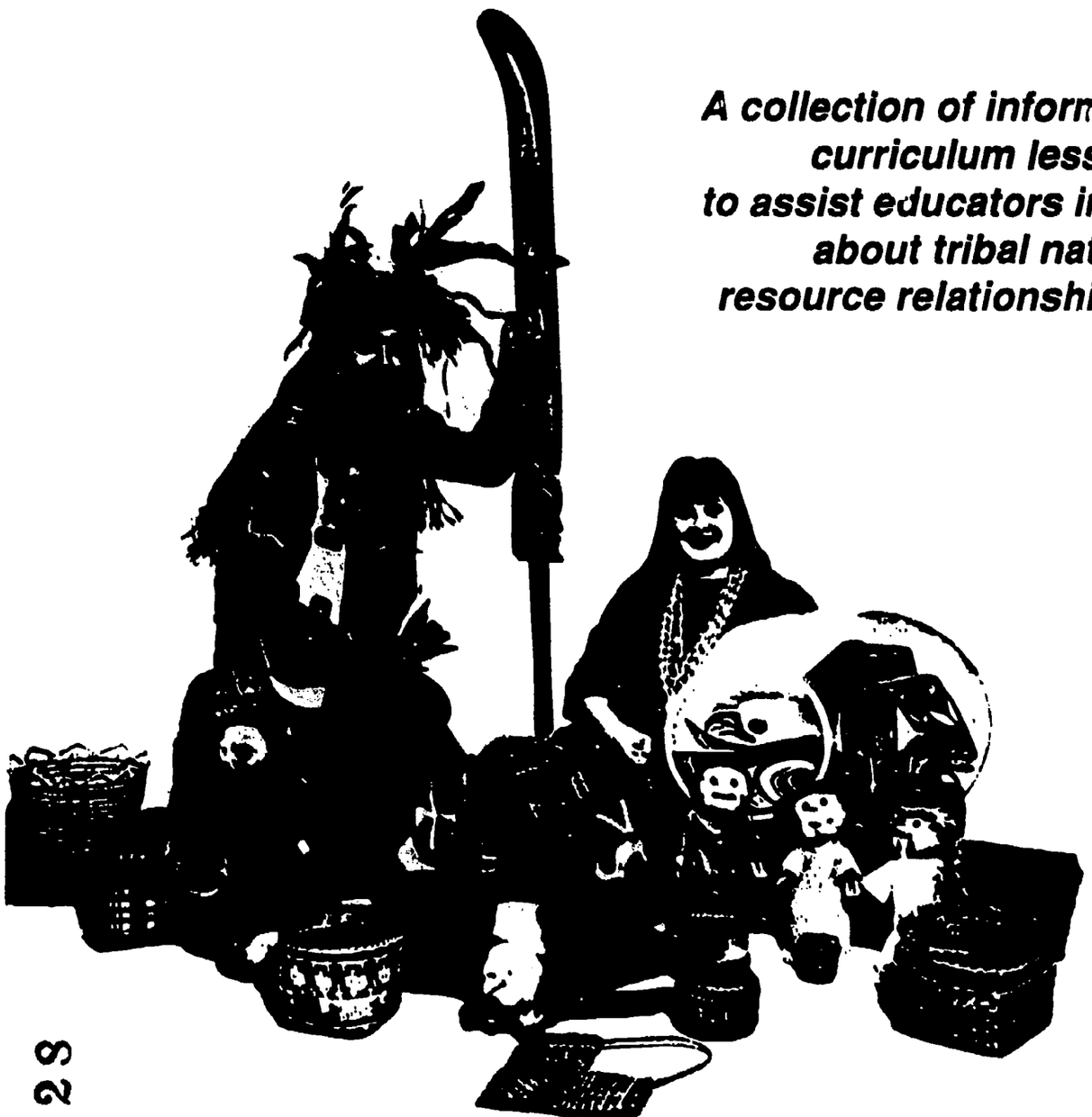
DOCUMENT RESUME

ED 340 522 RC 018 128

TITLE	Indians of Washington and the Environment. A Collection of Information and Curriculum Lessons To Assist Educators in Teaching about Tribal Natural Resource Relationship.
INSTITUTION	American Forest Foundation, Washington, DC.; Western Regional Environmental Education Council.
PUB DATE	89
NOTE	120p.; Compiled by Project Learning Tree.
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*American Indian Culture; American Indians; *Class Activities; Conservation (Environment); Educational Games; Elementary Secondary Education; Environmental Education; Learning Activities; Lesson Plans; *Natural Resources; Treaties; Tribes; Values; *Wildlife Management
IDENTIFIERS	*Environmental Attitudes; *Washington

ABSTRACT

The American Indian tribes of Washington have a unique relationship with natural resources, one of reverence and reliance. While non-Indian people traditionally approach natural resources from the perspective of ownership, tribal peoples view natural resources as components of life and culture. The survival of Washington tribes depends upon a sustainable natural resource base. This booklet contains lesson plans and classroom activities that help students become aware of tribal ways of life and historical and contemporary interactions with the natural world and non-Indian people. Major curriculum concepts include: (1) the diversity and importance of Washington's natural resources; (2) diverse uses of natural resources by people; (3) the influence of natural resources on cultures; (4) the role of culture in the development of controversial issues and the communication process for resolving such issues; (5) the finite nature of resources and related decision making; and (6) values clarification about the web of interrelationships among humans, fish, wildlife, and the environment. Lessons cover Washington geography, climate, and wildlife; daily life of Indians and first White settlers; sources of clothing; treaties; watershed, wildlife, and forest management; water quality; salmon fishing and Native fishing rights; American Indian reservations; historical timelines; and history, culture, and legends of the Quinault, Nisqually, Squaxin, and Tulalip tribes. Twenty-three additional resources are listed. This booklet contains maps, data tables, and graphics. (SV)



A collection of information and curriculum lessons to assist educators in teaching about tribal natural resource relationship

This we know: The earth does not belong to man; man belongs to the earth. All things are connected like the blood which unites a family....man did not weave the web of life; he is merely a strand in it.

Chief Seattle 1854

ACKNOWLEDGEMENTS

PROJECT LEARNING TREE is a program of the Western Regional Environmental Education Council and the American Forest Foundation, administered for the Foundation by the American Forest Council.

INDIANS OF WASHINGTON AND THE ENVIRONMENT was organized with the assistance of:

Dr. Willard Bill, Supervisor, Indian Education, Office of the Superintendent of Public Instruction, Washington State

Bill Frank, Jr., Steve Robinson and Carson Boysen of The Northwest Indian Fisheries Commission

Lynne Ferguson, Director, Project Learning Tree, Washington State

Juanita Jefferson, Lummi Community

Joan LaFrance, Curriculum Specialist

Barbara Lawrence, Suquamish Tribe

Roxanne Lyons, Contributor

Ray Mitchell, PLT Consultant, Swinomish Tribe

Jaime Pinkham, Area Forester, BIA

Kathy Simmons, PLT Consultant

Funding support for this publication provided by the tribal Timber Fish-Wildlife program.

COVER PHOTO: Courtesy of Skokomish Tribe, Project P.R.A.S.E. Multidimensional Curriculum, staff members Bruce Miller and Pam James (pictured), 80 Tribal Center Road, Shelton, WA 98584, (206) 426-4232.

PREFACE

Indians of Washington and the Environment was designed to be used in conjunction with **Project Learning Tree** (PLT). PLT, an award winning environmental education program uses the forest as a "window" into the natural world. PLT's activities/lessons help young people gain an awareness and knowledge of the world around them, as well as their place within it. **Indians of Washington** builds upon this theme, helping students gain an awareness of tribal ways of life through exploration of historical and contemporary interactions with the natural world and with non-Indian people.

The tribes in Washington have a unique relationship with natural resources; one of reverence and reliance. While non-Indian people traditionally approach natural resources from perspectives of ownership and possession, tribal people traditionally approach natural resources as components of life and culture. Indian people have developed a rich history and relationship with nature. Historical and contemporary circumstances have brought most of the tribes of Washington to the place where their survival is dependent upon a viable, sustainable natural resource base. This tightly woven link between Indian culture and livelihood makes tribal members aware of the dangers facing societies where natural resources are treated casually with little regard for the future.

