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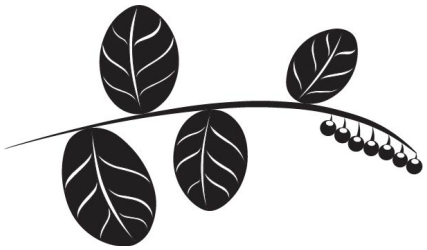


About the Cedar Box Teaching Toolkit

This Toolkit is an educational resource featuring 13 important native foods in Salish Country and the rich cultural traditions that surround them. The foods were chosen based on their nutritional and cultural significance as well as availability. The toolkit includes:

- A cedar bentwood box, cooking tongs, cooking rocks, display containers, teaching cards and samples of 13 native foods.
- Videos about foods and featuring native storytellers.
- A curriculum including an overview of Salish foods and descriptions of individual foods including recipes, stories and activities.
- A Feeding 7 Generations poster.
- A Feeding 7 Generations recipe book.

Educators can use the cedar box toolkit in a variety of settings including classrooms, community workshops and educational events. It can be used in a "show and tell" style while teaching about Salish foods, as an exhibit, or as a resource for teaching in depth classes on individual foods.

The information in this curriculum only scratches the surface of the vast cultural knowledge for each food. We hope that you can add your own community knowledge, stories, artwork, preserved foods and language to your toolkit over time.

How to Use This Curriculum

Chapters on specific foods can be used as handouts. Recipes, activities and stories provide a culturally based learning style. Short videos on several of the foods in this book can be accessed at https://vimeo.com/cedarboxstories.

This toolkit may provide service-learning ideas for classes or groups who want to take action in caring for the land. Some native foods are becoming scarce and difficult to access. It is our hope that educating people about the significance of these foods will encourage them to preserve and promote them. For example, we can plant native berries and wild greens in our gardens and public landscapes. We can work to restore the health of our waters and wild spaces.

Harvest ethics are an integral part of this curriculum. Wise gatherers, hunters and fishers teach us to take only what the land can handle and leave enough so that plant or animal communities continue to thrive. Likewise, it is essential to give back to the land so it will not become depleted. For example, we can return shells to beaches and compost to the soil. Teaching people about appropriate harvest and land management techniques will preserve these precious foods for future generations. Tribal elders, knowledge keepers and tribal natural resource managers can be additional sources for understanding harvest ethics.

Have fun! We hope this curriculum builds your knowledge and inspires you to engage with native foods. Getting out there to harvest berries, dig camas or fish for salmon not only feeds our bodies, it also nurtures our relationship to place, builds community and connects us to cultural traditions.

Introduction

The Salish Sea Region was one of the most densely populated and richest food places on the planet before Euro-American colonization. Stories passed down through generations of Native People tell us that many types of berries, roots, bulbs, nuts, and seeds were eaten as part of a well-balanced diet. These nutritious foods contributed to the excellent health and rich cultural traditions of Northwest Coastal Native Ancestors. These foods include:

- **Fish:** Salmon, smelt, trout, minnows, halibut, codfish, pollock, hake, rockfish, sculpin, perch, eel, flounder, sole, skates, anchovy, sturgeon
- **Shellfish**: Clams, geoduck, oysters, muscles, barnacles, scallops, limpets, snails, whelk, chitons, crab, shrimp, sea urchin, octopus, squid
- **Mammals from the water**: whale, porpoise, seal, turtle
- **Mammals from the land**: Deer, elk, bear, mountain goat, cougar, bobcat, rabbit, mountain beaver
- **Birds**: swans, geese, ducks, grouse, quail, pelicans, hawks, gulls, doves, pigeons
- **Greens**: nettle, spring beauty, miner's lettuce, cattail, fiddlehead ferns, horsetail fertile shoots, salmonberry and thimbleberry sprouts, purslane, evergreen tree tips from Douglas fir, true fir, hemlock and spruce, violet leaves and flowers
- **Roots and bulbs**: camas, wapato, wild onion, yampah, bracken fern, chocolate lily, rice root, glacier lily, spring beauty, silverweed, spring bank clover, biscuit root
- **Berries**: huckleberry, salmonberry, thimbleberry, blackcap raspberry, cranberry, salal, serviceberry, soapberry, wild strawberry, blackberry, elderberry
- **Fruits**: crabapple, wild cherry, currants, gooseberries, Indian plum, wild rose
- **Nuts**: Hazelnut, acorn

Many tribal elders fondly remember how their happiest times are ones where they gathered and prepared native foods with their friends and family. These were unifying moments when people worked together over a common purpose. Stories and laughter were shared while hands processed fish, berries, and nuts. As author Dr. Rudolph Ryser, Chair of the Center for World Indigenous Studies says, "For me, the kitchen table was a place where cultural knowledge was passed from one generation to the next."

