FREE MAGAZINE

Issue 14, 2015

Tread Lightly and Listen to the Land

THE FOOTPRINT PRESS

Passages from Silverdale, Mission, Abbotsford and beyond.

Message from the Editorial Committee

In Nature, all forms of life are interconnected and each species is necessary for the health of the whole. It is Human Nature, to label some forms of life a pest, vermin, or a weed. Such labels are based on misunderstanding of the functioning of life forms within ecosystems. They are used to justify the widespread violence we inflict on wildlife and on natural systems. Violence akin to chemical warfare against plants and insects, and calls for culls of one species after another. Violence which takes the lives of countless bees, geese, deer, coyotes, grizzly bears, and most recently, wolves.

If we are ever to reach a state of peace with life on earth, we need to refocus our perceptions onto the virtues of those we have maligned. When we look below the surface of the Swamp, we will see a Haven for frogs and other little creatures. When we open our minds and hearts to the similarities between misunderstood detestables and ourselves, we see the love of the coyote family, and the courage of the mouse.
Only when we take the time to care and to connect with Nature, will we find nonviolent solutions to the complex relationships we have with each other, and with all life around us.

Cover photo: Pacific Tree Frog, Bruce Klassen, Silverdale.

Spring Gardening Tips to Help Local Native Frogs

Nothing heralds spring more than the sounds of birds chirping and frogs croaking – and local frog populations are expected to breed early this spring due to our mild winter. In the Fraser Valley, we have five native species of frogs: the Pacific Chorus Frog, Northern Red-legged Frog, Coastal Tailed Frog, Oregon Spotted Frog, and Western Toad; and two invasive species: the Bullfrog and Green Frog.

Studies show that globally, amphibian populations are in decline. Unfortunately, all of our local native frog species, with the exception of the Chorus Frog, are classified as at-risk by the B.C. Conservation Data Centre. Fragmentation and loss of habitat from urbanization and draining of wetlands are the main threats in the Fraser Valley, as well as competition and predation from introduced species such as Bullfrogs, toxins like pesticides and fertilizers entering watercourses, impacts with cars, and disease.

There are a number of things you can do in your garden this spring to help out our local frogs. Over the next few months, frogs will be migrating from the forests where they spend most of the year, to water sources to breed and lay eggs. Whether you have breeding habitat or not, avoiding the use of pesticides and fertilizers, removing invasive species, adding habitat complexity to your yard, and incorporating native plants into your garden can all help our amphibian populations to thrive.

Aurora (Red Legged frog) **Carrielynn Victor,** Cheam village. Photo courtesy SCCP

Aurora and Frankie, **Carrielynn Victor,** Cheam village

Tip #1: Remove invasive non-native plants

English Ivy, Himalayan Blackberry, and Lamium (Yellow Archangel) are examples of common invasive plants in gardens. Invasives are non-native species which are known for their aggressive spread and out-compete native species. Removing these species will help native plants, which provide natural food sources and diversity of habitat for various wildlife. If you do have frog-breeding habitat (such as a pond, wetland or slow moving stream), some common invasives you might find are Reed Canary Grass, Yellow Flag Iris, Eurasian Watermilfoil, and Purple Loosestrife. While some vegetation in breeding ponds is good for frogs, these species can be detrimental.

Tip #2: Add habitat complexity

Increase the diversity of your yard by adding large woody pieces like logs and stumps to your garden. They will provide moist terrestrial refuges and help shelter frogs from predators as they move to and from breeding habitat. Furthermore, downed wood, brush piles, and wildlife snags provide habitat to wildlife such as small songbirds and mammals like shrews and voles.

Tip #3: Enhance native vegetation

Adding indigenous varieties to your garden can enhance your yard for frogs and other wildlife. Frogs camouflage in vegetation, eating insects off the undersides of leaves, as they stay hidden from predators. Native plants also require less water, fertilizer, and maintenance than ornamental varieties and their nectar, fruit, and seeds will attract other wildlife to your yard as well. A few examples to consider are: Red Flowering Currant, Salal, Salmonberry, Mock Orange, Sitka Mountain-ash, Sword Fern, Oceanspray, Oregon Grape, and native Roses.