By combining **Indians of Washington and the Environment** with **Project Learning Tree** teachers receive innovative opportunities to involve students in integrated explorations of human and natural resource interactions. The activities offered in both curriculum guides are interdisciplinary. You will find science, social studies, and language arts concepts working together to offer students in-depth experiences to understand the world around them. The PLT activities listed below will compliment **Indians of Washington and the Environment** and are recommended for use in conjunction with the lessons included in this document.

PLT resources and activities can be acquired through workshops or university courses which are held throughout Washington. Workshop participants receive the PLT guide free of charge and have opportunities to plan ways in which these ready-made lessons can be adapted for individual curriculum goals.

We hope you and your students will find your studies about the tribes of Washington and their relationship to natural resources rewarding. Young people need to understand the relationship of diverse cultural values to the natural world. As they develop this understanding they will become creative decision makers capable of meeting the challenges of protecting our state's diverse cultures and the environment.

Lynne Ferguson, PLT
Olympia, WA

PROJECT LEARNING TREE ACTIVITIES TO BE USED IN CONJUNCTION WITH INDIANS OF WASHINGTON AND THE ENVIRONMENT

Elementary Activities

#32 Did You Ever Eat a Pine Tree - focuses on the importance of the forest and other plant communities as a source of food for humans and other animals.

#34 Woven History - through study of Native American baskets, this lesson shows how vegetation can be linked to human lifestyles, culture, and history.

#39 Start A City - uses common regional materials to construct a dwelling or community to describe how the environment affected pioneer and Native American lifestyles.

#41 The Native Way, A Natural Lifestyle - research and discussion of the interrelationships between different Native American lifestyles and natural resources.

#43 Musing on Music - construction of forest product musical instruments is used to explore historical and cultural roots of instruments.

#88 Another Way of Seeing - identification of similarities and differences between student's current lifestyles and those of early Native Americans.

Secondary Activities

#2 Tree Verse - explores cultural views of nature, expressed through reading and creating poetry.

#15 Where Are the Cedars of Lebanon - focuses on how a civilization's development is affected by its treatment of natural resources.

#16 The Influence of Forests on Your Region's History - compares uses of the forest by early Indians, by immigrant pioneers, and by contemporary society, through use of multi-media presentations.

#18 Native Americans and the Forest - research and discussion of how the cultures and economies of Native American tribes have been and continue to be influenced by natural resources.

#19 Native American Web of Life - creation of a web of life identifies differences and similarities in different Native American Indian tribes' uses of and attitudes toward natural resources.

#20 Indian Summer, Winter, Spring, and Fall - through research and discussion, explore the significance of the seasons to the religious, economic, and social existence of various Native American tribes.

#21 Pioneers in the Wilderness - uses role playing to describe differences between current attitudes toward natural resources and the attitudes of early settlers.

#26 Superstitions, Symbols, and Similes - uses concepts symbolized by natural objects to describe influences which cultural traditions and religious beliefs may have on a society's treatment of the natural environment.

#37 We Can Work It Out?! - identification of conflicting and compatible kinds of land use and description of criteria for judging compatibility.

#48 Land Allocation - exploration of advantages and disadvantages related to different methods of land allocation.

#49 For Better or for Worse - uses discussion to identify trade-offs involved in an environmental issue.

#71 Biography of a Favorite Thing - a comprehensive look at items used in daily lives that are derived from and depend on natural resources.

#82 A Simpler Life - comparison and discussion of wilderness lifestyles and modern technological society.

To find out the next PLT workshop in your area, or for more information about PLT, write to:

Lynne Ferguson, Director
Project Learning Tree
711 Capitol Way, Suite 608
Olympia, WA 98501
(206) 352-1500

INTRODUCTION

From time immemorial, Indian people have lived in the area called Washington state. Their traditions taught them that although resources were abundant, they should take only what was needed and leave the rest.

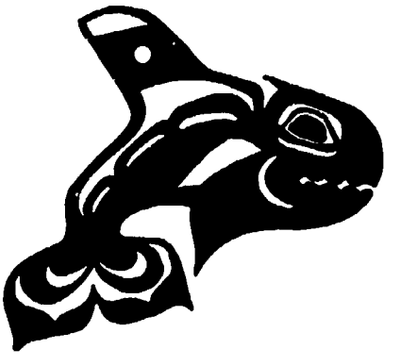
With the influence of non-Indian traders, Indians saw dramatic changes in technology, ideas and economic structure. The influences of missionaries brought many social changes as well. Then came treaties, the Boldt decision, and more recently the Timber, Fish and Wildlife Agreement. What does this all mean to the tribes?

Today tribes know what shape their resources are in. Anadronomous fish need habitat from their spawning grounds to the ocean. Stability over the next hundred years depends on our ability to respond to an ever changing natural resource base and on the ability of the Indian and non-Indian people to work together. We have a chance to start planning for the next 100 years now. We want a quality life for all of us, Indian and non-Indian alike. This doesn't mean stopping all activities on timber lands, streams and rivers or in urban areas. Through better planning we can help provide a balance in nature.

Education is key to the effort to help develop understanding and respect between the Indian and non-Indian people. Teachers are key to the success of education. This curriculum is intended to help teachers know and understand the true history of the land and to help students understand the importance of Indian/non-Indian cooperation.

Our future is in your hands.

Billy Frank, Chairman
Northwest Indian Fisheries Commission



CONTENTS

Section III

MAJOR CURRICULUM CONCEPTS

1. Communicate an awareness of Washington's diversity and importance of natural resources related to the environment, economic and social health.

2. Develop an understanding of the diverse use of natural resources by people.

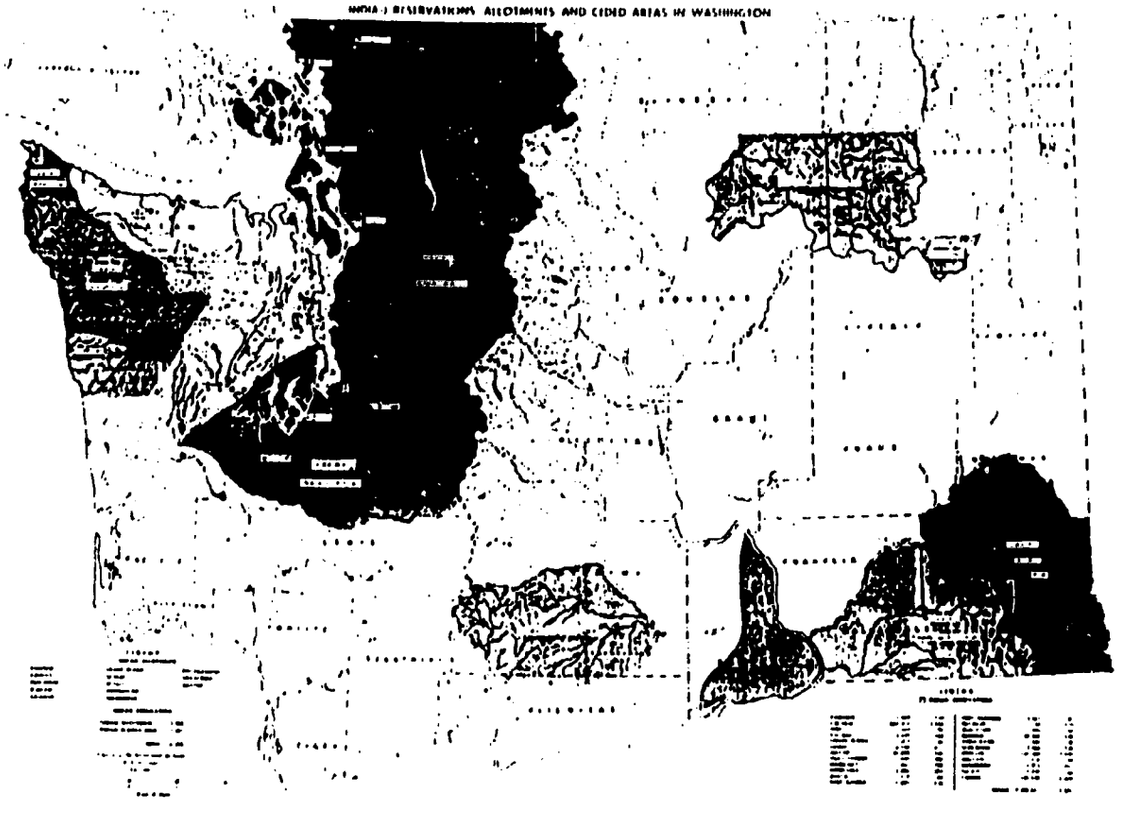
3. Identify the influence of natural resources on cultures in shaping the past, present and future.