Despite ruptures to native food systems and the introduction of Euro-American industrialized foods, many Native People continue to harvest, hunt, gather and grow the native foods that have nourished their ancestors for countless generations. These foods and the traditions that surround them provide people with top-quality nutrition, physical activity, a connection to the land and the seasons, as well as strong ties to family and community.

The story of our relationship to the earth is written more truthfully on the land than on the page. It lasts there. The land remembers what we said and did. Stories are among the most potent tools for restoring the land as well as our relationship to the land. We need to unearth the old stories that live in a place and begin to create new ones, for we are storymakers, not just storytellers. All stories are connected, new ones woven from the threads of the old.

-Robin Wall Kimmerer, Braiding Sweetgrass

From White Cap to White Cap

From the deep waters of the Pacific Ocean to the snow capped peaks of the Cascade Mountains – the land and waters of the Coastal Pacific Northwest are teaming with wild foods. Within this land thrives a great diversity of ecosystems, from open grasslands to wetlands to dense forests. This abundance of food and diversity of landscapes is directly linked to active management by Native People. As we look into the past to see how traditional foods were harvested, processed and maintained, it becomes clear that Northwest Coastal Indian ancestors had an advanced understanding of their food systems. Special techniques including burning, weeding, aerating the soil, pruning and modifying waterways and beaches has been utilized to increase the bounty of foods, which is mutually beneficial for many non-human species. Without these techniques, many important foods may well have disappeared from the Northwest long ago. Examples of cultural landscapes include:

Camas Prairies – Prairies naturally formed in the Puget Sound region about 14,000 years ago, after glaciers retreated. Many foods including edible bulbs, roots, nuts and berries thrive in this open landscape. Burning the prairies releases nutrients into the soil and prevents trees from taking over. Open meadows are attractive to deer, elk, and other animals that graze on prairie plants. Through selective harvest and pruning, you can increase the bounty of edible plants.

Mountain Huckleberry Meadows – Shrouded in snow most of the year, these highlands are only accessible in summer and early autumn. The growing season is short, but very productive. Mountain huckleberry, alpine lilies and many other foods, as well as basketry plants and medicines thrive in these meadows, which have been traditionally maintained through burning, specialized harvesting techniques and weeding out unwanted species. Many Native People still maintain that it is well worth making the journey to harvest huckleberries and other mountain foods and medicines in late summer.

Lowland Forests – Like a broad green belt between the rocky summits and watery seas, ancient forests carpet the majority of the land. Beneath the shady canopy of giant cedar, hemlock, spruce, and fir trees are many types of foods and medicines including salal, lowland huckleberries and nettles. The forest is home to a variety of wild game. Forest edges and sunny openings are especially productive food areas that can be maintained for diversity and abundance.

Wetlands – Wetlands include the margins of lakes and ponds, shallow freshwater marshes and peat bogs. Food plants specially adapted to these wet conditions include cattail, wapato and bog cranberry. Many basketry plants including cattail, tule, sedges and willows are harvested from wetlands. Birds including ducks and geese rely on these areas for feeding and nesting grounds.

Saltwater Beaches – Tribal elders say that when the tide is out, the table is set. Beaches provided a rich abundance and wide variety of foods. Clams thrive in sandy and gravelly beaches, while seaweed and other shellfish flourish on rocky shores. Tidepools are hiding places for octopus and crabs. Because of the mild climate, food can be harvested from saltwater beaches all year round. Through modifying beaches and creating "clam gardens" you can increase the number of clams and other ocean species.

Feeding 7 Generations

Food is a gift. Salish Elders remind us that true wealth is having access to native foods along with the knowledge of how to gather, prepare and serve them. Our values and food traditions are a living legacy that links us to past, present and future generations. Several times a day, we encounter opportunities to reflect on what we eat and how our choices change our world. When we harvest native foods and incorporate them in to our modern lifestyle, we strengthen our cultural identity, our relationship to the land and tribal sovereignty. It will take all of us to feed the next seven generations.

