
Nuxalk Food and Nutrition Handbook

-A practical guide to family foods and nutrition using native foods.

Produced By: The Nuxalk Food and Nutrition Program Staff

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Cover Drawing: Sluq' with ooligan grease served in raven bowl - Don Hood

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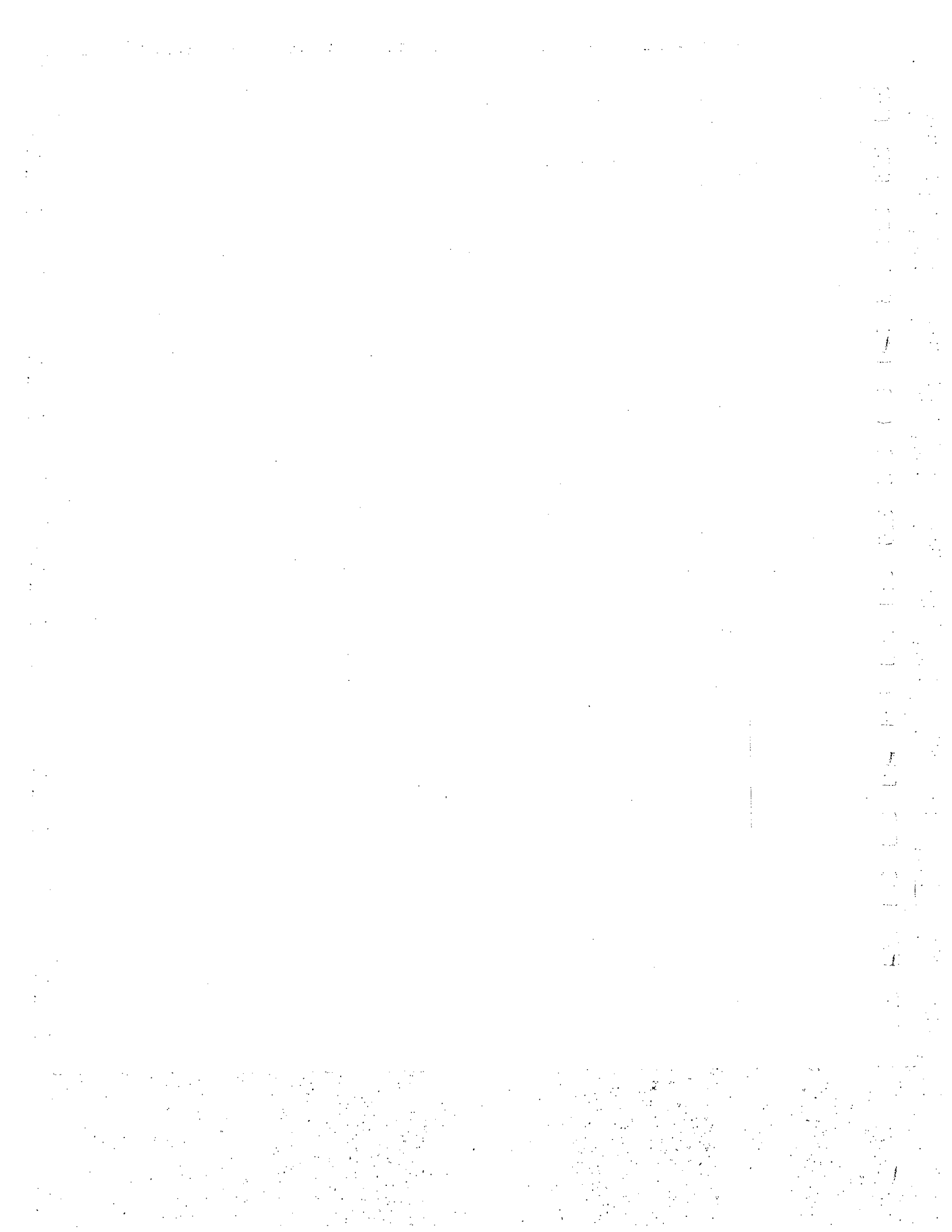


Table of Contents

List of Illustrations	
List of Tables and Figures	
Introduction	1
SECTION I. TRADITIONAL NUXALK FOODS	5
A. The Foods - Fish	6
Harvesting and Use of Each Salmon	6
Spring Salmon	
Steelhead	
Sockeye	
Pinks (Humpies)	
Chum (Dog)	
Coho	
Nuxalk Ways of Preserving Salmon	9
Canning	
Jarring	
Barbequing	
Smoked Fish	
Sluq'	
Salted Fish	
Fish Heads	
Fish Backbones	
Salmon Roe	
Ooligans	
Ooligan Grease	
The Foods - Other Seafoods	20
The Cods	
Trout	
Herring	
Herring Roe	
Flounder	
Halibut	
Seal	
The Foods - Shellfish	22
Mussels	
Crab	
Abalone	
Clams	
Sea Cucumber	
Sea Urchin	
Octopus	

The Foods - Berries 24

Black Hawthorn
Blackcaps
Bunchberries
Grey Blueberries
Highbush Cranberries
Kinnikinnick
Mountain Bilberries
Red Elderberries
Red Huckleberries
Salal Berries
Salmonberries
Saskatoons
Soapberries
Sun Berries, or Stink Currants
Swamp Gooseberries
Thimbleberries
Watery Blueberries
Wild Blue Currants
Wild Gooseberries
Wild Raspberries
Wild Strawberries
Rose Hips

The Foods - Greens 36

Stinging Nettles
Cow-parsnip
Seaweed
Sheep Sorrel
Lambsquarters
Thimbleberry Shoots
Salmonberry Shoots
Fireweed Shoots

The Foods - Roots 40

Wild Clover Roots
Silverweed Roots
Rice Roots
Licorice Fern Roots
Fern Roots

The Foods - Tea 43

Labrador Tea
Salmonberry Bark Tea

The Foods - Tree Foods	43
Black Cottonwood Inner-Bark	
Western Hemlock Inner-Bark	
Wild Crabapples	
The Foods - Game	46
Duck	
Grouse	
Rabbit	
Moose	
Deer	
Mountain Goat	
B. Nuxalk Native Food Yearly Harvesting Cycle	48
C. Harvesting Traditional Nuxalk Plant Foods	50
D. Growing Your Own Traditional Nuxalk Plant Foods	51
SECTION II. FOODS, NUTRITION AND	
 LIFESTYLE.....	55
A. Safe Home Foods: Preparation, Preservation, Storage	56
Food Safety	
Canning and Jarring	
Dry Jam and Fruit Drinks	
Freezing	
Drying Foods	
Smoking and Drying Fish	
Root Cellars	
B. How to Select Nutritious, Low-Cost Foods	71
C. How to Cook Nutritious, Low-Cost Meals	75
D. The Cost of Food in Bella Coola	76
E. Nutrition and Lifestyle	79
Important Nutrition Facts for Everyone	
Roles and Food Sources of Major Nutrients	
F. Nutrition, Fitness and Desirable Body Weight	88
G. So You Want to Lose Weight?	91

H. Children's Snacks for Good Nutrition and Dental Health	93
---	----

SECTION III. NUXALK FOOD AND NUTRITION PROGRAM	95
---	-----------

A. Nuxalk Food Use Studies	96
--------------------------------------	----

B. Native Food Availability Studies	97
---	----

C. Grandmother - Mother - Daughter Study	98
--	----

D. Chemistry of Nuxalk Foods	99
--	----

E. Health Assessments	100
---------------------------------	-----

F. Ongoing Nuxalk Food and Nutrition Program Activities at the Health Clinic	101
---	-----

Appendix 1. Listing of Traditional Foods by Common Name - Genus and Species - Nuxalk Name	105
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Appendix 2. Listing of Traditional Foods by Nuxalk Name - Common Name- Genus and Species	107
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For Further Reference	109
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List of Illustrations

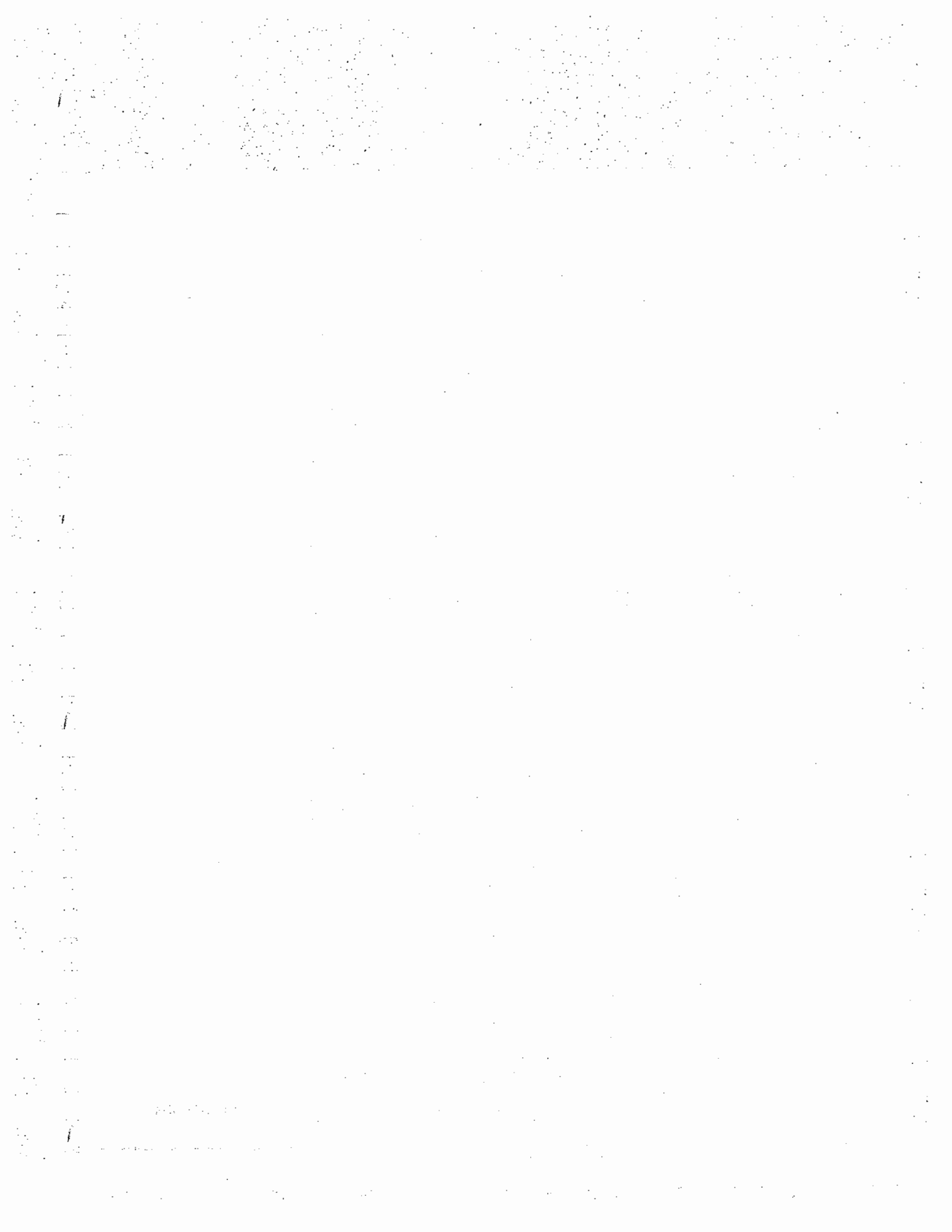
Spring salmon	7
Steelhead	7
Sockeye	7
Pink (Humpy)	8
Chum (Dog)	8
Coho	8
Cutting salmon to fit cans	9
Cutting for barbecuing and smoking	9
An elder demonstrating how to cut fish (Felicity Walkus)	10
Making sticks for barbecuing fish	10
Barbecuing sockeye	11
Removing head, tail and fins from a fish	11
Placement of sticks for smoking	12
Preparation of slug'	12
Salting salmon	13
Fresh steelhead roe with seaweed and grease	14
Ooligan	15
Seine - netting ooligans	15
Ooligans hanging from sticks in smokehouse	16
Ooligan box and cooking box by the river	18
Scooping off the ooligan oil	18
Finished ooligan grease	19
Grey cod	20
Red cod (Red Snapper)	20
Ling cod	20
Herring eggs on hemlock branches	21
Drying halibut at home	21
Butter clam, cockle and little-neck clam	22
Sea urchin	23
Cleaned sea urchin showing roe in five parts	23
Design for a berry drying rack	24
Black hawthorn	25
Blackcaps	26
Bunchberries	26
Grey blueberries or oval-leaved blueberries	27
Highbush cranberries	27
Kinnikinnick	28
Mountain bilberries	28
Red elderberries	29
Red huckleberries	29
Salal berries	30
Salmonberries	30
Saskatoons	31
Soapberries	32
Sun berries or stink currants	32
Swamp gooseberries	33
Thimbleberries	33
Watery blueberries or Alaska blueberries	34

List of Illustrations (cont. . . .)

Wild blue currants	34
Wild gooseberries	34
Wild raspberries	35
Wild strawberries	35
Wild rose hips	36
Stinging nettles	36
Peeled cow-parsnip stalks	37
Seaweed	37
Sheep sorrel in flower	38
Lambsquarters in flower	38
Thimbleberry shoots ready for harvest	39
Fireweed shoots at edible stage	39
A wild clover plant and a bundle of clover roots	40
Silverweed or cinquefoil in flower	41
Rice root in flower	41
Rice root seed-stalk and root clusters	41
Licorice Fern	42
Fern root and leaf	42
Labrador tea bush showing leaves and flower	43
Scraping the inside surface of the black cottonwood (Karen Anderson)	44
Removing outer bark from Western hemlock tree (Willie Hans)	45
Scraping the inner-bark from Western hemlock tree (Felicity Walkus)	45
Wild crabapple	46
The Nuxalk garden early in its development, 1983	51
Mason jars are used for pressure canning. Regular jars or mason jars can be used in boiling water canning	59
A pressure canner and rack	61
Knowing when the jam has cooked to thickness	63
A home freezer	64
A smokehouse	70
An early root cellar: front view, above ground with sod roof	70
Below ground view of root cellar	70
A selection of Nuxalk foods	71
Warming-up with calf stretches	89
Warming-up with trunk circle stretch	89
Counting the neck pulse	90
Watch out for night-time snacking	92
Choose an activity you enjoy	93
Counting plants on the Nuxalk reserve	97
Interviewing	98
Nutrient analysis	99
Fitness testing	101
The Nuxalk Health Clinic	101

List of Figures and Tables

Nuxalk Native Food Yearly Harvesting Cycle	48
Processing Time in Boiling Water	59
Processing Time in the Pressure Canner	60
Blanching Chart for Vegetables	66
Maximum Recommended Storage for Meat, Fish and Poultry in Refrigerator and Freezer	67
Market Guide for Best Nutrition and Low Cost	72
Changes in the Cost of the Nutritious Food Basket in Bella Coola	77
Changes in the Cost of the Dairy Products Group of the Nutritious Food Basket	77
Good Meals and Pool Meals	80
Roles and Food Sources of Major Nutrients	86
Nuxalk Food and Nutrition Program	95



Introduction

This handbook on food and nutrition was written for native people in Canada. Special attention has been given to the foods and nutrition of the Nuxalk people of Bella Coola, British Columbia. The book gives practical information on how to find and prepare foods and the nutritional benefits that they offer. The major theme is that traditional native foods can provide important benefits to the nutritional status and lifestyle of native people, and greater use of these foods is strongly encouraged. It is clear that family meals containing a variety of traditional foods are highly nutritious and economical. In addition, the harvesting and preparation of traditional foods can offer opportunities for physical fitness and for learning and practicing important aspects of native cultural life.

Many native people no longer use all the traditional foods known to their culture. This has happened for several reasons, including lack of access to traditional food resources, loss of knowledge of how to harvest and use traditional foods, and a re-direction of time and energy to employed work. Due to these factors, store-bought foods now provide a large part of the food of native people living both on and off reserves. While this book emphasizes traditional foods, it also contains suggestions on how to make food choices that are wholesome and economical using foods that can be bought in grocery stores.

The handbook is divided into three main sections:

- I. Traditional Nuxalk Foods
- II. Foods, Nutrition and Lifestyle
- III. The Nuxalk Food and Nutrition Program.

There are several chapters of practical information on the preparation of traditional and purchased foods, but this is not a recipe book. Recipes for specific items can be found in references listed in the Appendix. There are chapters of practical information on: the gardening of traditional plant foods; safe food preservation; and good nutrition practices for health promotion. The final section of the handbook briefly describes the various components of the Nuxalk Food and Nutrition Program which is being conducted on the reserve in Bella Coola at the time this handbook was printed.

The Nuxalk Food and Nutrition Program officially began in January 1983, but it was preceded by about two and one-half years of background work and planning with funding agencies. The design of the program was made by Harriet Kuhnlein, a professor of nutrition at the University of British Columbia, in close collaboration with Sandy Moody, Community Health Nurse in Bella Coola, and Rose Hans, the Nuxalk Community Health Representative. The Nuxalk Nation Council approved and encouraged the program from its earliest beginnings, with special help from Ed Moody, Chief Councillor, and Archie Pootlass, Band Manager. The decision to attempt this program in Bella Coola was made after initial conversations between Harriet and Archie, when he was Acting Director of the Union of British Columbia Indian Chiefs in 1980.

From the first days of work on this program, it was clear that the majority of women, men, and children in the Nuxalk community wished to have their traditional foods documented with an understanding of how they might contribute to good health. The elders were especially generous in giving many hours of their time for discussions and demonstrations of their knowledge about identification and preparation of the Nuxalk foods.

Within Health and Welfare Canada, the program application was polished and guided by Margo Palmer of the Western Regional Office, Health Promotion Directorate. The bulk of the funds for three years of personnel support and community activities was provided by the Health Promotion Contribution Program and supplementary funding for laboratory work was provided by the National Health Research and Development Program. In the early stages of the research and proposal drafts, funds were made available to Dr. Kuhnlein by the Social Sciences and Humanities Research Council, the Canadian Ethnology Service, the Natural Sciences and Engineering Research Council, Health and Welfare Canada, and the Youth Employment Program of the Province of British Columbia.

The Medical Services Branch of Health and Welfare Canada provided moral support through nutritionists Jean Steckle, Charlotte Waddell and Penny Bell, as well as invaluable help through the provision of clinic facilities and encouragement from the Nuxalk Health staff: Sandy Moody, Rose Hans, Eliza Saunders, Warren Snow and Debbie Tallio.

Throughout the program, the School of Family and Nutritional Sciences and the Buchanan Statistical Centre of the University of British Columbia have provided necessary facilities for laboratory work, computer work, and graphics. Many people on the U.B.C staff have contributed to the program. Of particular mention is Mitchel Erickson, the research assistant who has worked on the food and nutrition analyses which are briefly described in the last section of the handbook.

Special work on this handbook was provided by many people. Most of the writing about traditional foods was done by Emily Schooner. She spent many hours interviewing elders and consulting with Rose Hans. Some of the sections on traditional foods were first written by Louise Hilland, Sarah Saunders and Aaron Hans during their employment in the summer of 1983. The remaining chapters on nutrition, weight loss, physical fitness and purchased foods were written by Sandra Marquis. Sandra also did much of the editing and revision of the handbook, with help from Anthea Kennelly, Joanne Condruk, and Harriet Kuhnlein. Final review of the manuscript was made by Margaret Siwallace and Karen Anderson of the Cultural Committee and Nuxalk Nation Council.

Nancy Turner, botanist with the B.C. Provincial Museum, graciously supplied many of the food plant photos in this handbook. She also drafted the chapters on harvesting plant foods and growing traditional plant foods in home gardens, and provided assistance in editing. Other photographs were taken from the files of the Nuxalk Food and Nutrition Program.

Don Hood, a Nuxalk artist, made the wonderful drawings for the cover, chapter headings, and the seafoods. Other drawings were provided by Anthea Kennelly and Dan Lee. A few drawings in the fitness section were taken, with permission from Dave Bogoch, from *Bogie's Book on Fitness*.

While this handbook was written specifically about Nuxalk foods and nutrition of the Nuxalk people, the intent of the Nuxalk Food and Nutrition Program is to seek new ways for improving the nutritional health of all native people. Extensive research was completed on the harvesting and use of traditional foods, the nutrient composition of traditional foods, changing food patterns of Nuxalk women during this century and nutrition and health assessment of the Nuxalk people. With this information, community activities for nutrition and health promotion of the Nuxalk people were designed and are being conducted. This handbook summarizes most of the research that was done and is an integral part of the educational effort in the Nuxalk community.

The handbook is suitable in many ways for use by other native groups. Several elements of the traditional food system, the patterns of use of these foods and native nutritional health status, are similar for other native groups with similar ecological settings in Western North America. It is hoped that the community activities and educational tools generated by the Nuxalk Food and Nutrition Program will be helpful as a model, and will provide ideas and stimulation to other native groups who seek to improve their nutritional health by emphasizing traditional food resources.

A copy of the handbook will be provided free of charge to each Nuxalk family. While supplies last, additional copies will be available for \$2.33 in Canada and the U.S.A. and \$6.00 internationally (to cover postage costs). Priority for mailing will be given to native health organizations. The handbook, as well as other information about the Nuxalk Food and Nutrition Program, can be obtained from the following sources.

Nuxalk Food and Nutrition Program
Division of Human Nutrition
School of Family and Nutritional Sciences
The University of British Columbia
Vancouver, British Columbia
V6T 1W5 (604) 228-6253

Nuxalk Food and Nutrition Program
Nuxalk Health Clinic
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Bella Coola, British Columbia
V0T 1C0 (604) 799-5441

Nuxalk Nation Council
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V0T 1C0 (604) 799-5613

Health Promotion Directorate
Western Regional Office
202-560 W. Broadway
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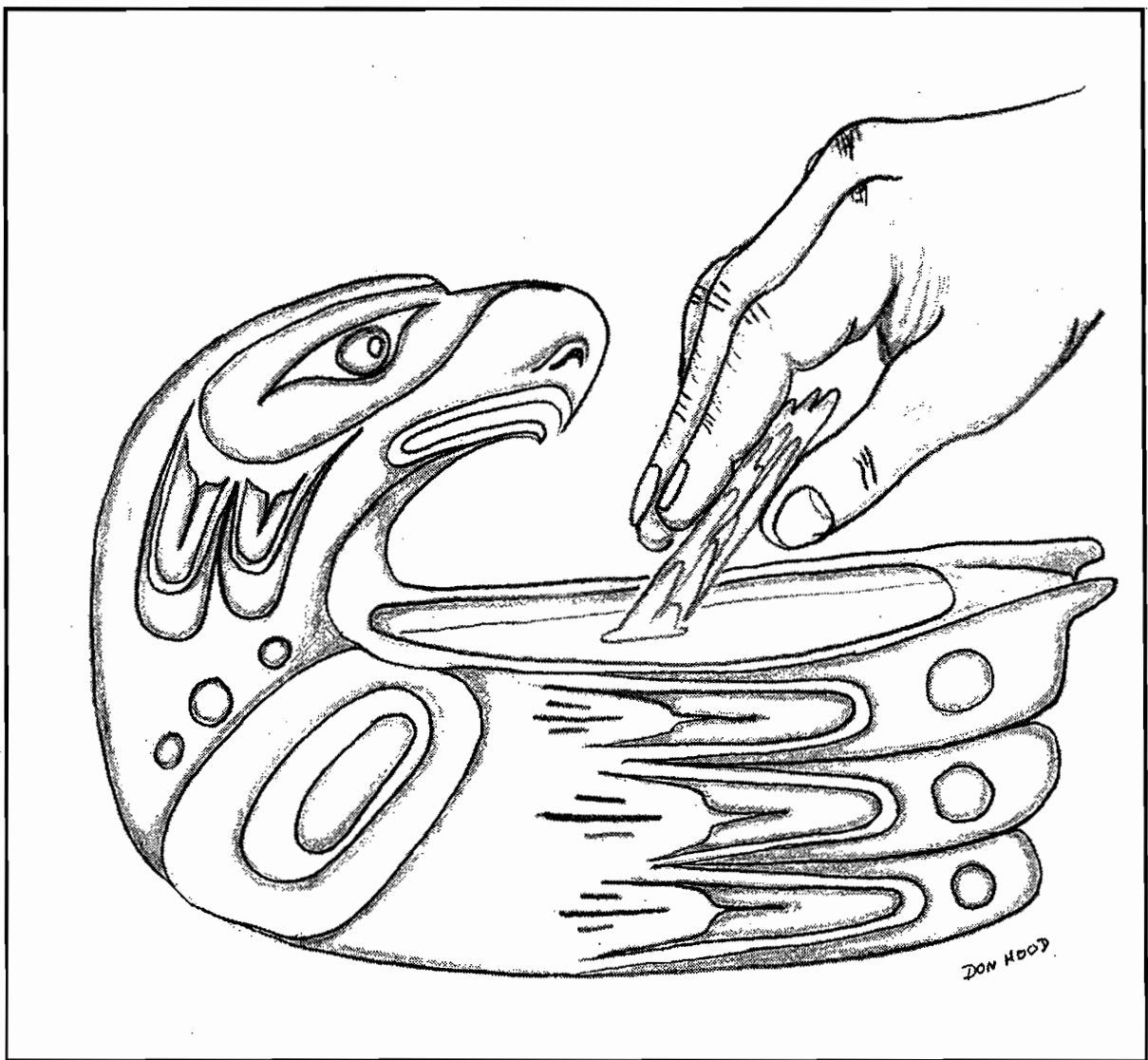
1985 reprinted copies are also available from:

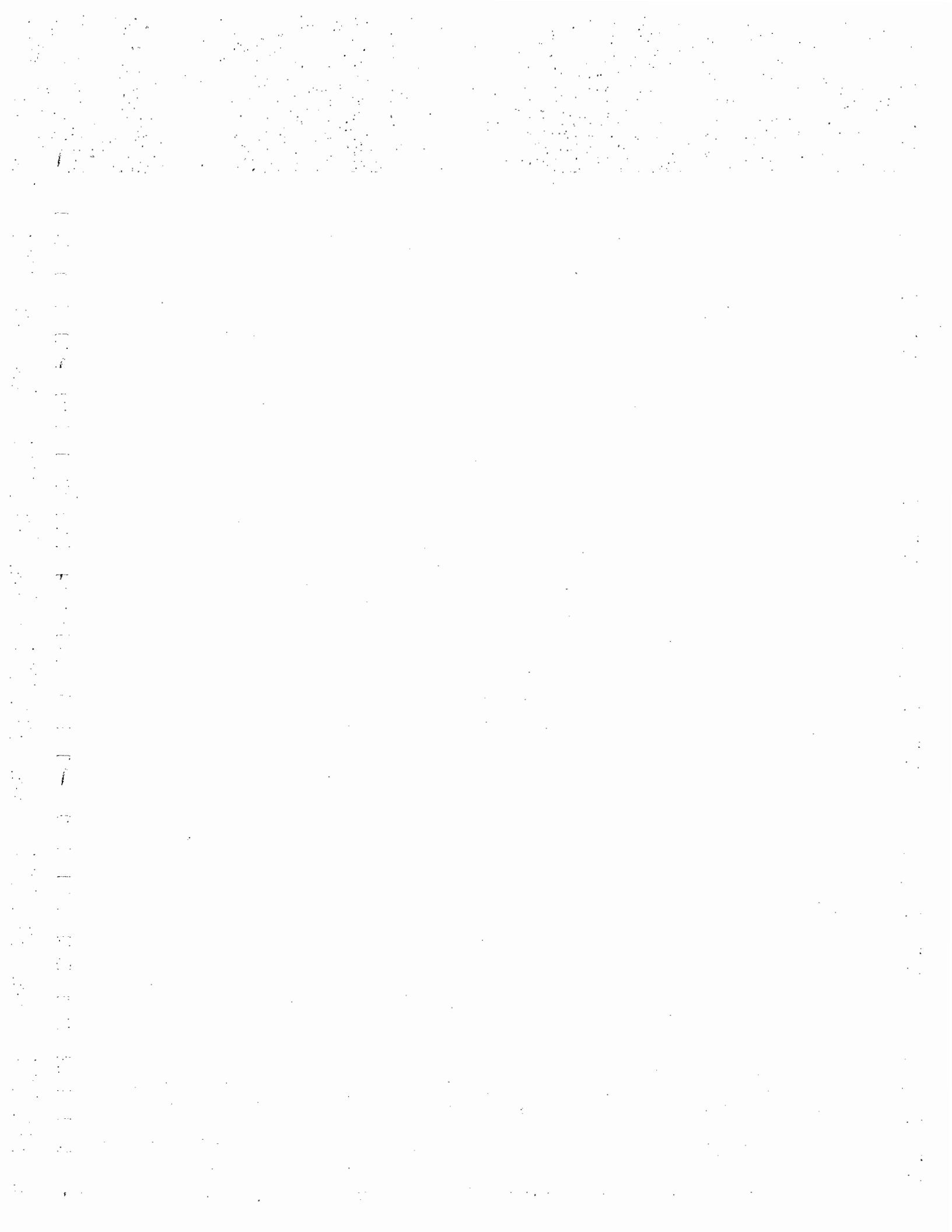
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Health and Welfare Canada
Jeanne Mance Building
Tunney's Pasture
Ottawa, Ontario K1A 0L3

It is also foreseen that the section on traditional Nuxalk foods will be reprinted by the Nuxalk Nation as a separate publication in the near future. This will be obtainable from the Nuxalk Nation Council at the address given.

All of us who have worked to make this book a reality hope that readers will find it fascinating, helpful and an inspiration. We will be pleased and rewarded for our efforts, if in some small way, this handbook will contribute to better understanding and use of traditional native foods for improved health of native people.

Section I Traditional Nuxalk Foods





SECTION I: TRADITIONAL NUXALK FOODS

In this section, the native foods of the Nuxalk people are described. These foods form a plentiful diet which kept the people healthy for many generations. The food system contains fish, shellfish, game, berries, greens, roots, tree foods, and tea plants. Each food is described along with the usual ways of traditional preparation. At the end of this section there are three short chapters on the harvesting cycle of the Nuxalk foods, the harvesting of plant foods, and how to grow wild Nuxalk plant foods in a home garden.

A. The Foods

- Fish**
- Other Seafoods**
- Shellfish**
- Berries**
- Greens**
- Roots**
- Tea**
- Tree Foods**
- Game**

B. Nuxalk Native Food Yearly Harvesting Cycle

C. Harvesting Traditional Nuxalk Plant Foods

D. Growing Your Own Traditional Plant Foods

A. The Foods - Fish

The Nuxalk people have always eaten a lot of fish. In the old days, fish fed the people and the people were careful to use them well. They did not waste any part of a fish. They used the fish heads, tails and bones. In times of famine they also used the heart, liver, stomach and chewed the gills. Even if the people were poor, they were rich in food.

"Long ago, about 100 years ago, or so, it was getting to be springtime for the Bella Coola people. It was green and all the trees had their buds and the salmonberries and thimbleberries had their flowers. Then it turned cold and a big blizzard came in from the east and dropped a whole lot of snow - there was more than 5 feet of snow - so much that people had to dig tunnels so they could get water up from the river.

Finally, the snow melted, but it was so cold that everything was brown and dead. The fish did not come to the river that year, and the people got very hungry. They went to the river and got a pail of water to make fish stew with the spirit of the fish in it.

Finally, the men knew they had to go up into the mountains to get some fish. So they went up and camped up there and caught the small trout and other fish, and they smoked them and dried them very dry to carry them back to the village. The people ate these fish very sparingly - just a little bit for each person each day. They saved the bones of these fish and made stew from them over and over again. Finally they dried the bones over the fire, and made them into powder. They used the powder to make soups, just a little bit at a time. With this food the Bella Coola people survived the winter."