If you do have a pond, planting native vegetation around it can help increase its attractiveness to frogs. Shrubs that overhang the water provide cover from predators like Raccoons and Great Blue Herons, and will drop insects into the pond for food. Species such as Willow and Red-osier Dogwood are excellent on the edges of ponds and wetlands because they are more tolerant of moisture. Other good riparian plants are Pacific Ninebark, Black Twinberry, Bog Rosemary, Black Cottonwood, and Western Red Cedar. Adding native aquatic plants to your pond may also enhance habitat for frogs by providing attachment sites for egg masses. Most pond-laying

amphibians attach their eggs to thin-stemmed emergent vegetation or sticks under the water. Consider adding Cattail or other types of rushes or sedges to your pond. Arrowhead and Yellow Pond Lily also have nice flowers and provide cover. To prevent plants from spreading and for easy maintenance, keep plants in a pot within your pond.

Many of our frog species in the Fraser Valley are endangered. By making your yard a frog-friendly place you can help out local frog populations.

Lovena Morton, BSc.
South Coast Conservation Program*

Red legged frog & Long Toed salamander tadpoles

How else you can help:

There is still much to be learned about species at risk and where they can be found. If you think you spot an at-risk amphibian, contact the South Coast Conservation Program. Information to include is the location, date/time, species, and number seen. If you can, take a photo! To report a species at risk sighting or schedule a free visit to learn about opportunities to enhance your backyard, contact info@sccp.ca.

For more resources on backyard stewardship check out: www.sccp.ca/projects/south-coast-landowner-stewardship-program

* The SCCP is a multi-partner program for the conservation of endangered species and ecological communities on BC's South Coast

Creating a New Vision for the Silverdale Lands in Mission B.C.

On the morning of March 19/15, large signs advertising the sale of Genstar and Madison's 1,196 acre "Silverdale Lands" were posted on Clay road, Silverdale avenue, Gunn avenue, and Nelson street, in Mission. It was then announced that Genstar's Silvermere Island and lake properties had already been sold, and Genstar had made a corporate decision to pull out of the development scene in B.C. altogether.

The sale of these lands signals the end of decades of highly controversial planned urban sprawl, as the entire 3,400 acre Silverdale hillside was ultimately slotted for residential housing development, with Genstar and Madison taking the lead, planning to bring services to the area, including water, estimated at over $70 million.

And now that the proponents have left the scene, what will the future be for Silvermere and the Silverdale Lands?

To answer this question we need to understand the values of these lands to the people of Mission and to the larger community.

Nestled between the highly productive Stave River, the Silvercreek wetlands, and the Fraser River, the Silverdale Lands include some of the most endangered fish and wildlife habitat in the Fraser Valley. Both the Stave River and Silvercreek support large populations of wild Pacific salmon, including over a half million Chum salmon, which spawn in the Lower Stave, and other species of salmonoids including Steelhead, Char and endangered Coho. This place, a tourism hotspot, draws scores of anglers to the Lower Stave every year. Silvermere Lake and Silvermere Island, located in the midst of the Lower Stave, are home to 113 animal species, including endangered Western Painted turtles and several other listed species (Red-legged frog, Barn owl, Bald eagle, Double Crested cormorant and Great Blue heron).

Just to the east of the Stave, the forests of Silverdale are also home to numerous endangered and listed species, including but not limited to: Red-legged and Tailed frogs, Western Screech owls, Oregon Forest snails, and Band Tailed pigeons. Thriving populations of local wildlife including several species of owls (e.g., Saw-Whet owls, Northern Pigmy owl), ravens, amphibians, black bear, bobcats and numerous songbirds, are just some of the treasures supported by this green jewel in Mission.