Live with the Seasons. From spring camas prairies to summer huckleberry meadows to autumn fish runs, seasonal foods connect us with the rhythm of the land. For thousands of years we have organized our lives to gather what is in season. In return, we receive peak nutrients that keep us healthy all year long.

Diversify Your Diet. Our ancestors ate a wide variety of foods just a few generations ago. Today, most Americans eat only 12-20 foods on a regular basis, limiting our consumption of minerals, vitamins and other nutrients. When we eat many types of foods, we receive the nourishment we need to stay strong. We also promote the diversity and health of the land.

Eat More Plants. All health advocates agree that we need to eat more plants. Plant foods help us maintain a healthy weight and prevent chronic diseases including heart disease, diabetes and cancer. Eating more plants also reduces climate change and environmental destruction.

Traditional Foods are Whole Foods. Imagine walking through the grocery store with your great grandparents. What would they recognize as food? Our ancestors thrived on whole foods that weren't industrialized, genetically modified, refined, packed with sugar or blended with additives, dyes or chemicals. Whole foods feed the wholeness within us.

Gather Wild Foods. There is a store outside your door. Wild foods are the most nutritious and flavorful foods we can find. Free and accessible, they thrive all around us from forests to fields to back yards. Tasting wild foods connects us to the gifts of the land and attunes us to the seasons.

Cook and Eat with Good Intention. Cooking is a time to offer respect to the plants and animals that gave their lives to nourish us. It is also an opportunity to honor our culture and the people with whom we share food. If we eat while on the go, we miss the pleasure of eating, and do not have sufficient time to savor and digest. Harvesting, preparing, serving and consuming food with good intention feeds our bodies and spirits.

Give Back to the Land. When we harvest and grow food in a way that supports plant and animal communities, we express native values of generosity. Generosity includes both giving and receiving. Organic and sustainable practices return basic life materials to the soil. Through caring for the land, we continue the ancient practices of our ancestors and pass down a world that supports generations to come.

The Impacts of Colonization on Native Foods Access

Native food has always been an integral part of Coast Salish culture. Yet peoples' ability to access food traditions has rapidly declined in the last few generations. During European colonization, most communities were moved from their homeland onto small reservations. Some settlers made land management practices illegal and forced Native people to farm in the European style where land is cleared and plowed. Children were sent to boarding schools in an attempt to strip them from their culture. They were given European names and were prohibited from speaking their language. Practicing many cultural traditions, including food traditions, became illegal.

The health of Coast Salish people has also suffered from the loss of ancestral food traditions, which were replaced with commodity foods that are high in carbohydrates, sugar, dairy and poor quality fats. This is vastly different from a traditional foods diet that includes an abundance of vitamins and minerals, good quality fats and rich antioxidants. As people became more sedentary and adopted new European-style foods, diabetes began to appear. Diabetes was virtually non-existent among Northwest Coastal Indian people about 125 years ago, and now it is at epidemic levels. Studies also link trauma from colonization directly to diabetes and other modern diseases.

Access to native foods has steadily declined since treaty times. Obstacles have been put in place by governing bodies on the local, state and federal levels. The ancestral economy of Coast Salish people has been exploited and the health of the land certainly reflects the health of the people. Environmental toxins in wild foods prohibit people from hunting, fishing and gathering in some areas. Elders from many communities grieve that they can no longer harvest and prepare the foods they grew up eating. New generations have had little exposure to traditional foods and their teachings making it harder for them to incorporate into a modern lifestyle. The implications of this are vast. As the availability of these foods decreases, the stories, songs and language connected to them also fall silent.

In the face of these great obstacles, it is incredible that Northwest Coastal People have continued to hold on to their food traditions. And yet they have. The current resurgence of cultural traditions is nothing short of a renaissance. Elders are gathering to remember and to teach. Families and communities are restoring harvest areas and are picking up the digging stick and the basket. Gardens are being planted. Land partnerships and food policy initiatives are shaping programs. Partnerships with local, state and federal governmental bodies are emerging to address these issues. Native foods are being embraced as a powerful organizing tool to fight modern chronic diseases. They are reconnecting people to the seasons, the land, and their community.