.....told by a Nuxalk elder.

Harvesting and Use Of Each Salmon

Since many of the salmon species are prepared and preserved using the same methods, this section has been broken down into two parts: 'Harvesting and Use of Each Salmon' and 'Nuxalk Ways of Preserving Salmon'.

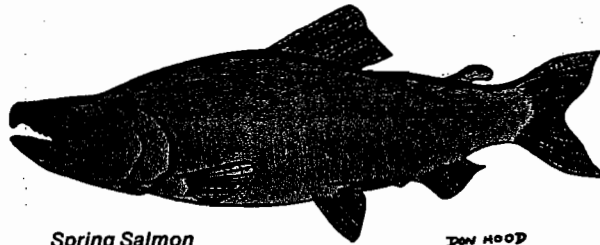
Spring Salmon (chinook) Amlh

Spring salmon is usually harvested from May to the end of June. As with most salmon species, springs are caught using a net and drifting the river in a row boat. They are the largest salmon, and average between 14 - 18 kg. (30 - 40 lbs.).

In the old days, springs were preserved by drying. They were hung in the smokehouse until the fish were completely dry. They were then stored in cedar boxes in the smokehouse. When it was time to eat the fish, they were first soaked in water. Then the fish was either boiled or cooked directly over the fire. Fish cooked by the latter method were set down in the middle of a group for everyone to eat.

Today, spring salmon are salted or half-smoked (and then canned or frozen). They can also be barbequed after cutting away several strips from the fillets for slug.

Once barbequed, the fish can be either jarred/canned or frozen and cooked later. Fresh springs are oven baked, cooked as steaks or used in stew.

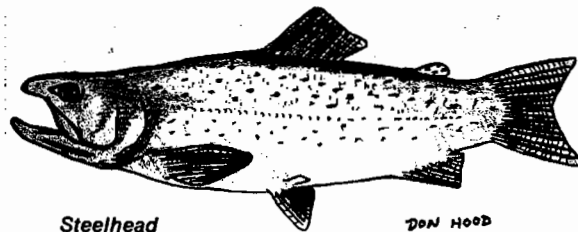


Spring Salmon

**Steelhead
K'lat**

Steelhead are usually fished from the beginning of October to the end of April. The largest steelhead weigh about 17 kg. (37 lbs.). They are caught by drift netting the river or by using a fly rod. In the old days steelhead were often speared.

Today, steelhead are usually preserved by freezing. There are still a few people who smoke steelhead in early spring when other fish are not available.

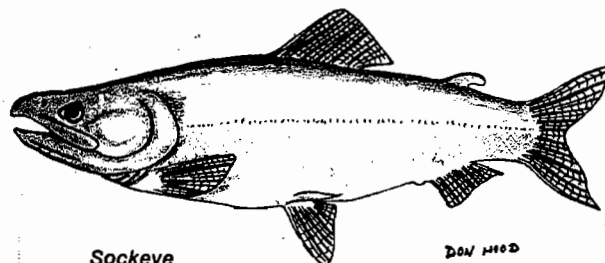


Steelhead

**Sockeye
Samlh**

Sockeye are usually harvested around the end of June for canning. They are also caught by drifting the river with a net. They are usually 3 - 5.5 kg. (7 - 12 lbs.).

Methods of preservation used today are: canning, jarring, barbequing, slug' and smoking. It is jarred/canned either plain or with a sauce. Fresh sockeye are usually cooked as steaks, because they are just the right size. Another favourite way is to make a mulligan (or stew) with potatoes and vegetables.

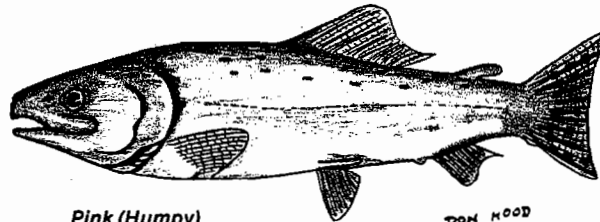


Sockeye

**Pinks
(humpies)
Kap'ay**

Pinks, or humpies, are usually caught from the beginning of June to the beginning of July. They are fished by drifting the river with a net. Mature pinks are usually about 2 kg. (4 lbs.).

In the old days, pink salmon were dried in the smokehouse. Today, they are canned, dried, barbequed and made into slug' or knum.



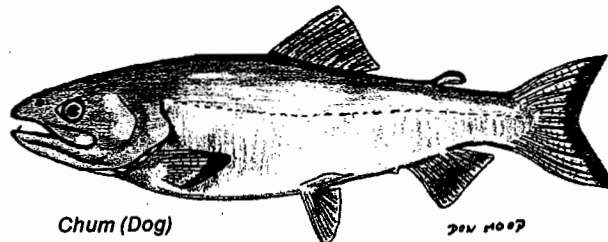
Pink (Humpy)

**Chum
(dog)
T'li**

The harvesting season for chum is usually from the beginning of August to the middle of September. Mature chum weigh 3.5 - 4.5 kg. (8 - 10 lbs.). The method of harvesting is again by drifting the river with a net. In the old days, the male dog salmon were hooked with a gaff during the August spawning season.

Years ago, chum salmon were smoked and stored in cedar boxes in the smokehouse. It is said that if you leave chum hanging in the smokehouse too long, it develops a different taste. Some people feel that chum is the least oily fish, and is therefore the best for drying and smoking. Fresh chum were eaten boiled whole in water with $\frac{1}{2}$ to 1 cup (125 - 250 ml.) ooligan grease added.

Today, chum are preserved by canning, jarring, salting, smoking and as slug'.

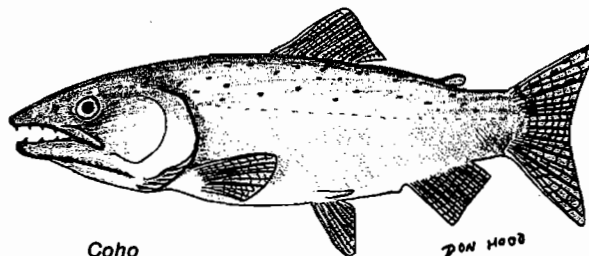


Chum (Dog)

**Coho
Ways**

Coho are usually harvested from the middle of September to the end of October. Mature coho weigh from 4.5 - 6.5 kg. (10 - 14 lbs.). They are caught by drifting the river with a net. In the old days, coho were also speared.

Today, coho are canned, jarred, smoked, barbequed, salted, and made into slug' or knum.



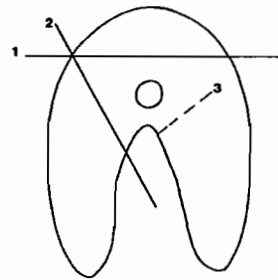
Coho

Nuxalk Ways of Preserving Salmon

The following species of salmon are preserved by cooking and sealing in cans or jars. Sockeye is the favourite for this method of preserving, but springs and coho are also popular. Some people also can pinks and chum.

Canning

To begin you must cut all the fins and the head off the fish. It is easier to handle the fish if you make a slit in the tail. You then slit the belly, remove the guts and wash the fish. The fish is then cut in rounds (thick steaks) the length of the can. If the fish is large, the rounds are cut into three pieces (see diagram below). The pieces are packed tightly into cans or jars and then cooked. Please refer to the section on how to can fish, page 61.



Cutting salmon to fit cans

Jarring

Jarring is done exactly the same way as canning except that jars are used instead of cans. Some people prefer to use jars because they can be re-used year after year, as long as there are no cracks or chips in them. Cans can only be used once.

Barbequing

Sockeye, coho, spring and pink salmon are barbequed.

To get the fish ready, cut off the head and the fins near the head and on the belly of the fish, but leave the large fin on the back of the fish. It is easier to handle the fish during the cutting if you make a slit near the tail - it lets you get a better grip on the fish. Next, start cutting the fish from the back. The first cut is made beside the back fin and around the body cavity. The second cut goes under the fin and down the other side of the body cavity. Cut close to the backbone, using it as a guide. Cut as close as possible to the ribs. When you complete one side, flip the fish over and repeat the procedure. When both sides are done the backbone and insides should separate easily from the outer skin, as shown below. The backbone and guts are removed together and the flesh is left lying flat. This is called an "overcoat". The overcoat should be no more than $\frac{3}{4}$ to 1 inch (2 - 2.5 cm.) thick at the thickest point.



Cross-section



Overcoat

Cutting for BBQ and smoking



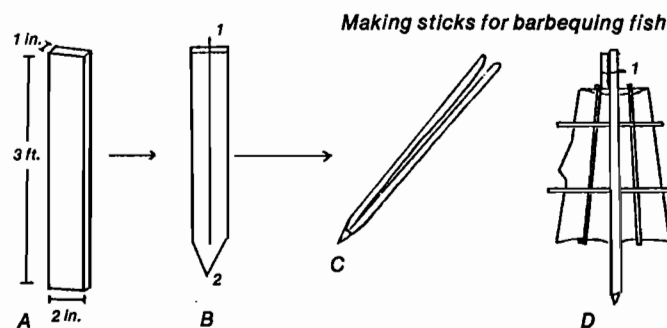
An elder demonstrating how to cut fish.
(Felicity Walkus)

Soak the overcoats in brine for 20 minutes to 1 hour. Then hang them to dry overnight in the smokehouse. The overcoats are then mounted on barbeque sticks. Some people like to dry them in the sun for an hour or so.

The barbeque sticks are all made from 1" x 2" sticks of cedar wood which are about 3 ft. long. One end of the stick is left open (to insert the fish into) and is later wired together to hold the fish in. The opposite end of the stick is sharpened to a point to be stuck in the ground (see below).

Before you use them, first soak the barbeque sticks in water while cutting and soaking the fish. This is done so that the barbeque sticks don't burn during the barbequing process.

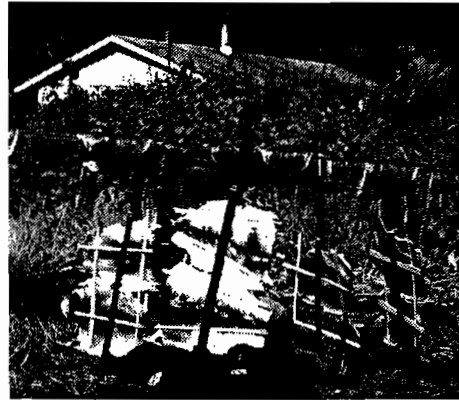
Mount the fish on the barbeque sticks. The head end of the fish is inserted and centered at the pointed end of the stick. Next smaller cedar sticks are placed lengthwise along the fish. Other cedar sticks are woven across the fish through the lengthwise sticks. When one side is done, you flip the fish over and do the same for the other side, making sure to match the sticks on both sides of the fish. Wire the top of the barbeque stick closed.



- A. BBQ sticks made from one piece of cedar 1 inch x 2 inches x 3 feet.
- B. A slit is cut from 1 to about 8 inches from 2 which is whittled to a point.
- C. The inside surfaces of the stick are whittled down to give some room for the fish. The point is reinforced with wire.
- D. The overcoat is slipped between the two halves of the stick which are held together at 1 by a wire.

Another variation of preparing barbequed fish is to use oven racks to lay the fish on. The fish and racks are then mounted on sticks and placed beside the fire.

Start the fire about $\frac{1}{2}$ hour before cooking the fish. Put some rocks on the bottom of the fire - this keeps the fire hot if the flames die down. Alder, cedar, or other wood may be used. Use a small, high-burning fire. Stand the barbeque sticks around the fire, about 1.5 feet (0.5 meters) from the fire. Turn the fish when the fat and juice have formed a whitish substance on the first side. If the fire gets too hot, move the fish back from the fire. Barbequed fish is done when the "fat stops dripping". Barbequing usually takes 2 - 3 hours.



Barbequing sockeye

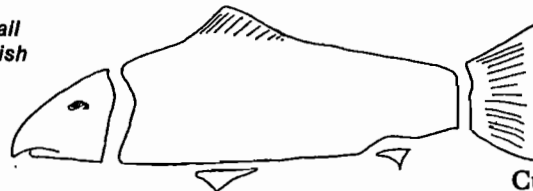
After it is barbequed, the fish can be canned or jarred (plain or with a sauce) or frozen. If it is to be canned, the fish is left on the barbeque sticks and hung in the smokehouse over a low alder fire for 2 days. It is then cut and canned.

Smoked Fish

All species of salmon are smoked: pink (humpies), sockeye, chum (dog), coho, spring and steelhead. Some people feel that sockeye and spring are too fatty for smoking.

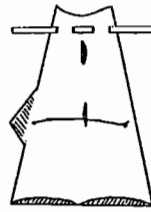
Cut the fish, and remove the head and tail. Remove all the fins except the one on the back - you will need it later to hold the stick in place.

*Removing head, tail
and fins from a fish*



Cut the fish as you would for barbequed fish, but leave only about $\frac{1}{2}$ inch (1 cm.) of flesh under the skin. Cut the rest away in thin strips for sluk' (page 12). Cut as close to the skin as possible, but making sure not to cut through it. Flip the fish over and repeat the process on the other side. When the skin is completely cut away from the backbone, make little slits in the fish. Cedar sticks are woven through the slits. The stick at the tail end of the fish is used to hang the fish from the smokehouse rafters. The other stick keeps the fish flat during smoking. These smoked overcoats are called knum, and they can be eaten fresh, canned, jarred or frozen.

You need a small branch with three points at one end. You also need a small, thin stick. Put the branch through the slits near the back fin. The cedar stick is put in the holes near the tail, and used for hanging the fish in the smokehouse.



Placement of sticks
for smoking

For half-smoked fish, the fish is hung in the smokehouse for one to four days. The fire is big for the first day and smaller for the remaining days. The fish is hung 6 feet (2 meters) above the fire. The wood should be alder.

Sluq'

Once the barbequed or smoked fish has been cut, you are left with the backbone with some remaining flesh on it. From this you can make sluq'.

Cut strips of flesh approximately $\frac{1}{4}$ inch (0.7 cm.) thickness down the length of the fish. This is done all the way down the backbone. Depending on your personal taste you can soak the sluq' in a brine solution. Whether it is soaked or not, most people hang the strips out to dry in the wind for $\frac{1}{2}$ - 1 hour. The small rib bones are then removed from the sluq'. A toothpick or twig is woven through the thickest part of the sluq'. The toothpicks are threaded onto slender sticks which are placed across the rafters of the smokehouse.

The sluq' is hung to smoke overnight with the alder fire going. In the morning turn them so they smoke and dry on all sides during the day. If the weather is good, the sluq' will dry enough so that the remaining bones can be pulled that evening. But if the weather is cold and rainy, the sluq' will have to hang to dry another night with the fire going.

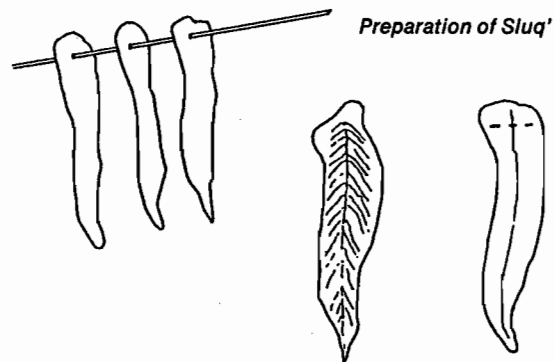
Some people pull the bones out on the third day after cutting the fish. When to pull the bones out depends on how dry the sluq' is. Test this on the second evening of the smoke-drying. After the bones are pulled, the sluq' is put onto ooligan sticks and hung on the rafters of the smokehouse.

Do not put the fish directly above the fire, but hang it on one end or to the sides with the fire built in the middle of the smokehouse. This way if the fire gets too hot, the heat will not cook the fish.

To smoke the sluq', have the fire so that there is not too much smoke coming from it. Some people keep the door of the smokehouse open a bit to make the smoke circulate better. After the sluq' is on the ooligan sticks, it should be smoked for three days. When finished smoking, take the sluq' into the house and hang them up someplace for a few days to complete the drying. The basement is a good place to hang them. Thin strips of sluq' dry faster than the thick strips.

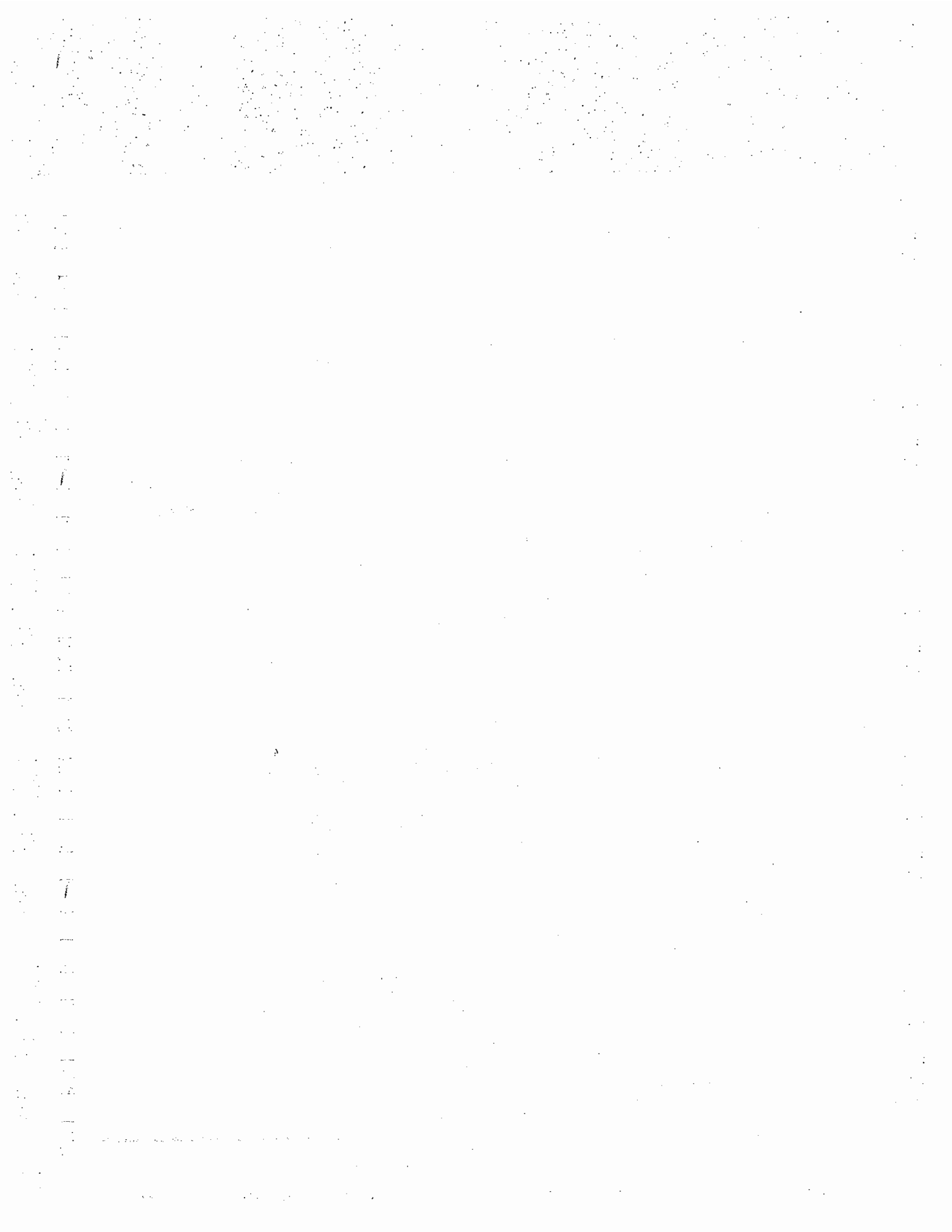
Hanging them in the house for this time helps them to keep from having too strong of a smoky taste. Then the sluq' can be stored in the freezer, or then can be jarred or canned.

If you have a lot of fish to cut for smoked fish and sluq', allow one day between cuttings, so you will have time to take the many small bones out of the sluq'. Usually pliers are used to remove these bones.



Salted Fish

The main fish which are salted are: spring, coho and chum (dog). Some people feel that coho gets too dry when it is salted. It is said that the best flesh for salting comes from the fatty belly of spring salmon.



For salted fish, cut the salmon the same as for barbequed fish, then cut the fish into small pieces about 5 inches (15 cm.) square. Cover the bottom of a clean crock or plastic container with salt. Put a layer of fish in the crock and add another layer of salt, being sure to carefully cover all parts of the fish pieces. Continue this until the crock is full, finishing with a layer of salt. Leave the fish in the salt until you are ready to prepare it for a meal.



Salting salmon

To prepare the salted fish for a meal, first soak the pieces in running water for 4 to 6 hours. Then simmer the fish pieces for about 20 minutes.

Fish Heads

The heads of spring salmon and coho are usually used.

The heads are either boiled in a stew or baked in an oven. They can also be barbequed over an open fire then smoked and stored for later use. Five fish heads will make a stew for 7 to 9 people. Many people consider the heads a real delicacy.

Fish Backbones

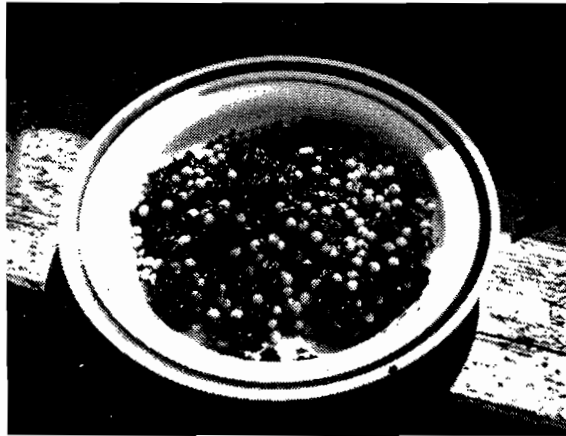
After making slug', you are left with the backbone. Wash the backbone with running water, and then soak it for one hour in a brine solution. Make two slits on either side of the tail end of the backbone of the fish and thread a string through it. Or you can thread backbones directly onto slug' sticks. The backbones can either be smoked or dried. If smoked, they are hung in the smokehouse for 2 or 3 days.

In the past, coho or dog salmon bones were used. The bones of pinks (humpies) are said to be too small, and some people feel that spring salmon bones are too fatty to be good when smoked.

In the old days, families used to get together to make soup from dried fish backbones. Each family would bring their dried fish spines. The spines were cooked with water in a cedar box. Hot stones were placed in the box to bring the water to a boil. Cooking continued for a long time, until the bones were soft. The bones were then mashed up using a big wooden paddle. Then everyone would help themselves to the rich, thick soup.

Salmon Roe

Salmon roe is eaten fresh and is also ripened into a favourite Nuxalk food. Fresh roe can be simmered or fried and eaten with vegetables or seaweed. The skeins are usually left on fresh roe.



*Fresh steelhead roe
with seaweed and grease.*

The roe of steelhead, chum (dog), coho and pink (humpies) are preserved by ripening or fermenting. Roe from sockeye or spring salmon is not used for ripening as it is "too rich". People say that sockeye and spring salmon roe are poisonous if ripened. Preserved, ripened roe is called "stink eggs" or mutsi. Mutsi can be made in two ways, called either tmkwa or anultz.

Tmkwa is made from the roe of steelhead, chum or pink salmon. Coho salmon is also used, but only from the late part of the run. Coho from the early part of the run are said to be "too rich", meaning full of fat, for tmkwa. When making tmkwa, the roe is washed well in several changes of fresh water. Some people like to use salted water. The skeins are removed and the roe broken up. Then the roe is allowed to sit in fresh water at room temperature for several days or up to 3 - 4 weeks in cool weather. Some people like to put salt crystals in with the roe. Others don't add any water. But however you do it, be sure that every few days the roe is stirred to give it some "air".

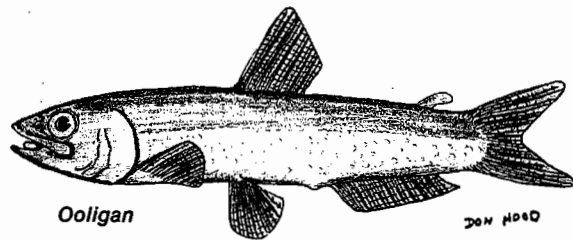
Anultz is made from coho caught in the early part of the run or is made from little humpies. The whole skeins are stacked in a crock or box and left to ripen. No water is added. In the old days, anultz was made in boxes with holes in the bottom, so that the juices could drip out. This way the anultz would get hard and dry. It was sometimes called Indian cheese. Some people say that anultz does not keep as long as tmkwa. It is also said that coho anultz is very rich and has a lot of calories.

In the old days, intact roe skeins were smoked and dried. Spring salmon roe was most often used this way. The dried roe was soaked and then boiled and eaten with hemlock cambium. These roe were also used to make paint.

Some people have reported getting sick from eating mutsi. Mutsi should be prepared carefully. Make sure that you remove the gall bladder (a green or yellowish sack) from the roe. If the gall bladder breaks and some of the bile gets on the roe, the mutsi will sour. It is also important to stir tmkwa every few days to give it some "air", which will prevent the growth of a dangerous food bacterium that can cause food poisoning (botulism). For the same reason, both tmkwa and anultz should never be prepared or stored in plastic containers with airtight lids, or plastic bags, unless it is kept frozen.

If you have never made mutsi, get lessons from one of the elders before you try it on your own.

Ooligans Sputc



Ooligans are usually harvested from about the end of March through the beginning of April. They usually come out at the time of the new moon. It is said that when the new moon curves down, the river will be empty, but if the moon curves up, the river will soon be full of ooligans. The harvesting methods used for ooligans are mainly: seining the river with nets, staking the nets in the river, or dipnetting. Sometimes children wearing gumboots wade in the water and catch ooligans by hand. Anyone in the village can get a pail of fresh fish when the seine-netters come to shore.



Seine-netting ooligans.

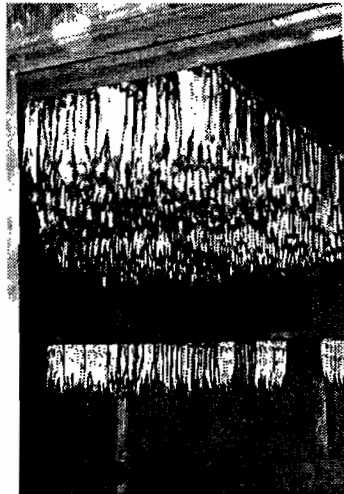
While the ooligans are running, many people eat them fresh every day. They can be boiled, baked, or dipped in flour and fried. Some people eat cooked ooligans in sandwiches. People say that eating a lot of ooligans (especially fried ooligans) will make you very sleepy.

There is a story that people are not supposed to drink water when they eat the first ooligans of the year. If they do, then the "river will get too high".

There are several methods of preserving ooligans: smoking, drying, salting, and freezing. Once the ooligans are smoked or dried they can be jarred/canned either plain or with a barbeque or tomatoe sauce. Some people do not smoke the first ooligans caught, because they say the fish are "too rich", meaning too fatty. A few Nuxalk families like to remove the guts of the ooligans before preserving them, but most people just wash them well under running water. Heads, tails, and fins are always left on when preserving the fish.

Smoking/Drying

First the ooligans are put in a brine solution (about 2 cups - 500 ml. - coarse salt in 3 gallons - 12 liters - water) to soak for ½ to 1 hour. They are then put on 2 to 3 feet (0.6 - 0.9 meters) long cedar sticks, usually 12 - 25 fish per stick. The sticks are pushed in through the gills and out through the mouth. The sticks are then hung from the rafters of the smokehouse. Once in the smokehouse, the fish are spread apart a little bit so that they are not touching each other. If the fish are too close together they will not dry evenly, and some may spoil. The smoking process continues for 2 - 6 days, depending on whether the ooligans are to be half-smoked or completely dried. Alder wood is used for smoking.



Ooligans hanging from sticks in smokehouse.

When the ooligans are dried they are either frozen in plastic bags or jarred/canned either plain or with a sauce. In the early days, sticks of hard dried ooligans were hung from the house rafters or in the smokehouse. Small, dried ooligans can be eaten whole (including heads, tails and guts) as snacks. For a meal the dried ooligans are usually simmered for 20 to 30 minutes and then served. People usually remove the heads before eating these cooked ooligans.

It is said that in the old days, dried ooligans were lit and used as candles. They burned because of all the oil in them. Ooligans are sometimes called "candle fish".

The salting process for ooligans is the same as that done with other fish. Salt is put in the bottom of a clean crock or plastic container, a layer of ooligans is placed in, then another layer of salt (making sure that all the ooligans are covered with salt). Layering continues until the container is full - ending with a layer of salt. Coarse salt is used. The ooligans are salted whole, and the heads and tails are removed only right before the fish are eaten.

Salted ooligans can be eaten 2-3 days after being placed in the salt, or they can be kept for up to a year. Before they are eaten, salted ooligans are soaked in several changes of water for 1-2 days. This removes the excess salt. They are then boiled for about 30 minutes.

Freezing

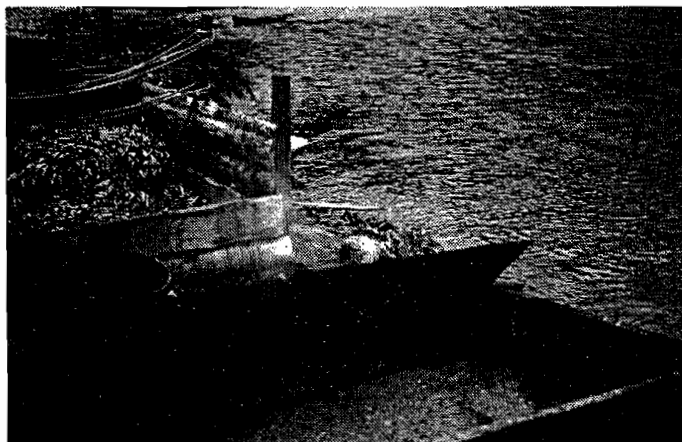
To freeze fresh ooligans, place the clean fish close together in plastic bags, squeeze the air out of the bags, seal them carefully and place them in the freezer. Fresh frozen ooligans keep only for about 2 months, before the flavour changes, but smoked/dried frozen ooligans keep for much longer.

Ooligan Grease

Ooligan grease is made during the season that ooligans are harvested. The ooligans are seine-netted from the river, packed into a boat, then hauled by the bucketful to a "stink-box" built on the river bank. Some of the elders remember when only the fattier, richer, female fish were used for grease - this was done by using the early part of the run. Nowadays, seine-netting is done when the run is fullest, and both female and male fish are used.

Using cedar planks, build a holding bin (also called a "stink-box") approximately 3 ft. high, with the length depending on the amount of grease you will be cooking (8 - 12 ft.). Have one end of the "stink-box" made with removable boards. This end will be the closest to the cooking box for ease of loading the ripened ooligans. Line the bottom of the "stink-box" with cedar boughs. Use enough boughs (2 or more layers) to allow drainage of blood and water from the ooligans as they are aging. Fill the "stink-box" with fresh netted ooligans beginning at the end with the removable boards. Cover the box with boards or a tarp, and let stand for 7 - 10 days. Start cooking the ooligans after 7 days or less, if the weather is warm, or anywhere after 10 days if it is cool. Each family has their own way of telling when the fish are ripe enough - either by the smell or feel of the fish. If the fish are properly ripened, one "stink-box" with 7 tons of fish can yield up to 100 gallons (380 liters) of grease.