Not surprising, given this incredible biodiversity and abundance, the Silverdale Lands and surrounding area have a rich human heritage, with evidence of First Nation settlement dating back over 10,000 years, making this area one of the oldest known human settlements in Canada. More recent settlement is comprised of mostly rural properties, whose residents rely on the steady, clean water of the Silverdale hillside for their wells. This water, derived from both surface and deeper aquifer sources, and filtered by the local environment, would be at risk from development disturbance.

The decision made in the 1970s, to plan and build a massive residential development in Silverdale and another residential development on Silvermere Island, completely failed to adequately take into account these tremendous environmental, cultural and historical values. As a result, numerous concerns over the years have been raised by local residents about contamination and degradation of their wells. More recently, both federal fisheries scientists and provincial environmental ministry scientists cautioned Mission that "moving forward without designating conservation areas and evaluating potential impacts would likely lead to an ecologically unsustainable development" (MOE Oct.21/08). The plan also failed to realistically account for the massive financial investment that would be necessary to provide services to the development, or for the drain on existing water sources, and subsequent costs of over $300 million for a new water source, to satiate the thirst of twice our current population.

Can we imagine a future for Silvermere and the Silverdale Lands that respects the land and all of its human and nonhuman inhabitants? A vision that does justice to its priceless environmental, cultural, and spiritual heritage? A vision which doesn't bleed our community coffers dry, and assists with our water conservation and carbon reduction efforts? It is time to begin serious discussions about the potential for a world-class park, establishing **conservation areas for endangered species, for ecotourism facilities, a wildlife refuge at Silvermere, and even an outdoor research lab on local species at risk for a new university campus. As we free our minds from assuming past decisions must proceed, and sprawl on the hillside is all we can do, the possibilities are endless. All it takes is a "shift" in our imagination! There is a purpose for everything. The sale of the Silverdale Lands represents a once in a lifetime opportunity for our community to take a breath, steer our course away from urban sprawl, and listen to the land and all of its inhabitants, past, present, and future.**

Tracy Lyster
CAUSS

A Slow-Traveling "Rock"

During a family outing to Mission's Rolley Lake years ago, while standing on a "rock" knee-deep in water, my eldest child, was very slowly being transported through the shallows. This was my first indication that turtles inhabited this lake. Years later, research has shown that, indeed, they do exist there! Widely inhabiting North America in select areas from B.C.'s 51st parallel, to coastal California, the Western Painted turtle (Chrysemys picta belli), is endemic to B.C., and now considered its only remaining native freshwater turtle.

Two B.C. populations exist; one in the Interior, the Rocky Mountain population, and the Pacific Coast population, which inhabits the coastal area from Vancouver to Hope, some of the Vancouver and Gulf Island areas, and the Sunshine Coast. Habitat requirements for this turtle include clean waters of ponds, slow-moving streams, backwaters of rivers, marshes, and shallow shorelines of lakes. All of these water sources must contain muddy bottoms, appropriate warmth, abundant aquatic plants, ideal basking sites, and be in close proximity to preferred nesting areas.

Sometimes mistaken for the non-native Red Slider turtle, but lacking its red-coloured head, and neck markings, the Western Painted turtle's name arises from the bright yellow stripes on its head, neck, and legs. On its plastron, (belly), below the carapace, (top shell), and on its back, are vivid red markings. The skin is generally olive green, while the upper shell is dark, basically flat, and smooth. The hind feet are webbed. Red markings adorn the belly edges, and the shell trim, while the Painted turtle's ribs form a portion of the shell. Unable to breathe by expanding, and contracting its ribs, abdominal muscles pump air to and from the lungs. Lacking external ears, the turtle's shell has the astounding ability to direct low-frequency vibrations to its middle ear!