Grace Ann Byrd harvesting nettles at the Nisqually Community Garden

Traditional Food Harvesting, Cooking & Preservation

Native American Harvesters

In most cases the right for Native Americans to harvest food and ceremonial items is protected by either Federal treaty or the Constitution which both exceed regulations imposed by the multitude of land managers below. For more information, Native American harvesters can check with the Natural Resources office of the Tribe that they are registered. In Western Washington the treaties guaranteed Native Americans an "exclusive right" to all resources within the boundaries of the reservations and an "in common" right to off-reservation fishing, hunting and gathering of roots and berries, at all “usual and accustomed grounds and stations.” The Boldt decision further clarified the Native American right to harvest shellfish and finfish stating that Native Americans have rights to 50 percent of the harvestable surplus (http://nwifc.org/about-us/shellfish/treaty-rights-faq/). Non-native harvesters would do well to recognize that Native Americans were the original stewards of many of the natural resources we enjoy today.

Harvest Ethics

Those harvesting wild plants and animals have an ethical responsibility to ensure that they do not exceed the capacity of a particular ecosystem to both replenish itself, and provide for other organisms. Please respect the organisms that you harvest and the land that supports them by not overharvesting and leaving as little trace as possible.

Below are some general guidelines for harvesting different types of plant and fungal resources. (Plants guidelines from Nature’s Garden by Samuel Thayer)

- Annual Weeds: are plants that produce seed and then die within one growing season. These plants reproduce prolifically and are usually only restricted in abundance by the available habitat. They can generally be harvested with little restraint.
- Biennials: are typically tap rooted plants that produce seeds the second year and then die. Harvesting the roots destroys the plant but they usually produce an abundance of seed and the soil disturbance that results from harvesting the plants is an ideal germination environment for future plants. Harvest no more than half of the plants in a particular colony.
- Perennial Greens: are plants that die back to a root that persists year to year (like stinging nettles). Harvesting the leaves does not significantly damage the plant unless they are picked repeatedly over the course of a season. Take less than a third of the available foliage.
- Perennial Shoots: are stems that die back to a root that persists year to year (like cattail). They are more sensitive than greens because the entire above ground portion of the plant is often removed. Take less than a third of a particular colony in a given year.
- Fruits, Seeds, Nuts, and Berries: are gifts from the plant to us. While they are important to the reproduction of a particular plant, taking them does not harm the plant in any way. Overharvesting of berries is almost impossible, but be a good steward and plant a few seeds after you are done picking.
- Multiple Underground Storage Organs: are things like tubers and some rhizomes from plants that grow in communities(cattails). They can be harvested in moderation from

healthy patches, but leave at least half to continue growing. The remaining plants will often benefit from soil that was loosened during your harvest.

- Single Underground Storage Organs: are things like tubers, bulbs, and taproots. They are the most prone to overharvesting as the removal of the bulb results in the loss of the entire organism. Space your harvesting out so that you don't remove an entire clump. Only remove a small percentage of the entire population and replant the smallest and the largest of the roots that you dig up. The largest roots usually produce the most seeds and will help replenish the population.

For information on rare plants and animals that should not be harvested, see the Washington Natural Heritage Program website.

Safety

The things we put in our mouths have the capacity to damage us and wild foods are no exception. Poisoning from misidentification, improper harvest season, inadequate preparation, or contamination, as well as allergies, all threaten wild food harvesters. Fortunately, these hazards are easily avoided with knowledge, experience, and a few simple guidelines.

1. Do not rely solely on a wild food book for identifying plants. These books are best used in combination with expert help and field guides that are specifically designed for identification.
2. Never eat something the first time you identify it.
3. Never eat something unless you have total confidence in your identification.
4. Be sure you understand the proper season for collecting edible parts and process them according to instructions from a reputable source.
5. Just try a little bit the first time. Never serve new foods to other people if you don't have experience eating them.
6. Let others know when you serve them wild foods in case they have never tried a particular food before. Advise them to start by only trying a little bit.
7. Avoid harvesting plants near busy roadways or areas were contamination is suspected.

Aleta Poste harvesting nettles

Digging gear:

Only a few light tools are needed for harvesting and managing the hidden food treasures buried beneath the earth. With nothing more than a stout digging stick, a harvesting basket, and a strong back, a feast of clams or roots can reward the knowledgeable and persistent. Throughout the Pacific Northwest, two different styles of digging sticks are traditionally used by those tending root and clam gardens. "T" handled diggers are most commonly used for unearthing roots in hard ground. Securely fastened to a sharpened vertical piece is a horizontal handle, which provides a comfortable surface to exert the necessary force to break through dry or rocky soils. These digging sticks are usually round and unshaped in cross section and fairly straight from tip to handle. Softer soil sites and clam gardens are traditionally cultivated with a digging stick made out of a single piece of wood that is often more substantially carved with broadly sharpened head, narrow shaft, and rounded or squared handle.