After ripening, the ooligans are put into about 9 inches (20 cm.) of boiling water in a cooking box over an open fire. It takes about 2 hours to bring the water to a boil before the fish are put in. Once the fish are in the cooking box, the fire must be tended very carefully so that the water barely simmers. It is said that if the fish are boiled, the "grease goes back into the ooligans". If the water boils, cold water from a bucket is carefully added to cool down the boiling "spot". The fish are stirred every 5-10 minutes during the cooking to help release the oil.



Ooligan box and cooking box by the river.

When the cooking is finished, more cold water is carefully added to the box to cool it down, so that all the oil will rise above the water and fish. The oil is then scooped off the top into clean pots. To get the last bit of oil, use a board to push the oil to one side and then scoop it out.



Scooping off the ooligan oil.

When all the oil has been skimmed off, the cooking box is emptied and hosed down. The fish waste is released through a hole in the bottom of the cooking box and usually runs down into the river. Some people use the waste as fertilizer for their gardens.

The pots of skimmed oil are heated on a pump stove or a wood stove. The grey foam which forms on top plus any fish bits are skimmed out of the oil. As soon as the oil comes to a boil it is removed from the stove. Some families use the traditional method of re-heating the oil by adding hot rocks to the pot of oil, rather than using a stove. They like the "hot rock flavour" this gives the grease. Some people like to reheat and skim the grease 2 or 3 times, to make sure that it will not get "strong-tasting". Each family has their special way of preparing the grease.

After the heating is done, the grease is poured through several layers of cheesecloth into gallon jugs. The cheesecloth catches any remaining bits of fish and foam. The resulting grease is golden and thick. The jugs are allowed to cool and are then stored in a cool, dry place. Some people like to store their grease in a freezer; they say that this keeps the grease from getting "strong-tasting." Properly cooked and bottled grease can be stored at room temperature for at least a year without spoiling.



Finished ooligan grease.

Ooligan grease has always been an important part of the diet of the Nuxalk people. It is eaten with dried fish, smoked fish, potatoes, herring roe, salmon roe, thimbleberry shoots, cow-parsnip, roots, berries, seaweed, and is used to make bannock and bread. The elders say that everything tastes better with ooligan grease.

Some people use grease as a medicine. Drinking some warm grease is said by some people to be good for tuberculosis. Grease has also been used to treat food poisoning or red tide poisoning, because drinking one half cup or more of grease at one time will bring on diarrhea.

In the old days, grease was also used to make snow ice cream. When getting ready for a feast, a new canoe was packed with snow, then a layer of grease, then more snow. When the snow and grease were frozen, it was cut into blocks. The blocks were eaten. Later, when the leftover snow in the canoe had thawed, the leftover grease floated to the top. This grease was collected and given to widows who had no one to help them make ooligan grease.

In the past, ooligan grease was also used to lubricate leather and wooden tools.

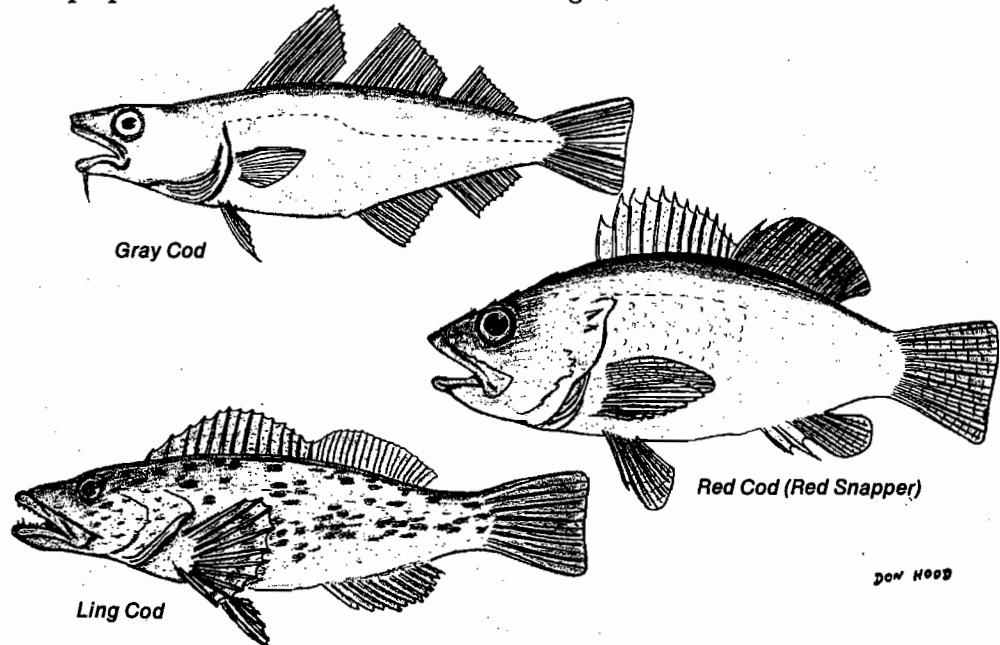
Ooligan grease is a very nutritious food. It has more unsaturated fats than butter or lard. Ooligan grease is also a very rich source of vitamin A and contains more vitamin E than either margarine, vegetable fats or lard.

The Foods - Other Seafoods

The Cods - Ic7iixw, Nalhm

Rock, red and ling cod can be harvested all year long. They are usually caught by jigging. The cod can be caught anywhere in the inlet.

In the past, cod were always eaten fresh, but today they are sometimes frozen. The fish are filleted and the skin removed. The fillets can be frozen, or eaten fresh. They can be dipped in flour and fried, or dipped in batter and deep fried. Some people like to smoke cod fillets before freezing them.



Trout Tutup

Trout are harvested all year round from the river. Today they are usually caught with a rod and reel, and eaten fresh soon after they are caught.

Herring Klkl

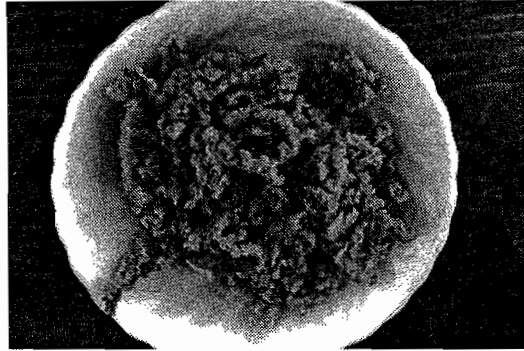
Herring are caught about mid February to April. Today they are caught using a herring punt and net way out in the inlet. In the past, herring were scooped out of the water with an oar that had sharpened nails or pieces of wood sticking out of it.

Herring can be eaten fresh, boiled, or coated with flour and fried. They are also canned either plain or in a sauce. Some people pickle them. They are also frozen fresh. In the old days, herring were smoked.

Herring Roe At

Herring eggs are a favourite Nuxalk food even though they are not harvested at Bella Coola. Herring eggs are sent by family and friends from Bella Bella either fresh or dried on hemlock branches or salted in containers.

To cook, pour boiling water over the eggs, or steam them in a little boiling water for a very short time.



Herring eggs on hemlock branches.

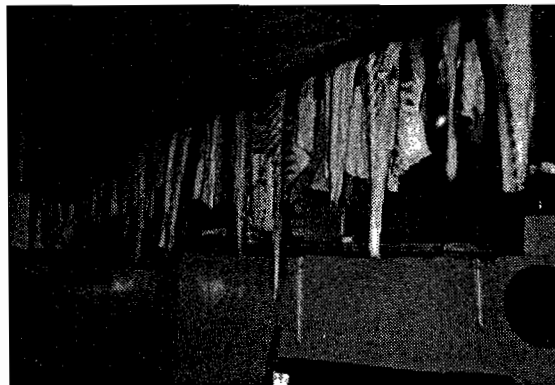
**Flounder
Pays, Nukakals**

Flounder can be harvested all year round. Today, they are caught mainly by jigging from the dock or from a boat out in the inlet. In the old days, flounder were speared with a sharp pole.

Flounder is not usually preserved except by freezing. It is eaten fresh, and usually cooked by frying either whole or in fillets.

**Halibut
P'wi**

Halibut are caught all year round. It is eaten fresh, usually cut into steaks. The heads can be boiled and eaten. The tails are smoked for 2-4 days and then boiled and eaten. Today, halibut is usually preserved by freezing. Long ago, halibut were cut into slug' and sun dried. Some people still dry halibut.



Drying halibut at home.

**Seal
Ascw**

Today, seal can be hunted all year round. In the past, the Nuxalk people only hunted seals once a year. More than one hunt was taboo. Today, seals are killed with a rifle. In the old days, skilled hunters knew how to kill a seal by hitting it with a club.

Long ago, people used the seal skin to make silky moccasins and they also salted the seal meat and fat. When ooligan grease was scarce, seal fat was used. Today seal meat and fat is frozen, and usually cooked by boiling or baking.

The Foods - Shellfish

Mussels Smiks

Mussels can be harvested all year round, except during a red tide. (See note below.) At low tide they are pried off rocks with a knife.

In the old days, mussels were cooked by placing them beside a fire. As soon as they opened, they were eaten and enjoyed. Today mussels are steamed open and the meat is then eaten or frozen.

Crab K'inacw

Crab can be harvested all year round, except during a red tide. They are usually caught in crab traps in the inlet. In the old days, crabs were speared with a sharp pole.

Crab is cooked by steaming or dropping into boiling water, and then the shells are cracked and the meat taken out. In the old days crab meat was preserved by drying. Today crab is usually preserved by freezing, and some people like to can it.

Abalone Plxani

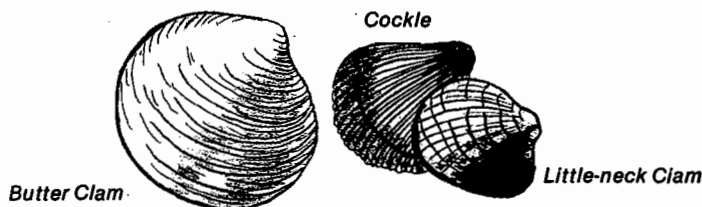
Abalone are gathered all year round, except during a red tide. At low tide abalone can be pried off the rocks with a knife.

The abalone meat is removed from the shell, coated with flour and fried. Abalone is preserved either in jars/cans or by freezing. In the old days, people from Bella Bella jarred abalone and traded the jars to the Bella Coola people.

Clams Ts'ikwa

Clams are harvested all year round, except during a red tide. Clams are usually dug around Bella Bella or Namu.

To preserve the meat of clams, you can either jar/can or freeze them. Clams can also be dried in the oven or on racks in the sun. In the past clam meats were dried and smoked slightly. To eat them fresh, fry them or cook them in a chowder.



DON HOOD

Note:

Red tide is a condition in the sea caused by a combination of warm water, sunlight, and nutrient levels. This leads to a growth of small sea animals which produce a serious poison. The poison is concentrated in shellfish. The season of the red tide can vary, but is usually in the warm times of the year. Most commercial fishermen are informed about when the red tide warnings are out. If you are in doubt about whether or not to harvest shellfish because of the red tide, check at the Fisheries' Office in Bella Coola.

Sea Cucumber
71ats

Sea cucumber can be harvested all year round. In the past, sea cucumbers were harvested using a tool similar to a rake; it was pulled along the sea floor and the sea cucumbers were scooped up.

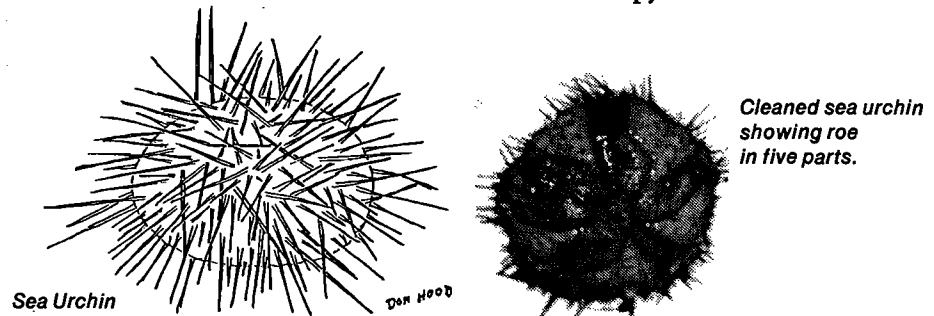
The head of the sea cucumber is cut off and the guts are squeezed out; the remainder is washed and scraped. This "stiffens" it and removes the slime. The sea cucumber is then boiled in water for 15 minutes, cut open, and the outer skin is removed. The white strips of meat inside are eaten, but some people also eat the skin.

Some people used to pickle sea cucumbers. Today, however, few people use sea cucumbers at all.

Sea Urchin
Mtm

Sea urchins are collected out in the inlet from the end of October to January, usually after the first snowfall. They are gathered using a dip net to scoop them up. This is done during low tide. In the old days, they were also speared with sharp poles. Long ago, four men were drowned while they were trying to get "sea eggs", because they were using river canoes instead of sea canoes.

To eat sea urchins, split the shells open with a knife, wash them out with running water, and remove the loose insides. The meaty roe parts are saved and eaten raw. The roe is in 5 parts and is a clear orange colour. Sometimes, there is also a milky white substance around the roe; this can be eaten too. Long ago, the roe was sometimes dried on rocks and eaten when it was crispy.



Octopus
(devil fish)
Sts'mas

In earlier times, the Nuxalk people ate octopus, but they only ate the young ones. At low tide they could find the octopus in shallow water among the rocks. It was said that only strong men could catch and kill octopus. The arms of the octopus were cut up, pounded with rocks to soften the meat, and then cooked.

There is an old story that octopus sometimes climb out of the water, up onto the shore and into trees. They would sit in the trees sucking the sap and making loud sucking noises. One man in South Bentinck heard noises. When he went to the tree the octopus grabbed him and tried to pull him into the water. The man managed to free himself and was not drowned.

It was a traditional Nuxalk belief that women should not eat octopus nor any other any cave-dwelling animals (including bears and beaver) during their child-bearing years. If they did eat these animals then they would "have trouble during birthing".

The Foods - Berries

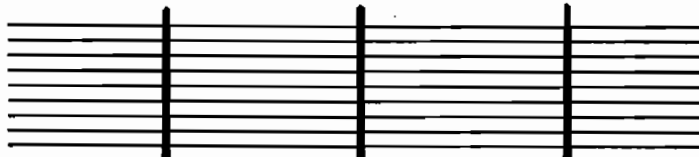
In the old days, the Nuxalk people used to carefully burn sections of mountainsides, to provide good berry-harvesting areas. The fire cleared the trees and under brush and the number of berry bushes increased. Two to three years after the burning, good crops of berries could be picked. Even today, good berry-harvesting areas are found where there had been forest fires or logging.

The Bella Coola Valley is very rich in its resources of wild berries. There are many delicious kinds for you to try, and each one is described separately in this section.

In the past, the Nuxalk people dried many varieties of berries, including wild raspberries, thimbleberries, red huckleberries, blueberries, saskatoons, salal berries, bunchberries, salmonberries, soapberries, red elderberries, blackcaps and mountain bilberries. The berries were cooked in cedar boxes, using hot rocks to bring them to a boil. The cooked berries were mashed, and then spread on drying racks. The drying racks were covered with thimbleberry leaves and the berry pulp was spread on top of the leaves. The berries were either dried in the sun or in a smokehouse. Some people liked to put bowls under the drying racks to catch the juice. The juice was then poured back on to the berries so that all the flavour would be preserved. Other people did not bother to save the berry juice.

The berries were left on the drying racks for 1 or 2 days, and then turned over and allowed to dry on the other side. As many as ten racks were made and used for different varieties of berries. The dried berries formed cakes about 1 foot (30 cm.) wide, 3 feet (90 cm.) long and 1 inch (2.5 cm.) thick. The dried berry cakes were stored in cedar boxes in a warm area of the smokehouse. The cakes were stored wrapped in thimbleberry leaves or covered in ooligan grease. The ooligan grease mixed with berries made a very nutritious food for the Nuxalk people all winter long.

To make a drying rack, four pieces of cedar wood about 24 in. (61 cm.) long, and 24 sticks 6 ft. (2 meters) long were needed. The 6 ft. sticks were tied across the 24 in. sticks. The 24 in. sticks were about 2 ft. (61 cm.) apart.



Design for a berry drying rack.

Nowadays, the Nuxalk people still use the local and traditional berries. They are eaten fresh or are preserved frozen or in jars. People also make jelly and dry jam from the berries. The term 'dry jam' means to cook the berries with sugar to thickness. Snow was sometimes mixed with dry jam and ooligan grease and eaten as ice cream. Raspberry dry jam was the favourite of many people. Two cups (500 ml.) or snow were mixed with 1 cup (250 ml.) of dry jam and 2 tbsp. (30 ml.) or grease.

There are many kinds of Nuxalk berries. Here they are listed in alphabetical order by common name. If you know only the Nuxalk name of a food, see Appendices 1 and 2 where the Nuxalk names and scientific names are listed in alphabetical order.

Black Hawthorn
Q'ay

Black hawthorn berries are harvested in July and August. The bushes are found along streams, shorelines and roadsides, and in damp meadows. The berries grow in clumps and are easy to pick, although you have to be careful of the thorny branches.

In the old days, people mashed the berries, strained out the seeds and then boiled the fruit. After being boiled, they were stored in cedar boxes.

Today, the berries are made into dry jam or jelly. They are very good for jam or jelly because they contain a lot of pectin, a natural thickener. The seeds should be removed first. Dry jam is stored in cellars or freezers and taken out when needed.



Black hawthorn

Blackcaps
(black raspberry)
Usukw'ltih

Blackcaps are picked from the end of June to the middle of August. They are found in open woods and clearings. They are easily harvested and are a special favourite. They are best when they are a dark black, after all traces of red are gone.

In the old days, people used to dry them on drying racks in the sun or in the smokehouse during the night, or when it was raining. This drying method was the same as that used for other berries. The dried berries were either soaked in water and then eaten, or mixed with ooligan grease before being eaten.

Today, people make dry jam or jelly or freeze the berries and use them throughout the year in fruit salads. Blackcaps are very popular mixed with other berries (such as raspberries or huckleberries) in jam.



Blackcaps

**Bunchberries
(dwarf dogwood)
P'xwlht**

Bunchberries are a bright orangey-red when ready to pick, and they are harvested from the end of June to the end of August. They grow close to the ground in damp evergreen forests and logged areas. The berries are easy to find and harvest.

In the old days, bunchberries were dried on racks. Before being eaten, they were soaked and then mixed with other berries, depending upon individual taste.

Today, bunchberries are eaten with ooligan grease and a little bit of sugar. They are also jarred, mixed with red huckleberries or made into dry jam with thimbleberries.



Bunchberries

**Grey Blueberries
("mouldy" or oval-
leaved blueberries)
Spuuxaltswa**

Grey blueberries are harvested from the end of June to the middle of August. When ripe, they are a blue-purple colour, and look as if coated with grey dust. They are found in moist forests and along streams. There are a lot of these berries in the Bella Coola Valley.

In the old days, they were dried, as were other berries. Now people eat them fresh, freeze them, or use them in pies, dry jam, and jelly. They are also used in fruit salads, pancakes and muffins.



Grey blueberries or oval-leaved blueberries

Highbush Cranberries
(squashberry)
St'ls

Highbush cranberries are picked in July through to October. They can be picked even after the first frost. They grow along streams and in swamps and moist woods on tall bushes. They are ready to pick when they are red and slightly soft.

The berries are delicious when mixed with wild crabapples, then lightly cooked and mixed with a bit of ooligan grease and sugar. These berries are always cooked before being eaten, and can be mixed with other berries.

In the old days, highbush cranberries were stored in 10 gallon barrels filled with water and covered with ooligan grease. Now, highbush cranberries are preserved in jars.



Highbush cranberries

Kinnikinnick
(bearberry)
Milicw

Kinnikinnick berries are harvested in September and October. They are found in logged-over areas, dry slopes and well drained soils in exposed areas. The bushes grow in patches close to the ground. The berry is red when ready to be picked.

In the old days, people dried the berries. When they wanted to eat the berries, they then soaked them in water and added ooligan grease. This reduced the dryness of the berries and prevented people from becoming constipated. The dried berries were also used to trade with the Bella Bella people. Kinnikinnick were traded for seaweed or sea urchins ("sea eggs"). The dried kinnikinnick were also cooked mixed with flour to make dumplings. The berries are soft and mealy and can be used to thicken stews. Chiefs ate the berries cooked with bear fat or mountain goat fat. The leaves of the plant were dried and used as tobacco.

Today, kinnikinnick berries are usually eaten fresh or frozen or preserved as dry jam. They are often mixed with other berries.



Kinnikinnick

**Mountain
Bilberries
(black huckleberries)
Sgaluts**

Mountain bilberries are harvested from the end of June to the middle of August. They grow on mountain slopes and in dry evergreen forests. They are dark blue when ready to be picked, and are easily harvested.

In the old days, these berries were eaten fresh or dried as other berries were. Today, mountain bilberries are not used very much because they are hard to find, but they are still a great favourite. They are usually mixed with blueberries to make a dry jam or jelly or they are frozen. They are also used in fruit salads, pancakes, cupcakes and muffins.



Mountain bilberries

**Red Elderberries
K'ipt**

Red elderberries are picked in July, August and part of September. They are found in open swampy areas and forest clearings. The berries are red in colour and grow in large clusters, so are easy to pick.

In the past, red elderberries were always cooked or dried; they were never eaten raw. They were dried on drying racks, then stored with thimbleberry leaves in cedar boxes. When people wanted to use the dried berries, they soaked them in water, cooked them, then added ooligan grease for flavour.

Today, red elderberries are cooked in a little water with their stems on for about 20 minutes. Some people add sugar and ooligan grease to the cooked berries, other people do not add anything. They are then eaten right off the stems or they are jarred or made into dry jam. Other fruit may be added to the dry jam for extra flavour.



Red elderberries

Red Huckleberries Sqala

Red huckleberries are pinkish/red when ready to be picked and are harvested from July to late August. They are found in shaded forests and they are easy to pick. They are eaten fresh, made into dry jam, or dried.

Long ago, the berries were harvested and then dried on drying racks. After they were dried, they were stored in cedar boxes.

Today, red huckleberries are preserved frozen, as dry jam or as jelly. They are eaten by themselves or with blueberries, wild raspberries and other fruit in fruit salads. They are sometimes mixed with apples, oranges or peaches in dry jam.



Red huckleberries

Salal Berries
Mikw'lh

Salal berries are picked in June through to September. Salal is quite rare in the Bella Coola Valley today. Salal bushes are found in damp forests and logged areas. They are quite easy to harvest in clumps, depending upon the growth of berries on each branch.

In the old days, the berries were boiled using hot rocks. They were then mashed and formed into cakes about 1 foot (30 cm.) wide, 3 feet (90 cm.) long and 1 inch (2.5 cm.) thick. The cakes were stored in cedar boxes in a warm area of the smokehouse. Salal berries can be used to sweeten other berries, especially salmonberries.

Today, people make dry jam or preserves from salal berries.



Salal berries

Salmonberries
Qaax

Salmonberries are harvested in June. They are found along roads, and in swamps and damp woods. They are easy to pick and are very abundant. Salmonberries are ready for picking when they are soft and juicy. Their colour can be any shade of yellow, orange, or red when they are ripe.

Long ago, salmonberries were eaten fresh with ooligan grease or dried and stored for the winter. Today they are eaten fresh or made into dry jam or are frozen. They are not usually mixed with other berries.



Salmonberries

Saskatoons
(service or
June berries)
Sq'sk

Saskatoon berries are harvested from the end of July to the first two weeks of September, and they are ready for picking when the colour is a deep purple/red. They are found on open hillsides and in dry forests. They are easy to pick. They are somewhat dry in texture, but they have a good flavour.

In the old days, the berries were dried and then stored in cedar boxes. They were eaten with ooligan grease, after they had been soaked in a little water to soften them.

Today, saskatoons are made into dry jam or frozen in bags for fruit salad. They are mixed with other fruit in dry jam, such as oranges and peaches.



Saskatoons

Soapberries
Nuxwsi

Soapberries are red when ready to be picked in July, August and part of September. They are found in dry, open woods, especially at the head of the Valley, or up by Anahim. Soapberries are often picked by hitting the bush with a stick and letting the berries fall into a blanket spread on the ground, or into buckets. Because they are so small, they take a long time to pick by hand.

Today, soapberries are frozen or preserved in jars or cans. Long ago, they were dried and placed in cedar boxes with thimbleberry leaves in between them.

To make soapberry "ice cream", whip berries in a glass or metal bowl free of grease. Add a little sugar and some water to the whipped berries, then whip some more. Some people also add fruit such as bananas or raspberries after the soapberries are whipped.

Long ago, soapberries were whipped with bunches of inner cedar bark or thimbleberry or salal branches in birch bark bowls. It takes about 10 minutes to whip them this way, if you are whipping briskly.

In the past, snow flavoured with smoked mountain goat fat was sometimes added to the soapberry ice cream after the berries were whipped to give added flavour. To smoke the snow, it was packed into a basket with lots of holes in the bottom. The basket was hung up high off the ground. Goat fat was placed on a red-hot rock which was positioned under the basket. In this way the smoke from the fat flavoured the snow.



Soapberries

Sun Berries
(grey currants or
stink currants)
Q's

Sun berries are ripe in July and August. The bushes are found in black mucky soil along streambanks and in swamps.

In the old days, the berries were dried on cedar racks outside, or in the smokehouse. There is an old story that if sun berries fall into water they will turn into fish.

Today, sun berries are preserved as dry jam, eaten fresh or frozen. Harvesting is usually done by the whole family, and the berries are prepared in one household and shared later. Sun berries are usually not mixed with other berries in dry jam, but they do make a nice addition to fruit salads.



*Sun berries
or stink currants*

**Swamp
Gooseberries
Mnmntsa**

Swamp gooseberries are harvested from the end of June to the middle of August, and they are a deep purple when ready to be picked. They are easy to pick, but you must be careful of thorns, as they are poisonous. The bushes are found in moist, open woods and along streambanks. The berries are eaten fresh off the bush. In the past, the berries were eaten as medicine to protect against pain from the thorns of devil's club. Swamp gooseberries were dried on drying racks. Today, they are not used by many people.



Swamp gooseberries

**Thimbleberries
Snutatiqw**

Thimbleberries are a deep red when ready to be picked, and are picked from the middle of June to the middle of August. Thimbleberries are found in open woods and clearings and along roadsides. They are very abundant, even on village streets, and are easily harvested.

In the olden days, thimbleberries were dried using the same procedure as for other berries.

Today, thimbleberries are usually mixed with raspberries to make dry jam. The raspberries add flavour and the thimbleberries contain a lot of pectin which thickens the dry jam. They are also wonderful with porridge.



Thimbleberries

**Watery Blueberries
(Alaska Blueberries)
Snuqlxlayk**

Watery blueberries are picked in July, August and the first part of September. They are found in moist forests and along streambanks. They are easy to pick, and are a dark blue-black when ripe.

In the old days, the berries were dried and stored in cedar boxes for the winter. Leaves were placed between the dried berry cakes. Before being used, the dried berries were soaked in water until they were moist. Like all berries, they were then eaten with ooligan grease.

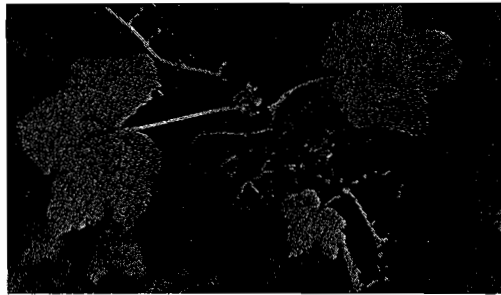
Today, people make jam and jelly, and freeze the berries. In dry jam, watery blueberries are often mixed with other fruit to give added flavour. Some of the fruits that might be used in the dry jam are huckleberries, raspberries, apples or oranges.



Watery blueberries or Alaska blueberries

Wild Blue Currants
Ts'ipscili

Wild blue currants are a deep purple in colour when ready, and are picked from the end of June to the beginning of August. Some people feel that these berries are best eaten by themselves, and taste odd if mixed with other berries. Wild blue currants are always eaten fresh, after they are cooked with a little water. They are not preserved.



Wild blue currants

Wild Gooseberries
Atl'anulh

Wild gooseberries are harvested from the middle of June to the end of August. They grow in moist open woods and clearings. They are easy to pick, although the bushes have thorns.

In the old days, the berries were sometimes picked green. The leaves were picked along with the green berries, and the leaves and berries were cooked together to make a sauce. Ooligan grease and sugar were added to the sauce, for flavour. These berries were never dried.

Today, people make dry jam or jelly with wild gooseberries picked when they are ripe and a purplish colour.



Wild gooseberries

Wild Raspberries
Qalhqa

Wild raspberries are pinkish/red when ready and are harvested from the middle of June until late July. They are found along streambanks and in open woods and clearings. They are eaten fresh, made into dry jam or dried in the sun.

Most people use the same method for making dry jam with wild raspberries as they use for the regular garden variety raspberries. Wild raspberries can be mixed with rhubarb, blueberries, huckleberries and other berries. They have a stronger "raspberry flavour" than most garden-cultivated raspberries do today. Wild raspberries have always been a big favourite.



Wild raspberries

Wild Strawberries
Qululuuxu

Wild strawberries are harvested from the beginning of June to the end of July, and are red in colour when ready. They grow close to the ground in open woods and clearings.

Although the Nuxalk people really like their taste, wild strawberries have never been a major source of food, because there are only a few berries located in any patch and the patches are spread far apart. Strawberries are only eaten fresh in season, or mixed with other fruit.



Wild strawberries

Rose Hips
(wild rose)
Skupik

Rose hips can be yellow, orange, or red when ready to be picked, and are harvested from the last week of August to the middle of October, after the first frost. They grow along roads and shorelines and in open woods. They grow all over the Bella Coola Valley, and are easy to harvest right in the village area. Rose hips are very rich in vitamin C.

In the old days, rose hips were not preserved, just eaten fresh off the bush for snacks. Only the outside rind of the hip is eaten, because the inside contains prickly silvery seeds.

Today, some people dry the rose hips and use them for tea. To use the rose hips for tea, pick them after the first frost. Slit the hips down the side and remove the seeds. Dry the rinds for several days, until they are crisp and brittle, then crush the dry rinds into a powder. Use 1 tbsp. (15 ml.) of powder for 1 cup (250 ml.) of tea. Pour boiling water over the powder and allow the tea to steep for 5 minutes.

Some people use rose hips to make a beautifully-coloured dry jam or jelly.



Wild rose hips

The Foods - Greens

Stinging Nettles Tsna

Stinging nettles are harvested for eating from the middle of February to the middle of April, when the young plant is only about 6 to 8 in. in height. This is when the plant is tender and does not have a woody texture. Stinging nettles are found growing in large patches at the edges of clearings or roadsides or in damp areas and shaded woods. They grow all over the valley. Wear gloves to protect your hands when harvesting and working with the nettles. During cooking, the stinging substance is destroyed.

To prepare the nettles, they must first be soaked in salt water and drained; then they can be steamed in a bit of water. Or, prepare nettles in the same manner as you would spinach.

In the old days, stinging nettles were also harvested in the late fall, after they had matured. The stems were made into twine and rope, which was later made into nets for herring and ooligan fishing. The stinging nettle was an important plant for the Nuxalk culture.



Stinging nettles

Cow-Parsnip (wild rhubarb) Xwiq

Cow-parsnip is easily harvested from the middle of February to the middle of April. It is found in moist open areas, roadsides and meadows. Cow-parsnip is very abundant. It is harvested for eating when it is young and tender. The stalks should be about 8 to 10 in. in length. Usually, the stalks are cut at the base while the buds are still closed, before red specks show on them.

Once picked, the leaves are removed and the outer skin is peeled off the stems with a knife. The outer skin can burn your skin and cause sores, so be careful handling the plant and be sure to remove all the outer skin before eating the stalks.