Considered "opportunistic omnivores", the Painted turtle's diet consists of aquatic insects and their larvae, water-borne plants, snails, earthworms, frogs, tadpoles, fish, and carrion. These turtles, more carnivorous while young, become increasingly herbivorous upon maturity. While seeking food, the Painted turtle is capable of diving to a depth of 2 meters, and is able to stay fully submerged for close to an hour. It ingests its food underwater due to difficulties swallowing dry food.

During colder months, most of these turtles seek the muddy bottoms of their chosen wetland to hibernate. With late Spring's increasing warmth, they emerge from their Winter beds and begin the courtship period. Male Painted turtles, which become sexually mature between the ages of 2-5 years, chase the females, which mature in 4-8 years. The successful male suitor, swims in front of his chosen mate, his forelegs stretching towards her, sometimes caressing her head. The smitten female then follows him, and the two sink to the watery shallows, where mating occurs.

Following breeding in early June or July, nest sites are carefully selected, and prepared by the female Painted turtle on south-facing slopes, in soft, dry soil, devoid of vegetation, and located 150-300m, from an adequate water source. Nesting areas are in short supply, which sometimes results in hazardous crossings of roadways, with disastrous consequences for this, and other turtle populations. Painted turtles only reproduce every 2 years, and lay only 1 clutch of eggs. Digging her nest, using the front feet, 6 to 18 white, oval-shaped eggs are laid and nest building is completed when she covers the area with strong hind feet.

After a 70 to 80 day incubation period, the hatchlings emerge in late August or early September. Only 1 in 5 young turtles venturing outside the nest will survive. The young turtles finally leave their birth homes the following late Spring or early Summer. With some growing to a "dinner plate" size, Western Painted turtles can live up to 30 years.

The Pacific Coast population of the Western Painted turtle is now classified as being endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is also Red-listed on the federal Species at Risk Act (SARA) which means that this animal faces "imminent extirpation, or extinction."

Turtles face diverse threats to their survival. Topping the lengthy "Danger" list, is the frequent loss of their eggs and young due to predation from raccoons and skunks, freezing temperatures, pollution, wetland intrusions such as damming, waterfront development, agricultural activities, traffic fatalities, logging, human intrusions, and unsupervised pets. Turtles offset predator attacks by vigilant scanning before venturing ashore, and carefully choosing basking sites, such as vegetation mats, logs, and large rocks. Enjoying the warmth of sunny afternoons, turtle "stacks" can sometimes be seen upon these areas.

If this endangered creature is to survive, immediate protective legislation from provincial and municipal governments is urgently required as well as for the other 675 species at risk across Canada. We must all do our utmost to protect and restore existing wetlands, and other important turtle habitat, from destructive forces, to ensure the survival of these members of a long-existing species in our part of the world.

Val Pack, Mission

FOOTNOTE:
The first turtles appeared 200 million years ago, considerably before the dinosaurs.
Locally, Western Painted turtles dwell in and around Southwest Mission's Silvermere Lake.

Painted turtle: **Mike Stefiuk** Photo courtesy K.E.E.P.S.

The Other Dogs in our Backyard

Coyotes, the other dogs in our backyards, are in the unenviable position of having ongoing negative press despite their integral contribution to ecological balance. While coyotes share many of the characteristics of domestic dogs—being social, playful, curious, and smart—their reputation for killing small animals has led to large-scale extermination. Are coyotes as dangerous as we may have come to believe? Is the widespread slaughter of these animals supportable? Or are they just doing the same thing as us—trying to stay alive and protect their families?

Unless they have come to identify people with food, coyotes are extremely timid. While we may often hear their yipping howls at night, we are much less likely to see them. In truth, the main personality trait that most coyotes share is being wary of humans. The average coyote tops out at about 35 pounds, and generally all it takes to scare them away is a loud noise or other form of challenge. But as we continue to sprawl into our wilder perimeters, conflicts with wildlife occur more often. Stories of coyote human confrontations seem to be common. However, there are only two fatal coyote attacks on record, compared to 20-30 fatal domestic dog attacks in the USA annually. The bottom line is that most instances of conflict with coyotes can be traced to human interference.