4. Examine the role culture plays in the development of controversial issues and the communication process established to resolve these issues.

5. Explore the interconnection of humans and natural resources and the finite nature of resources as part of the decision-making process now and in the future.

6. Clarify values about the intricate web of interrelationships between humans, fish, wildlife and the environment.

SECTION I



NOW WE CALL IT WASHINGTON

Objective: Working in groups, students will identify the natural environment of Washington state and understand where different tribal groups are located.

Background: The tribes in Washington have historical connections to natural environments in this state. Most tribes have been in specific regions of Washington for thousands of years. They primarily lived along the major rivers harvesting fish and berries, constructing homes and living a comfortable existence. This historical connection to natural resources has had a profound effect on the way of life in and among the tribes. The major issues confronting the tribes today are directly linked to their historical and contemporary relationships to natural resources.

As you use this lesson, please make certain you ask students to consider how being in Washington for thousands of years might have influenced today's tribal groups. This lesson is important because it sets the stage for understanding today's tribal challenges.

Activity:

1. Provide students with a large piece of butcher paper and ask them to draw an outline of the shape of Washington state.

2. Within their outline of Washington, ask students to draw a mural of the major rivers, mountains, desert and forested areas.

3. Using a black marking pen, ask students to identify the most "likely" locations for tribes to establish permanent camps.

4. Using the map your class created, have the students discuss the following:

   - What kind of weather would you have near the water? Near the mountains? Inland?
   - Where do you think most people would settle? Why?
   - What kinds of food do you think people would take from the land? From the waters?
   - What kind of clothing would people wear?
   - What would the people take from their land to make their homes or shelters?
   - In which area would you prefer to live? Support your answers.

5. Now, divide your class into three groups. Assign each group a region of Washington to study. Give students the activity sheets that follow. After answering the questions, each group will share their conclusions with the whole class. Allow time for questions from other groups.

Adapted from Content & Activities for Teaching About Indians in Washington State, SPI

Provide your group with the following information.

Coastal Region

a) Topography: The Coastal Region is mainly a lowland plain which rises in the west to the Olympic Mountains and the Willapa Hills which are part of the Coast Mountain Ranges. Many streams and rivers feed the Pacific Ocean.

b) Climate: The Coastal Region has a mild, marine climate, with no extreme or prolonged cold or hot periods. Heavy rainfall, especially in the Olympic Peninsula area, occurs throughout the year.

c) Vegetation: Thick stands of conifers--Douglas fir, spruce, red cedar, yellow cedar, hemlock, pine--grow in the Coastal Region. Broadleaf trees may be found at lower elevations--maple, oak, dogwood, alder, aspen, birch, madrona. There is an abundant variety of edible berries and root vegetables. Seaweed growing along saltwater is often found.

d) Animal life: Sea life includes five species of salmon making annual runs up the rivers--also halibut, cod, herring, smelt, mollusks, seal, sea lion, sea otter, porpoise, whale. Deer, elk, mountain goat, bear, wolf, beaver, mountain lion, mink, land otter, and water fowl are also in abundance.

Using the map your class created, discuss the following:

- What kind of weather would you have near the water?

- Where do you think most people would settle? Why?

- What kinds of food do you think people would take from the

- What kind of clothing would people wear?

- What would the people take from their land to make their

- Give reasons why someone would want to live in this area.

Provide your group with the following information.

Puget Sound Region

a) Topography: Lowland plains exist between the Coast Ranges and the Cascade Mountain Range including the valley of the Chehalis River which extends westward between the Olympic Mountains on the north and the Willapa Hills on the south. Many streams and rivers empty into Puget Sound.

b) Climate: The Puget Sound has a mild, marine climate with no extreme prolonged cold or hot periods. Moderate rainfall occurs throughout the year.

c) Vegetation: The vegetation is similar to that of the Coastal Region.

d) Animals: The animal life is similar to that of the Coastal Region with the exception of the sea otter and whale which are more prominent along the Pacific Coast.

Note: A water environment predominated in the Coastal and Puget Sound Regions. Such features as streams, rivers, tidelands, bays, sheltered coves, lakes, peninsulas, waterfalls, inlets, wetlands, and river valleys particularly influenced the lives of the Indians who lived in these areas.

Using the map your class created, discuss the following:

- What kind of weather would you have near the water? Near the mountains? Inland?

- Where do you think most people would settle? Why?

- What kinds of food do you think people would take from the land? From the waters?

- What kind of clothing would people wear?

- What would the people take from their land to make their homes or shelters?

- Give reasons why someone would want to live in this area?

Provide your group with the following information.

Plateau Region

a) Topography: Characteristics of the Plateau include an upland plain and a rolling basaltic area from the central to the easter region. The Columbia-Snake river system flows from the region to the Pacific Ocean.

b) Climate: More extremes in seasonal changes are found here than in the Coastal and Puget Sound Regions. Heavy rains alternate with drought; hot summers, cold winters, and periodic high winds in open areas are common in the Plateau Region.

c) Vegetation: This is mainly grassland, with sparse coniferous and broadleaf forests in the more mountainous area. Edible berries and root vegetables are often found.

d) Animal life: There are annual runs of salmon up the major rivers. Bison were native to the area. Other animals include deer, elk, mountain goat, bear, wolf, beaver, mountain lion mink, land otter and antelope.

Using the map your class created, discuss the following:

- What kind of weather would you have near the water? Near the mountains? Inland?

- Where do you think most people would settle? Why?

- What kinds of food do you think people would take from the land? From the water?

- What kind of clothing would people wear?

- What would the people take from their land to make their homes or shelters?

- Give reasons why someone would want to live in this area.

3-2-1 CONTACT

INFORMATION

Although there is no doubt that non-Indians' influence on this continent over the past two centuries has resulted in dramatic impacts on the environment, it is unlikely that the pioneers or their successors saw themselves as spoilers of the land. People, no matter where they go, generally behave in ways consistent with their cultural values. For example, 100 years ago our forests appeared to be limitless. The "cut-it-all-down" approach to using trees was advantageous at the time. Today we clearly understand the need to harvest selectively, to replant and reforest so that we can ensure a continuous cycle of trees and forests. More trees are being left along streams to maintain their protection for fish habitat.

For thousands of years, the Indian people of the Pacific Northwest lived in harmony with their forest environment. Today, as in the past, the Indians believe a spiritual connection exists between the forests and all creatures: the salmon, the eagle, the deer -- and themselves. The tribes recognize that the need for timber and jobs must be balanced with protecting the fragile connections between clean water, healthy forests and vigorous salmon runs.

Everyday, the scientific community is uncovering valuable information that seems to confirm the connections esteemed by Indian wisdom.

OBJECTIVE

Students will be able to describe differences between Indian attitudes toward natural resources and the attitudes of non-Indian groups moving into Washington state (Oregon Territory).

ACTIVITY

Divide the class into groups (families) of 3 or 4. Half of the groups will research Indian peoples' use of natural resources, half will describe non-Indian attitudes towards use of natural resources.

Students should consider the rationale behind the different non-Indian groups' values and behavior.

Divide your students into groups of three or four to assume the roles of members of non-Indian groups newly moving from the east to the west. Make certain that the following list of groups on the next page are represented in this activity.

Ask half of your students to describe Indian living areas. They will list resources used in shelters, food, clothing, transportation and cultural pursuits.

Ask the other groups to make lists of things they must do to establish life in this wilderness. These tasks should be listed in the order the groups plan to accomplish them. For instance, "provide food" might be first and "provide shelter" second. The groups will list the resources they used in establishing a homestead.

Then each group should discuss the environmental impacts they could anticipate resulting from each activity. For example, providing food and shelter probably would involve shooting wild game, securing water and cutting trees and clearing ground for a cabin and garden. Compare the environmental impact of a pioneer family and an Indian family.

It is important that each group respects the other even though they may create a different type or style of homestead.

Human beings in all times and places shape their beliefs and behavior in response to the same basic human problems and needs.