The inside tender stems are eaten raw or after being steamed lightly. In the old days they were eaten with ooligan grease. The stalks can also be preserved by freezing or pickling.

The cow-parsnip plant has similar flowers to its relative the water-hemlock. Water-hemlock is very poisonous. However, water-hemlock does not usually grow in the same place as cow-parsnip. Water-hemlock grows in standing water, such as is found in the tide flats. Also, water-hemlock has fine leaves divided into small leaflets, while cow-parsnip has large leaves. To be on the safe side, do not pick cow-parsnip from the tide-flats.



Peeled cow-parsnip stalks

**Seaweed
(red laver)
Lhaq's**

Edible seaweed is usually gathered by the Bella Bella people in May. It grows on rocks in the tidal zone of sheltered bays. The seaweed is dried on rocks in the sun, then broken into small popcorn-sized pieces. The Bella Bellas still send seaweed to the Nuxalk people.

Seaweed is used dry on top of stews, or it is boiled and eaten with fish, clams, fresh salmon eggs, or ripened salmon eggs. Some people call seaweed "Bella Bella pickles". Dried seaweed can be kept for a year, if kept in a very dry spot. If it is dried and then frozen, it will keep even longer.

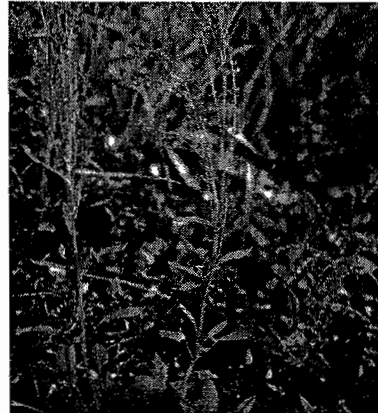


Seaweed

Sheep Sorrel
(sourgrass)
Yumyumalcwlhp

Sheep sorrel plants are harvested from the end of February to the middle of April. This plant is easy to pick, and is abundant in the Bella Coola area. It is found in gardens and empty fields, and can be picked at any stage of the plant cycle before seeding.

Sheep sorrel is cooked and eaten as you would eat spinach. It is also eaten as a fresh salad green. It is not usually preserved. You should not eat too much sheep sorrel at one time, just as you would not eat too much rhubarb at one time (rhubarb is related to sheep sorrel), because it may upset the stomach.

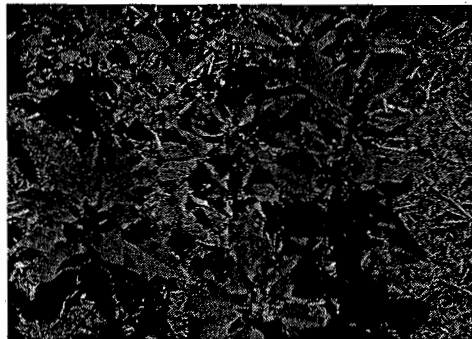


Sheep sorrel in flower.

Lambsquarters
Ts'icts'ikmlhp

The lambsquarters plant is harvested from the end of February to the middle of April or even later. It should be picked when young and tender, when growth is between 10 - 12 in. The plant is easily gathered and is found throughout the Bella Coola Valley, usually as a weed in gardens and plowed fields. When you are weeding your garden, remember to save these little plants, and serve them for dinner.

As with most greens, this plant is traditionally not preserved for later use, but it is eaten fresh. It can be used as a raw salad green or lightly steamed in the same way as spinach.



Lambsquarters in flower.

Thimbleberry Shoots
Sxtsi

Thimbleberry shoots are harvested from the middle of February to the middle of April. Thimbleberry bushes are very abundant in Nuxalk areas, where they are found in clearings and along roadsides and shorelines. The shoots are easily harvested by cutting off the growing shoots about 6-8 inches (15-20 cm.) from the tip.

The shoots or stems are eaten fresh. Just remove the leaves and outer skin with your fingers, then eat the inside stem. Today, some children eat the stems dipped in sugar. In the old days, the stems were eaten with ooligan grease or a mixture of herring eggs and grease. Thimbleberry shoots are more popular for their flavour than salmonberry shoots or fireweed shoots.



Thimbleberry shoots ready for harvest.

Salmonberry Shoots
Qaxaxlpsxts'i

Salmonberry shoots are harvested and used the same way as thimbleberry shoots.

Fireweed Shoots
Ts'ayxhlp

Many Indian people used peeled fireweed shoots as a fresh green in early spring. Like thimbleberry shoots, the growing stem is snipped off 6-8 inches (15-20 cm.) from the new tip, and then the stem is peeled and eaten with the fingers.



Fireweed shoots at edible stage.

If you gather enough of them, the peeled shoots of thimbleberry, salmonberry or fireweed can be used in salads or steamed lightly to serve as a fresh vegetable with butter or ooligan grease.

The Foods - Roots

Wild Clover Roots (perennial or springbank clover) T'xwsus

Clover roots are harvested in the late fall from October to December, and depending on weather conditions, from January to March. They are found only along the coast in tidal flats. The roots taste best when the leafy part of the plant is not growing, and they are easier to dig when the plant dies back in the fall. But this means that you must know where the plant is before the frost kills all the leaves.

In the old days, clover roots were pried out with digging sticks. When a bundle of roots had been gathered, they were tied with a string and piled on the ground or into baskets. The bundles of roots were then washed and cooked. Clover roots are traditionally served at the Chief's potlatch.

In earlier days, the roots were cooked by piling them into boxes filled with water. Hot rocks were then placed in the boxes, and the water brought to a boil. Usually clover roots were cooked along with bundles of silverweed roots. A few of the elders still use this method of cooking. Other people liked to cook the roots on top of hot rocks, either in a pit or on top of the ground. Today the younger generation use steamers or pressure cookers to cook clover roots. Using this method they need to be cooked for about one-half hour, or until they are tender.

In the old days, clover roots were preserved by putting them in small boxes. The boxes were then covered with soil and stored in the root cellar. Clover roots were also preserved by drying. Then before they were eaten, the dried roots were first soaked in water and cooked.



A wild clover plant and a bundle of clover roots.

Silverweed Roots (Pacific cinquefoil) Uq'al

Silverweed roots and clover roots grow together in the same areas. Silverweed roots are harvested and prepared like the clover roots. They are eaten by themselves, or with other foods such as ripened salmon eggs, berries and ooligan grease.

The silverweed roots are light brown with darker lines along them. The clover roots are white. It takes a bit of practice to sort out the clover roots and silverweed roots from other roots that are turned up from the ground. Check your roots with one of the elders to make sure that you have the right ones, and that they are the most tender roots. If you dig the roots in the same spot each year, the digging will become easier as you gradually weed out the other plants and keep the ground loose. In the old days, families often had their own spots for digging roots each year. There are lots of these roots in Nuxalk areas.



Silverweed or cinquefoil in flower.

**Rice Roots
(Indian rice)
Ilk**

Rice root is harvested by carefully digging the root clusters out of the ground. They are ready for harvest in the fall from the last week of August to the middle of October, November or December and later on into February (depending on weather conditions). When the rice roots are harvested, the stem is a brownish colour with no leaves or flowers on it, and about 12 to 18 in. in height. Rice root is found in moist, open areas, tide flats and mountain meadows.

In the old days, the rice was boiled in water, then drained. The cooked rice was eaten either with ooligan grease or hemlock cambium. The rice can also be mashed and eaten.

Today, the method of preparation is the same, but some people add sugar for flavour. Nowadays, rice root is rarely consumed. In Nuxalk areas rice root is getting hard to find, so if you dig some up be sure to leave a few kernels in the ground so that the rice root can grow back next year (see the section on conservation of plant foods, page 51).



Rice root seed-stalks and root clusters.

Rice root in flower.

Licorice Fern Roots
K'tsaatsay

Licorice fern roots can be harvested year round (depending on weather conditions), but they are mainly used from early spring to late fall. Licorice ferns are found in moist areas, often among moss and tree trunks. In the summer and fall the actual fern is about 6 to 10 in. high.

Harvesting is done by carefully digging through the surrounding moss and pulling up as much of the root as possible. You then wash the root and eat it. It is not eaten in large amounts; it is mostly used as a mouth "freshener", to make your mouth taste sweet.



Licorice fern

Fern Roots
(male fern and
spiny wood fern)
Sqw'alm

Fern roots can be harvested in the fall and winter, but are best around the end of September. They are found in moist woods.

The roots are dug up with a shovel or pitch fork. Dig a circle around the plant; then pull up the cluster, and shake off the excess soil. It takes about an hour of work to get a sack full. The roots are hairy and shaped like fingers or like a bunch of bananas upside down. If the roots are flat and dark inside, do not eat them, because they are either too old or the wrong kind of fern. But, if they are round, firm and light green coloured inside, they are good to eat after cooking.

In the past, the roots were steamed overnight in a pit. Today, they can be cooked in a pressure cooker. It takes about an hour to get them tender. Once they are cooked, the roots are peeled like tiny bananas. They are eaten alone or with ooligan grease or ripened salmon eggs.

It is said that if the roots are raw, they are good to eat for losing weight and for curing people who have been poisoned by red tide or by poisonous plants. Raw fern roots act as a strong laxative.



Fern root and leaf

The Foods - Tea

Labrador Tea Pu7yaas

The leaves of the Labrador tea bush can be picked and used at any time of the year because the bush is an evergreen. To store the leaves though, it is best to pick them after the first frost of the year. The bushes are found in peat bogs, muskegs and wet mountain meadows. The leaves are long, with rounded edges and are fuzzy underneath. After the frost in the fall, they are easy to harvest by putting a box near the plant and shaking the branches into the box until the leaves come off.

After picking the leaves, store them in pillow cases or other cloth bags in a dry place. The cloth lets in air but keeps the leaves dry. To make pu7yaas, simmer a handful of leaves in a pot of water. At first, try simmering the leaves 15 to 30 minutes. You will decide how strong you like pu7yaas. The longer you simmer the leaves the stronger the tea will be.



*Labrador tea bush showing
leaves and flowers.*

Salmonberry Bark Tea Qaaxlhp

The bark of mature salmonberry bushes can be peeled off with a knife and boiled up to make a refreshing tea. The tea is boiled until it becomes a golden colour.

The Foods - Tree Foods

Black Cottonwood Inner-Bark Q'ls

Cottonwood inner-bark is harvested in May and June. The best trees to get inner-bark from are found along rivers and lakes where they have lots of sun and water. The trees should have smooth bark and be 8-10 inches (20-25 cm.) in diameter. You can tell that it is ready when the outer-bark comes off easily and the inner-bark is shiny and sweet. The tree would not have too many branches where you want to harvest the inner-bark.

To harvest the inner-bark, remove a patch of the outer-bark. Then using a knife or other scraping tool, scrape the inner-bark off the tree in long strips. About one-half pail of inner-bark can be taken from one tree. These days the tree is cut down so that the whole tree can be scraped. The rest of the wood is used for firewood.

Cottonwood inner-bark tastes sweet. It is usually eaten fresh as an occasional treat, and is not preserved. It is known as a good laxative.



*Scraping the inner-bark
from black cottonwood tree.
(Karen Anderson)*

Western Hemlock Inner-Bark Sal'lalhp

Hemlock inner-bark is harvested in early summer, when it is easily scraped and tastes just right. These trees grow all over the Bella Coola Valley.

To harvest inner-bark, remove a big section of outer-bark using a small axe. Then scrape the inside surface of the bark. Hemlock inner-bark is eaten after it is cooked. In the old days, it was also preserved by drying the cooked inner-bark.

To cook the hemlock bark, a pit was dug in the ground and rocks were piled into it in a small heap. A fire was built on and around the rocks. When the rocks were hot they were spread out in the pit, and a stove pipe was placed standing up in the center of the pit. The rocks were covered with skunk-cabbage leaves, and the inner-bark was placed on top of the leaves and then covered by another layer of skunk-cabbage leaves. The whole pit was then covered by old sails or blankets. Water was poured into the stove pipe, forming steam on the hot rocks, and the inner-bark was left to steam overnight. In the morning, the hemlock was taken out and pounded with rocks. The inner-bark was then placed on drying racks on top of skunk-cabbage leaves. When one side was dry, the inner-bark was flipped over

and the skunk-cabbage leaves removed. The hemlock inner-bark was then stored as dried cakes.

Dried hemlock inner-bark was kept for use in the winter. Before it was eaten it was soaked in warm water. One way to eat hemlock inner-bark was with ooligan grease and salmon eggs. Sometimes, hemlock inner-bark was used for babies whose mothers could not breast feed. The mother would chew the inner-bark, put it in water and then give it to the baby to suck on.



*Removing outer-bark
from Western hemlock tree.
(Willie Hans)*



*Scraping the inside surface
of the Western hemlock bark. (Fellicity Waikus)*

Wild Crabapples (Pacific crabapples) Pc

Wild crabapples are harvested throughout September and October, and sometimes earlier. The trees are found in wet woods, bogs and along streams. The crabapples are easy to pick.

In the old days crabapples were picked by women who went out from the village together. They wore blankets tied at their waists with belts. The women sat in the trees, picking crabapples and dropping them into their blankets. The crabapples were then placed in cedar boxes in a dark place and allowed to ripen. They might be stored until a large feast. They were gently cooked, then eaten with ooligan grease, using a wooden spoon. Crabapples were also often mixed with salal berries or highbush cranberries.

To preserve them for the winter, crabapples were cooked slightly, dried and then mixed with ooligan grease. The grease kept them from the air and from mould and insects.

In the old days, wood from crabapple trees was used to make fish hooks, and fishing line was made from cedar bark.

Today, people freeze wild crabapples or make them into jelly or dry jam.



Wild crabapples

The Foods - Game

Duck Naxnx

Ducks are usually hunted with a rifle in the fall from September to December.

To prepare the duck, pluck the feathers, then burn off the down (usually over a pump stove, or another stove with a gas flame). Then cut off the wings, head, feet and bottom part of the duck. To remove the guts, make a slit across the bottom of the duck, making sure not to cut the bag (where the guts are) and then pull the insides out from the bottom. To remove the meat from the duck, you start at the backbone and slide the knife down both sides. If done properly you will have separated the skeleton of the duck from the meat. Ducks are now usually stored in plastic bags and frozen. In the old days ducks were jarred.

Also in former times, duck feathers were saved to make quilts, mattresses and pillows.

Grouse Takws, Mucwmukwt

The methods of preparing and preserving grouse are exactly the same as for duck.

Rabbit Qax

Rabbit can be hunted all year round. However, few people hunt them because they are scarce, and people prefer other meats. They are shot with a rifle or caught with traps.

To remove the skin from the rabbit, make slits in the skin down the length of the legs, then make a thin slit in the skin down the front of the body. Once this is done, you should be able to remove the skin by pulling it off towards the head in one motion. Next slit the stomach and remove the guts and then the head. The meat can be either fried, deep fried, baked, steamed, or cooked in stew.

Rabbit is usually preserved by freezing in plastic bags.

**Moose
Skma**

Moose are hunted mainly in the fall. They are scarce in the Bella Coola Valley, so most hunters travel up to Anahim Lake. An adult moose will weigh 1000-2000 pounds, but of the whole animal, only about 60% is useable meat. Moose and deer have little body fat, so the meat might be quite dry and tough, especially if it is from an older animal. If this is so, you will want to grind the meat for "burger" or else cook it with long, slow, moist methods such as pot roasting or stewing.

To prepare it, you first skin and gut the moose; when this is done, you cut the moose in quarters and let it hang for a couple of days. This is so that the blood drains out. When this is done, the moose is ready to be cut into meal-size portions and then eaten fresh or frozen or canned/jarred. Watch one of the experienced hunters dress and cut a moose or deer before you try it yourself.

**Deer
Scwpanilh**

Deer are hunted during the fall, but unlike moose, they can be found in the Bella Coola Valley.

Methods of cutting and preserving deer are similar to those for moose, except that deer are smaller. Because of this, deer can be hung whole, rather than being quartered.

Long ago, deer and moose were dried and stored for later use. The meat was dried in strips hung high over a fire right at the hunting camp, so that it could be carried back to the village easily.

**Mountain Goat
Yaki, Qwwaax**

Mountain goat is hunted mainly in the fall months, but it can be found on through February. To hunt mountain goat, the hunter must travel by foot up a nearby mountain, because the goats roam on high mountain slopes. Sometimes the hunters will be gone for 2-4 days.

Long ago, mountain goat meat was dried right at the hunting camp. This was because the meat was heavy and the men had a long way to hike. After the meat was cut in strips and dried over a fire, it was lighter and easier to carry.

In those days, the hunters would not carry pots for cooking, so instead they used mountain goat stomach (tripe) for cooking. They tied one end of the stomach closed, they filled it with water and chopped meat. Small rocks were heated on the fire and then added to the meat and water in the stomach. The hot rocks heated the water and cooked the meat. When the tripe split, the men knew that the meat inside was cooked.

Today mountain goat meat is usually preserved by freezing.

B. The Nuxalk Native Food Yearly Harvesting Cycle

Here is a table that shows when the native Nuxalk foods are harvested according to months. The time is only approximate, because every year the actual weeks that foods are ready depends a lot on the weather.

You can see that there is fresh fish or shellfish available during every month of the year. Game foods are usually most plentiful in the fall, although rabbit can be found anytime.

The plant foods are usually short in their season of harvesting, because the Nuxalk people depend on only one part of the plant being ready, or ripening. The berries are summer foods. The roots are best in the fall and spring. Green vegetables are all harvested in the spring, except for seaweed. This is a special food that is harvested and dried by neighbours in Bella Bella, but the Nuxalk people usually get it from them in the spring or early summer. Labrador tea can be picked at any time, but the fall, after frost, is best for picking enough to store away for the winter.

Nuxalk Native Food Yearly Harvesting Cycle

Food	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
<u>Salmonids</u>												
humps							-----					
dogs								-----				
coho									-----			
sockeye							-----					
springs						-----						
steelhead	-----											-----
trout	-----											-----
<u>Other fish</u>												
herring				-----								
ling cod				-----								
flounder				-----								
red cod				-----								
ooligans				-----								
<u>Shellfish/other seafood</u>												
sea cucumber												
abalone												
mussels												
crab												
seal												
sea urchin												
clams												

continued....

Food	Months											
	J	F	M	A	M	J	J	A	S	O	N	D
<u>Game</u>												
✓ moose												-----
✓ duck												-----
✓ grouse												-----
✓ deer												-----
✓ mountain goat	-----											-----
✓ rabbit	-----											-----
<u>Tree foods</u>												
✓ cottonwood							-----					
✓ crabapple												-----
hemlock							-----					
<u>Berries</u>												
saskatoons												-----
kinnikinnick												-----
bunchberries												-----
wild strawberries												-----
salal												-----
stink currants												-----
wild gooseberries												-----
wild blue currants												-----
rosehips												-----
wild raspberries												-----
blackcaps												-----
thimbleberries												-----
salmonberries												-----
red elderberries												-----
soapberries												-----
watery blueberries												-----
mountain bilberries												-----
grey blueberries												-----
red huckleberries												-----
lowbush blueberries												-----
highbush cranberries												-----
<u>Root foods</u>												
✓ fern rhizomes												-----
✓ "rice root" bulbs												-----
✓ silverweed roots												-----
✓ clover rhizomes												-----
<u>"Greens"</u>												
✓ fireweed shoots												-----
✓ cow-parsnip												-----
✓ seaweed												-----
✓ thimbleberry shoots												-----
✓ salmonberry shoots												-----
✓ young stinging nettles												-----
<u>"Tea"</u>												
✓ Labrador tea												-----
✓ Salmonberry bark tea												-----

C. Harvesting Traditional Nuxalk Plant Foods

Many wild berries and other Nuxalk plant foods can be harvested on reserve land near the village or further up the valley. Some people have already been harvesting several traditional plants for many years. These people may want to use this handbook to get ideas about other plants they can use or about different ways to use traditional plant foods. Those with less experience can use this book to help them get started in looking for and using traditional plant foods.

There are two important considerations to think about when using traditional plant foods: safety and conservation.

Safety

1. Be sure you know the plants well, and can recognize those you want to harvest. There are some very poisonous plants around. If you are not sure about a plant, do not eat any part of it - ask someone who knows to check if it is the right one. The Nuxalk food plant garden at the Health Clinic can help you by providing living examples of the food plants.

2. Know how the food is prepared in the Nuxalk tradition. Should it be peeled or cooked before eating? Nuxalk and other native people have learned how to use native plant foods through many generations of experimenting and sharing knowledge. For example, they learned long ago the cow-parsnip can only be eaten when it is young, and that it has to be peeled or it will cause skin sores. Red elderberries have to be cooked before they are eaten. Red elderberry leaves, shoots and roots can be poisonous, and were never eaten. Be sure to read about the plants you want to harvest in this handbook.

3. Collect plants from safe, clean areas. It is best to gather plants away from main roads, where they will not be polluted by exhaust from cars. Be sure you harvest from areas that have not been sprayed with pesticides, or herbicides. Sometimes these are used on Hydro or Forest Service properties. If you are in doubt, call these offices to check on whether or not spraying has taken place. Be sure that the ground where you dig roots is not contaminated with sewage.

Conservation

In the old days, Nuxalk people used many wild food plants. Harvesting the plants was done carefully so that the food resource was not destroyed. In fact, sometimes harvesting is helpful to the plants growing in a spot. For example, digging clover roots and silverweed roots in an area keeps the soil loose and free of weeds, so that the new crop of roots will be more plentiful, less tangled and easier to harvest.

Today, in the Bella Coola Valley, wild plants are threatened by development, logging and overgrazing by animals. Native plants can still be used, but they must be protected and used correctly. As long as the branches are not broken, berries and fruit can be picked without harming the plants. However, picking edible green shoots, or even digging roots, causes some damage to the plant which you are harvesting.

If you practice conservation, native plant foods can be used without destroying the plant community. Then the foods can be harvested year after year. If you are digging clover or silverweed roots, do not dig all of them from one spot. Also, leave pieces of the roots in the ground and cover them with dirt, so that they will

grow into new plants the following year. When picking green shoots, take only one or two shoots from each plant. This will allow the plant to remain healthy and to produce shoots again next year.

One plant that must be especially protected is riceroor. In British Columbia, it is a rare species today. Digging up the whole bulb destroys the plant. If you leave a few of the rice-like bulblets in the ground they will grow into new plants, but it will take several years until these plants are big enough to harvest. If you are digging riceroor, leave at least half of the plants alone, and re-plant several "rice" grains from the outside of the bulb in the soil where you were digging.

D. Growing Your Own Traditional Nuxalk Plant Foods

One way in which wild food plants can be used more often is to grow them yourself. A number of food plants, such as thimbleberry, salmonberry and wild rose, are already growing around the village, but other plants can also be grown close by in your own garden. You might get some hints from the Nuxalk garden at the Health Clinic as to which types of food plant will grow in a garden and what types of soil they like best.



The Nuxalk garden early in its development, 1983.

If you try growing some of these wild plants, keep in mind the areas where they grow best in the wild. Try to make parts of your garden into the same type of soil and conditions that you see in the wild. Some plants such as the huckleberries and blueberries like a semi-shaded place. Many, including wild currant and bunchberry, like to grow on rotten logs. Sun berries (stink currants) like a rich, black, swampy soil.

How do you get wild plants to grow in your garden? There are five main ways, which are:

1. growing from seeds
2. growing from stem cuttings
3. growing from layered stems or offshoot plants
4. growing from a piece of root or underground stem
5. transplanting seedlings which are growing in the wild

Growing plants from seed is usually only possible in a few cases. Riceroor can be grown from seeds, but the plants are rare, so take only a few seeds, and leave the others to grow in the wild. Sheep sorrel and lambsquarters grow easily from seeds.

Some plants, especially shrubs, such as blueberry and saskatoon, will root from stem cuttings. One way of doing this is to take cuttings of new side branches off the main stem. The cutting should have a "heel" of the old wood still attached. The cuttings are best when taken in late spring or early summer. They should be 4 inches (10 cm.) long. Dust the cut end lightly with rooting compound (such as "Rootone") then plant the cutting outside in a box of sandy soil. Keep it damp and cover it with a small tent of plastic to keep the air around the cuttings moist. Once the cuttings have grown roots and started to grow they can be re-planted in potting soil. When the plants become hardy and really grow, they can be planted in your garden.

Many shrubs will root from stems if these touch the ground. This is called layering. You can use layering for sun berry (stink currant), wild blue currant, blackcap, kinnikinnick and highbush cranberry. Bend a branch down to the ground and partially bury it. Put a rock over the buried part, to hold the branch down. Make a cut where the branch comes down to the ground and dust the cut lightly with rooting compound. Once the branch has rooted, and makes a new shoot, you can dig it up and plant it in your garden. It is best to trim the new plant back quite a bit so there will not be too much plant for the newly-planted roots to support.

Some plants such as wild strawberries and silverweed put out special runners that grow new plants at their ends. These new plants can be removed and transplanted.

Many plants spread themselves naturally by extending their roots or bulbs and growing new plants or sucker shoots from these. This is why fireweed, thimbleberry, clover, licorice fern, raspberry, salmonberry and wild rose tend to grow in clumps. All of the plants in the clump may have come from the same parent root. If you dig up a piece of root with a shoot attached you will not harm the parent plant. You can then plant the shoot in your garden and it will eventually grow into many plants. When transplanting any roots take care not to harm the fine root hairs. The root hairs absorb food and water for the plant.

To protect wild plants, transplanting seedlings should only be done when there are lots of the seedlings in the area so that some are left to grow undisturbed. Try to dig up as much of the root area of the plant as possible. Your chances of successful transplanting are best if you choose small plants which do not have a lot of roots. Transplant in the fall or early spring when the plants are not growing rapidly, and are therefore not so dependent on the delicate root tips which are easily broken by a shovel. That is why the Nuxalk garden at the Health Clinic was planted in October.

Here is a list of Nuxalk food plants with some details on how to plant them and what type of soil to use.

BUNCHBERRY (p'xwlht) - grow from seeds or transplanted clumps; they like shade or semi-shade and an acid humus soil, such as from rotten wood

LICORICE FERN (k'tsaatsay) - grow from transplanted pieces of root; plant under moss on rocks or rocky soil

WILD CLOVER (t'xwsus) - grow from sections of root or rooted stem cuttings; likes slightly salty, sandy soil; try watering once or twice a year with slightly salty tidal water

RICEROOT (ilk) - grow from seed scattered on soil or from tiny bulbs (seeds may take six months to grow); likes slightly salty soil

SILVERWEED (uq'al) - grow from seedlings produced at the ends of runners or from large root pieces; likes same growing conditions as wild clover

FIREWEED (ts'ayxhph) - grow from seed or pieces of root; likes open, sunny areas

THIMBLEBERRY (sxtsi) - grow by transplanting rooted shoots in fall or spring; trim shoots back when planting

SALMONBERRY (qaxaxlhpsts'i) - grow by transplanting rooted shoots in the fall or spring; trim back plant when planting; likes damp, rich, dark soil

WILD RASPBERRY (qalhqa) and BLACKCAP (usukw'ltlh) - grow by transplanting rooted shoots in the fall or spring, or by layering; likes a sunny location with well-drained soil; trim shoots back when planting

RED HUCKLEBERRY (sqala) - grow from seeds or layered branches or from seedlings transplanted in the fall; likes some shade and acid soil such as from rotted wood

MOUNTAIN BILBERRY (sqaluts) - grow from seeds, cuttings or rooted shoots; likes some shade and damp, gravelly soil

GREY BLUEBERRY OR OVAL-LEAVED BLUEBERRY (spuuxaltswa) - grow from seeds, cuttings or rooted shoots; likes shade and damp, acid soil (rotten wood)

WILD GOOSEBERRY (atl'anulh) - grow from transplanted seedlings, cuttings or layered shoots; likes gravelly, well drained soil

SUN BERRY OR STINK CURRANT (q'is) - grow from layered shoots; likes rich, black swampy soil

WILD BLUE CURRANT (ts'ipscili) - grow from layered shoots; likes some shade and grows on damp, rotten wood

SOAPBERRY (nuxwski) - male and female flowers grow on separate bushes, so you need both types of bushes if you want to get berries; grow from cuttings or layered shoots; needs open, well-drained area; does best in limed soil

SASKATOON BERRY (sq'sk) - grow from transplanted seedlings or cuttings; likes open well-drained areas

WILD ROSE (skupik) - grow by transplanting offshoots from the parent plant in the fall or early spring

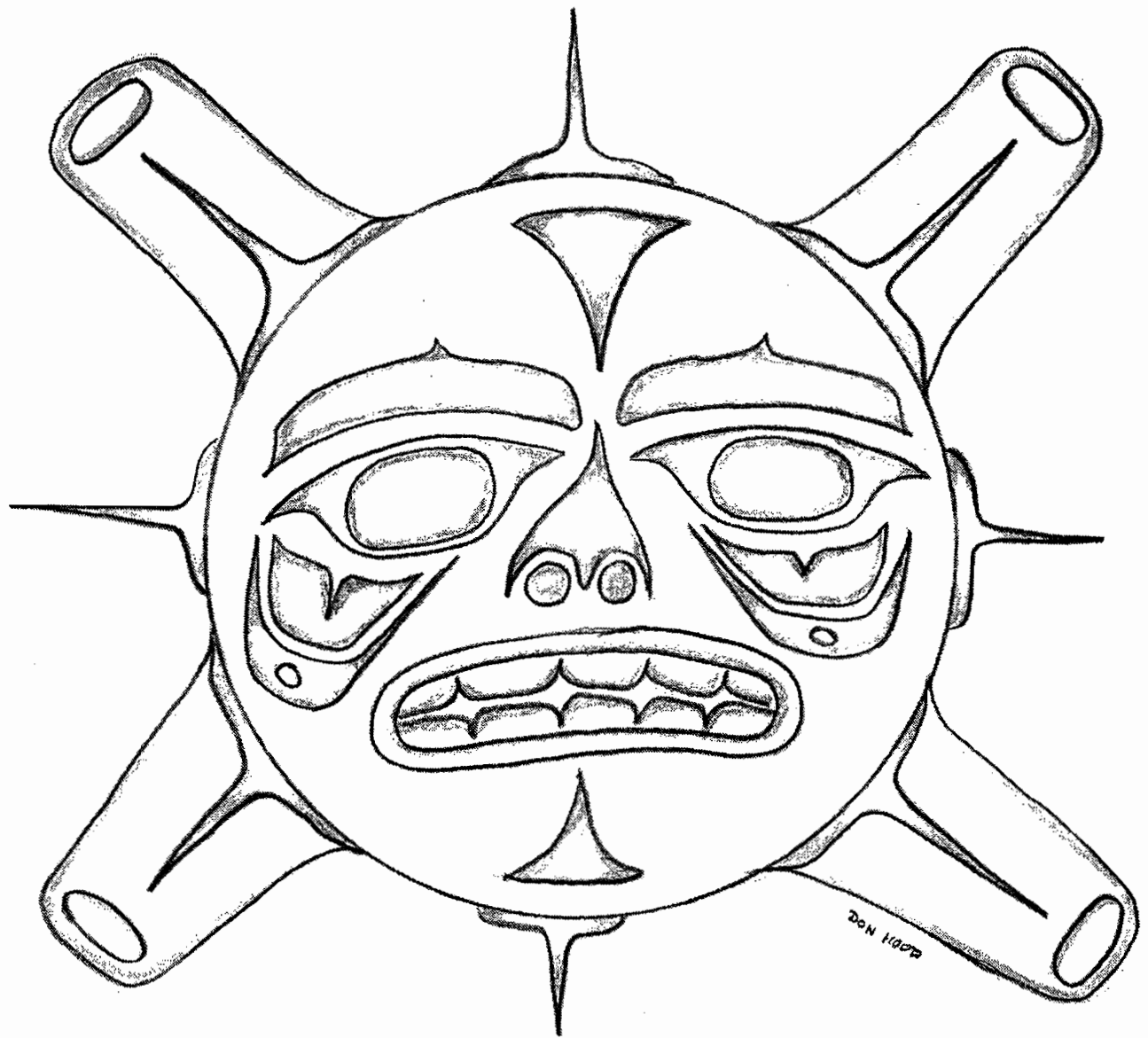
KINNIKINNICK (miliew) - grow from cuttings or layered shoots; cut back shoots when transplanting; likes gravelly or sandy well-drained soil in open places