Despite these facts, due to their reputation for killing pets and farm animals, coyotes are met with so much animosity that they are killed by the millions. They are the victims of traps and snares that often leave them to starve to death with broken limbs. They are poisoned—which unintentionally poisons other animals too. They are chased down and shot by sharpshooters in planes. Their dens are blown up or burned down with their pups inside. Even live-traps used for relocation often result in the animal being killed by the existing coyotes upon arrival at their new "home." This heavy-handed approach has done nothing but rotate coyote populations.

What their bad reputation fails to take into account is that coyotes play a crucial role in both rural and urban ecosystems. Although classified as carnivores, their diet varies greatly, making them a generalist species. This adaptability allows coyotes to adjust to new locations, provided there is enough food and shelter. Coyotes primarily eat small mammals such as rats, mice, shrews, voles, squirrels, and rabbits. This role as scavenger and predator of rodents makes them an important part of maintaining ecological balance.

This diet flexibility is also the reason for many human-coyote conflicts. Garbage, compost, overflowing birdseed, pet food, and fallen fruit are irresistible to hungry coyotes. Once they become habituated to these foods, coyotes become bolder and are at risk of extermination. Keep this simple rule in mind: A fed coyote is a dead coyote.

Pets are another source of conflict with coyotes, and here the stories are myriad. But there are straightforward ways of keeping our pets safe. Pet owners should be aware that coyotes are attracted to, and can mate with un-spayed or un-neutered domestic dogs. Coyotes can be more aggressive towards dogs during January and

Yelling, Coyote
counts each drop of rain,
from his lover's bed.

Paul Falardeau

February when they are looking for mates and the scent of un-altered dogs can both lure coyotes in and lure our dogs out. Even pet feces can be a strong attractant. All pets are potentially at risk in coyote territory, so it is best to keep cats inside, and keep small dogs on leashes while out for a walk.

We know coyotes see livestock as prey, so taking precautions to discourage coyotes from farm animals is a great investment. Keep fences around livestock in good condition, flat to the ground, if possible, with a minimum two-meter height. Motion-activated lights and sprinkler systems around the perimeter can frighten coyotes away. Guard animals, such as Great Pyrenees, can be trained to protect livestock, a solution that is used successfully in other areas of the world. As coyotes become "trained" to stay away from livestock, they will remain on the perimeter, defending their territory from new, and possibly more aggressive coyotes. In return, the coyotes will reward property owners by feeding on large amounts of small rodents and other unwanted critters.

Coexistence with coyotes is possible! Without their role as scavenger, our ecosystems are thrown off balance; and without their howls, our evening soundscape loses an ancient voice. The price of coexistence is that we must take responsibility for our interactions and make conflict-avoidance a priority. Over time, our caution with food sources will reduce the number of coyotes and reinforce their elusive nature. We will be rewarded with fewer rodents and with the survival of those haunting night songs.

Carrie Besko, Deroche

Coyote photos: **Rick Skerry,** Hatzic

Did you know?

Home landscapes use more pesticides per year than almost any other type of land in the United States. Wildlife can be exposed to the poisons during or immediately after application, or by drinking tainted water, or eating exposed food, such as earthworms, insects, seeds, buds, blossoms, and nectar.

The bottoms of most birds' feet and the skin of frogs and salamanders are permeable to pesticides encountered on surfaces where these animals walk or crawl.

You'll rarely observe a poisoned bird because it will die quietly, often in hiding. Other animals, scavaging on poisoned carcasses, accumulate the toxins and die, in a process known as bio-accumulation.

Bats and birds depend on a healthy population of flying insects. Elimination of these insects may lead to weakness or death from starvation.

