Forest Products Workshop, Ktunaxa Kinbasket Treaty Council, Yaqaan Nukiy, Creston, B.C.). *B.C. Journal of Ecosystems and Management*, (online journal). Volume 1, issue 1 (<http://www.siferp.org/jem/>)

Turner, Nancy J. (2005). *The Earth's Blanket. Traditional Teachings for Sustainable Living*. Vancouver, BC: Douglas & McIntyre & Seattle: University of Washington Press (Cultures and Landscapes series), 298 pp.

Turner, Nancy J. 2006. *Food Plants of Interior First Peoples*. (Reissued; orig. published in 1978 by B.C. Provincial Museum; revised and republished, 1995, Vancouver: University of British Columbia Press, Vancouver and Victoria: Royal British Columbia Museum); New Edition, Victoria: Royal British Columbia Museum.

Turner, Nancy J. and Fikret Berkes. (2006). "Coming to Understanding: Developing Conservation Through Incremental Learning." *Human Ecology*, special issue, *Developing Resource Management and Conservation*, 34(4), 495-513. (Special Issue on Learning Conservation, edited by N.J. Turner and F. Berkes).

Turner, Nancy J. and Fiona Hamersley Chambers. (2006). Northwest Coast and Plateau Plants. Pp. 251-262 + references in: *Environment, Origins and*

Population, Vol. 3 (D.H. Ubelaker, D. Stanford, B. Smith, and E.J.E. Szathmary editors), *Handbook of North American Indians* (William C. Sturtevant, General Editor), Washington, DC: Smithsonian Institution.

Turner, N.J., I.J. Davidson-Hunt and M. O'Flaherty. (2003). Living on the edge: Ecological and cultural edges as sources of diversity for social-ecological resilience. *Human Ecology*, 31(3), 439-463.

Turner, Nancy J. and Alison Davis. (1993). "When everything was scarce": The role of plants as famine foods in northwestern North America. *Journal of Ethnobiology*, 13(2), 1-28.

Turner, Nancy J., Marianne B. Ignace and Ronald Ignace. (2000). Traditional Ecological Knowledge and Wisdom of Aboriginal Peoples in British Columbia. *Ecological Applications*, 10 (5), 1275-1287.

Turner, Nancy J., Harriet V. Kuhnlein and Keith N. Egger. (1985). The cottonwood mushroom (*Tricholoma populinum* Lange): a food resource of the Interior Salish Indian Peoples of British Columbia. *Canadian Journal of Botany*, 65, 921-927.

Turner, Nancy J. and Dawn C. Loewen. (1998). The Original "Free Trade": Exchange of Botanical Products and Associated Plant Knowledge in Northwestern North America. *Anthropologica*, XL (1998), 49-70.

Turner, Nancy J., Laurence C. Thompson, M. Terry Thompson and Annie Z. York. (1990). *Thompson Ethnobotany. Knowledge and Usage of Plants by the Thompson Indians of British Columbia*. Victoria: Royal British Columbia Museum, Memoir No. 3 and Vancouver: University of British Columbia Press.

Turner, N.J., and J.C. Thompson, eds. (2006). *Plants of the Gitga'at People. 'Nwana'a lax Yuup*. Hartley Bay, BC: Gitga'at Nation and Coasts Under Stress Research Project (R. Ommer, P.I.), Victoria, BC: Cortex Consulting.

Turner, Nancy J. and Katherine L. Turner. (2007). "Rich in food": Traditional food systems, erosion and renewal in Northwestern North America. *Indian Journal of Traditional Knowledge* (special issue on Ethnic Foods), 6(1): 57-68.