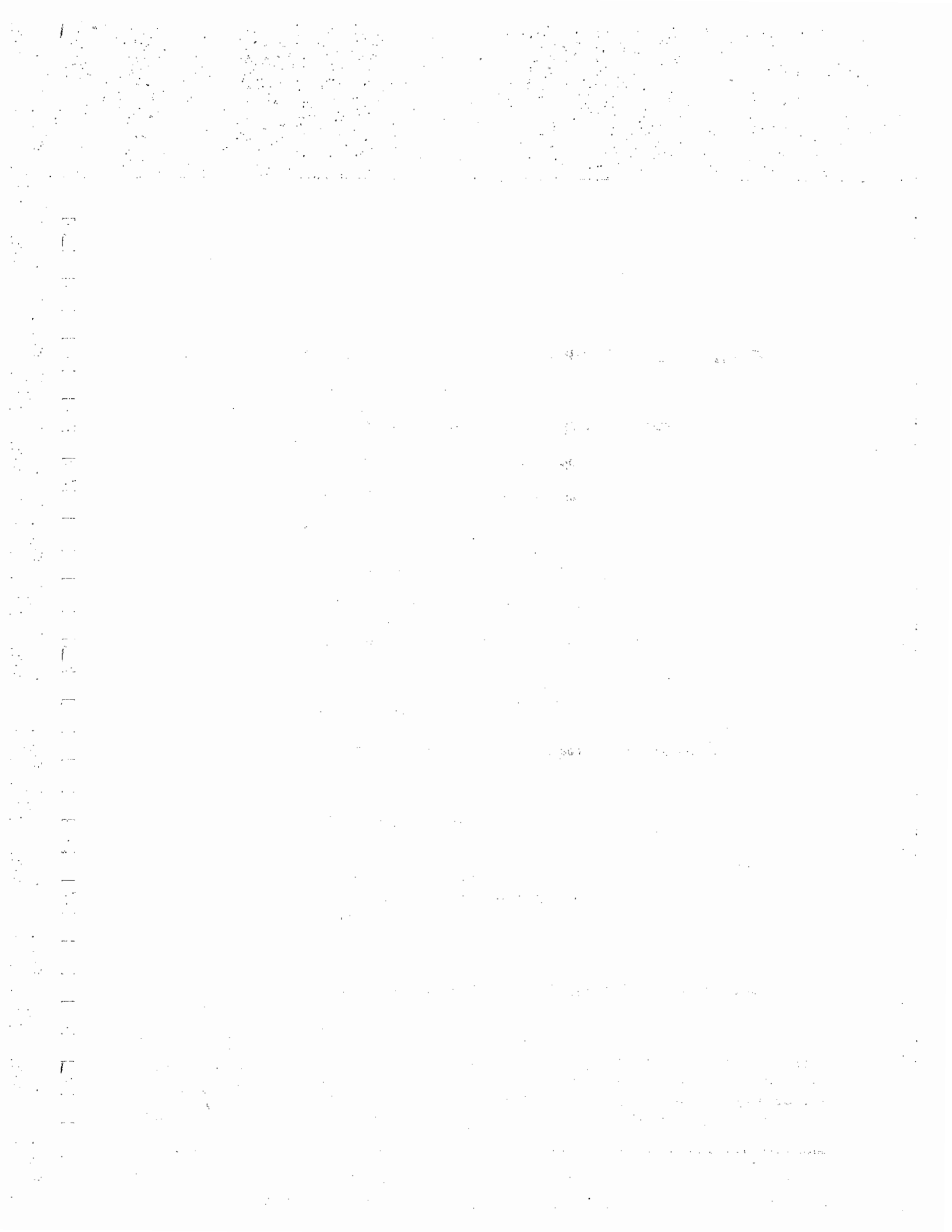
HIGHBUSH CRANBERRY (st'ls) - grow from cuttings, layered shoots or rooted shoots; likes moist acid soil from rotted wood, with some shade

RED ELDERBERRY (k'ipt) - grow from seed, cuttings or transplanted seedlings; allow plenty of room as this is a very large bush; likes moist, acid soil from rotted wood in a sunny location

Section II

Foods, Nutrition And Lifestyle





SECTION II: FOODS, NUTRITION AND LIFESTYLE

This section tells how foods are used for good nutrition and health. It also tells how lifestyle and good nutrition fit together in a healthy family. There are practical ideas on how to keep foods safe, preserving foods, controlling food costs, and losing weight. This section also shows what vitamins, minerals, and other nutrients are in foods.

A. Safe Home Foods: Preparation, Preservation and Storage

Food Safety

Canning

- how to can fruit, tomatoes, and pickles
- how to can vegetables
- how to can fish

Dry Jam and Fruit Drinks

Freezing

Storage of meat, fish, and poultry in the refrigerator and freezer

Drying Foods

Smoking and Drying Fish

B. How to Select Nutritious, Low-cost Foods

C. How to Cook Nutritious, Low-cost Meals

D. The Cost of Food in Bella Coola

E. Nutrition and Lifestyle

Important Nutrition Facts for Everyone

Roles and Food Sources of Major Nutrients

F. Nutrition, Fitness and Desirable Body Weight

G. So You Want to Lose Weight?

H. Children's Snacks for Good Nutrition and Dental Health

A. Safe Home Foods: Preparation, Preservation and Storage

Many families enjoy the flavour and satisfaction of having their own home-preserved foods. We know that in the past, native people did a lot of preserving of foods for the winter or other seasons when fresh foods were not available. Today, preserving fish, garden foods, wild plant foods and game is just as enjoyable and satisfying. Once you have all the equipment needed, and good access to the foods you want to preserve, you can also save quite a bit of money by preserving your own foods at home. Also, you will have these foods for good nutrition of the family during the seasons when marketed foods of the same quality are not available or too expensive for your food budget. Although home food preservation takes a lot of time and energy during the summer months, most people find it a nice way to spend time with their friends and family. The sharing of work in food gathering and preservation is one way that native cultural traditions are expressed.

Food Safety

This section gives some guidelines on how to preserve and store food safely, and how to cut down on loss of important nutrients when foods are prepared.

Bacteria which cause food spoilage may also cause food poisoning. They are always present in the air, water, soil and on your skin. Food must be treated to destroy these bacteria or to prevent them from growing and spreading.

To keep foods clean and safe, remember these points:

1. Wash your hands before preparing, serving or eating food.
2. Right after working with any type of food, wash the knives, cutting boards and work surfaces with soap and water. This is especially important after working with raw fish or meat.
3. Wash all fruits and vegetables before eating. This removes dirt and insects, and pesticides from commercial foods.
4. Keep cold foods cold until they are served (at 5°F or 15°C). Keep hot foods hot until they are served (above 140°F or 60°C). Micro-organisms grow best at temperatures of 10° to 100°F (-12° to 38°C). Bacteria have a good chance to grow in foods kept sitting at room temperature or in a warm place (ie. on the back of the stove).
5. To preserve the best taste and nutrient value in food, refrigerate or freeze leftovers right away.
6. Do not eat cottage cheese or yoghurt directly from the package. The spoon you use will be contaminated with bacteria from your mouth, and then the bacteria will grow in the food remaining in the container when you store it.

-
7. Cracked eggs may have bacteria growing inside the egg. They are alright if cooked because cooking destroys the bacteria, but never eat them raw, such as in eggnog.
 8. The warm cupboard under the sink is a great place for bacteria to grow, so foods should not be kept there. Nor should food be kept near household cleaners. These are two common ways that foods are spoiled.
 9. Store canned and preserved foods in a cool, dry place, well away from the heat of the stove. This way, the flavour and nutrients will be retained for a longer time.

Canning **(Preserving foods in cans or jars)**

During canning, food is heated to destroy bacteria and natural enzymes in the foods, and to seal the container. This prevents the natural deterioration and spoilage of food. The time and the temperature of heating must be great enough to do this.

Only fruit, tomatoes and pickled vegetables may be canned using a boiling water-bath. These foods are high in natural acids, and micro-organisms do not grow well in them. All other foods must be canned using a steam-pressure canner. It produces higher temperatures than the boiling water-bath, and therefore greatly reduces the risk of food poisoning.

General guidelines for canning:

1. Wash all equipment with soap and water. Clean the pressure valve of a pressure canner by pulling a clean piece of string or cloth through it.
2. Only use jars and cans that are in good condition. Dented or rusted cans or chipped or cracked jars and lids should not be used, because these will not seal well and the food inside could become spoiled.
3. Wash all jars, cans and lids well.
4. Use good-quality, fresh foods to give the best final product.
5. Wash all food before using it, even if it is to be peeled. This reduces the chances of contamination from dirt, bacteria, and pesticides.
6. Check to make sure your can sealer is working well: put a little water into a can, seal it, then submerge the can in water. If air bubbles rise from the can, it is not sealed properly. It is better to lose one can than to waste all your canned foods. Have your sealer repaired if your test can failed to seal.
7. Label and date your canned goods. Then, use canned foods within 6 months to a year. Longer storage reduces the taste, quality and nutrients of the food.

8. Store jars and cans in a cool, dry place. Excess heat may destroy some of the good taste and nutrients of the canned food. Moisture may cause cans and jar lids to rust through.
9. Do not use cans that are swollen, leaking or badly dented, or jars which have lost their seal. Bacteria can enter leaking cans and jars and cause food spoilage and food poisoning. Rule of thumb: "if in doubt, throw it out." You cannot smell or taste some food poisons.

How To Can Fruit, Tomatoes and Pickles

Usually jars are used, and these can be either regular jars that fit canning rings and lids, or mason jars.

Raw Pack - clean, peel and slice fruit
- put cold, raw fruit into jars and cover with boiling sugar syrup or water leaving $\frac{1}{2}$ " air space at the top for heat expansion
- wipe the mouth of the jar clean to insure a good seal
- heat lids and rings in boiling water, then fasten onto jars

Hot Pack - first, prepare the food:
clean, peel and slice fruit
stew tomatoes
heat fruit in syrup or water
heat pickles in pickling liquid
- fill jars with hot food, but leave $\frac{1}{2}$ " air space at the top for heat expansion
- wipe the mouth of the jar clean to insure a good seal
- heat lids and rings in boiling water, then fasten onto jars

Sugar syrup for fruit:

mix 4 cups (1 liter) water or juice with:

2 cups (500 ml.) sugar to give 5 cups (1.25 liters) **thin syrup**, or
3 cups (750 ml.) sugar to give $5\frac{1}{2}$ cups (1.4 liters) **medium syrup**, or
 $4\frac{3}{4}$ cups (1.2 liters) sugar to give $6\frac{1}{2}$ cups (1.6 liters) **heavy syrup**

Bring the mixture to a boil for one minute to dissolve the sugar.

Most fruit is very good when canned in a thin syrup. Thin syrup also costs less, has fewer calories and is less likely to cause tooth decay than heavy syrup.

Put filled jars into a large, deep pan containing hot water. Water should come to 1 or 2 inches (2.5 - 5 cm.) above the tops of the jars. Cover pan. Bring to a full rolling boil. Boil gently for time recommended for each food (see chart below). Remove jars from water as soon as the time is up. Cool jars completely, and check that the lids have sealed (follow lid package instructions). Once the jars have sealed, you can remove the rings, wash them, and reuse them. Label and date jars, and store in a cool, dry place.



Mason jars are used for pressure canning. Regular jars or mason jars can be used in boiling water canning.

PROCESSING TIME IN BOILING WATER

Food	Jar Size	Time to be Processed
Apples or Crabapples	pt. (500 ml.) or qt. (1 liter)	15 or 20 minutes
Applesauce	pt. or qt.	10 minutes
Beets, pickled	pt. or qt.	30 minutes
All Berries, except Strawberries	pt. or qt.	10 or 15 minutes
Cherries	pt. or qt.	20 or 25 minutes
Peaches, Pears or Apricots	pt. or qt.	20 or 25 minutes
Plums	pt. or qt.	20 or 25 minutes
Rhubarb	pt. or qt.	10 minutes
Tomatoes, stewed	pt. or qt.	10 minutes
Tomatoes, cold pack	pt. or qt.	35 or 45 minutes
Pickles, hot pack, thin sliced	pt. or qt.	10 minutes
Pickles, cold pack, whole	pt. or qt.	20 minutes

How To Can Vegetables

Usually mason jars are used for pressure canning of vegetables because they are less likely to crack in the high heat of the pressure canner.

- Raw Pack** - clean and slice vegetables
- pack cold, raw vegetables in jars
 - add ½ tsp. (2.5 ml.) salt to pint jars, 1 tsp. (5 ml.) salt to quart jars
 - fill jars with boiling water, but leave ½" air space at the top for heat expansion
 - wipe the mouth of the jar clean to insure a good seal
 - heat lids and rings in boiling water, then fasten onto jars

- Hot Pack** - clean and slice vegetables
 - heat vegetables in water
 - pack hot vegetables and cooking liquid into jars (making sure jars are filled), but leave ½" air space at the top for heat expansion
 - add ½ tsp. (2.5 ml.) salt to pint jars, 1 tsp. (5 ml.) salt to quart jars
 - wipe the mouth of the jar clean to insure a good seal
 - heat lids and rings in boiling water, then fasten onto jars

Place jars on rack in a pressure canner. Have 2 to 3 inches of boiling water in the bottom of the canner. Fasten canner lid securely. Let steam flow out of canner for 10 minutes, then close the air vent. Bring pressure to 10 lbs., adjust heat to keep pressure constant. Process for recommended time (see chart below). Follow the canner manufacturer's recommendations, if available.

When time is over, remove canner from heat. Let stand until pressure is zero. Slowly open the air vent and then unfasten the cover. Be careful of the steam. Remove jars from the canner and cool completely. Once jars are sealed you may remove the lid rings, wash them, and re-use them. Label, date and store jars in a cool, dry place.

Remember that the spores of botulism (a food poisoning bacterium) are abundant in the soil from which vegetables come. Proper canning procedure is essential in order to destroy the bacterium.

PROCESSING TIME IN THE PRESSURE CANNER

Vegetable	Jar Size	Processing Time
Asparagus	pt. or qt.	25 or 30 minutes
Beans, green*	pt. or qt.	20 or 25 minutes
Beets	pt. or qt.	30 or 35 minutes
Carrots	pt. or qt.	25 or 30 minutes
Corn*	pt. or qt.	55 or 85 minutes
Peas, green*	pt. or qt.	40 minutes
Potatoes, whole or cubed	pt. or qt.	30 or 40 minutes
Spinach	pt. or qt.	70 or 90 minutes
Squash, cubed	pt. or qt.	55 or 90 minutes
Zucchini	pt. or qt.	25 or 30 minutes
Hemlock inner- bark strips	pt. or qt.	30 or 40 minutes
Clover roots	pt. or qt.	30 or 40 minutes
Silverweed roots or other root foods	pt. or qt.	30 or 40 minutes

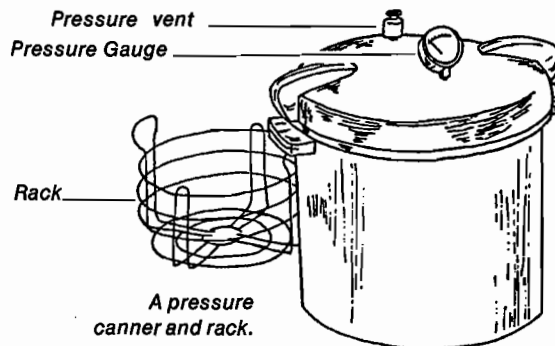
*Beans, corn and peas need 1 inch (2.5 cm.) of headspace at the top of jars because of expansion during pressure canning.

How to Can Fish

Fish and meat may contain bacteria which can cause botulism, a very severe type of food poisoning. These bacteria are only destroyed by the very high heat found in a pressure canner. A boiling water-bath is not hot enough for the safe canning of fish or meat.

Steps to Canning Fish:

1. Use fresh, good-quality fish.
2. If fish is to be canned more than 3 hours after it is caught, it should be cleaned and refrigerated, or chilled in cold, running water. Smoked salmon should be canned as soon as it is cool after smoking. These procedures will reduce spoilage.
3. Use mason jars or C-enamel cans ("salmon tins").
4. Wash all equipment well. Rinse all jars, cans and lids in boiling water just before using.
5. Clean the fish, removing head, tail and fins. Wash the fish. The bones can be left in. They soften during canning, and many can easily be eaten. Bones provide the valuable mineral calcium to our diets. Also, some of the calcium "cooks out" of the bones and moves into the flesh of the fish during the canning process.
6. Cut the cleaned fish into lengths which will fit the jars or cans.
7. Pack fish into glass jars leaving one inch (2.5 cm.) of head-space at the top of the jar. Pack fish into cans leaving only $\frac{1}{4}$ inch (0.6 cm.) head-space at the top. This leaves enough room for swelling during cooking.
8. For every pint of fish add $\frac{1}{2}$ to 1 tsp. (2.5 to 5 ml.) salt to the can or jar.
9. Wipe the sealing surface of the jar or can with a clean cloth. Jar lids and rings should be boiled before being put on. For sealing cans, follow the instructions of the manufacturer of the appliance you have.
10. Cover the bottom of the canner with 2-3 inches (5-8 cm.) of boiling water. Place jars or cans on rack above water. If there are 2 or more layers of cans, have another rack between each layer. This allows the steam to flow around all the cans, and heats them evenly.
11. Close the canner, and set it on the heat. Heat until the steam flows out through the air vent for 10 minutes, then close the air vent.



12. Let pressure rise to 10 lbs. Then adjust the heat to keep the pressure steady at 10 lbs. If the pressure is uneven, the cans may not seal. Do not remove the pressure weight during the canning process. If you "vent" the canner the heat becomes the same as in a boiling water bath, and is not high enough to safely preserve your fish.
13. Process at 10 lbs pressure for the required time:
 - ½ pint (250 ml.) or pint (500 ml.) jars for 110 minutes
 - ½ pint flat cans for 90 minutes
 - 1 lb (0.45 kg.) flat cans for 120 minutes
 - 1 lb (0.45 kg.) tall cans for 100 minutes
 - 20 ounce (0.6 kg.) cans for 135 minutes
14. When time is up, carefully remove canner from heat. Wait until pressure returns to zero (about ½ hour), then open the air vent. Let the pressure fall slowly. Do not pour cold water over the canner.
15. Open the canner lid, being careful of the steam. Remove cans or jars, and set them out to cool.
16. Cool cans or jars completely. If any of the cans or jars in the pressure canner did not seal properly, do not open them. They can be kept in the refrigerator and used within a week or so. The sealed ones should be washed with soap and water before storage. This will prevent bacteria and mold from growing on the food residues left on the outside of the jars or cans.
17. Label and date your cans or jars. Store them in a cool, dry place.

Dry Jam and Fruit Drinks

Dry jam and fruit drinks can be made from just about any kind of fruit, and are especially delicious when made from wild berries of the Bella Coola Valley. Each person has their own preferred ways to make these, but here are some general guidelines:

Dry Jam:

Any jam is a mixture of fruit and sugar. It can be cooked with or without pectin, and stored in small jars sealed with rings and lids, or paraffin wax. Also, the fruit, sugar and pectin mixture can be stored in the freezer. Commercial pectins (Sure-Jell, Certo, etc.) have instructions on the exact amount of pectin and sugar to add to fruit when using these products.

All fruits have some natural pectin, and some have quite a lot (such as apple, crabapple, black hawthorn, raspberries, and thimbleberries). If you want to make a dry jam without commercial pectin, a general procedure for cooked dry jam is this:

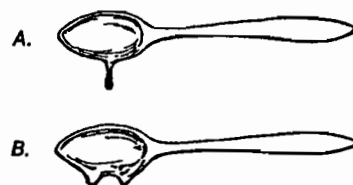
1. Use fruit that is ripe and flavourful, but not overripe, since there is less pectin in overripe fruit.
2. Wash your jam containers with soap and water; rinse thoroughly, and drain.

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- Mix $\frac{1}{2}$ - $\frac{3}{4}$ cup sugar into each 1 cup of packed fruit. Usually, a maximum of 4 cups of fruit can be cooked at once over a regular stove burner. If you try to cook a larger potful of jam, it takes a very long time and is likely to burn.
 - Bring the mixture to a boil, then simmer gently and stir regularly to prevent sticking.
 - Cook the jam until it thickens and will coat a metal spoon when you hold it up.

Knowing when the jam has cooked to thickness

A: Not ready

B: Ready (be sure to use a metal spoon)



- Ladle the thickened jam into the clean jars. You can seal with lids and rings or with melted paraffin wax. As the jam cools, it will continue to thicken, and you should end up with a soft, easy-spreading dry jam.
- Label the sealed jars and store in a cool, dry place.

Fruit Drinks:

Delicious and nutritious fruit drinks can be made from many fruits, especially from garden or wild berries. When preserved and stored, these make a convenient and refreshing beverage to use instead of those artificially-flavoured and coloured "drink crystals" so many people are using these days. Here are a few ideas for non-alcoholic drink concentrates you can prepare and preserve at home:

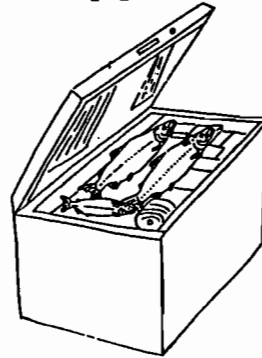
- Some of the berries which have been used to make delicious drink concentrates are salal berries, rose hips, blackcurrants, and raspberries. You might like to try other strongly-flavoured berries as well.
- The work is easiest if you prepare your bottles or canning jars before making the concentrate. Wash them in hot soapy water then rinse and drain. Now either put them in a 300° F. oven or in a large pan of boiling water. Leave them there for about 15 minutes or until you are ready to use them.
- Wash your berries. Remove stems if necessary.
- Place berries in a saucepan and add enough water to prevent burning. Bring to a boil over medium heat, and simmer gently until fruit turns to mush. Stirring and pressing fruit with a wooden spoon will help.
- Strain the mush through a sieve. Press out the last of the juice with a wooden spoon. Measure the juice and return it to the saucepan.
- Add about $\frac{1}{2}$ cup sugar for each cup of juice. Bring to a boil.

7. Pour the concentrate into your hot, sterile bottles or jars. Put on the lids.
8. You can store the syrup in the refrigerator if you plan to use it within about a month. Otherwise, preserve with a regular boiling water method (page 59) or like this: (1) Sit the bottles in a large pan of warm water. (2) Bring water to a simmer and simmer for 20 minutes. (3) Remove the bottles and dip the tops in melted wax. (4) Label and store in a cool, dark place.
9. To use the concentrate, dilute some in a glass, using about $\frac{1}{4}$ cup concentrate to $\frac{3}{4}$ cup cold water. You can make it weaker or stronger depending on your personal taste. You can add ice cubes, and perhaps a lemon wedge.

Another nice way to use concentrate is to make a hot drink with it by adding boiling water instead of cold water. You can touch it off with honey or a squeeze of lemon.

Freezing

Freezing is another means of preserving food. It stops bacteria from growing and slows down the natural deterioration of foods. The benefits of freezing and canning must be weighed. Canning may be a cheaper way of preserving foods, as electricity for the freezer costs money. However, often freezing is faster and more convenient. Freezing also preserves some nutrients better than canning does. You must also consider the initial costs of the equipment.



A home freezer

The quality and nutrient content of foods is best when foods are frozen quickly and correctly. Keep these points in mind:

1. Keep freezer temperature at 0°F (-18°C) or below. At higher temperatures, foods lose their quality (taste and nutrients) very quickly.
2. Wash foods thoroughly before freezing.
3. Blanch all vegetables before freezing (see blanching chart). Blanching destroys the natural enzymes which cause vegetables to deteriorate. Fruit does not need to be blanched.
4. Some foods do not freeze well, and lose their texture when thawed. Do not freeze: fried foods, milk sauces and custards, uncooked potatoes, lettuce, whole eggs, cooked egg whites, mayonnaise, green onions, or radishes.

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5. Use glass, stiff plastic or metal containers, plastic bags or freezer paper to freeze foods in. Paper or cardboard containers cannot be sealed well, and should not be used, or your foods will dry out and get "freezer burn." Nutrients, flavor and texture are lost.
 6. Pack foods loosely, allowing some head space for expansion of frozen liquids in stiff containers. Squeeze out as much air as possible from wrappings. Air contributes to loss of flavour and nutrients.
 7. Wrap meat and fish in moisture-proof coverings - freezer paper or plastic bags. Place two layers of waxed paper between steaks or fillets, so they can be separated easily. Squeeze all the air out of the package and seal seams and ends of wrappings with tape. Use meat and fish before their recommended time of storage is used up (see storage chart).
 8. Label and date packages. Be sure to use the oldest food in your freezer first, since frozen foods lose nutrients and flavour over time.
 9. Package frozen foods in convenient amounts that will be used at one meal by your family. This saves having to thaw and then refreeze foods.
 10. Thaw all foods except fish in the refrigerator. If fish can be put in to cook while it is still frozen, it will stay moist. Thaw fish before cooking only if you are planning to fry it.
 11. You may refreeze partially thawed foods, as long as they still feel cold and contain ice crystals. But refreezing does reduce the texture and quality as well as destroying some nutrients of the food!
 12. If the power goes off for a short time, do not open your freezer until it comes on again. Food in a full freezer will stay frozen for 2-3 days. Food in a half-full freezer will stay frozen for 1 day. If your foods thaw completely, use them as quickly as possible. Do not refreeze them if they have thawed to room temperature. Spoilage by bacteria may cause food poisoning when these foods are eaten after the second thawing.

**Blanching Chart
For Vegetables**

Blanching means to boil or steam vegetables for a few minutes, then to cool them immediately in cold water before packaging for the freezer.

Vegetable	Blanching Time
Asparagus	2-3 min. (depending on size)
Beans, lima	2-4 min. (depending on size)
Beans, green (whole)	3 min.
Beets	20-40 min. (depending on size)
Broccoli (pieces)	3 min.
Brussel sprouts	3-5 min. (depending on size)
Cabbage (sliced)	1½ min.
Carrots	2-5 min. (depending on size)
Cauliflower	3 min.
Celery	3 min.
Corn (whole cobs)	4 min.
Mushrooms	3-5 min.
Parsnips	2 min.
Peas (green)	1½ min.
Rutabaga (cubed)	2 min.
Spinach, greens, cow-parsnip	1½ min.
Squash (cubed)	3 min.
Tomatoes	1 min.
(blanch whole tomatoes and then remove skins before freezing)	
Turnips (cubed)	2 min.
Zucchini (sliced)	1 min.

Note: Tomatoes may also be stewed and then frozen.

**MAXIMUM RECOMMENDED
STORAGE OF MEAT, FISH AND POULTRY IN
REFRIGERATOR AND FREEZER**

Food	Refrigerator 38° to 40°F (2 - 3 °C)	Freezer 0°F or lower (-18 °C)
Roasts		
Beef, veal, lamb	4-6 days	6-9 months
Pork	4-6 days	3-6 months
Steaks and chops		
Beef	3-5 days	6-8 months
Pork, veal, lamb	3 days	3-4 months
Ground meat		
Beef, veal, lamb	1-2 days	3-4 months
Pork	1-2 days	1-3 months
Variety meats (liver, kidney etc.)	1-2 days	3-4 months
Luncheon meats	1 week	not recommended
Sausage	3-7 days	2 months
Frankfurters	4-5 days	not recommended
Bacon	5-7 days	2 months
Smoked ham		
Whole	1 week	2 months
Slices	3-4 days	not recommended
Corned beef	1 week	2 months
Leftover cooked meat	2-4 days	2-3 months
Poultry		
Raw	2 days	6 months
Cooked	2-4 days	2-3 months
Fish		
Cooked	2-4 days	1 month
Raw	1 day	2-4 months
Frozen, cooked combination foods		
Meat pies		3 months
Stews		3-4 months

NOTE: luncheon meats, ham slices, ham loaf and frankfurters "weep" and lose water when they are frozen and so become tough and rubbery.

Drying Foods

Another method of preserving foods is to dry them. Bacteria and mould need water to grow, so they can not spoil well-dried foods. In the past, before people could freeze or can foods, drying was the most important way of preserving food for the winter months. The Nuxalk people dried fish, shellfish, game and berries.

Berries were dried on thimbleberry leaves placed on drying racks (see the section on traditional use of berries). Berries were either dried whole or were cooked and then dried in cakes. Drying can still be an economical way of preserving fruit. Berries and other fruit can be dried using the sun or your oven, or by using one of the new, inexpensive, electric food dryers. Fruits can be dried whole, in slices or as fruit leather.

Guidelines for drying fruit:

1. Use ripe but not overripe fruit. Slightly overripe fruit can be used in fruit leathers (see below).
2. Wash the fruit well, and remove bad spots, pits and stems from fruit. Peel the fruit if necessary.
3. Most berries can be dried whole, but strawberries and other larger fruit should be cut into 3/8 in. (1 cm.) slices.
4. Place berries or fruit on mats in the sun and leave until hard and dry
or
Spread in a single layer on cookie sheets, place in the oven at 145°F (63°C), with the door open and leave until hard and dry (10-20 hours). If you use an electric food dryer, follow the manufacturer's instructions for time and temperature. Usually, 15-20 hours is sufficient.
5. Cool fruit, and pack in air-tight containers, such as plastic bags. Store in a cool, dry place. You may want to use a strong box or can to hold your bags of dried foods.

To serve:

- a. soak fruit overnight in fresh water
- b. further soften the fruit by boiling for a few minutes (optional)
- c. serve with ooligan grease and/or a little bit of sugar

Fruit Leather

This can be made with a single fruit, or by combining two or more fruits. Experiment to find your favourite combinations.

1. Cook fruit in a small amount of water.
2. Mash or puree fruit using your hands or a blender.
3. Pour fruit out onto cookie sheets to a depth of ¼ inch (0.6 cm.).
4. Let dry in the sun or in an oven set at 135°F (57°C) for 10-30 hours (check fruit frequently for dryness). Or use an electric food dryer.
5. While still warm, roll the leather up and wrap in plastic.
6. Store in an air-tight container in a cool dry place.
7. Eat fruit leather broken off in pieces, or it can be soaked in water and used in recipes.

Depending on the fruit used, fruit leather can be very sweet and sticky on the teeth. Remember to brush teeth regularly if fruit leather is used often in the family.

Smoking and Drying Fish (also see Section I)

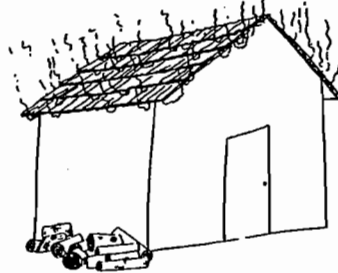
Fish is smoked by hanging it in a smokehouse. Fish can be half-smoked or fully-smoked. Half-smoked salmon requires 1-3 days of smoking. Fully-smoked salmon may require 4 or more days. Half-smoked fish has a smoke flavour, but is still soft. Fully-smoked fish tastes more smokey and is dry.