From **"Landscaping for Wildlife in the Pacific Northwest"**

Pollen in the apple blossoms, **Tracie Stewart**, Abbotsford.
f-Tracie Stewart Artist

A Walk with Nature

A mouse in a fur coat
ran hell for leather
across a snow capped road.

A snowy owl flapped away
in panicked flight
to sit in barren trees.

Two squirrels started past me,
but one ran back again
chattering out it's warning.

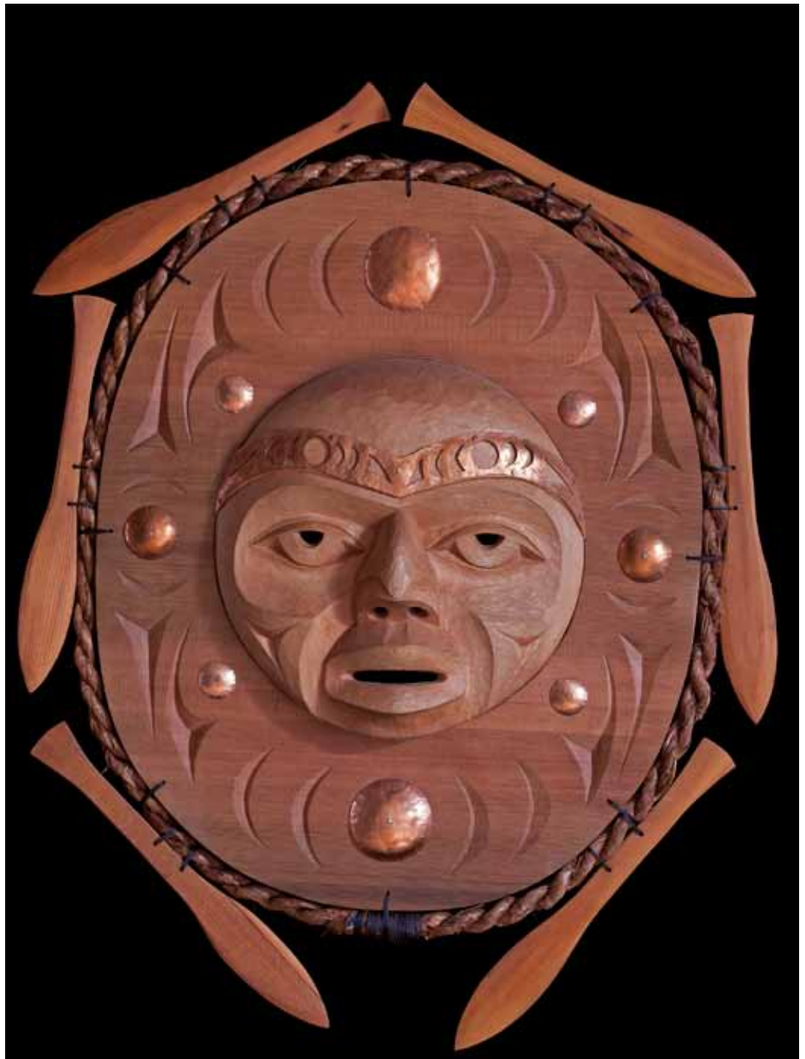
A coyote sniffed the air for me
and ran, then stopped,
to see if I was chasing.

Shelley Haggard, Mission

Coyote with pink salmon: **Mike Stefiuk** Photo courtesy K.E.E.P.S.

The Medicine Wheel

It has been hard keeping our ceremonies intact and much was lost due to the residential school system, but I firmly believe there is emerging a new interest in our traditional ways. One of those traditions is the Medicine Wheel. The Medicine Wheel is like a map. We travel around it in all aspects of our lives – from new born to child, to adolescent, to adult and to elder. It shows us where we are going, where we came from, and our relationship to all other beings on this journey.