Digging sticks are made from the hardest and toughest material available. Historically Indigenous People west of the Cascades preferred yew or oceanspray wood, while those living east of the Cascades preferred serviceberry, hawthorn, mock orange, and oak. The tips of all wooden digging sticks are carefully sharpened, fire hardened, and rubbed with tallow to form resilient, waterproof points. Digging sticks are usually three to four feet long, or roughly the length of the root gardener's leg. Top handles are made either of the same wood, or occasionally of antler. Today, steel digging sticks are often forged.

Traditional gardeners use digging sticks in a similar manner to short-handled shovels or potato forks. The tip of the digging stick is driven into the ground near the target root or clam and the handle pushed downward, prying the food from the ground. Hard, uncultivated ground must usually be dug from several different angles. Digging sticks are the perfect tool for their designed task and allow traditional gardeners to remove undamaged roots and clams from even the driest and rockiest soils.

After a quick dusting to remove the largest clumps of sediment, the gardener places the root or clam in an open-work basket. This basket is never far from the digger and more roots or clams are harvested until the basket is full. The open weave of the basket allows dirt and sand to fall freely, and in some instances, the basket is submerged partially in water and shaken, like a colander, to rinse off any remaining dirt. Thus cleaned, the roots or clams are ready to be cooked or dried.

Berry Picking Gear

The Pacific Northwest bursts with a bounty of berries. From the spring's first salmonberry to the winter's last cranberry, our region boasts a delicious diversity in the dozens. Nearly every ecosystem from coastal fringe to mountain meadow has berries to offer, and the ready picker must not only know when and where to find each fruit, but have the proper gear to pluck, stow and clean their crop.

A handful of our fruit and nut bearing plants are either too tall or too short to comfortably get our hands on. Shrubs such as chokecherry, crabapple, elderberry, hazelnut, and serviceberry all have long flexible limbs that suspend the majority of their fruit just beyond the reach of the unaided arm. To this evolutionary problem, the berry hook is an ergonomic solution. Functionally no more than a long stick with a branch-catching barb on one end, the berry hook nullifies the need to climb anything (thus sparing our own limbs from damage) by bending the fruit to the level of the picker. For those seeking a leg-up on the competition, tying a foot loop on the bottom end of the berry hook will free both hands for picking.

Berry hooks are often made on the spot from materials at hand. The long straight shoots of oceanspray, hazelnut, and serviceberry are just a few of the preferred woods. The hooked end is usually part of an attached low-angle crotch.

Bog cranberries and Cascade blueberries present the opposite problem. They are so low that a stiff back from constant stooping is the primary hazard. Once removed, berries are placed in a small berry picking basket that is tied around the waist. This basket has a wide enough weave for unripe berries, insects, and small debris to fall through, but narrow enough to retain the desirable fruit. Traditional berry baskets hold about 1-3 gallons. When the front basket is full, it is emptied into a large burden basket that is placed in a central location, or worn on the back with a tumpline. Some tribes also employ a third, intermediate sized basket. Today, many people pick berries into ½-1 gallon ice cream containers, which are nearly as fun to empty as they are to fill. Whatever container is used, picking speed increases dramatically when the container is tied to your waste as both hands are then free to pluck fruit.