NON-INDIANS

1. Fur Traders - Working for the North West Fur Company, a group of fur traders moved to this area. Their role was to bring and/or trap as many furs as possible for the Chinese market.
2. Missionaries - With this group came social changes more than physical changes. Indian spiritual practices were disrupted. Many tribes were convinced by missionaries that communal living in longhouses was sinful.
3. Loggers - A hearty lot, moved here to seek employment. Men living in camps, worked fourteen hours a day, seven days a week.

Families lived in town, so months went by while the breadwinner was off earning a living. The trees were so large that it took a good part of a day to harvest one tree. Logging was dangerous and only for very strong men.
4. Pioneers - Each family brought along vegetable and grain seeds and livestock consisting of a milk cow, two pigs, two sheep, a horse, an ox, and ten chickens.
The frontier provided abundant wildlife and fish.

INDIAN TRIBES

1. Plateau Tribal Groups - Colville, Spokane, Yakima and other Tribes. Fish and wildlife were abundant. Much time was spent preparing for the cold, snowy winters. Trade with other tribes was beneficial. Their travels established the routes that explorers and settlers would later "discover."
2. Puget Sound Tribes - Suquamish, Tulalip, Skokomish, Nisqually, Klallams and many other Tribes. These tribes were found near the mouths of rivers. Their lives were so comfortable that much of their time was cultivated for story-telling, artistic expression and spiritual development of the tribe. They fished, hunted and harvested berries.

The cedar canoe was their means of travel that connected them to the other tribes of the region for trade.
3. Coastal Tribes - Quinalt, Quileute, Hoh and Makah. Hardy people who braved ocean storms and the wet coast, they were whalers and fishermen. Their canoes were large, over 50 feet long, and strong to withstand the rigors of coastal travel. They, too, collected shellfish, hunted and gathered berries.

"The choices made by people in adapting to (or in altering) their environment depend on: characteristics of the physical environment, knowledge, skills, cultural values, and social organization.

As more and more settlers traveled west and made increased demands on the land, tension between the Indians and non-Indian people increased. The Indian people were subjected to many challenges to their cultural attitudes and way of life."*

* The History and Culture, Dr. Brouillet, S.P.I.

SALMON DINNER

OBJECTIVE

The student will be able to state ways in which salmon and shellfish play a significant role in the lives of western Washington indians.

ACTIVITY

Using research materials, develop a list on the blackboard of the foods available to indigenous people who lived in this area a thousand years ago. Also list the tools they may have used to obtain the food.

Working in groups, allow students to choose a local Puget Sound or coastal Indian tribe. Ask students to write a paper describing their livelihood or draw a picture from a setting in the daily lives of the Indians.

DISCUSS

Consider the following questions: (They are open-ended, no definite answers. However, salmon and shellfish should be considered.)

- Which food might be the easiest to find or locate? Others?
- Which food might be the easiest to catch? Next easiest?
- Which food might be the easiest to pick? Next easiest?
- Which food might have the most protein per unit? Next?
- Which food might have the most fat per unit? Discuss good vs bad fat*. Next?
- Which food might have the most vitamins? Next?
- Which food might have the most energy per unit?
- Which food might be the easiest to preserve?
- Which meat might be the easiest to preserve?
- Which food is most plentiful? Next?
- Which food might be available for the longest period of the year? Next?
- Which meats take the most energy (food) to catch: a deer or equivalent amount of salmon, clams and oysters?
- What is the reason for a varied diet then?

Apprise students that Indian people have ceremonies relating to the natural world. As an example, many tribes of the northwest conducted First Salmon Ceremonies. Consult local tribal people for what is and isn't appropriate.

*While the fats of animals such as cows may lead to health problems such as cholesterol and heart disease, fish fats have been found to reduce or eliminate harmful effects.

Adapted from Clean Water Streams and Fish, "Role of Salmon in History-Livelihood and Ritual" page 180.

WHAT YOU WEAR IS WHAT THEY WERE

OBJECTIVES

Students will be able to: 1) identify principal resources from which their clothing is made; 2) distinguish between renewable and nonrenewable natural resources; and 3) recognize environmental consequences of clothing preference.

METHOD

Students draw, label, and analyze their clothing according to the natural resources from which they are derived; and make personal judgments about appropriate uses of such natural resources based on criteria which they establish.

BACKGROUND

In all but the most tropical climates, people need an outside covering to keep warm. When ice flows receded after the last Ice Age about 10,000 years ago on the North American continent, people used fire for part of their warmth. Skins from wild animals were also used; saber tooth tigers, bears, wooly mammoths, and wolves were among the animals hunted for meat and clothing.

American Indian tribes have used animals for food and covering, and some still do as part of their present lifestyle. Elk, deer, bear, buffalo, and almost all animals killed for food also provide valuable skins for clothing.

When European settlers came to the North American continent, they brought with them the technology for making clothing out of spun fibers such as linen and wool. Extensive European populations and agrarian lifestyles had long since diminished their wildlife resources.

Today, we have coats and other clothing made from many materials. We can divide the sources of these materials into two categories: renewable and nonrenewable natural resources.

Renewable natural resources are derived from living things, and have the capacity for regeneration. Plant and animal products are derived from renewable resources. However, even renewable resources have limits. For example, although animals have the capacity for regeneration by mating and bearing offspring, if their habitat is destroyed, or pressures are too great to be able to reproduce, they cannot keep their number high. Cotton (from the cotton plant) and linen (from the flax plant) are two major clothing products derived from renewable natural resources. Some clothing products come from shearing the fleece off sheep, allowing it to grow again. Other domesticated animals, like cattle, provide clothing products, like leather, and also provide food products. Wild animals, like deer, may also provide leather for clothing.

Geese and ducks provide feathers for "down" jackets. Animals can be considered a renewable resource. However, in many cases they are threatened and some people raise questions as to the appropriateness of their use for products such as clothing, or food. Some wild animal skins are forbidden by law for use because they are taken from endangered species.

Nonrenewable natural resources are derived from non-living things. Although some resources may be replenished over time by natural processes, the time span is enormously long. An example is the accumulation of fossils from which petroleum products are drawn. (A process taking millions of years. Most synthetic clothing are also derived from fossil-fuel sources).

The major purpose of this activity is for students to distinguish between renewable and nonrenewable natural resources used as sources of clothing. Also, to increase an understanding of the traditional Indian use of renewable resources for their clothing you may want to discuss the differences and similarities with today's clothing.

MATERIALS

Drawing materials or notebook paper.

PROCEDURE

1. Begin this activity with a discussion of where clothing comes from. Ask each student to look at what he or she is wearing. Using a piece of notebook or drawing paper, ask each student to draw a simple picture of himself or herself, including the major exterior clothing being worn - from top to toe. Ask them to label each piece of clothing according to the major components it is made of (e.g. **cotton** shirt, **polyester** skirt, **leather** shoes).

2. Now turn the discussion to the concept of natural resources. Webster's New World Dictionary defines natural resources as,

> "Those actual and potential forms of wealth supplied by nature, implicitly available for human use."

Ask students to define what might be considered **renewable natural resources,** and what might be considered **nonrenewable natural resources.** Using the brainstormed list of natural resources, put an "R" by those which can be considered renewable and an "N" by those which can be considered nonrenewable.

3. Returning again to their drawings, ask the students to label the clothing parts of their drawings according to the natural resources from which they are derived, also indicating whether the resources are renewable or nonrenewable.

4. Discuss the students' findings. Consider questions such as:

- What seems to be the most common sources of clothing among those of us in this classroom? What percentage is renewable? Nonrenewable?

- What seasonal and regional differences are there in clothing choices and sources?

- What kinds of impact do our preferences in clothing have on the environment? (global resources, wildlife, water quality, economics, oil shale development)

- What kinds of impact do our preferences in clothing sources have on different aspects of the cultural and natural environments, e.g., on local economics, international trade, global resources, wildlife, wildlife habitat, agricultural lands, water quality, oil shale development?

- In our judgement--as individuals, or as a group--which sources of clothing seem to us to be most appropriate? Under what conditions? Ask the students to establish some criteria for their judgements, explaining their reasoning.

5. What impact did Indian peoples clothing have on the environment? (cedar bark and animal skin)

EXTENSIONS

1. Inventory your clothes closet. Tally the number of garments per each natural resource. Make a personal graph showing proportions of cotton, polyester, leather, silk, etc.

2. Write an environmental impact statement about the impact of your personal clothing preferences.

3. Study traditional Indian clothing of the Pacific Northwest by securing photos from tribal museums, or the Washington State Historical Society. Or view the clothing in person by inviting Indian visitors or attending an Indian cultural event.