Half-smoked fish can be cooked and eaten right away, or it should be canned or frozen. Fully-smoked and dry fish can be stored as it is in a cool dry place, or in the smokehouse.

A smokehouse is a small building designed just for smoking foods. It has holes in the upper walls which the smoke can escape through. Rails around the walls are used to support poles across the smokehouse. Foods to be smoked are hung from these poles. In a tall smokehouse there may be 3 levels of poles, and in a smaller smokehouse there may be only 2 levels. The lowest level is about 4 feet from the ground, and the upper level is about 6 feet from the ground. The fish can be hung first from the lower poles and then moved up to the upper poles where there is less smoke. Some people store fish in the upper level of their smokehouse. The fish will then get a stronger smoke flavour over time.

A small slow burning fire is built on the floor of the smokehouse. Only alder wood is used for the fire. The fire may be covered with a sheet of metal to keep it from burning too high and hot. The fire should be checked at least 3 or 4 times a day. With experience you will learn how to keep your smokehouse fire burning steadily.

Everyone likes to build and use their smokehouse in their own way. If you are just starting out, ask one of the elders for advice on how to build your smokehouse and the best ways to smoke fish.



A smokehouse with alder logs. Smokehouses are made with wood, metal sheets, or a combination of the two. If made with metal, the smokehouse will tend to be hotter.

How to take care of the smokehouse fire:

Start the fire with kindling, so that it gets very hot. Then put two big logs of wood on either side of the fire. Try to use logs that will lean into the fire, not away from the fire. If you do not have logs that will lean toward the fire, use sticks to prop the logs so they will roll into the fire as they burn down.

After the fire is burning well, put a sheet of metal (tin) over the fire. The sheet should be just big enough to cover the fire. This spreads the heat over the logs and the fire will not burn out as easily. When the fire dies down, push the burned logs into the fire centre, and add new logs to the outside.

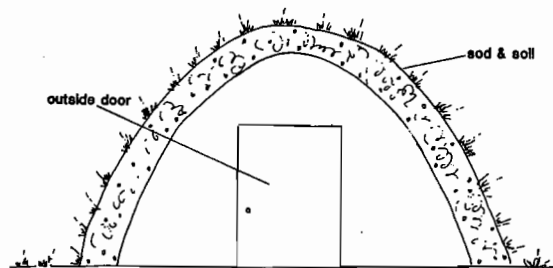
When smoking fish, try to keep the smokehouse smoking at all times. Check the fire when you don't see smoke coming from the smokehouse. In cold weather it does not matter if the fire goes out for a few hours. But in warm weather keep the fire going at all times to smoke the fish as quickly as possible. Otherwise the fish may spoil.

Root cellars

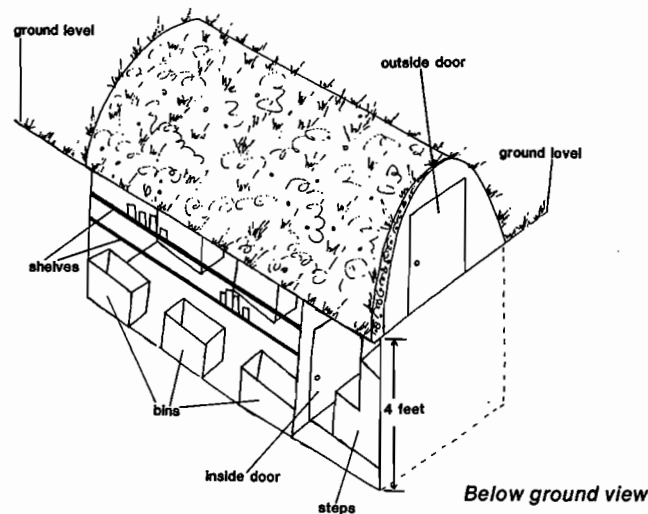
Long ago, root cellars were built to store root foods such as potatoes, clover roots, other roots and vegetables, ooligan grease, fruit and jam. These little buildings kept stored foods cool in summer and were insulated so the foods would not freeze in winter.

A large hole was dug about 4 ft. into the ground, and then a house was built into the hole. The house could be 6 ft. x 8 ft. wide, or however big you wanted it. The walls were made of cedar planks about 5 or 6 ft high and it had a peaked or rounded roof.

The ground that was dug out of the hole was used to cover the building and served as insulation. The root cellars were built with two doors — one from the outside that lead down a few stairs to another door leading to the inside of the cellar. This "entry way" also served to keep the cold out in the winter. (see diagrams 1 and 2)



An early root cellar: front view, above ground with sod roof



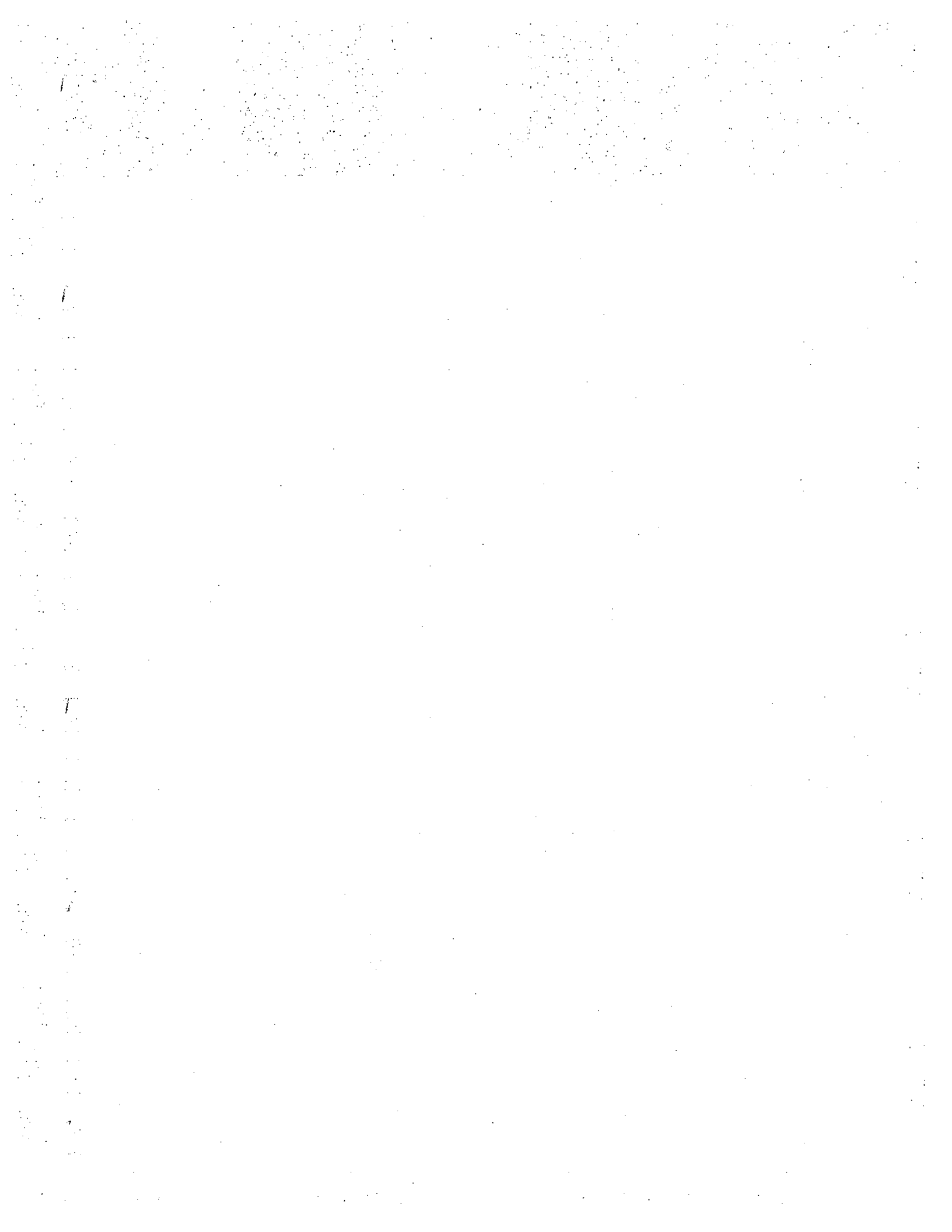
Root cellars were built a few feet from the house so that if the house burned down, there would still be some food. Some people built cellars close to the vegetable garden, which could be quite a way from the main house.

Root cellars today can be built with cement, 2 x 4's, and plywood. After digging the hole the size you want the root cellar to be, forms are made for pouring cement for the floor and underground walls. The cement walls should reach at least 1 ft. above the ground so that the rain will not run into the cellar and flood it.

When the cement is dry, the top part is built, 3 to 4 ft. high, or however high you want it, using 2 x 4's and plywood. Today the walls and ceiling can be insulated with fiberglass, to keep the food cool in summer and from freezing in the winter. The roof of the cellar can be peaked and empty. This empty space can then be used to store garden tools, or other items.

Inside the root cellars, bins are used to store potatoes, carrots, fruit, etc. Shelves are built to store jarred fruits and vegetables, ooligan grease, or whatever you may wish.

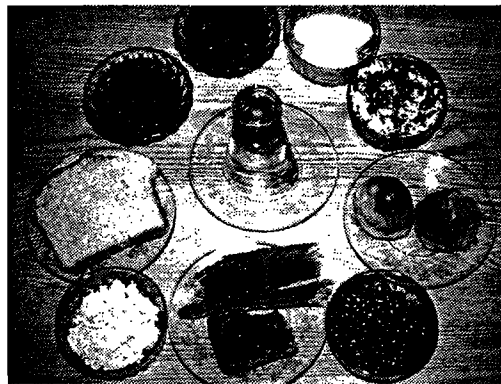
Today, people prefer to build cement cellars because they keep rats and mice out better than the earlier cellars did.



B. How to Select Nutritious, Low-cost Foods

Here are some tips on how to trim your food budget, and still keep quality in your meals.

1. Use as many traditional foods as possible. Many foods can be harvested for little or no money. But, of course, time and energy have to be considered too. Seafoods, berries, game and greens are all very nutritious foods.



A selection of Nuxalk foods. From the bottom going clockwise: dried fish, herring eggs, whole wheat bread, blackberries, raspberries, potatoes, seaweed with herring eggs, bannock cooked in ooligan grease, and salmon eggs. Ooligan grease is in the centre.

2. When shopping, keep nutrition and cost in mind and balance the two. See the Market Guide below.
3. Stock up on canned and bottled goods when they are on sale. But be careful of damaged goods, such as rusted cans, etc.
4. Try to buy fresh fruit and vegetables when each comes into season. Buy in quantity for home preservation, when the price is lowest.
5. Some nutritious foods are a good buy all year round (such as raw carrots, canned tomatoes and frozen peas). Try to buy these foods often.
6. Shop using a shopping list. Avoid impulse buying especially when you are hungry. It can be expensive! Try to shop only once a week after you have planned the meals for the week.
7. Buy meat according to how many servings it will give, not just according to price per kilogram (pound).
8. Dried skim milk powder is the least expensive way to buy milk, and it keeps well. Use it as a substitute for whole or 2% milk. Or you can extend whole or 2% milk by mixing it with fluid skim milk.
9. Frozen or canned "fruit juice" contains more real fruit and is more nutritious than tins labelled "fruit drinks" or drink crystals. Check the labels!
10. Store-bought sweets and desserts are expensive, and contain few nutrients. But it is okay to have a "treat" now and then!

Here is a guide showing some of the usual best buys of nutritious foods. Traditional foods (with little or no cost) are also included.

- Each food was rated on:
- how much of several key nutrients it contained
 - its average cost

The Market Guide can be helpful in making up your shopping list. By frequently using the foods suggested in the first three left-hand columns, you will be able to keep your food costs under control without sacrificing good nutrition. For a description of the nutrients, see page 86.

MARKET GUIDE FOR BEST NUTRITION AND LOW COST

Nuxalk Traditional Foods (little or no money and lots of nutrients)	First Market Choice (low cost per unit of nutrients)	Second Market Choice (moderate cost per unit of nutrients)	Other Market Choice (more expensive per unit of nutrients)
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Food Group I. (Fruits) Vitamin A, Vitamin C, Potassium, Fibre

-local berries (blackcaps, thimbleberries, salal berries, salmonberries, etc.)	-orange juice (frozen) -orange juice (canned) -oranges -apple juice (canned)	-bananas -peaches (canned) -pineapple (canned) -grapefruit -prune juice	-apples -applesauce (canned) -prunes (dried) -pears (canned) -fruit cocktail (canned) -raisins
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Food Group II. (Vegetables) Vitamin A, Vitamin C, Folic Acid, Fibre

-local greens (sheep sorrel, lambsquarters, seaweed etc.)	-carrots -cabbages -squash -turnip -brussel sprouts -spinach (canned) -tomatoes (canned) -tomatoes (fresh in season) -broccoli (in season) -peas (frozen)	-corn (canned) -green beans (canned) -mixed vegetables (canned or frozen) -lettuce (iceberg) -potatoes -spinach (raw in season) -zucchini	-celery -green pepper -onion
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Nuxalk Traditional Foods	First Market Choice	Second Market Choice	Other Market Choice
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Food Group III. (High Calcium) Calcium, Protein, Riboflavin, Vitamin A, Vitamin D

-local fish	-skim milk powder	-cottage cheese	-tofu
-canned fish	-skim milk (fluid)	-2% plain yoghurt	-medium cheddar
-soup made with fish skin and bones	-2% milk -buttermilk -whole milk -evaporated milk -2% UHT milk	-mozzarella cheese -mild cheddar cheese	cheese

NOTE:

Some native people have discomfort after eating large servings of dairy products. This discomfort can be in the form of stomach cramps, gas and/or diarrhea. This condition is called "lactose intolerance" and is caused by not digesting lactose, a sugar in milk. Most people with "lactose intolerance" can still take a cup or two of milk each day without problems. If someone in your family does not tolerate dairy products well, be sure there are other good sources of calcium in their diet every day.

Food Group IV. (Grains and Roots) Carbohydrates, Thiamin, Riboflavin, Niacin Iron, Potassium, Fibre, Folic Acid

-clover roots	-bran	-rolled oats (not instant)	-Cheerios
-silverweed roots	-wheat germ	-Red River or Sunnyboy cereal	-granola
-fern roots	-whole wheat bread	-white bread	-Shredded Wheat
	-cornflakes	-Allbran	-crackers
	-branflakes	-spaghetti	-white rice (not instant)
	-wheat flakes	-macaroni	
		-barley	
		-potatoes	
		-converted rice	

Nuxalk Traditional Foods	First Market Choice	Second Market Choice	Other Market Choice
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Food Group V. (High Protein) Protein, Iron, Niacin, Riboflavin

-fish	-split peas	-cod	-turkey
-game	-navy beans	-mackerel	-frying chicken
-shellfish	-kidney beans (dried)	(canned)	(whole)
	-chicken liver	-sardines	-tuna or salmon
	-beef liver	-ground beef	(canned)
	-pork liver	(regular)	-ham
	-beef kidney	-pot roast	-pork roast
	-beef heart	-stewing beef	-sliced prepared
	-eggs	-peanut butter	meat
	-stewing chicken	-tofu	-bacon
	-baked beans (canned)		

A FEW OF THE WORST CHOICES YOU CAN MAKE ARE:

- hotdogs, spareribs - they contain little meat and nutrients, and lots of fat and/or bone
- "Hamburger-helper" type mixes - they provide spices which would be much cheaper if bought alone
- individual pudding cups - very expensive for very little nutrient value
- frozen vegetables in sauces - you could make sauce that is much less expensive
- drink crystals (like "Tang", "Freshie", "Kool-Aid", "Co-Op Crystals") - these are not real fruit juice, but have lots of sugar, artificial colour and flavour, and are quite expensive for what you get

C. How to Cook Nutritious, Low-cost Meals

Here are some tips on how to store and cook food to minimize nutrient losses:

1. Plan your meals using all 5 food groups in the market guide, and use Nuxalk traditional foods often.
2. Plan meals before you go shopping. It is best to plan a week ahead.
3. Prepare only as much food as your family will eat, or plan to use leftovers in your weekly menu. Throwing out leftovers can be costly.
4. Try to use every bit of food. Bones and vegetable peelings can be used to make soup stock. Water from cooking vegetables can be used in gravies or stocks. Stale bread can be used in puddings, stuffings, or to stretch ground beef or fish.
5. But do not use mouldy foods! Either throw the food out altogether, or cut the mould off, cutting deep into the food. Do not use mouldy dry jam or preserves either. Some moulds are known to cause food poisoning. Remember, "when in doubt, throw it out".
6. Refrigerate fresh foods as soon as you get home from shopping. Some nutrients are lost when food is not refrigerated. This is especially true for meat, dairy products, and leafy vegetables.
7. Clean fruits and vegetables and then store them in the refrigerator in the crisper drawer or in closed plastic bags, to keep them from drying out. Store bananas, potatoes and onions in a cool, dry cupboard.
8. To get the most nutrients, use fresh green vegetables one or two days after getting them home.
9. Eat crisp, raw vegetables occasionally. Try pieces of broccoli, cauliflower, celery, green pepper and carrot sticks.
10. Cook vegetables by steaming or dropping them into a small amount of already-boiling water. Nutrients are lost during cooking, so cook vegetables only until they are tender. Try the quick Chinese cooking methods - the stir-fry methods.
11. Do not add water when cooking frozen or canned vegetables. There is enough water already with the vegetables, and the more water you add, the more nutrients will be lost when you pour off the cooking liquid.
12. Use margarine for cooking, instead of lard or shortening. It has added vitamins A and D, and is cheaper than shortening. If you want to use it, ooligan grease is great for cooking too! It has lots of vitamin A and E.
13. Try to use canned foods within 6 months of purchase, because nutrients are lost with longer storage.

Instant Skim Milk Powder

A liter of milk made from skim milk powder costs from $\frac{3}{5}$ to $\frac{3}{4}$ as much as a liter of fluid whole milk. Milk from skim milk powder has all the protein, minerals and vitamins A and D of fluid milk. It has half the calories of fluid whole milk, because the cream is removed.

Store milk powder in a cool dry place. If stored in a tightly closed container, it can be kept for several months. Follow directions for mixing carefully (ie. 1 measure of milk powder plus 3 measures of cold water). Chill the milk for several hours before using it.

To stretch your whole and 2% milk further, mix it with milk made from skim milk powder. At first, try $\frac{1}{4}$ skim milk and $\frac{3}{4}$ whole milk; later try $\frac{1}{2}$ of each.

D. The Cost of Food in Bella Coola

A continuing part of the Nuxalk Food and Nutrition Program has been the study of food prices in Bella Coola. A method developed by Agriculture Canada is used to record price changes at the Co-Op. This method is called "the Nutritious Food Basket". It is used to calculate the weekly cost of buying a variety of foods to meet the nutritional needs of an average family of four persons. Here are the steps to calculate the "Nutritious Food Basket":

1. To begin with we use a "shopping list" of 78 foods which was put together by Agriculture Canada. The foods on the list were carefully chosen to represent the foods usually bought by the Canadian population, such as milk, carrots, chicken, etc. The foods are divided into eleven groups: dairy products, eggs, meat, fish and poultry, meat alternatives, cereal and bakery products, citrus fruit and tomatoes, other fruit, potatoes, other vegetables, fats and oils, and lastly, sugar and other sweets.

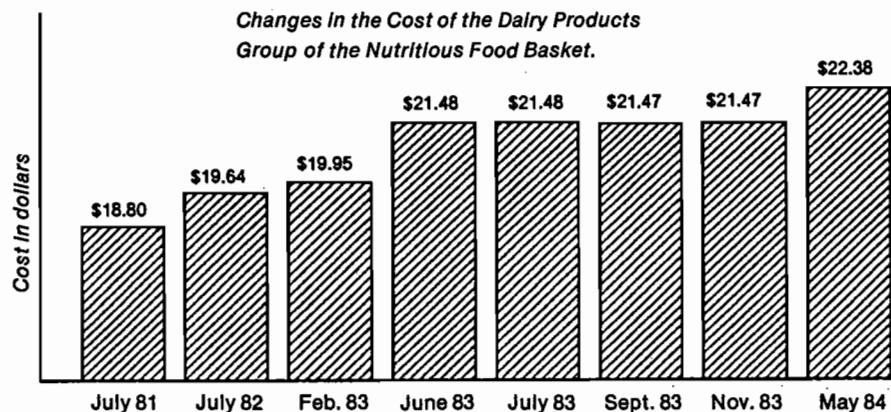
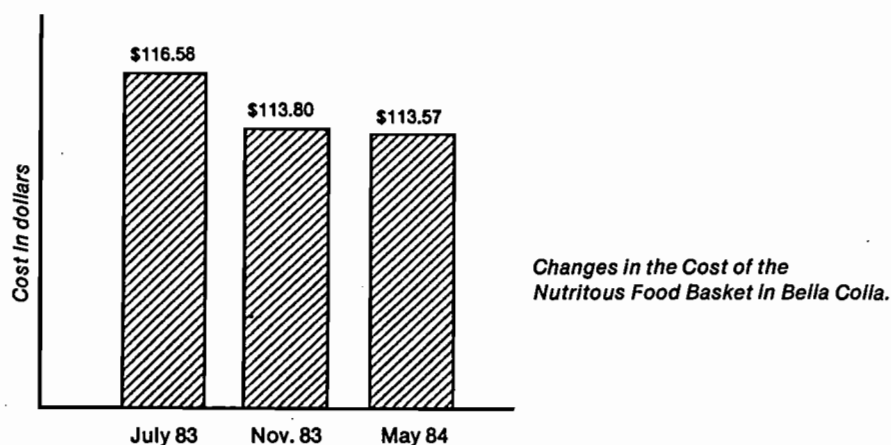
2. Every second month, foods on the shopping list are priced at the Co-Op. If there are two or more brands of an item, the cheapest price is recorded. If an item is not carried by the Co-Op, the best substitute is chosen.

3. Each food within a group is given a "number" to show its "weight" in the overall diet. For example, in the dairy products group, milk is given a greater "weight" than yoghurt, as milk is used more often by more people.

4. Next, an "average family" is constructed, based on information from the Canadian census. This family of four includes a man 36-50 years old, a woman 19-35 years old, a girl 7-9 years old, and a boy 13-15 years old. Canada's standards on nutrient allowances are used as a guide to calculate how much of each food group these people would need to eat to meet their nutrient needs each week.

5. The original Co-Op prices are then adjusted for these factors in 3 and 4 above. In the end, there is a price for each food group as well as a total price for the whole "Nutritious Food Basket" that will provide a good diet for the family for a week.

It is interesting to compare the cost of each food group to see which takes the biggest chunk out of the food budget. Other ways to use the results are to make month-to-month comparisons to see how costs are changing. The figures show the price changes for the cost of the Nutritious Food Basket as a whole and for the dairy product group.



We can also compare Bella Coila costs to those in Whitehorse and Vancouver. This is possible because the government uses the same shopping list to price foods in cities across Canada. For instance:

	Bella Coila	Vancouver	Whitehorse
July, 1981	\$105.62	87.40	106.70
July, 1983	116.58	90.93	117.64

Keep in mind that the "Nutritious Food Basket" is one big average. Food may cost your family more, or less, than this amount, depending on the numbers and

ages of the people in your family, your budget and food preferences. However, the costs calculated for the "Nutritious Food Basket" seem to be surprisingly close to what families on the Nuxalk reserve actually spend on food. The 1981 family interview survey we did showed that an average family (4.4 people) spent \$111.00 per week on food. The "Nutritious Food Basket" for July, 1981 (4 people) cost \$105.62 at the Co-Op.

Aside from this information about food costs in Bella Coola, there is also some information about the amount of money spent on alcoholic drinks. The following figures came from the Alcohol and Drug Program on the reserve.

1. In 1976, Bella Coola Valley people spent about \$60,000 a month at the liquor store. This increased 30% to \$80,000 during holiday seasons. This meant that for the valley population of 2,000, approximately \$30 per week (\$40 during holidays) was spent by four people (the average size of a family).
2. In 1983, these figures had increased to about \$54 a week for four people (\$72 during holidays). This was 50% of the weekly cost of food needed to meet the nutrient needs of a family of four.
3. Altogether, \$1.3 million was spent at the Bella Coola liquor store in 1983. This was the third highest per person expenditure in British Columbia. Keep in mind that "per person" includes everybody in the valley: men, women and children. Since only some of these people actually use alcohol, that means that those who do are spending a great deal of money at the liquor store.

If a family wants to cut down on food costs, a logical way to do it is to use more traditional foods, and to spend less at the Co-Op and the liquor store. Our work on the diet records from people on the reserve shows that those families who use a lot of traditional native foods are reducing the food budget for a nutritious diet by about 18%. If families could make the best use of all the native foods available in the valley, their food budget could be reduced up to 35%.

Another way to further decrease the amount of money spent on foods is to plant a home garden. Many people in Bella Coola are already doing this. They save money and have wonderfully fresh vegetables. Potatoes, carrots, lettuce, peas, beans, onions, beets, pumpkins and some members of the cabbage family are the most popular vegetables grown in the valley. The commercial varieties of berries (strawberries, raspberries, etc.) also grow well, and are in many home gardens.

E. Nutrition and Lifestyle

All of us live our own unique lives with individual habits and customs. Some of our habits are learned when we are children, and they are shaped by our genetic makeup and our social and cultural background. As adults, we learn new habits and make choices which establish our lifestyles. How we choose to live affects our health, well-being, work capacity and even the length of our lives.

We form habits regarding food, sleep, work, exercise, relaxation, drugs and alcohol and how we handle stress. Everyone's habits change with time and experience. Knowledge can guide our habits and help us to teach good habits to our children. Some knowledge of the basic scientific facts of nutrition is helpful to everyone, because we all must make decisions about what and how to eat.

Years of research have shown that good nutrition can make a difference to our well-being and physical and mental health. It is clear that too many sugary foods and poor brushing habits lead to tooth decay and loss of teeth. We know that overweight is associated with high blood pressure, diabetes and some forms of cancer. Alcohol and some drugs can reduce appetite and change eating habits, so that the body is affected both by the alcohol or drugs and by lack of nutrients. This can lead to diseases of the liver, kidney, heart and stomach as well as to some types of cancer. All these factors (alcohol, drugs and poor nutrition) can also affect unborn babies when a woman is pregnant. We know that if we eat well and exercise regularly we and our children will feel good physically and mentally.

Good nutrition is important to people of all ages: boys, girls, men and women. All mothers know how important it is to feed babies and growing children with nutritious foods. Childhood is the time for positive training in good eating habits, such as:

1. Eating a variety of nutritious foods several times a day. A variety includes protein foods, fruits, vegetables, whole grain foods, dairy products and root foods.
2. Keeping sugary snacks and non-nutritious drinks out of daily meals and using them only as occasional foods.
3. Balancing food with exercise to build a strong and healthy mind and body.

During the times of life when the body is growing (pregnancy, infancy, childhood and teen years) it is especially important to have regular meals with energy, protein, fat, vitamins and minerals. These nutrients are essential to build all body tissues (bone, muscle, brain and other organs). In the fully grown person, nutrients are needed to keep these tissues functioning and healthy. Also, throughout life good nutrition helps us to fight infections, to resist stress and to maintain high energy levels and positive thinking.

Women in the childbearing years need to keep their bodies fit for a possible pregnancy. Science has shown that good nutrition and health will influence the father's role in bringing a healthy baby into the world. Adults need to be nutritionally fit to keep healthy in their daily work, whether it is active physical work such as logging, or desk work or work within the home. In the elder years, good nutrition and fitness will help to keep people active and able to enjoy their families and community life. Nutrition is an essential part of a healthy life for everyone.

In the past, native people ate only foods which they could harvest and gather from the sea and lands around them. People in West Coast areas usually had well-balanced diets because they ate a great variety of foods - fish, shellfish, game meats, berries, greens and root vegetables - foods that are described in the first section of this handbook. The work needed to harvest and prepare these foods, and to preserve them for later use in the "spare seasons" contributed to the fitness levels of the people. Also, there was a lot of community spirit and sharing in the work. This sharing helped to make foods even more important to the native culture.

For everyone, an understanding and appreciation of cultural habits is important. Personal expression and participation in cultural events strengthens the ties of mutual support within the community. This gives a balance to life, and contributes to mental health and a sense of well-being. Community events around the harvesting and preparation of native foods have always been culturally important. In this way, the culture has provided for good health and nutrition of the people.

The knowledge of the healthfulness and use of traditional Nuxalk foods has passed through many generations. Today most of the foods given in the first part of this handbook are still available in the Bella Coola area. Although traditional foods are not bought with money, native people need their boats and nets, transportation to berry-picking and root-digging areas and the time and energy to do the work. However, this effort can be very rewarding when families make use of the traditional foods for:

- family and community spirit and fun
- physical fitness
- pure taste pleasure
- good nutrition

Plan your meals and the meals of your family with as many Nuxalk foods as you can and then balance your meals with nutritious, economical store-bought foods. Here are some examples of meal menus which show good meals and poor meals for each age group. These examples were taken from diet records gathered during the 1983 Nuxalk Health Assessments. They illustrate how people can make nutritious food choices.

	<u>Good Meals</u>	<u>Poor Meals</u>
For Toddlers:		
Breakfast	Oatmeal with milk Applesauce	White toast Apple juice in a bottle
Lunch	Macaroni and cheese Carrots Milk	Macaroni and margarine Kool-Aid
Dinner	Fish Potatoes with ooligan grease Corn Milk	French-fries Gravy Pop
For School Children:		
Breakfast	Egg Toast with margarine and dry jam Orange juice	No breakfast
Lunch	Peanut butter sandwich with whole wheat bread Celery sticks Apple Milk	Chips Brownies Kool-Aid
Dinner	Bar-B-Q fish Potatoes Salad Milk	Spaghetti with plain tomato sauce Jello Pop
For Adults:		
Breakfast	Cornflakes with milk Toast with butter Apple juice Coffee or tea	No breakfast or only tea or coffee
Lunch	Fish sandwich Carrot sticks Brownies Coffee	Rice with gravy Beer
Dinner	Spaghetti with meat sauce Salad Beer	Fried fish Fried potatoes Pie Coffee with 3 tsp. of sugar

	Good Meals	Poor Meals
For Elders:		
Breakfast	Boiled egg Toast with butter and dry jam Orange juice Tea with 1 spoonful of sugar	No breakfast
Lunch	Fish stew with potatoes, onion and celery	Cake Tea with 2 tsp. sugar
Dinner	Broiled fish Rice Salad Tea	Toast with butter and dry jam Pudding Tea

Here are three example of good meals using only traditional Nuxalk foods:

1. Stew with mutsie, clover
roots and ooligan grease
Jarred raspberries
Pu7yaas
2. B-B-Q fish
Steamed fern roots
Fresh cow-parsnip stalks
Stewed wild crabapples
3. Steelhead roe with seaweed
and ooligan grease
Bannock with dry jam
Whipped soapberries

Important Nutrition Facts for Everyone

Pregnant Women

- All nutrients are needed to build new cells and tissues.
- Every day eat many different kinds of high nutrient foods from within each of the food groups on page 86.
- Eat lots of dairy products, fruit, dark green vegetables and meat and fish.
- If you have "morning sickness" try eating smaller more frequent meals rather than 3 big meals. Eat a few crackers as soon as you get out of bed in the morning.
- As time goes on and the baby grows you will need more food and more nutrients.
- Do not try to diet while you are pregnant. Your baby will be most healthy if you gain 24 to 28 lbs during your pregnancy.
- Pregnant women also need lots of fluids - milk, fruit juice, soup and water are the best.
- Avoid sweet, low-nutrient foods. They will fill you up and replace nutritious foods.
- Get lots of rest and avoid stress.
- Avoid caffeine, alcohol, drugs and cigarette-smoking.
- Take advantage of prenatal classes at the Health Clinic.