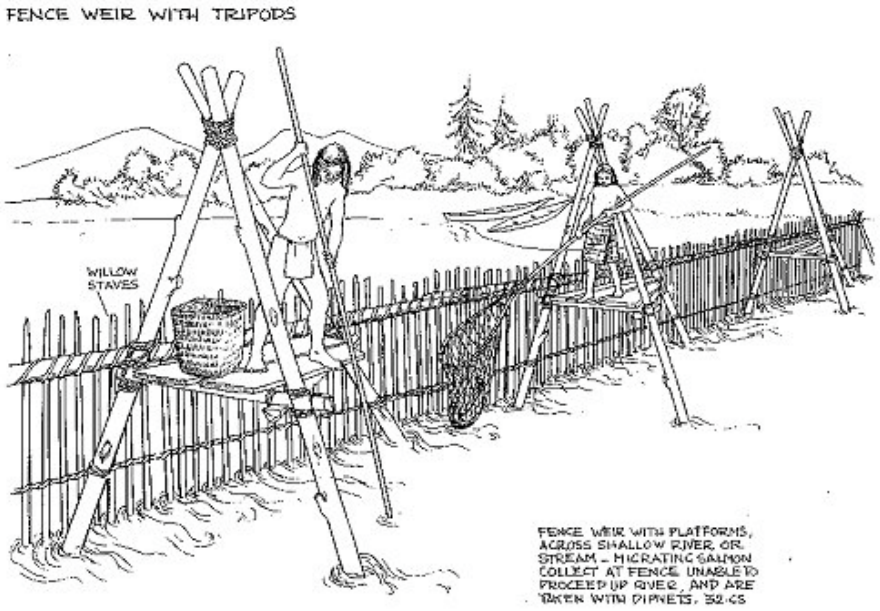
Back home, the berries must be cleaned to remove leaves, undesirable berries, and other debris. The age-old technique of rolling berries down a wet board still works as well today as it has for countless generations. The flat leaves and squishy over-ripe berries stick to the board while the ripe berries roll to the bottom. Be sure and use a wide board with a gentle slope and leave plenty of room at the bottom of the ramp to catch your berries. A variation of the same technique makes use of a dry towel on the board, which is nice if you are going to freeze your berries because they stay dry. Berries can also be cleaned in a more dynamic process by placing them on a damp bed sheet with the four corners spread tight. The fruit is then tossed in the air and finally rolled off into a container while the debris sticks to the sheet. Whichever method is used, some degree of hand sorting is usually needed to remove under-ripe fruit before the berries are ready to be cooked, dried, or eaten.

Fishing Gear

Any fisher will tell you that having the proper gear is vital to a successful catch. Scores of species swim through our coastal, intertidal, and river waters, and many require a unique selection of tackle, making fishing one of the most sophisticated categories of tools and technologies among Indigenous societies in the Pacific Northwest. Broadly, most fishing gear can be broken down into three basic methods: trapping (with weirs, nets, or traps), stabbing (with gaffs, spears, or rakes), and hooking (with lines and hooks), but each of these techniques (and the associated tools) are specifically tailored to a particular species at a particular life-history stage. For

example, a fisher may troll a hook for salmon in salt water, but pursue the same species a few months later with a gaff in a stream. Some tools, however, have more general utility across fish species, such as canoes, fish clubs, and fish cutting knives.

Fish weirs are traditionally among the most efficient means of capturing food because they are designed to temporarily obstruct not just one, but entire schools of fish. Simple designs include crescent shaped stone walls placed along the beach that take advantage of tidal action to trap fish within the enclosure at low tide, and wooden lattice-work fences placed across streams and small rivers. Both designs build upon areas where fish are naturally forced to congregate, and further inhibit the mobility of the fish. The most desirable fish from those aggregated by the weir were then netted, gaffed, or forced into traps, while excess and undesirable fish were allowed to escape through an opening in the weir. The following illustration depicts a river-based salmon weir. Other specialized weir designs were also employed to catch eulachon and smelt in rivers, and salmon, ground fish, and herring in estuaries and along coastal beaches. The power of flowing water imposes a practical limit to the height of a weir, and most are used in water no more than about six feet deep.



Drawing of a First Nations fence weir with tripods. Image © Hilary Stewart. *Indian Fishing: Early Methods on the Northwest Coast.* p. 104.

Early colonial settlers quickly adopted Indigenous weir techniques, but failed to allow an adequate number of fish to escape, leading to the eventual prohibition of weir-based fisheries.

Aggregations of fish in deep water are traditionally caught using other techniques such as reef netting. These nets were originally made of willow fiber and positioned along the salmon migration path in reefs that naturally concentrated the salmon. Two canoes held the mouth of the net open, and the bottom was anchored to the reef. Since salmon travel in schools that are destined for the same spawning grounds, an opening in the center of the trap allowed some of each school to escape to sustain each run.

Shoals of smaller fish, such as herring, could be "raked" with a specialized tool called a herring rake. This was made from a split cedar plank that was about 6 feet long with a long round

handle and a narrow head that contained a row of sharp bone spikes. The rake was sliced through the water to impale herring, which were then removed from the spikes and used for bait or eaten.

Additional hand tools such as spears and gaffs were used to catch salmon and other river fish in shallow streams. Gaffs were made from a long pole with a detachable hooked head that was attached to a line. Many types of spears were used to catch fish in estuaries and rivers including those similar in construction to the seal spear, and others with two barbed prongs.