4. How does today's clothing differ or compare with traditional clothing in terms of the resources used to produce it?

Adapted from Project Wild, Secondary Activity Guide, page 147.

SECTION II

"Great nations, like great men, keep their word."
— Justice Hugo Black commenting on Indian treaties.

WHAT IS A TREATY?

Throughout the history of the world, groups of people have competed or fought with each other over land and resources. Some do this in small battles over a long time; others enter into large wars. Sometimes there has been a stronger group or a weaker group; other times the groups are equal in power. A time comes when people want peace -- one side, the other, or both -- and for the sake of peace they talk to each other and enter into a formal agreement called a treaty. In the treaty, both sides agree as to how they will sharethe land or the resources, or how they will act or behave towards each other in order to have peace. Treaties are said to be made between equals, because the two sides will work as equal partners to keep the word of the treaty. Trust is the essential meaning of this kind of agreement which implies: "I will treat you as you treat me."

In the 1800's, when the land we now call Washington was called the Oregon Territory, the United States government made treaties with several Indian Nations in the Northwest in order expand land settlement and resources and to secure peace among settlers and Native Americans. The Indians and the United States government each agreed that if the Indians would give up the rights to most of their land and resources in the Oregon Territory and in return for the rights to live on the lands now titled "reservations," and for the rights to fish as they always had fished - not only on reservations, both sides would guarantee peace. These treaties were legally binding contracts.

Treaties signed in Washington include:

Treaty of Medicine Creek with Puyallup, Nisqually, and Squaxin Island tribes (Dec. 26, 1854).

Treaty of Point Elliot with Lummi, Muckleshoot, Tulalip, Swinomish, Suquamish, Sauk-Suiattle, Stillaguamish, Upper Skagit, and Nooksack tribes (Jan. 26, 1855).

Treaty of Point No Point with Port Gamble Klallam, Lower Elwha Klallam, Jamestown Klallam and Skokomish tribes (Jan. 26, 1855).

Treaty of Makah with the Makah tribe (Jan. 31, 1855).

Treaty of Quinault with Hoh, Quinault, and Quileute tribes
(Jan. 25, 1856).

In the United States the nature of treaties, including Indian treaties, is defined in the Constitution. Treaties we make with other sovereign nations are considered the Supreme Law of the Land, and no citizen or state may break them. Federal law supercedes state or local laws.

For 40-50 years there were no problems with fishing. Fish were plentiful and the settlers and Indians continued to fish with spears, nets, traps, and other methods for personal use and trade.

The development of the canning process and the ability to preserve fish for shipping made salmon attractive as a non-Indian commercial industry. Eventually, technology permitted the development of

gillnetters, purse seiners, reefnetters, and trollers. Many settlers became commercial fishermen. With their fishing vessels, huge numbers of fish could be easily caught. Over the years, the increasing number of fishermen, the advances of fishing technology and lack of regulation combined with the habitat destruction from the activities of an increasing population, fish stocks began to decline. Even with hatcheries, there were not enough fish to prevent stiff competition among fishermen.

Arguments arose between Indians and non-Indians about how many fish the Indians had a right to according to the treaties. Simultaneously, disputes over salmon arose between Canadians and Americans. Also, increased industrialization, damming of the rivers and poor logging practices polluted streams and reduced salmon habitat. As a result, now there are fewer fish. Who has the right to take them? Who has the right to stop fishing in order to preserve salmon runs? Who has the right to take fish from Canadian, Indian and American hatcheries?

Because of these problems, international treaties between the U.S. and Canada had to be examined. The Northwest Indians and U.S. government have had to re-examine the treaties made and signed in the 1850's. Those treaties guaranteed the Indians the right to fish at "all usual and accustomed grounds and stations...in common with all citizens".

What does this mean? Can non-Indians fish in the usual and accustomed grounds along with Indians? Can commercial fishermen catch most of the fish at sea before they get to Indian boats and nets closer to shore? Indian hatchery and fishery management personnel may be valuable guest speakers to assist in answering these questions.

Arguments over Indian and non-Indian fishing, and especially over net fishing led to several court decisions beginning in 1964. The non-Indians are represented by the Washington State Department of Fisheries and Wildlife and the Indians are represented by the U.S. government in the implementation of the United States v Washington court case.

What do the treaties of the 1850's mean today? In 1974, a U.S. district court gave the most recent interpretation of the treaties, a decision often called "The Boldt Decision," named after Judge Boldt. He said: "The right of Indians to fish at their usual and accustomed grounds and stations...in common with all other citizens" means that Indians are guaranteed half the catch." The decision also recognizes treaty tribes as co-managers of fisheries resources, or the Northwest Indian Fisheries Commission, 6730 Martin Way East, Olympia, WA 98506, Telephone (206) 438-1180. In 1979, the Boldt Decision was upheld by the U.S. Supreme Court.

Show and discuss the film: "Legacy of the Salmon People" or "As Long As the Rivers Run" available from the Washington State Library, Evergreen State College.

Read and discuss questions and answers provided in "The Truth About Indian Fishing." (see resource section)

After reading "What is a Treaty," discuss in small groups the following questions:

1. Define what a treaty is or does.

2. What rights do the Indians of western Washington have according to the treaties they made with the U.S. government?

3. What rights do the U.S. government or settlers have according to the treaties with the Indians?

4. How long ago were these treaties made?

5. Why are we having trouble with these treaties today?

6. What does "usual and accustomed grounds" mean?

7. What do you think the words "in common with" mean?

8. If you were Judge Boldt, what decision would you have made? Why?

Based in part on Clean Water Streams and Fish, A Holistic View of Watersheds, Elementary Curriculum, pages 291-296

TREATYTIME

A Game of Cross-Cultural Negotiations

What happens when groups of people endowed with different resources, and enjoying different languages and customs, must meet and agree on sweeping changes in their relationship? To what extent do misunderstandings about one another lead to unsatisfactory agreements? And to what extent can we tell, after years have passed, what was really meant to be agreed to in the first place?

These are important questions in the study of Indian treaties. Indian treaties were agreements made between two nations exchanging vast quantities of land, timber, minerals, and other resources for promises of peace, security, and some assistance. Of course, it isn't all too clear, because of language translation problems, what was promised. In fact, there are even disagreements over just how permanent these treaties were meant to be.

TREATYTIME is a way of experiencing some of the challenges, problems, and frustrations of making and keeping of cross-cultural agreements.

Before playing TREATYTIME you may find it helpful to discuss these questions:

- What kinds of social customs do we follow without even thinking about them?

- How easily might a stranger from another society unintentially offend us?

- Or misunderstand our actions?

As an experiment, have two students stand facing each other about ten feet apart, then have them begin to move closer to one another - one step at a time. Observe their embarrassment and avoidance of eye contact, and the inevitable laughter from the rest of the class, as they approach within what Edward Hall calls "intimate distance" -- about two feet. Is this custom the reason why people look at the ceiling of an elevator instead of at one another? Discuss the variations of "intimate distances" in cultures.

Do all languages have words for the same thing? Is it ever possible to translate ideas, no matter how careful you are? (If you or any of your students speak a language other than English, try to translate some concept words like trust, loyalty,
sympathy, suspicion, envy, amazement. Are there exact equivalents? How does language reflect the kinds of behavior people expect from one another?)

TREATYTIME: GENERAL INSTRUCTIONS

Object of Play

1. There are four teams. They are the Moo, Wumps, Bungs, and Wadgets. Each has its own language, customs, and government.

2. Each team begins with a certain amount of Land or Money represented by cards. Land and Money cards can be turned in for points at the end of the game.

3. During the first half of the class period teams can agree to trade resources. Promises are kept (or broken) in the second half.

4. The team with the most points at the end of the game wins.

Negotiation

1. Resource cards are more valuable to some teams than others, making it everyone's interest to trade.

2. All promises must be made in writing during the first half of the period.

3. Any number of agreements can be made between teams. Negotiations can be carried out anywhere by any representatives the teams choose.

4. Each team must use its own language and follow its own customs during the negotiations.

Enforcement

1. At the beginning of the second half, each team chooses a judge. Three judges must agree to make a decision.

2. After the judges have been chosen, each team must submit its claim for the number of points they think they deserve, explaining whether the points claimed are for Money or Land.