Nursing Mothers

- Every day eat many different kinds of high nutrient foods from within each of the food groups on page 86.
- Breast milk is inexpensive, convenient and always clean.
- Breast milk is always the right temperature and consistency for your baby.
- Breast milk contains antibodies which will protect your baby from disease.
- Breast feeding encourages development of well-formed jaws and straight teeth in your baby.
- Nursing mothers still need more food than usual and they need a varied, nutritious diet.
- Consume plenty of dairy products (milk, cheese, yoghurt and cottage cheese).
- Drink plenty of fluids.
- Avoid alcohol and drugs as they can pass into your milk.
- If you are breast feeding, do not give your baby any other food until he or she is at least 3 months old. Breast milk is a complete food.

Babies

- Breast milk is best for babies.
- If the baby is less than 6 months and cannot be given breast milk, commercial formula is the best choice. Follow the directions on the formula package carefully. Start whole milk when the baby can hold a cup.
- After 6 months, the baby can be given Pacific milk diluted in half with boiling water - it is sterile, just the right temperature, and there is no added sugar.
- It is best to start introducing solid foods to babies once they are 4 to 6 months old.
- Introduce solid foods gradually to babies. Start by using baby cereals.

Babies (cont. . . .)

- At 6 months, babies can usually have pureed foods (meat, vegetables and fruit).
- Try making your own baby food using a blender or grinder. It is cheaper than store-bought baby food and just as nutritious.
- Babies need lots of rest, love and care.
- Take your baby to the Health Clinic for regular visits and immunization shots. These will prevent serious illnesses.

Toddlers

- Every day toddlers need a variety of foods from each of the food groups; dairy, cereal, meats, fruit and vegetables.
- Breakfast is important to give them energy for the day.
- Introduce them to a variety of foods, so that they will not be afraid to try new foods when they grow older.
- Toddlers need plenty of milk for growing bones and teeth.
- Snacks are important because toddlers often cannot eat enough at meals. But snacks should be nutritious, not just sweet! Try raw fruits and vegetables, dry fruit mixes and slug'.
- Candy, pop and other sweets have no nutritional value and can damage your child's teeth.
- Let children help you prepare meals. It will help them grow to like nutritious foods and traditional foods.
- Wait until the child is 1 year old before giving hard crunchy vegetables or whole pieces of meat, as there is the danger of choking.
- Finger foods such as dry toast, fruit slices, and vegetable pieces are popular with toddlers and may be used to encourage them to eat a variety of foods.

School Children

- School children need a selection of different foods from all the food groups every day.
- Breakfast is very important; it helps children to think clearly in school and gives them energy for all their activities.
- A variety of foods in lunches such as fruit, vegetables, sandwich and milk contributes to the day's nutrition and helps keep children interested in good foods.
- School children often need snacks, which contain nutrients and energy to help them keep going between meals.

Teenagers

- Teenagers are going through a growth spurt and getting enough nutrients and energy for this growth is very important.
- They need a variety of good foods: fruits and vegetables, meats, cereals and dairy products.
- They need adults to show them good examples of nutritious diets and healthy, active lifestyles. Teenagers (especially girls) often try food fads and drastic weight loss diets and later, this can cause health problems.
- Fitness is important for strength, flexibility, confidence and growth.
- This is an excellent time for them to learn how to prepare their own meals.

Adults

- Every day, adults need a variety of foods which will give them nutrients as well as energy.
- Fitness and good eating habits are needed to maintain the right body weight.
- Adults need adequate fluids - milk, water, fruit juice (not just tea, coffee and alcohol).
- Adults still need calcium. It is especially important to prevent bone loss, which often occurs in older women.
- Adult women need good sources of iron every day.

Elders

- Elders need a variety of foods every day to maintain healthy bodies.
- Elders often are alone and do not like to cook just for themselves. It is best if they can have at least one meal a day with other people.
- Elders may have problems with their teeth and may need nutritious foods that are soft and easy to chew.
- If indigestion is a problem, try eating smaller, more frequent meals.
- Elders use less energy than they did earlier in their lives, so they need less energy foods. Elders' needs for other nutrients are the same. This means that each day, they should have protein foods, vegetables and fruits. They also need some fats and carbohydrates, but less than in their earlier years.

NOTE:

Some native people have discomfort after eating large servings of dairy products. This discomfort can be in the form of stomach cramps, gas and/or diarrhea. This condition is called "lactose intolerance" and is caused by not digesting lactose, a sugar in milk. Most people with "lactose intolerance" can still take a cup or two of milk each day without problems. If someone in your family does not tolerate dairy products well, be sure there are other good sources of calcium in their diet every day.

Roles and Food Sources of Major Nutrients

Nutrient	Roles	Native Foods				Best Foods Sources
		Greens	Roots	Berries	Fish and Shellfish	
ENERGY						
Carbohydrate	Most important source of energy. Includes starches, fiber and sugar.	X	X	X		All fruit, root foods, breads, cereals, rice and vegetables.
Fat	Source of energy. Supplies essential fatty acids. Carries the fat-soluble vitamins (A, D and E).				X	Ooligan grease, fish, meat, poultry, whole milk, cheese, butter, margarine, oils.
Protein	Builds and repairs all body tissues. Source of energy if not enough carbohydrate or fat is available.				X	Fish, meat, shellfish, poultry, eggs, cheese, milk, nuts and beans.
VITAMINS						
Vitamin A	Needed for normal vision, and healthy skin, bones and teeth. Helps fight infection.	X		X	X	Wild greens, dark green or orange vegetables and fruit.
Vitamin D	Needed for healthy bones and teeth.				X	Milk, margarine, (and sunshine).
Vitamin E	Needed for healthy tissues and blood cells.				X	Ooligan grease, margarine, vegetable oils, whole wheat cereals and breads.
Vitamin C	Needed for healthy tissues, bones and teeth. Helps fight infection.	X		X		Wild greens and berries. Other fruit, fruit juice and vegetables.

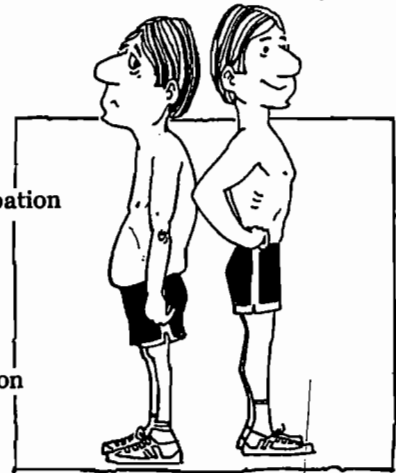
Nutrient	Roles	Native Foods				Best Foods Sources
		Greens	Roots	Berries	Fish and Shellfish	
B VITAMINS						
Thiamin (B1)	Needed for normal growth and body functions.				X	Whole grains, liver, pork, beans, enriched breads and cereals.
Riboflavin (B2)	Needed for normal growth and vision and healthy skin.				X	Fish, meat, liver, milk, greens, eggs, cheese, whole wheat and enriched breads and cereals.
Niacin (B3)	Needed for normal growth and body functions.				X	Fish, shellfish, meat, eggs, seaweed, liver, whole wheat and enriched breads and cereals.
Folic acid	Needed for reproduction, growth and healthy cells.	X		X		Fruits, green vegetables, beans, whole grains.
MINERALS						
Calcium	Needed for strong bones and teeth, and healthy nerves.	X		X	X	Fish bones, milk, cheese, yoghurt, hemlock inner-bark, wild berries, lambsquarters.
Iron	Needed as part of red blood cells to carry oxygen to all parts of the body.	X		X	X	Fish, shellfish, meat, nettles, wild berries, dried fruit, hemlock inner-bark, eggs, whole wheat and enriched breads and cereals.
Magnesium	Needed for strong bones and teeth, and healthy nerve function.	X			X	Shellfish, greens, wild berries, whole wheat breads and cereals.

F. Nutrition, Fitness and Desirable Body Weight

Good nutrition and exercise work together for fit, healthy bodies. In the past, people usually had to work hard gathering food, building houses and moving camp, and they were fit and strong. Now more and more people do not have to work at active jobs, and so poor physical fitness is a problem for many people in North America.

An active lifestyle does not guarantee a longer life or freedom from disease, but it does help to have a vigorous enjoyable life and a better chance of recovery from sickness or surgery. Exercise can:

- improve breathing and blood circulation
- build strong muscles
- improve posture
- build a strong heart
- improve digestion and help correct constipation
- keep bones strong
- keep your body flexible
- improve your balance and coordination
- give you a healthy appetite
- help you to sleep well at night
- give you energy and pep, and relieve tension
- help control body weight



Fitness is for everyone, no matter what your age, sex, physique or physical abilities. People exercise and keep fit in many different ways. Some people have active jobs which keep them fit. Other people keep fit by playing sports, by walking, biking, hiking, jogging or going to fitness classes. Even people who do heavy physical work may need a fitness program to loosen sore muscles and to keep other parts of their bodies in shape.

If you are thinking about starting to exercise, plan carefully before you start. Planning will help you enjoy the activity and will help you to stick with it. For anyone starting a fitness activity here are **THREE RULES** and some helpful hints.

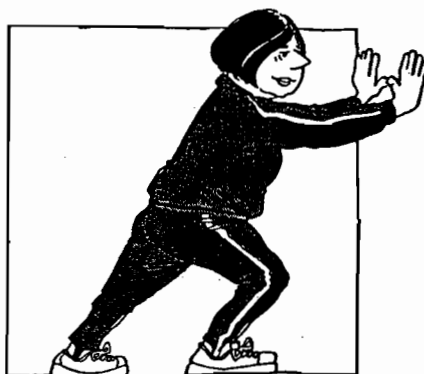
RULE 1 - Do some fitness activity at least 3 times per week.

RULE 2 - Your activity should take at least 30 minutes. There should be 5-10 minutes of warm-up, 15 - 20 minutes of vigorous activity, and 5 minutes of cooling down and relaxing.

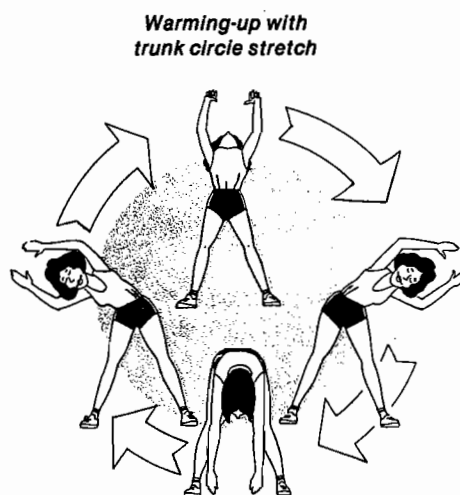
RULE 3 - Do your activity at a comfortable but energetic pace. You should be able to carry on a conversation during the activity but you should also feel that you are "working."

HELPFUL HINTS:

1. If you have any special medical problems or have not had any exercise for a long time, talk to your doctor or the health workers in the Nuxalk Health Clinic, and ask their advice about fitness activities.
2. Try one activity at a time. If after several weeks you decide you do not like what you have been doing, try something different. Pick an activity that you like. Do not do something just because that is what everyone else does. If you like an activity then you will find it easier to do regularly.
3. Start off slowly. Some people try to do too much right away and then get discouraged. You will be able to do more as you get fitter and stronger.
4. Pick a date to start your activity. Set up a schedule and time of day for your exercise and try to stick to it.
5. Get support from your family and friends. Tell them what you are doing and why. Perhaps a friend would like to join you.
6. Wear loose, comfortable clothing and comfortable footwear for your activity.
7. Warm-up and cool-down stretches are important! A good warm-up reduces the chances of injuries and stiffness. Stretch all your muscles out, but do not force them. The stretch should not be painful. Stretch slowly and release the stretch slowly, do not bounce. Cool-down stretches should be done the same way. Ask the fitness instructors at the Health Clinic to show you some good stretching exercises. Or you can read up on them in *Bogie's Book on Fitness*, which is available in the clinic.



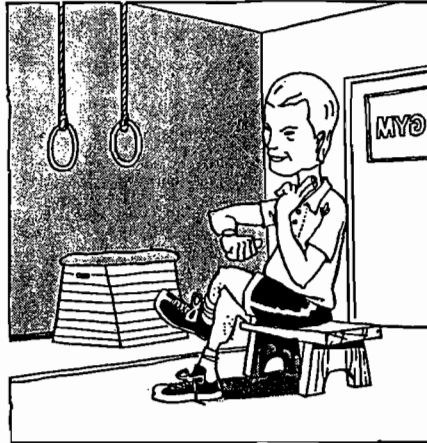
Warming-up with calf stretch



Warming-up with trunk circle stretch

8. Measure your heart rate by measuring your pulse. During fitness activities your pulse should increase. This means that your heart is working and growing stronger. But your heart rate should not get too high. Subtract your age from 220 - that number is your maximum heart rate. Then during exercise your heart rate should reach 75% of your maximum. For example, a 30 year old would have a maximum heart rate of 190 beats per minute (220-30), but should only get their heart rate to about 142 beats per minute during strenuous exercise.

Check your heart rate by counting your pulse for 20 seconds and then multiplying by 3 to give beats per minute (60 seconds).



Counting the neck pulse

(If you are confused about heart rates, talk to the fitness instructors at the Health Clinic or the CHN)

9. Try not to be self-conscious or discouraged about your exercise. Tension makes exercise harder. You will gradually feel stronger and more confident. In the meantime, you are working at fitness and are doing something important, and you should be proud of it!

OVERWEIGHT?

Excess weight is not healthy. It slows down your movements, puts strain on your body and heart and is related to diseases like diabetes and high blood pressure. If you think you are overweight, talk to your doctor or CHN and ask them what they think your weight should be. If you are overweight, there are 2 ways of solving the problem - nutrition and exercise.

First of all, make sure that you are eating well. Develop good eating habits - eat a variety of nutritious foods every day. Only occasionally eat high-calorie, low-nutrient foods. Talk to your CHN about a diet. Do not try dieting without some medical advice. Many of the popular diets in magazines are unhealthy and even dangerous. All diets must contain a variety of nutritious foods.

Secondly, decide on a comfortable, regular fitness routine. Follow the guidelines above. Exercise will help you burn off calories and fat, and will help give you extra energy.

Remember, it takes several years to put on extra pounds, and it will take a while to lose them. It is not good for your body to lose weight faster than 1 or 2 pounds a week. Sometimes you may slow down or stop losing weight but do not be discouraged. It is only temporary. As you exercise you may also find that temporarily you are not losing weight. This is because you are building muscle, but you are also losing fat!

G. So You Want To Lose Weight?

Here are some steps to help you along.

1. First consider weight loss carefully

a. Why do you want to lose weight?

Is it really you who wants to lose weight, or are you under pressure from your family, friends or doctor? If it is not your choice and your decision, then you probably will not be very successful at losing weight. The first step in successful weight loss is knowing that you want to do it.

b. How much do you want to lose?

Talk to your CHN, CHR or the nutrition aides in your clinic and ask them to help you set realistic goals for yourself. Set a long term goal (such as 50 lbs. in one year) and set short term goals (such as 5 lbs. in the first month and 4 lbs. in each following month). The long term goal gives you something to work towards. The short term goal will let you measure and reward your successes. Set yourself up to win, one step at a time.

Remember, everybody is different. Different people may be comfortable and look good at different weights. We all do not need to look like Jane Fonda! Some people look too thin. Be realistic in what you want to achieve in weight loss.

2. How to go about it:

Weight loss is achieved by combining three things;

- a. developing good eating habits
- b. reducing caloric intake
- c. increasing exercise and activity

These three work together to help you get to a comfortable weight.

a. Developing good eating habits.

Before you try to change your eating habits, keep a diet record for one week. Record all the foods and amounts you eat and drink and what time and where you had them. Review the diet record with your CHR or nutrition aides. Look for the times of day when you are eating most. Is it just before going to bed? Are you skipping meals and then snacking a lot later on? Are your snacks nutritious or are they low in nutrients and high in calories? Do you often eat on the run or when you are preparing meals, instead of eating just at meals? Do you keep going by drinking a lot of pop or Kool-Aid which has lots of calories from sugar?

Here are some common problems people have, and some suggestions to help:

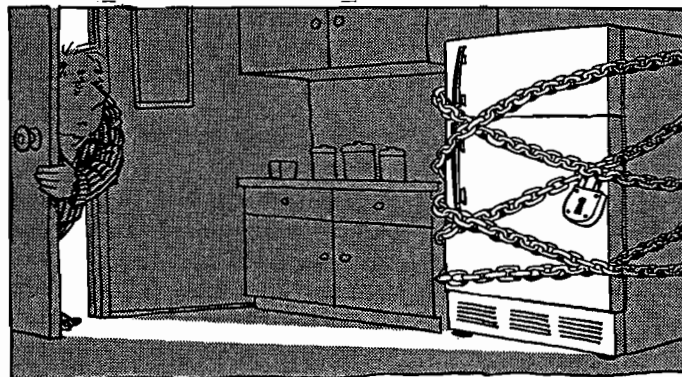
- eating too many fatty foods. Cut down on fried foods and foods made with lard or solid vegetable fat. Use a bit of oil, margarine or butter instead.

-
- eating too many sweets; desserts, Jello, Co-Op crystals, pop and candy. Only eat these foods occasionally, no more than once or twice a week.
 - eating too many servings at meals. When you want to lose weight, do not go back for seconds or thirds.
 - alcohol has a lot of calories. If you drink alcoholic beverages, be moderate. Keep it to 1 or 2 glasses a week, or none at all for a while.
 - not eating enough fruit and vegetables. Fruit and vegetables are filling and have fewer calories than other foods. Have 2 or 3 servings every day, and cut back the bread and potatoes.
 - eating heavy meals right before going to bed. Research has shown that eating heavy meals at night can build up fat more easily than if a large meal is eaten earlier in the day. Do not eat heavily at night.

b. Reducing caloric intake

After checking your diet record, decide on 2 or 3 changes you should make. Then try one change at a time. For example, if you miss breakfast but snack all afternoon, try eating a light breakfast and then allowing yourself only one midmorning and one afternoon snack. Or if you eat a lot in the evening, try eating a slightly larger supper and then only having one small, nutritious snack in the evening. If you eat quite a lot of high calorie, sweet foods, try substituting low calorie fruits and vegetables. In other words, **THINK** about the total energy/calorie content of your food, and change the trouble spots.

Try one diet change for three weeks, then add another new change. Remember that you are learning and everyone who is learning a new skill makes mistakes now and then. If one day you do not stick exactly to your diet, do not despair. Just keep on trying. As time goes by you will make fewer and fewer mistakes.



Watch out for night-time snacking.

c. **Increasing exercise and activity**

To increase your exercise, plan ahead - choose one activity that you think you might enjoy. It might be walking, playing a sport, hiking, jogging, or going to fitness class. Many people find the music and rhythm of fitness classes an enjoyable way to exercise.

Plan the days and times that you are going to exercise and stick to it. For exercise to be effective, you must exercise at least 3 times a week and for at least ½ hour each time. Exercise not only helps you lose weight by burning off extra calories, it also helps keep the weight off, and increases the strength of your muscles, heart and lungs.

3. Tell your family and friends what you are doing and why. Ask for their support and encouragement. Maybe a friend would like to join you.
4. **Expect to be disappointed sometimes.** People often slow down or stop losing weight even though they are still dieting and exercising. This is called a plateau. It is only temporary, and after a while you will start losing weight again. Do not try to lose weight faster than 2 lbs. per week. Loss faster than that is too hard on your body. Be patient and steady in your progress. Before you know it, you will reach your goals! **GOOD LUCK!**



Choose an activity you enjoy

H. Children's Snacks For Good Nutrition and Dental Health

Snacks are important for children because:

- children may refuse foods with important nutrients at meal times
 - snacks may supply these nutrients
- children often enjoy raw vegetables they can eat with their fingers, while they refuse the same vegetable when it is cooked
- children often accept new foods as snacks, while they will not eat new foods at meal times
- some children get over-excited at meal times and then eat poorly: snacks can help provide the nutrients they need.
- children have high energy levels so they need quite a lot of food, but they have small stomachs, so they usually can't eat enough food in one meal to last them to the next meal

But Snacks Should Supplement Meals, They Should Not Replace Meals

To supplement meals, snacks need to be full of nutrients. They should not just be sweet and sugary. Keep dessert, candy and sweets for special occasions, not as everyday food.

Snacks to Add Protein:

Pieces of cheese, slices of cooked meat, slug', hard-boiled eggs, pieces of cooked fish, nuts, celery sticks stuffed with cheese or peanut butter, slices of meat and cheese rolled together, smoked or dried ooligans.

Snacks to Add Calcium:

Milk, milkshakes made with unsweetened fruit, cheese, cottage cheese, cream soup in a mug, plain yoghurt, yoghurt mixed with unsweetened fruit, smoked or dried ooligans, dried seaweed, dried berries, canned fish.

Snacks to Add Vitamin A:

Peeled shoots of thimbleberry, salmonberry, fireweed and cow-parsnip, berries, milk, raw carrot sticks, pieces of broccoli, cabbage, green pepper, turnip, squash or tomatoes.

Snack to Add Vitamin C:

Wild fresh or frozen berries, oranges, rose hips, fresh fruit salad, unsweetened orange juice, vegetable juices, raw vegetable pieces.

Snacks to Add B Vitamins:

Whole grain bread, whole grain crackers, unsweetened cold cereal, cornbread, dried fish, homemade low-sugar oatmeal cookies and bran muffins.

Foods to Avoid for Regular Snacks:

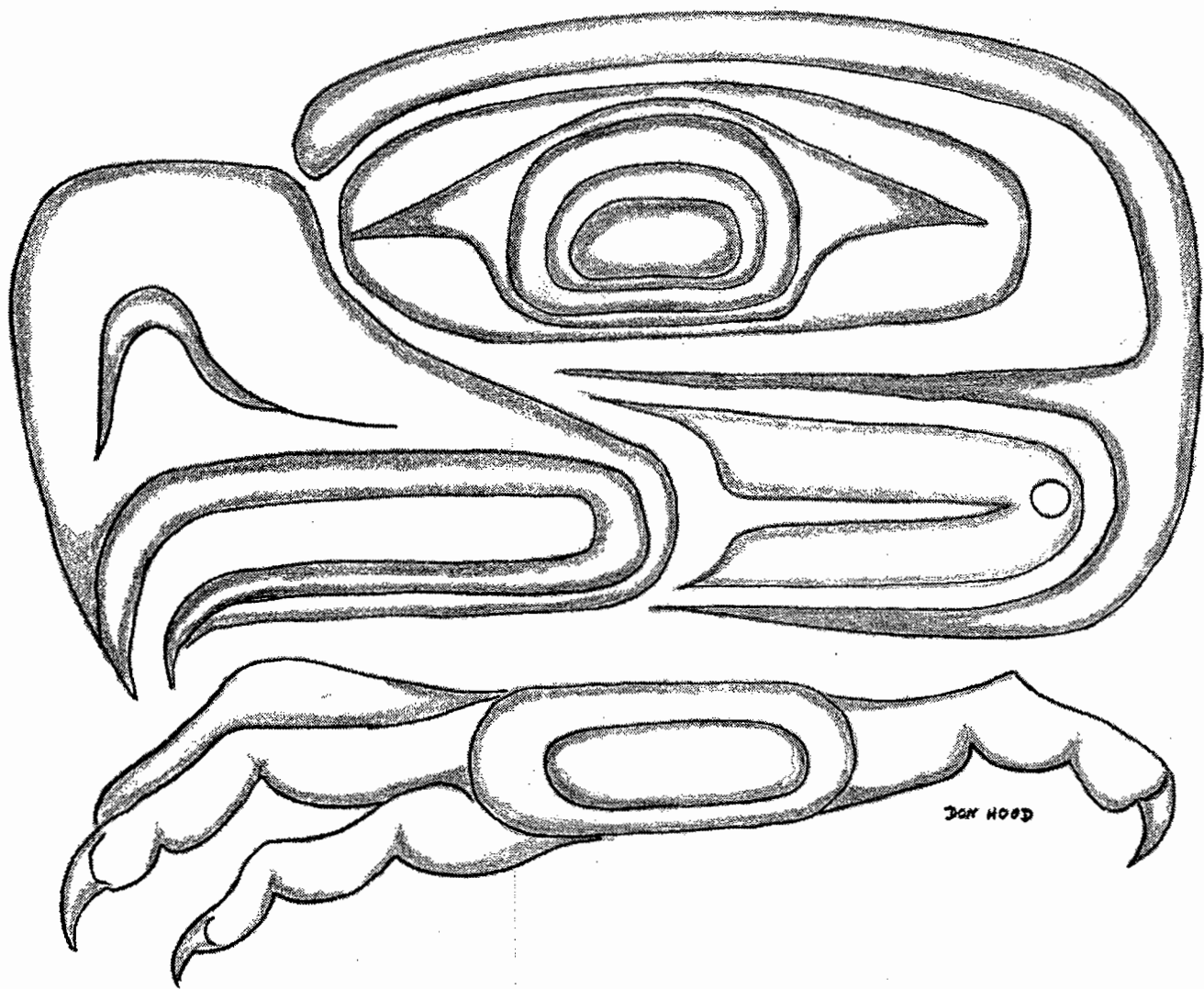
Candies, chocolate bars, soft drinks, potato and corn chips, salty crackers, powdered drink mixes, sweet "desserts".

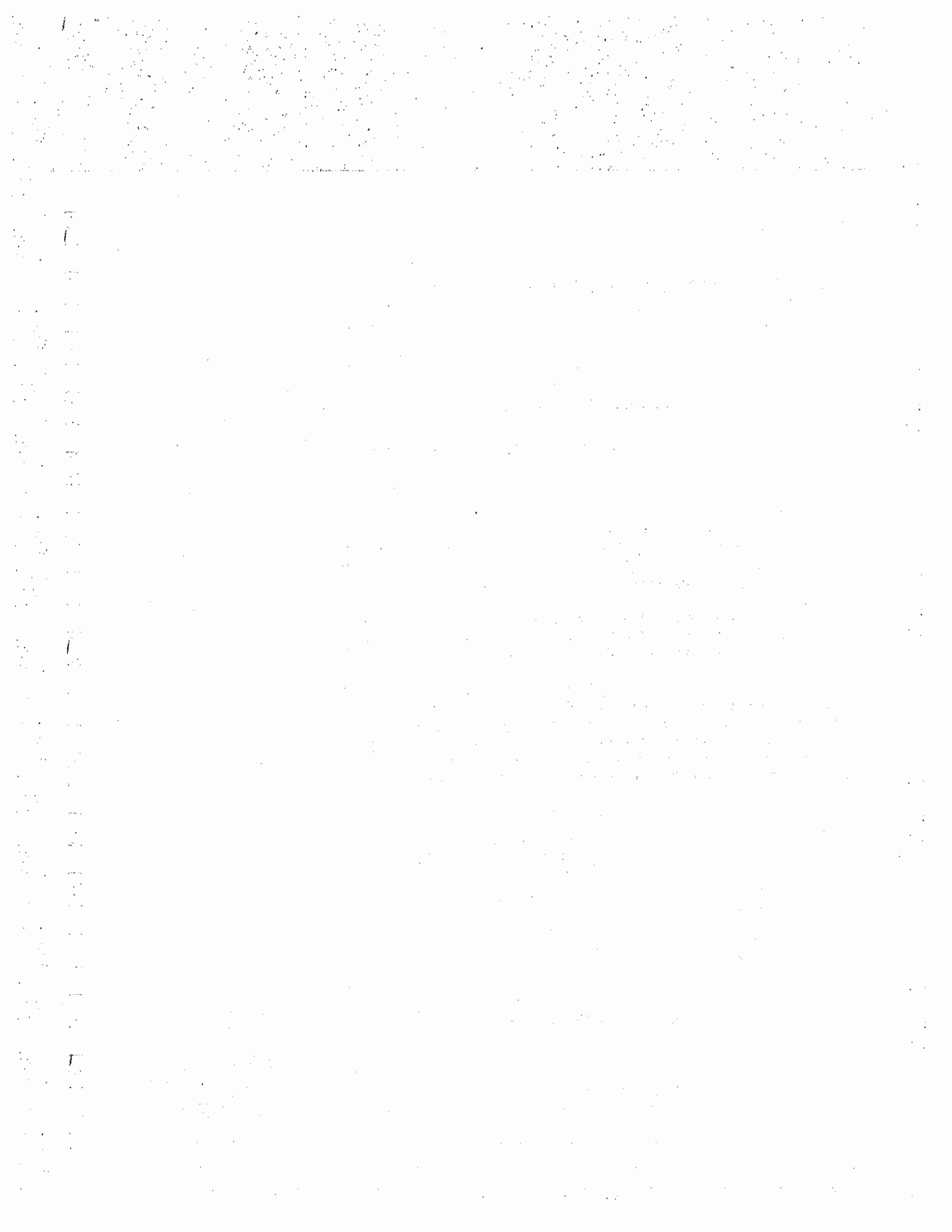
These foods are high in calories and low in nutrients. They should not replace nutritious foods in your child's diet. Most of these contain high amounts of sugar which contribute to tooth decay.

Snacks for Adults

Adults sometimes need snacks too. When you snack, think about nutrients, not just sweets or "filling up". Eat the same kinds of snacks listed above for children. You can set a good example. Your children will learn good food habits if they see you eating nutritious foods.

Section III Nuxalk Food And Nutrition Program





SECTION III: THE NUXALK FOOD AND NUTRITION PROGRAM

In this section a summary of the different parts of the Nuxalk Food and Nutrition Program is given. Here is an outline of activities, and the years they have taken place:



NUXALK FOOD AND NUTRITION PROGRAM



1. Nuxalk Traditional Food Use
 - Elders' Meetings 1980-82
 - Family Interviews 1981, 1985
 - Grandmother-Mother-Daughter Interviews 1982-83
2. Current Traditional Food Availability 1982
3. Nutritional Quality of Traditional Foods 1980-86
4. Nutritional Status of the Nuxalk People 1983, 1986
5. Improving Nutritional Status by Emphasizing: 1983-86
 - Use of Traditional Nuxalk Foods
 - Use of Available Marketed Foods of Good Quality
 - Enhancing Healthful Lifestyle Habits

The overall goal of the program is to improve the nutritional status and health of the Nuxalk people. Good diet, stressing native foods and nutritious marketed foods, and good lifestyle habits are the tools of the education program. The work on native food use, availability of native foods, chemistry of the native foods and health assessments gave needed background information for planning the activities of the nutrition program at the Health Clinic.

There have been many elders, and many younger men and women who have guided this program with their knowledge and advice on how to do things best. Without their help the program would never be able to reach its goals.

This program is being done for the people of the Nuxalk Nation. However, it was planned and funded with the hope that the methods used, the information learned and the tools developed could all be used by other native groups who wish to improve the health of their people by emphasizing good foods and nutrition.

A. Nuxalk Food Use Studies

B. Native Food Availability Studies

C. Grandmother-Mother-Daughter Study

D. Chemistry of Nuxalk Foods

E. Health Assessments

F. Ongoing Nuxalk Food and Nutrition Program Activities at the Health Clinic.

A. Nuxalk Food Use Studies

In 1980, work was begun to identify the traditional foods of the Nuxalk people. Several meetings were held with the elders, during which they remembered the foods they had used as children, and how their parents and grandparents had prepared foods. These talks were very interesting and provided a long list of foods eaten in the the past.