Hook and line fishing was as common in the past as it is today. Halibut were taken with bentwood hooks made from yew or hemlock and baited with octopus, and small bone hooks were used for catching salmon. Fishing line was usually made from the stipes of bull kelp or fiber from willow or stinging nettle.

Fish cutting knives were originally made from sharpened mussel shells or thin sheets of slate that were hafted on one side and ground sharp on the side opposite the handle.

Hunting Gear

Modifications on many of the same technologies used to catch fish were adapted to hunting other animals from the sea, land and sky. Traditional hunting gear including bow and arrows, nets, traps, harpoons, and spears were all used to capture quarry ranging from deep diving seals to high climbing mountain goats and fast flying ducks.

<u>Bows and Arrows</u>

Prior to guns, bows and arrows were the quintessential hunting tools of humans nearly everywhere. On the coast, bows were usually made from yew or vine maple, although ocean spray and yellow cedar were sometimes used as well. Yew and bighorn sheep horn were commonly used in the interior. Most bows were short with recurved tips and sinew backing. Bowstrings were made of sea lion gut, sinew, or plant fiber. The material selection and construction of a bow was a meticulous process requiring several weeks of dedicated work. Yew wood, though revered by bowyers around the world for its unique combination of dense hardwood and elastic sapwood, is often twisted and knotty. Much care was thus taken to select a stave from a straight trunk or branch. This piece was split in half to make a stave, which ranged in length from the distance between the archer's elbows when his fists were put together, to the span between his hands when his arms were stretched outwards. The heartwood was carved away until the stave was roughly 3 inches wide and a half-inch thick. Each limb was wrapped in seaweed and buried in sand near a hot fire until it was softened by the steam and could be bent into shape. The sapwood faced away from the archer and was usually covered with many layers of deer sinew that was dried, pounded, and fastened with glue made from fish skins or sturgeon spinal cord. The best bowstrings came from sea lion gut, but it was not uncommon to use the gut, sinew, or leather from other animals as well as nettle, willow, and dogbane cordage.

Arrows were specially designed for each type of animal. On the coast the shafts were usually made from the long shoots of oceanspray or split from western red cedar wood.

Fletching was made from eagle or cormorant feathers. Detachable foreshafts were commonly used and arrowheads were made from bone, wood, or stone. In the interior, arrow shafts were usually serviceberry with hawk or grouse fletching and arrowheads of stone, wood, or bone.

Nets and Traps

Fish weren't the only creatures captured by net. The Salish also used nets to snare ducks and even deer. Duck nets had a mesh coarse enough for small species such as teal to pass through, but fine enough to retain larger ducks, geese, and swans. Willow or nettle fiber nets were suspended between poles or trees at the mouth of narrow flyways in the evening when it was difficult for the birds to see. After several birds got stuck in the net, it was dropped to the ground so that the birds could be killed.

Nets were also used to force seals close to shore and keep them from diving, so they could be harpooned or clubbed. Deer were similarly corralled into narrow canyons and driven into stout willow fiber nets where they were easily speared or shot with a bow and arrow. More commonly, deer were killed with pit fall traps or deadfall traps. Dead fall traps were positioned across a deer trail in such a manner that when the deer stopped to go under a large log, the deer pushed a trigger that caused the log to fall and break the deer's neck.

Harpoons and Spears

Seals and other sea mammals were hunted with a large harpoon about 15 feet long. The main shaft was made of Douglas fir, and the foreshaft made of a hardwood, such as yew or oceanspray. The head was a composite of three pieces, the center point usually made of bone or hardwood and two barbs of elk horn. The pieces were lashed together with cherry bark and sealed with pitch. A line was tied to the head and once speared, the foreshaft would separate from the main shaft and twist the head sideways into the wound.

Ducks and geese were hunted with a pronged spear that was designed to catch in the feathers and not damage the meat. It was difficult to get close enough to the waterfowl to spear them, without a stealth and cunning technique. On a moonless night, a pair of hunters would canoe through a marsh—the person in the bow with a spear and the person in the stern with a pitch wood torch. Perceiving the flame to be farther off than it actually was, and blinded of the presence of the hunters by the torchlight, the waterfowl allowed the hunters to get within spearing distance.

Once available, guns quickly replaced the bow and arrow, harpoon, and spear. They also changed animal behavior. For example, ducks were said to be much more skittish after the introduction of firearms. During the early period of transition, some Native American hunters loaded pieces of stone arrowheads with each bullet, believing that the stone more effectively killed the animal than the bullet.