3. Claims for points can be challenged by other teams.

4. The judges must resolve all disputed claims on the basis of the written agreements, and their decisions are final.

Adapted from Understanding Indian Treaties As Law, pages 19-27

TREATYTIME: SPECIAL INSTRUCTIONS FOR TEACHERS

Preparation

1. Organize teams and distribute instructions to the class the day before you play TREATYTIME.

2. Each student will need a copy of the general instructions and the special instructions for his or her team. Remind the class that team instructions are confidential and should not be discussed with other teams at any time.

3. Just before your class meets for TREATYTIME arrange all the chairs and tables in your room in four groups, one in each corner. Make a large sign for each team with its name on it and tape or tack it up in that team's corner.

4. Make ten copies of the sheet of resource cards and cut them apart. Place each team's cards face down in its corner as follows before class begins: 30 Money cards to Wadgets, 20 Land cards to the Bungs, 15 Land cards to the Wumps, and 12 Land cards to the Moo.

Beginning Play

1. Send each team to its assigned corner.
2. Appoint a King for the Bungs and divide the Wumps into High and Low Wumps (see the special instructions for these two teams). Make your choices known only to the Bungs and the Wumps.
3. Make sure plenty of paper is available for writing agreements.
4. Remind the class that all agreements must be completed in writing by mid-period, and tell them to begin.

Scoring

1. You will be ultimately responsible for seeing that scoring is consistent with the following schedule -- understanding, of course that the judges alone can decide whether any particular team "has" a resource.

Value in Points For:

Team	1 Money Card	1 Land card	1 Money +1 Land	
Wadget	10		15	35
Bung	15		20	35
Wump	15		25	40
Moo	15		30	40

2. All teams begin with 300 points.
3. Since money can be used to develop land, a team scores more points for a Land + Money pair than a Land card and a Money card are worth separately.

TREATYTIME: SPECIAL INSTRUCTIONS FOR WADGETS

You Wadgets have lots of money but no land. To score a lot of points you will have to buy land from the Bungs, Wumps, and Moo.

The Wadgets have a President chosen by election. Whoever gets the most votes wins. Hold your first election at the beginning of the game, and hold another one whenever you want to. You can keep the results of your election to yourselves.

According to the Wadget Constitution "laws" are made by the President and the vote of the majority of the Wadgets. "Treaties" are negotiated by the President and then must be approved by 2/3 of the Wadgets.

Wadgets are very fond of saying "A man's handshake is as good as his contract." Wadgets love to shake hands. You shake hands whenever you meet and whenever you say goodbye. You shake hands whenever you make promises. In meetings you shake hands every time you speak, as a sign of respect for your listeners. This is a very important Wadget custom. The other most important Wadget custom is saying "boo-oo!" very loudly when you agree with something someone else is saying.

The Wadget language makes very careful distinctions among different kinds of promises:

"contract"	a binding promise among individual people; if one party to a contract breaks it, he must pay the other for its losses.
"agreement"	a promise that does not have the force of law.
"treaty"	a promise among countries or nations that has the force of law only as long as both sides continue to go along with it.
"compact"	a promise among countries or nations that none of them have the power to break without the consent of the others.

Because you Wadgets think your ways of doing things are better than anyone else's, you will try to get the other teams to observe the customs of the Wadgets, and prefer to make deals with those teams that do.

At the end of the game you Wadgets will score 10 points for each Money card you are entitled to, 15 points for each Land card, and 35 points to each pair of a Money card and a Land card.

TRY TO MAKE THE BEST DEALS YOU CAN. YOU DO NOT HAVE TO GIVE OTHER TEAMS ANY INFORMATION ABOUT YOURSELVES UNLESS YOU WANT TO. ABOVE ALL, REMEMBER TO TALK AND ACT LIKE GOOD WADGETS.

TREATYTIME: SPECIAL INSTRUCTIONS FOR THE MOO

The Moo have few resources, but they value what they have very much. As a rule, the Moo like things just they way they are.

You Moo are very democratic people. You have no written laws or constitution, but it is understand that no decision is made affecting you all unless **everyone agrees**. You often send messengers to discuss things with other people, but you don't consider yourselves legally or morally bound to any agreement until you've all had a chance to get together and everyone has voted in favor of it.

You are also very religious people. Believing, as you Moo do, that the gods want all people to live the same good lives you do, you are only willing to share your resources with people so long as they remain "moo-moo."

Your language is a lot like English, but contains some special words you must use very carefully:

"moof" to give something away reserving a right to take it back whenever you want.

"gitch" to give away a thing such as food or clothing; gitching is forever--a good Moo never goes back on a gitch.

"moo-faa" to let someone use your land for a while--the Moo have no words for giving away land forever.

"moo-moo" being good in the Moo way, behaving with dignity like a good Moo.

The Moo are **highly offended** by physical contact with other people such as hand-shaking and back-slapping. You Moo consider people your custom is to stick our your tongues as a sign of disgust. It is Moo belief that uncivilized hand-shaking and back-slapping peoples cannot be trusted, and the Moo will not make any kind of gitch with such people -- although they might make a moof, or a moo-faa.

At the end of the game the Moo will score 15 points for each Money card they are entitled to, 30 points for each Land card, and 40 points for each pair of a Money card and a Land card.

TRY TO MAKE THE BEST DEALS YOU CAN. YOU DO NOT HAVE TO GIVE OTHER TEAMS ANY INFORMATION ABOUT YOURSELVES UNLESS YOU WANT TO. ABOVE ALL, REMEMBER TO TALK AND ACT LIKE GOOD MOOS!

TREATYTIME: SPECIAL INSTRUCTIONS FOR BUNGS

You Bungs are rich in resources. You are all very proud of yourselves, and your name, "Bung" means, "the only real people in the world."

All the Bungs are governed by a King (or Queen). Being King is hereditary. The King is treated very carefully. When the King speaks, all the Bungs cover their eyes with their hands out of respect. No Bung ever speaks to the King unless being first spoken to. Any minor thing the King asks to be done (like "get me a chair to sit on") is done at once.

But the King of the Bungs isn't really all that powerful. Nothing he does as King has to be followed by other Bungs unless they want to. Usually they do what the King commands out of respect, but if he does something really very disagreeable they ignore it.

Your language is a little different from English, containing among other things some very special words to describe the nature of promises.

"tunk"	the kind of promise the King can make.
"tunk-runk"	a promise made to be kept, but with respect.
"go-tunk"	to make a promise not meaning to keep it, or to give something away not meaning to give it.
"go-bung-tunk"	a solemn promise not to be broken under any circumstances.
"go-bung"	to act respectfully before the King, to treat the King the way a Bung would.

Since you Bungs are so respectful of your King, you want other people to act that way too. You always refuse to make deals with people who do not "go-bung".

At the end of the game you Bungs will score 15 points for each Money card you are entitled to, 20 points for each Land cards, and 35 points for each pair of a Money card and a Land card.

TRY TO MAKE THE BEST DEALS YOU CAN. YOU DO NOT HAVE TO GIVE OTHER TEAMS ANY INFORMATION ABOUT YOURSELVES UNLESS YOU WANT TO. ABOVE ALL, REMEMBER TO TALK AND ACT LIKE GOOD BUNGS!

TREATYTIME: SPECIAL INSTRUCTIONS FOR WUMPS

The Wumps are a very unusual people. Long ago the Wumps broke up into two bands, the High Wumps and the Low Wumps. Each band governs itself and chooses its own leaders, called "gups." Sometimes there are as many gups as there are Wumps.

The High Wumps still behave as if they represent all the Wumps, frequently referring to the Low Wumps as "our children" and trying to act on their behalf. The Low Wumps resent this and, on principle, oppose everything decided upon by the High Wumps. Unfortunately, the Low and High Wumps have never divided up their land, and continue to use it all together. This leads to many arguments.

Under Wumps customs, Wump women own all the land, and no arrangement involving land is lawful unless the women have agreed to it. Nonetheless Wump men have been known to make deals on their own and keep them secret from the women, hoping to keep all the profits to themselves.