These foods included all types of salmon, plus salmon roe, steelhead, trout, cod, herring, ooligans, sea urchins, crab, clams, seal, abalone, sea cucumbers, and mussels. Game animals included moose, duck, grouse, mountain goat, deer and rabbit. Tree foods used were cottonwood inner-bark, hemlock inner-bark and crabapples. Many kinds of berries were used, plus rose hips, silverweed roots, clover roots, cow-parsnip, seaweed, young stinging nettles, and the shoots of fireweed, thimbleberry and salmonberry. Labrador tea and salmonberry bark tea were also used. All these foods are described in the first section of this handbook.

The next step was to find out about the present food habits of the Nuxalk people. This was done in the summer of 1981. Altogether, one hundred and two Nuxalk families were interviewed by either David Hunt or Theresa Barton. The interviewers talked especially to whomever in the family did the cooking and shopping. Eighty-two families on the reserve were interviewed, and 20 Nuxalk families in Williams Lake, Vancouver and Victoria were interviewed.

Families were asked about their present use of traditional foods. It was found that families living on the reserve used many more of the traditional foods than families living off the reserve. All reserve families used fish. The families living in the cities also used fish, but reserve families used 5 times as much fish as city families. Sixty-five percent of reserve families used berries, 46% used game foods and 35% used other plant foods (mainly tea). Of the city families, only 57% used berries, 21% used game and 29% used other plant foods.

Family members were asked to report what they had eaten the day of the interview (store-bought and traditional foods). Only 51% of reserve adults and 31% of the city adults ate fruit or juice the day of the interview. Only 39% of reserve adults and 56% of city adults ate vegetables (other than potatoes).

These diet records were analyzed to see which nutrients were eaten, and then compared to Canadian Recommended Nutrient Intake values. It was found that reserve families were not eating very well. They especially were not eating enough foods with calcium, vitamin E, vitamin A, vitamin D, vitamin, C, the vitamin called folic acid, and iron. It is clear that better nutrition is needed for all age groups. It is especially important for women in their childbearing years and for pregnant women.

The nutrients needed could be supplied by eating a greater variety of foods. Fruit and vegetables supply vitamins C, A, E and folic acid. Ooligan grease is rich in vitamins A and E. More calcium rich native foods such as preserved fish containing bone and skin would also be helpful. Mineral-rich root foods and more meat, fish and shellfish, could supply the needed iron. Locally available and inexpensive native foods could supply all these nutrient needs.

B. Native Food Availability Studies

In 1982, studies were done to find out what types of native foods are available to people in the Bella Coola area. It was found that all the salmons, steelhead and ooligans are still available to Nuxalk people for use as foods. These can be caught in the Bella Coola River and are an essential food resource that all people can still take advantage of. The other fish (cod, flounder, halibut, etc.) and shellfish (mussels, crab, clams, sea urchin, etc.) are available on a more limited scale. These are brought in from the outer channel, usually by the commercial fishermen on the way home. Some foods, such as herring eggs and seaweed, are brought in from Bella Bella, and there may not be enough available for everyone who wants some.

The game foods are still available but have grown scarce over the years. Deer and moose are the most commonly used game foods. Mountain goat and duck are seldom used. Trapping licenses are still held by some members of the band, and this resource may supply some game foods.

The entire area of the reserve was studied for the availability of 42 plant food species. Of these, the following wild plant foods are readily available to the Nuxalk people:

Pacific crabapple	p'c
Black cottonwood	q'ls
Western hemlock	sal'lalhp
Saskatoon berries	sq'sk
Labrador tea	pu7yaas
Wild gooseberries	at'anulh
Nootka rose	skupik
Wild raspberry	qalhza
Thimbleberry	snutatiqw
Salmonberry	qaax
Red elderberry	k'ipt
Oval-leaved blueberry	spuuxaltswa
Highbush cranberry	st'ls
Bunchberry	p'xwlht
Fireweed	ts'ayxhlp
Cow-parsnip	xwiq'
Pacific silverweed	uq'al
Springbank clover	t'xwsus



Counting plants
on the
Nuxalk reserve.

The abundance of berries changes with time. So, during other years berries such as sun berries (stink currant), swamp gooseberry, and wild blue currant may also be easy to harvest.

Other plant foods that were important in the earlier Nuxalk diet are less available - that is, you may have to travel up the valley to find them, or there are just not very many around. Foods such as rice root, soapberries, blackcaps and salal are in this category.

Many of the plants easily found around Bella Coola were used in the past by Native people as food. These foods are described in more detail in the first section of this handbook. All these foods are still available to the Nuxalk people for relatively little cost, and they can supply important nutrients needed in the diet.

C. Grandmother- Mother-Daughter Study

In 1982 and 1983 the people working with the Nuxalk Food and Nutrition Program conducted interviews with Nuxalk women on the use of traditional Nuxalk foods over the past 60 years. This was done by interviewing 3 generations of adult women in 22 families. The 3 generations were called "grandmothers", "mothers" and "daughters."

Interviewing



The list of traditional foods studied came from the elders' meetings on foods in 1980 and 1981. There were 54 foods discussed in the interviews. These included: game, fish, shellfish, teas, berries, roots, and greens. Each woman was asked to remember if she had used and liked the foods in her childhood, early married life and at the present time.

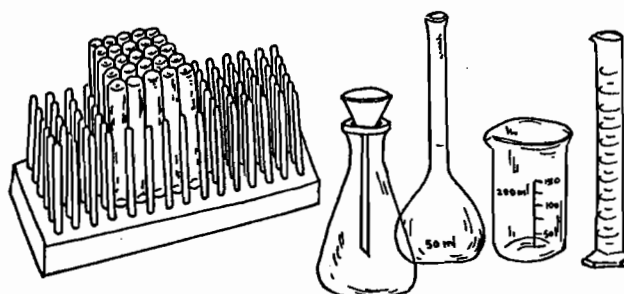
The results of the study showed that the grandmothers recalled using most of the 54 foods, and that they remembered liking all the foods they had used. Many foods the grandmothers remembered using were foods which the mothers and daughters had not used very much. These foods were: sunberries (stink currants), red elderberries, wild blue currants, highbush cranberries, salal berries, wild gooseberries, bunchberries, crabapples, cottonwood inner-bark, hemlock inner-bark, clover roots, silverweed roots, salmonberry shoots, herring, sea urchin, mussels, seal, abalone, mountain goat and rabbit.

Thirty-four Nuxalk foods are still being used in the families of women of all 3 generations. These foods included all the salmon, steelhead, trout, herring, ooligans, the cods, salmon eggs, crab, clams, some berries (blackcaps, saskatoons, wild raspberries, thimbleberries, salmonberries, soapberries, etc.), thimbleberry shoots, seaweed, Labrador tea, cow-parsnip, deer, moose, duck and grouse.

These thirty-four foods add important and inexpensive nutrients to the diets of the Nuxalk people. Increased use of all the traditional foods could add more variety and nutritional value. Also, use of traditional foods gives the elders an opportunity to teach the younger generation many of the past skills and customs of the Nuxalk people.

D. Chemistry of Nuxalk Foods

A very important part of the program is finding out what the important nutrients are in the Nuxalk native foods. Although many of the fish species have been analyzed before in government labs, several of the plant food species have never been collected for chemical studies. Our goal for this part of the program is to analyze each of the Nuxalk foods for several vitamins, minerals and other nutrients. Most of this work is being done in the nutrition lab at the University of British Columbia. However some analyses are contracted to other labs.



Nutrient analysis

There has been good progress on this work, but as this handbook went to press, there was still a lot to do. Keep in mind that all of the data on chemistry of Nuxalk foods will be available in the Health Clinic on the reserve. This information will be used in teaching school classes and in helping people to select well-balanced diets for weight loss, diabetes, etc.

We have been able to scientifically prove that ooligan grease is a very nutritious food. It contains more vitamin A and vitamin E than other fats that are used for cooking on the reserve (lard, margarine, corn oil, Crisco). Ooligan grease also has a good balance of the kind of fats that it contains. It has about 65% mono-unsaturated fat, 33% saturated fat, and the rest in polyunsaturated fat. It also has the added bonus of containing small amounts of calcium, vitamin K and protein.

We also know some of the nutrients in the berries, and how they compare to store-bought frozen fruit. Thimbleberries and salal berries have more vitamin C and calcium than store-bought strawberries and blueberries. Salmonberries and soapberries are also good sources of calcium, and salmonberries are an excellent source of carotene (the plant form of vitamin A).

The roots of wild clover, silverweed and Nuxalk edible ferns are all higher in calcium, iron, zinc and magnesium than are commercial potatoes.

We have also found that cow-parsnip stalks are a good source of nutrients. They compare well to other vegetables for energy content and minerals, such as calcium and magnesium. However, it is important to remember to use the young stalks when the buds are still closed and before there are any red specks on the stalks. It is always important to peel the stalks before eating because there is a strong poison, called furanocoumarin, in the peels of the stalks. The elders who told about using cow-parsnip all remember using only young, peeled stalks.

Be sure to stop into the clinic to get your copy of the nutrition data on the Nuxalk foods. This will be available when all analyses are completed.

E. Health Assessments

In May 1983, the Nuxalk Food and Nutrition Program ran a health assessment clinic. The clinic was free to all Nuxalk people and their relatives. Three hundred and seventy people went through the clinic, including babies, children, teenagers, adults and elders. It took about an hour for each person to go through the clinic. Each person was weighed, measured to determine body fat, asked about their diet, rode a stationary bicycle to test their fitness level, had their hearing and eyesight tested, and had a dental check. Blood and urine samples were also collected from each adult. These were tested for levels of iron and vitamins, and for cholesterol levels. The blood was also tested for an enzyme called "gamma GT" which checks for liver function.

It was found that many women aged 20 to 60 were low in iron. A few of the younger men (20 - 40 years old) were also low in iron. Generally, the elders had adequate blood iron levels. Iron is important for carrying oxygen throughout the body. It keeps us well and strong. Women lose iron when they menstruate each month, so it is particularly important for them to get lots of iron in their food. See page 87 for sources of iron in native foods and store-bought foods.

It was also found that many adults (male and female) had low blood folic acid and vitamin A levels. Folic acid and vitamin A are found in fruit and vegetables. Low blood levels mean that people are not eating enough of these foods, and they may have problems with vision, pregnancy, infections and dental health.

Generally, children were in good physical condition, but adults were less so. Most adults and teenagers tended to have poor diets and to put on weight as they grew older. Better diets and a regular physical fitness program could help this problem.

The gamma GT enzyme was too high in many adults. This means that the liver is under stress - the usual stress is infection or too much alcohol. More men were affected than women. The most severe cases were in the 41-60 year age category.

High blood cholesterol was not a major problem in the Nuxalk population, but it did increase as men and women got older.

Fitness of the people was tested using a stationary bicycle, a pulse wand that measured heart rate, and an activity questionnaire. In general, it was found that young people in the teen years were the fittest, and did more active exercise each day. As people get older, they are less active, and the trend is to put on weight. Everyone should consider their own level of fitness and try to improve it. There are some suggestions on how to do this in Section II of this handbook.



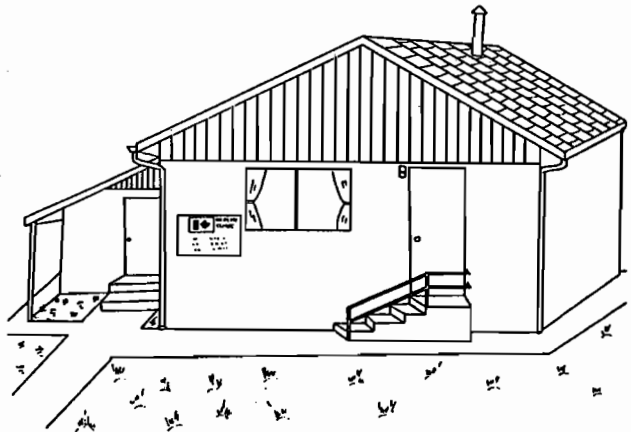
Fitness testing.

As a result of the clinic, several people were referred to doctors for hearing aids and for eye glasses. All people have been invited to the clinic to discuss their personal results with the CHN, CHR or nutrition aides.

In 1986, another health assessment will take place. It is hoped that the health and nutritional status of the Nuxalk people will improve between 1983 and 1985. Improvement will happen if people make use of the variety of nutritious foods available, and if people practise health-full lifestyle habits.

F. Ongoing Nuxalk Food and Nutrition Activities at the Health Clinic

There are many activities operating out of the Nuxalk Health Clinic that are associated with this program. We would like to explain each of them briefly.



The Nuxalk Health Clinic

1. Meetings with the Elders

There were at least eight meetings held with elders in attendance at various times. The purposes of the meetings were to first describe the traditional foods of the Nuxalk Nation, of which there were 61 primary foods, and second to describe how each food was used and how often it was used in Nuxalk diets.

2. Nutrition/Health Assessments

These were done in May, 1983, and will be repeated in May, 1986. These assessments included: dental, clinical, blood/urine, eyes/ears, fitness, anthropometry (skin folds, height and weight) and diet. The purpose of these assessments was to measure the health status of as many Nuxalk adults and children as possible, before and after our nutrition and health education programs. All people who participated have been invited in to have the result explained.

3. Nutrition Classes

These have been held in the schools (Bella Coola Elementary and Acwsalcta) and have also been offered to adults. Our school programs are special, as we feel it is very important to make the children aware of traditional foods and good nutrition at an early age.

A) Classes with Grades 3-5

These consist of teaching the food groups, and also about vitamins and minerals, nutritious snacks, importance of breakfast, outings to harvest clover roots, silverweed roots, thimbleberry shoots, cow-parsnip stalks and making ooligan grease.

B) Classes with Grades 6-7

Concentration has been placed on making the students aware of foods used traditionally. This includes greens, roots, tree foods, and comparing traditional and contemporary methods of preparing ooligan grease.

C) Adult Classes

These classes are geared towards making the younger adults more aware of traditional foods found in the valley, and how to use them. Classes include fish cutting, salting fish, smoking fish, barbequeing fish, canning fish, how to make bannock and mutsi, harvesting tree foods, berry drying, etc.

The purposes of the adult classes are to:

- (1) show when, where and how to harvest and prepare traditional foods
- (2) teach about good-quality marketed foods, budgeting and good nutrition
- (3) fitness and healthful lifestyle

4. Food Gathering

The purpose of this is to show people where and how to get traditional foods, to get more traditional foods to Nuxalk people and to provide samples for laboratory analyses for vitamin and mineral content. All the primary foods are obtained in the nearby environment. This means organizing many community treks and harvesting expeditions.

5. Fitness Classes

These classes have proven to be very popular with the young adults and those who are young at heart. The purpose of these classes, of course, is to get people into healthier condition. In May, 1983, Emily Schooner and Louise Hilland took fitness training from David Bogoch of BOGIE'S FITNESS in Vancouver. As a follow-up, David came to Bella Coola in October, 1983, and April, 1984. He did fitness sessions with students of Bella Coola Elementary, Acwsalcta,

and Sir Alexander Mackenzie School. He also held fitness sessions with overweight people, the general public and the instructors. These sessions sparked a lot of interest in the fitness program. We are very thankful to him for his help. The following classes are offered, mostly during the school year:

Regular classes for the young adults or those in good physical shape. These classes are held at Bella Coola Elementary School, every Tuesday and Wednesday evening from 7:30 to 9:00 p.m. Instructor is Louise Hilland.

Light classes for adults who don't have a regular exercise routine. These classes are held at the CE Centre on Monday, Wednesday and Friday afternoon from 12:15 to 12:45. Instructor is Louise Hilland.

Overweight classes for adults with 20 lbs. or more to lose. These are held at the CE Centre on Monday, Wednesday and Friday from 6:00 to 7:00 p.m. Instructors are Warren Snow and Emily Schooner.

Arthritis class is for adults with arthritis or other disabilities. Held every Monday at the Health Clinic from 3:00 to 4:00 p.m. Instructor is Sarah Saunders.

Check with the clinic in case the times and places have changed.

6. Ooligan Grease Making

The nutrition project made grease in 1983, 1984 and will also make some in 1985. The purpose of the grease making is to preserve the knowledge of how to make grease and to encourage more people to learn to make it and of course to use it. Since we started making grease, a lot of interest has been shown by all ages, especially the younger generations. In 1983, we did two cookings, using Horace Walkus' ooligans and cooking box. We made 17 gallons of grease which we distributed about the community. In 1984, we used Willie Hans' box and did 4 cookings, finishing up with 35 gallons of grease. With the help of Willie Tallio and crew, we seined for our ooligans for the grease. In 1984, we clarified the grease using both the pump stove and hot rock methods. This was great for labour and flavour comparisons. We always had helpers who wanted to learn how to make grease. All helpers took some grease home with them.

7. Luncheons and Feasts

These are held periodically. The purpose of these are to allow people to taste, see and to discuss the preparation of the traditional foods as well as to help make people aware of what we are doing in the project. All the foods at these luncheons and feasts are harvested and prepared by us. Our feasts will be held throughout the time of the Nuxalk Food and Nutrition Program - that is, until the end of 1986.

8. Nuxalk Food Garden

This is planted in front of the Health Centre to show people what the actual plants look like. The garden was planted in the fall of 1983 and was planned by Nancy Turner and Sarah Saunders. The majority of the work went into making the right environment for the different plants, such as a bog for the Labrador tea, etc.

9. Nutrition Displays

These are held at various times and at different events, such as at Education Week/Science Fair and Band Meetings. The purpose is to make people aware of the different activities we have done or are doing at the time, such as the different activities listed in this chapter. We also want to enable people to taste traditional foods that we have preserved and those that are available at the time, such as shoots, greens, fish, etc.

10. Pre-natal Classes

These classes are held 3 times each year with 6 classes per session. Topics taught are: nutrition for pregnant women, nutrition for infants, pre- and post-natal exercises, as well as other pre-natal information.

11. Dental Health Classes

We teach about good foods for the teeth, and about brushing, in the schools twice a year. Teachers are asked to encourage students to brush and floss regularly and to use flouride tablets daily.

12. Diabetic Workshop

This is held each spring by the nurse with the help of the local doctors and a nutritionist, if available. The nature of the disease, diet and exercise are discussed in detail. Good examples of foods for diabetics are served for refreshments.

13. Healthy Lifestyles and Disease Prevention

Classes for adults and children are given by the nurse, CHR and nutrition aides throughout the year.

Everyone is invited to participate in these activities. For more information, call the clinic at 799-5441.

**Appendix I -
Listing of
Traditional Foods
(common name -
genus and species -
Nuxalk name)**

Salmon

chum - *Oncorhynchus keta* - t'li
coho - *Oncorhynchus kisutch* - ways
pink - *Oncorhynchus gorboscha* - kap'ay
sockeye - *Oncorhynchus nerka* - samlh
spring salmon - *Oncorhynchus tshawytscha* - amlh
steelhead - *Salmo gairdnerii* - k'lat

Other Seafoods

flounder - *Platichthys stellatus* - pays, nukakals
halibut - *Hippoglossus stenolepis* - pwi
herring - *Clupea pallasii* - kkl
herring roe - *Clupea pallasii* - at
ling cod - *Ophiodon elongatus* - nalhm
ooligans - *Thaleichthys pacificus* - sputc
red cod - *Sebastes ruberrimus* - ic7iixw
seal - *Phocoo* species - ascw
trout - *Salmo* species - tutup

Shellfish

abalone - *Haliotis* species - plxani
clams - several genera - ts'ikwa
crab - *Cancer* species - k'inacw
mussels - *Mytilus edulis* - smiks
octopus - *Octopus dofleini* - sts'mas
sea cucumber - *Parastichopus californicus* - 7lats
sea urchin - *Strongylocentrotus* species - mtm

Berries

black hawthorn - *Crataegus douglasii* - q'ay
blackcaps - *Rubus Leucodermis* - usukw'lth
bunchberries - *Cornus canadensis* - p'xwlht
grey blueberries - *Vaccinium ovalifolium* - spuuxaltswa
highbush cranberries - *Viburnum edule* - st'ls
kinnikinnick - *Arctostaphylos uva-ursi* - milicw
mountain bilberries - *Vaccinium membranaceum* - sqaluts
red elderberries - *Sambucus racemosa* - k'ipt
red huckleberries - *Vaccinium parvifolium* - sqala
rose hips - *Rosa nutkana* - skupik
salal berries - *Gaultheria shallon* - mikw'lh
salmonberries - *Rubus spectabilis* - qaax
saskatoons - *Amelanchier alnifolia* - sq'sk
soapberries - *Shepherdia canadensis* - nuxwski
sun berries (stink currants) - *Ribes bracteosum* - q'is
swamp gooseberries - *Ribes lacustre* - mnmntsa
thimbleberries - *Rubus parviflorus* - snutatiiqw

watery blueberries - *Vaccinium alaskense* - snuqlxlayk
wild blue currants - *Ribes laxiflorum* - ts'ipscili
wild gooseberries - *Ribes divaricatum* - atl'anulh
wild raspberries - *Rubus idaeus* - qalhqa
wild strawberries - *Fragaria vesca* - qululuuxu

Greens

cow-parsnip - *Heracleum lanatum* - xwiq'
fireweed shoots - *Epilobium angustifolium* - ts'ayxllhp
lambsquarters - *Chenopodium album* - ts'icts'ikmlhp
salmonberry shoots - *Rubus spectabilis* - qaxaxlhpsxtx'i
seaweed - *Porphyra perforata* - lhaq's
sheep sorrel - *Rumex acetosella* - yumyumalcwlhp
stinging nettles - *Urtica dioica* - tsna
thimbleberry shoots - *Rubus parviflorus* - sxtsi

Roots

fern roots - *Dryopteris filix-mas* and *D. expansa* - sqw'alm
licorice fern roots - *Polypodium glycyrrhiza* - k'tsaatsay
rice roots - *Fritillaria camschatcensis* - ilk
silverweed roots - *Potentilla pacifica* - uq'al
wild clover roots - *Trifolium wormskioldii* - t'xwsus

Tea

Labrador tea - *Ledum groenlandicum* - pu7yaas
Salmonberry bark tea - *Rubus spectabilis* - qaaxllhp

Tree Foods

black cottonwood - *Populus trichocarpa* - q'ls
Pacific crabapple - *Pyrus fusca* - p'c
Western hemlock - *Tsuga heterophylla* - sal'lalhp

Game

deer - *Odocoileus* species - scwpanilh
duck - *Anas* species - naxnx
grouse - *Canachites* species, *Dendragapus* species - takws, mucwmukwt
moose - *Alces alces* - skma
mountain goat - *Oreamnos americanus* - yaki, qwwaax
rabbit - *Sylvilagus* species, *Lepus americanus* - qax

**Appendix 2 -
Listing of
Traditional
Foods
(Nuxalk name -
common name -
genus and
species)**

Salmon

amlh - spring salmon - *Oncorhynchus tshawytscha*
kap'y - pink - *Oncorhynchus gorbuscha*
k'lat - steelhead - *Salmo gairdnerii*
samlh - sockeye - *Oncorhynchus nerka*
t'li - chum - *Oncorhynchus keta*
ways - coho - *Oncorhynchus kisutch*

Other Seafoods

ascw - seal - *Phoca* species
at - herring eggs - *Clupea pallasii*
ic7iixw - red cod - *Sebastes ruberrimus*
klk - herring - *Clupea pallasii*
nalhm - ling cod - *Ophiodon elongatus*
pays, nukakals - flounder - *Platichthys stellatus*
p'ui - halibut - *Hippoglossus stenolepis*
sputc - ooligans - *Thalechthys pacificus*
tutup - trout - *Salmo* species

Shellfish

k'inacw - crab - *Cancer* species
mtm - sea urchin - *Strongylocentrotus* species
splxani - abalone - *Haliotis* species
smiks - mussels - *Mytilus edulis*
sts'mas - octopus - *Octopus dofleini*
ts'ikwa - clams - several genera
7lats - sea cucumber - *Parastichopus californicus*

Berries

atl'anulh - wild gooseberries - *Ribes divaricatum*
k'ipt - red elderberries - *Sambucus racemosa*
mikw'lh - salal berries - *Gaultheria shallon*
milicw - kinnikinnick - *Arctostaphylos uva-ursi*
mnmntsa - swamp gooseberries - *Ribes lacustre*
nuxwski - soapberries - *Shepherdia canadensis*
p'xwlht - bunchberries - *Cornus canadensis*
qaax - salmonberries - *Rubus spectabilis*
qalhqa - wild raspberries - *Rubus idaeus*
q'ay - black hawthorn - *Crataegus douglasii*
q'is - sun berries (stink currants) - *Ribes bracteosum*
qululuuxu - wild strawberries - *Fragaria vesca*
skupik - rose hips - *Rosa nutkana*
snuqlxlayk - watery blueberries - *Vaccinium alaskense*
snutatiiqw - thimbleberries - *Rubus parviflorus*
spuuxaltswa - oval-leaved blueberries - *Vaccinium ovalifolium*
sqala - red huckleberries - *Vaccinium parvifolium*

sqaluts - mountain bilberries - *Vaccinium membranaceum*
sq'sk - saskatoons - *Amelanchier alnifolia*
st'ls - highbush cranberries - *Viburnum edule*
ts'ipscili - wild blue currant - *Ribes laxiflorum*
usukw'ltlh - blackcaps - *Rubus leucodermis*

Greens

xwiiq' - cow-parsnip - *Heracleum lanatum*
lhaq's - seaweed - *Porphyra perforata*
sxtsi - thimbleberry shoots - *Rubus parviflorus*
qaxaxlhpsxts' - salmonberry shoots - *Rubus spectabilis*
ts'ayxlhp - fireweed shoots - *Epilobium angustifolium*
tsna - stinging nettles - *Urtica dioica*
yumyumalcwlhp - sheep sorrel - *Rumex acetosella*
ts'icts'ikmlhp - lambsquarters - *Chenopodium album*

Roots

ilk - rice roots - *Fritillaria camschatcensis*
k'tsaatsay - licorice fern roots - *Polypodium glycyrrhiza*
sqw'alm - fern roots - *Dryopteris filix-mas* and *D. expansa*
t'xwsus - wild clover roots - *Trifolium wormskioldii*
uq'al - silverweed roots - *Potentilla pacifica*

Tea

pu7aas - Labrador tea - *Ledum groenlandicum*
qaaxlhp - salmonberry bark tea - *Rubus spectabilis*

Tree Foods

p'c - Pacific crabapple - *Pyrus fusca*
q'ls - black cottonwood - *Populus trichocarpa*
sal'lalhp - Western hemlock - *Tsuga heterophylla*

Game

naxnx - duck - *Anas species*
qax - rabbit - *Sylvilagus species*, *Lepus americanus*
scwpanilh - deer - *Odocoileus species*
skma - moose - *Alces alces*
takws, mucwmukwt - grouse - *Canachites species*, *Dendragapus species*
yaki, qwwax - mountain goat - *Oreamnos americanus*

For Further Reference

If you would like to read any of the articles or books listed here, first check the code beside the reference, then turn to page 112 to see which address the code stands for. Call or write to this address to find out how to get the reference.

Using Native Foods

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-
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 - MH Nutrition Division, Ministry of Health, Province of B.C. **Nutrition: Day One to Year One.**
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- MH Ministry of Health, Province of B.C. **Infant Nutrition: Sample Menu 4-5 months.**
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- HP **Participation and Occidental Life. Fitness Head On or How to Overcome the Ten Most Common Problems that Stand Between People and Fitness.**

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HC Kuhnlein, H.V., Chan, A.C., Thompson, J.N. and S. Nakai, 1982 Ooligan grease: a nutritious fat used by native people of coastal British Columbia. *J. of Ethnobiology* 2: 154 - 161.

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All these publications are available for you to read in the Nuxalk Health Clinic. As papers are published later on, they will also be available at the clinic.

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- HP** Health Promotion Directorate
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- MH** Nutrition Division
Ministry of Health
1515 Blanshard Street
Victoria, B.C.
V8W 3C8 (604) 386-3166
- MS** Medical Services Branch
Pacific Region
814 Richards Street
Vancouver, B.C.
V6B 3A9 (604) 666-0921
- PL** Your Public Library
If the library does not have the book you want, ask the Librarian about an Inter-Library loan. It may be possible to send away to another library and get a copy for you to borrow.

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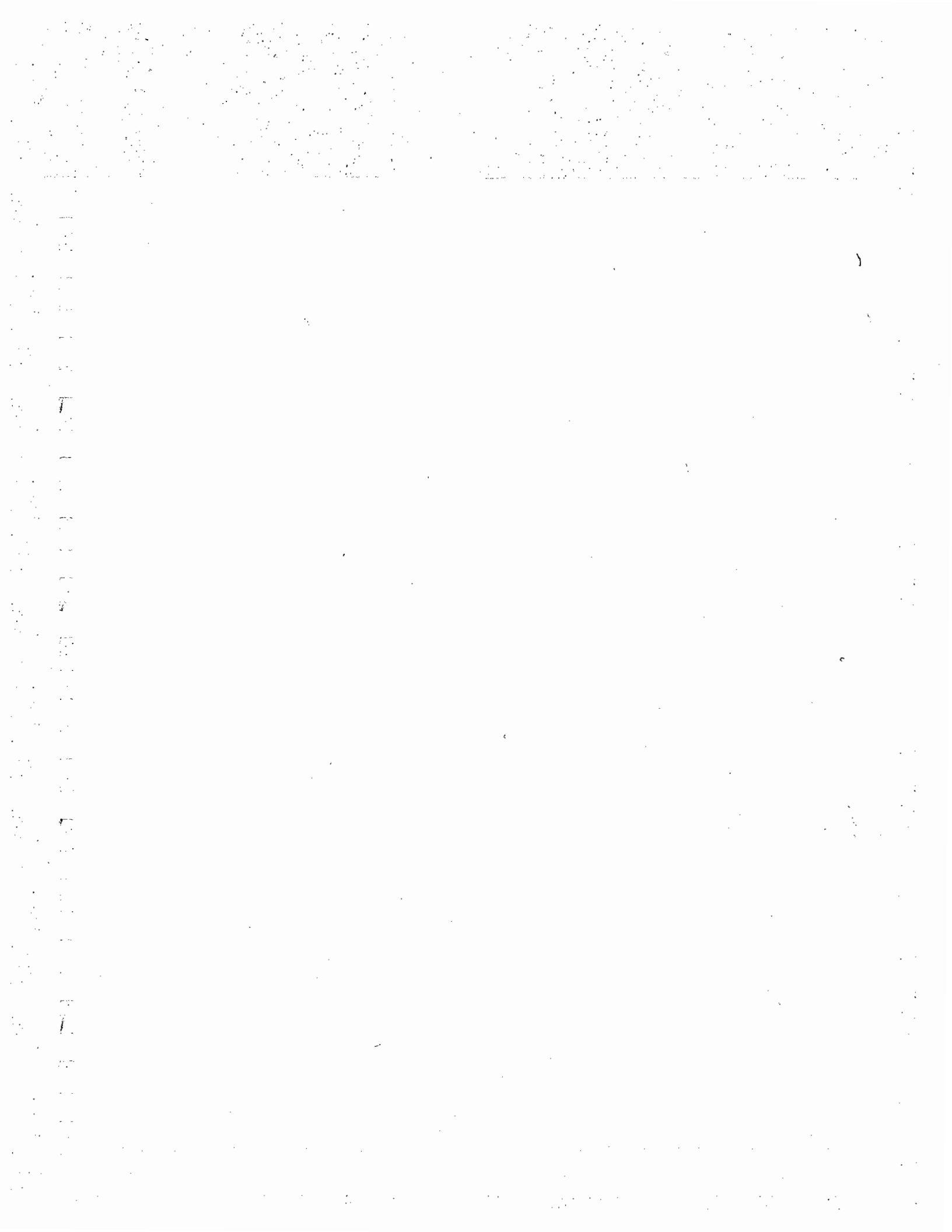
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