Cooking

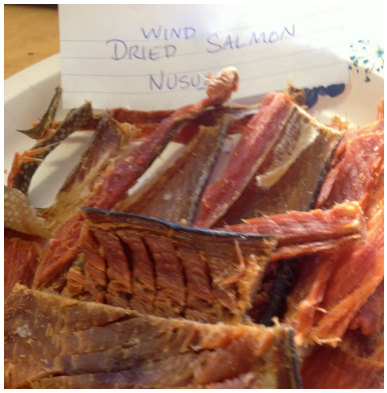
Northwest Coastal Ancestors used a variety of cooking techniques such as roasting or steaming in earthen pit ovens, spit roasting next to a fire, baking in or on hot coals, and boiling in tightly woven baskets or bentwood boxes with hot rocks. Deer, seal, and numerous root vegetables were sometimes cooked whole in underground roasting pits. For this, a large pit was dug and filled with volcanic rocks. Then a hot fire was kindled inside the pit and burned until the rocks were glowing hot. The coals were scraped out and the pit was lined with vegetation such as salal, sword fern, and skunk cabbage before the food was placed in the pit. The oven was then sealed with mats and soil and left to cook for several hours to as long as 3 days. A fire was usually lit on top of the pit for foods that required more than 1 day to cook. This technique varied considerably by food type. For example, clams could be placed directly on the hot rocks and only required seaweed—not earth—to be placed over the top; many root vegetables were steamed inside of earth ovens by adding water to the hot rocks. Typically, only large quantities of food were pit roasted, such as a year's supply of camas or clams, or enough meat for a feast.

Smaller portions of food such as fish, de-shelled clams, venison, and waterfowl were traditionally roasted on spits. Large fish were "butterflied" or split down the back and folded open along the belly. The fish was held open with small pieces of split cedar and mounted on an upright spit near the fire, where they were periodically turned. Upright spits of various sizes were used to roast many whole animals ranging in size from clams to marmots, as well as pieces of larger animals. Spit roasting or barbecuing is still a popular means of preparing these foods. Some foods were roasted directly on the hot coals, such as clams that were still in the shell, and the rhizomes of cattails and bracken fern. Small portions of other foods could be wrapped in skunk cabbage leaves and buried in the coals of a fire.

Family sized portions of food were also regularly boiled in watertight baskets. Special cooking stones, usually about the size of ping pong balls, were heated in a fire and dropped into the baskets using fire tongs. Crabs, fish, meat, and berries were all cooked in this manner, or water was simply heated for medicinal tea or used to soften dried foods such as hard smoked salmon and dried camas.

Preserving

Having food throughout the winter and a balanced diet throughout the year has always been a necessary part of life that is made possible in our region by preserving food. Not surprisingly, many of the same techniques used today were also used traditionally, including storing fresh food live, cold, wet, or frozen, and processing food by drying, smoking, or fermenting. Live storage was perhaps the simplest and most intuitive means of ensuring future meals. Some roots, such as springbank clover, were harvested in the fall, while dormant, and kept alive in damp soil near the house where they could easily be dug up during the winter. Those that wouldn't actually stay alive could be kept fresh in cool places. For example, blue elderberries were bundled with pine needles and cached in the snow where they could be retrieved later in the winter. Similarly, crabapples were stored in baskets in cool dry places or, more rarely, submerged in water. Water storage was more common for cooked red elderberries and acorns, which were packaged and buried near streams or swamps for a month or more. Bitter constituents could be leached out of these foods when stored in this manner, so this was also a form of passive processing.



Many foods required more complex processing such as dehydrating, smoking, and fermenting. Wind drying salmon and sun drying roots and berries were common in the upper river valleys and dry interior where wind and sun are more predictable. On the coast, where air humidity is higher, heat and smoke were often necessary elements to hasten the process and ward off bugs. For example, salal berries were dried on skunk cabbage leaves near a hot fire, and salmon and elk meat were usually smoked in a special smoke house or hung in a smoky part of the main house.

Most interesting were traditional methods of fermenting foods such as salmon: fresh roe of Spring Salmon was buried in a deep hole that was lined with several layers of perforated bigleaf maple leaves, which allowed the oil to drain away as the eggs cured. The eggs were then covered with more leaves and soil, and then left to ferment. Whole salmon were sometimes buried for up to 10 days before they were boiled and eaten, and in some areas, sockeye were fermented and rendered for oil in the same manner as eulachon grease.

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