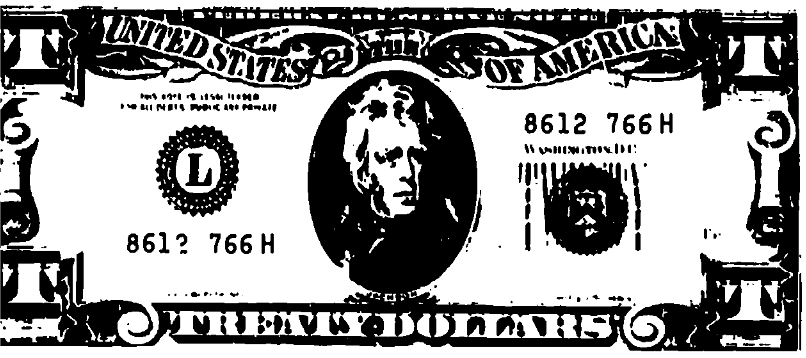
Wumps never discuss business matters with other people. They listen very politely to everything that's said, and then either go along with it or go away without saying a word. Wumps believe it rude to argue and dicker. By the same token, when they have a proposal to make, they simply say what it is and then go away, leaving the other folks to either accept or reject it.

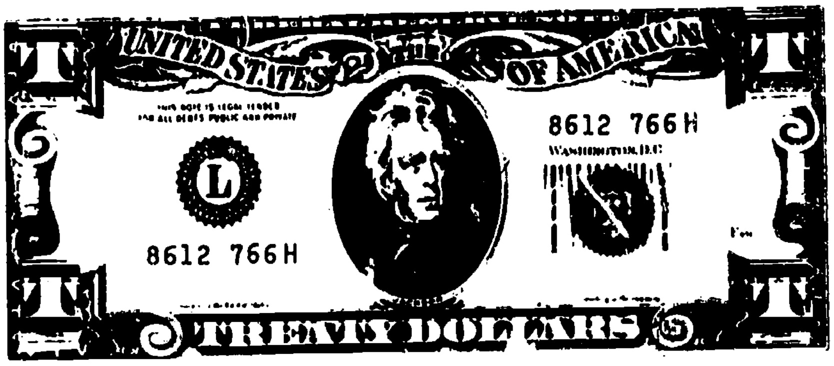
Wump language distinguishes among different kinds of promises:

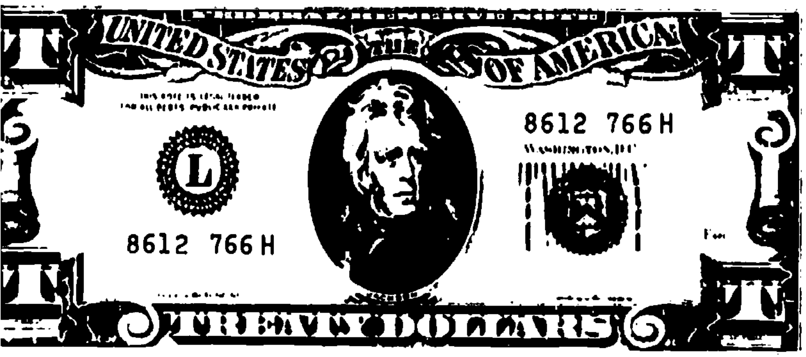
"brip"	a binding promise among individual people; if one party to a brip breaks it, he must pay the other party for its losses.
"klonk"	a promise that does not have the force of law or morality.
"moof"	a promise among countries or nations that has the force of law and morality as long as both sides continue to go along with it.
"grand-moof"	a promise among countries or nations that none of them have the power to break without the consent of the others.

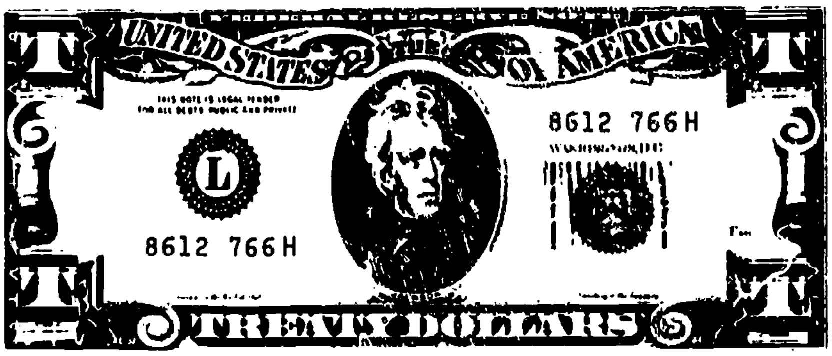
At the end of the game you Wumps will score 15 points for each Money card you are entitled to, 25 points for each Land card, and 40 points for each pair of a Money card and a Land card.

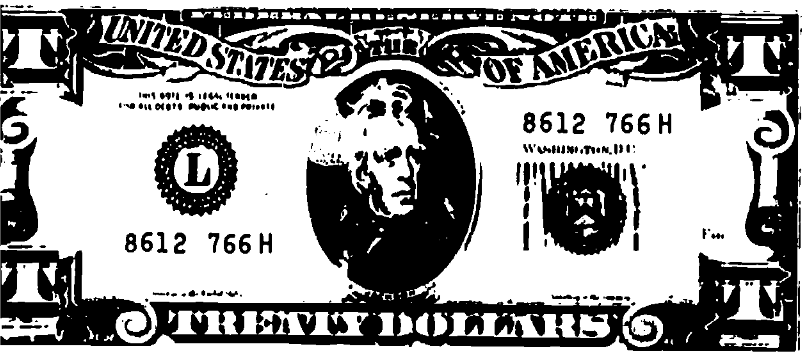
TRY TO MAKE THE BEST DEALS YOU CAN. YOU DO NOT HAVE TO GIVE OTHER TEAMS ANY INFORMATION ABOUT YOURSELVES UNLESS YOU WANT TO. ABOVE ALL, REMEMBER TO TALK AND ACT LIKE GOOD WUMPS!