Coast Salish Moon when the paddles are in the corner of the house
Peter Gong, Mission

In North America, remains of ancient wheels have been discovered all over the continent- about 30 in Canada and 20 or so in the USA. They were a gathering place, a place of ceremony, and a place of healing, which is why the word "medicine" is used. As with all First Nation ceremonies, the main purpose of the Medicine Wheel is to help the participants achieve their highest potential – to be the best they can be.

The Medicine Wheel is built up of many layers or aspects. Imagine a tightly coiled spring. Viewed end-on, it appears to be a compete circle. Each circle of the spring leads on to the next layer, adding depth, or meaning, to the whole. Four is a very important number that frequently occurs in nature. The base of the Medicine Wheel is made up of the Four Directions: Sakastenohk (East), Apihtakisikanohk (South), Pahkisimotahk (West) and Kiwetinohk (North). The Four Directions have been given a colour. In my way of teaching the Medicine Wheel, these colours are Yellow in the East- the colour of optimism, stimulation and exuberance; Red in the South – the colour of energy, passion and courage; Black in the West – the colour of solidity, earthiness and endurance; and White in the North – the colour of intensity, decisiveness and acuity. In my teachings, The Four Elements – the building blocks of nature –make up the next circle. Air is represented in the East. Air is the invisible but vital mixture of gases we all need for our survival. Earth in the South is our Mother, fertile and nurturing. Water is in the West – the cleanser and healer. Fire in the North is the creator and destroyer. The Medicine Wheel also contains the Four Planes of Reality that make up everyone's Being. Spiritual, Physical, Emotional and Mental. Ceremonial Plants, Animal Helpers, Plant helpers and Gems and Stones, are represented in other circles, each with attributes which assist us in our journeys. Outside the Wheel, the Cree Moons help orient us to the rhythms of Nature.

Four main animal totems of my culture make up the Four Spirit keepers. We treat them with respect and view them as our relations. They are very powerful and can guide us in times of joy and sorrow. Different aspects or Inspirations are associated with each Spirit Keeper. The Eagle, in the East, flies high and can clearly see what is happening on earth. It lets the spirit know what is needed below. As the messenger from heaven and the spirit of the sun – it is said to carry the sun's fire in its eyes. The eagle moves between worlds and is a symbol of great power. It can help human beings seeking clarity, wisdom, and illumination. Wolves in the South, are strong and loyal and live by highly defined rituals. They are loving family (pack) members and the wolf teaches us to trust our own insight. The Wolf can help us with growth, trust and love. The Grizzly bear in the West, is both intelligent and resourceful, and like a human, can stand and walk on two legs. Bears hibernate in the winter, a time of introspection and a time of healing – going within to find our inner resources. The Grizzly bear can help us with experience, introspection, and strength. Finally, the Buffalo, in the North, is symbol of abundance from the time when the great plains were densely populated by large herds of North American Buffalo. With their four hooves firmly planted on Mother Earth, they are a symbol of groundedness. Buffalo gave its meat, hide, bones and spirit to the people and is therefore associated with a true giveaway. It is said that the sacred pipe was given to the people by White Buffalo Calf Woman- a symbol of purity. Buffalo helps us with cleansing, renewal and will eventuality lead to purity.

Moon Mask with the Four Directions
Peter Gong, Mission

Through this Wheel, all things are connected; the Eagle in the East soars high giving it clarity and wisdom. The warmth in the South leads to trust and love. The Grizzly bear in the West, hibernates, going within, for the winter months, and the cold in the North leads to cleansing and purity. The Medicine Wheel can be used by individuals or by groups following certain ceremonial protocols and procedures. The Wheel can give us new perspectives, new characteristics to study, new guides to help us.

Not all people will travel the Medicine Wheel in the same way. The new generations need some guidance, not a rigid, blind following of old traditions, but insight into how these traditions came into being, and how they can be adapted and made relevant for today.

All my Relations,

Frank Supernault, Cree Elder,
and **Angela Brady,** Chilliwack
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Coyote Mask,
Betty Joe, Mission

THE FOOTPRINT PRESS

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