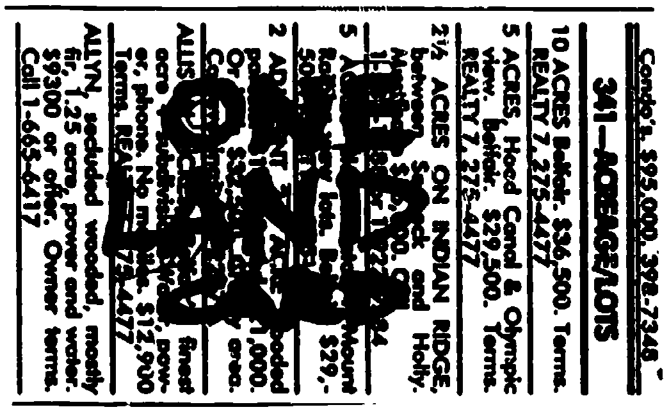


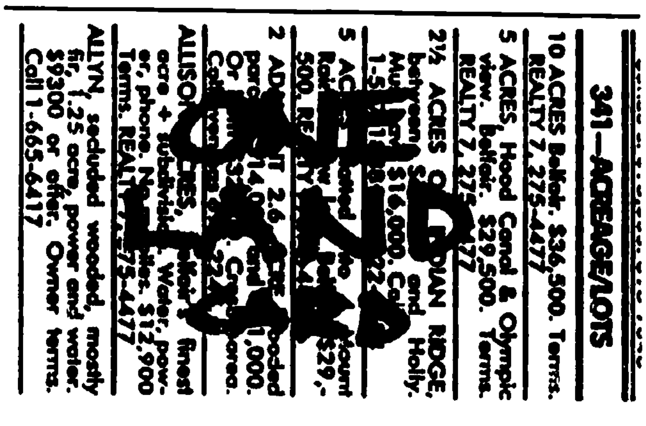


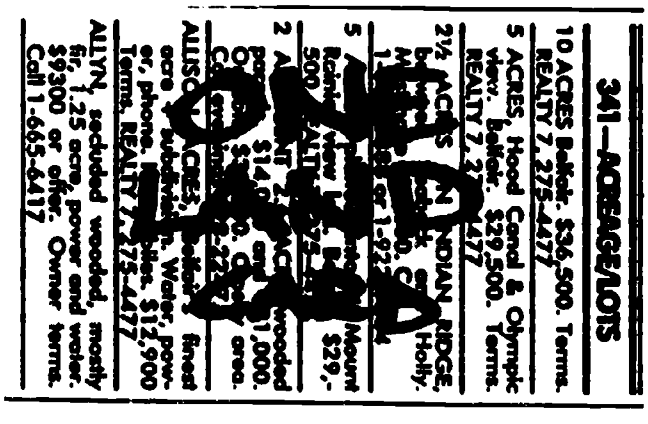


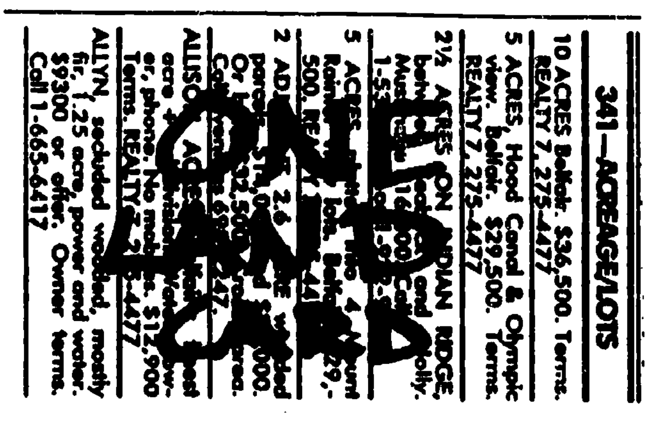


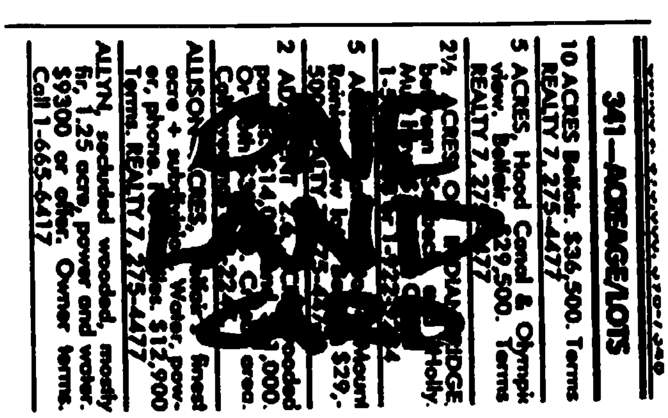












TREATYTIME: DEBRIEFING QUESTIONS

Ask each team to make a report answering the following questions:

1. What was your goal in negotiating with the other teams? How many Land and Money cards did you try to get?

2. Which teams did you try hardest to trade with? Why?

3. How did you find out about other team's strengths, weaknesses, and customs?

4. How reliable was your information? Why?

5. Did you need "interpreters" to your customs? Explain using specific examples.

6. Were your intentions misunderstood by other teams? By the judges? Explain using specific examples.

7. Did your team try to take advantage of other teams' customs? Of their ignorance of your customs? Explain using specific examples.

8. If you could do it all again, what would you do to give your team the best possible chance of winning?

PICTIONARY

OBJECTIVE

The students will be able to convey a message using only symbols or pictures.

PROCEDURE

Students will keep a journal of drawings that depict a word or concept. Make a transparency of Indian words and pictures on the next two pages. Use an overhead projector and discuss with the students the many ways people might depict the same word.

Write several nouns on the blackboard and have students create drawings of each.

ACTIVITY

To play pictionary - divide students into teams of two. Write nouns and/or other words on 5 X 7 cards placed face down. One team member picks a card, and draws a picture or symbol to depict the meaning of the word so that his/her partner can guess the word. They cannot use letters, numbers or voices to communicate. Use an egg timer or the second hand on your watch.

You may want to generate a list of words, have students draw a symbol for each, study with their partners, and use only those words on the cards.

Students may create a language for your class.

Discuss:

- How many ways do we communicate? (language, gestures, eyes, facial expression, body language)
- Are any of your students bilingual?
- What are the advantages/disadvantages to knowing two languages?
- How many languages were spoken by the Indian tribes in Washington two thousand years ago? One thousand years ago? One hundred years ago? Now?

INDIAN SYMBOLS

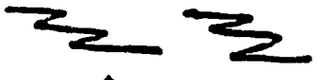
SPEAR - FEATHER 

ENEMY 

HORSE 

MAN 

MOUNTAIN 

LIGHTNING 

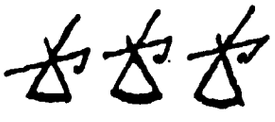
SUNRISE 

PONY TRACKS 

RIVERS 

MOON - MONTH 

RED TOMAHAWK 

CAMP 

BUFFALO EYE 

CATTLE TRACKS 

DEER HOOF 

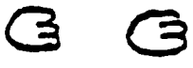
LAKE 

GOOSE 

CLOUD 

RAIN 

WIND 

BEAR TRACKS 

RABBIT TRACKS 

FISH 

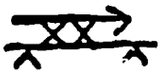
BEAR 

CANOE 

SNAKE 

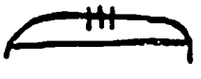
EAGLE 

BAD OR EVIL 

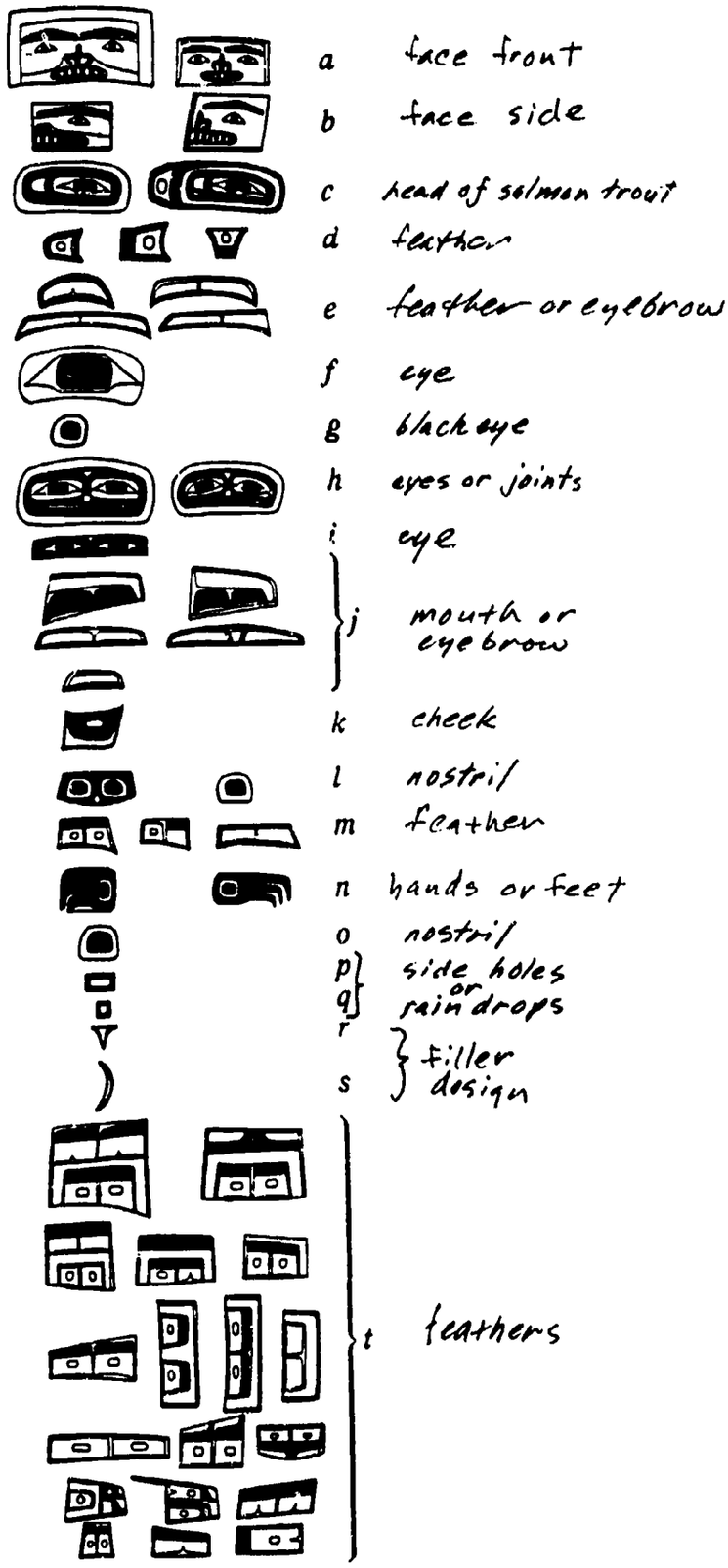
DISCOVERY 

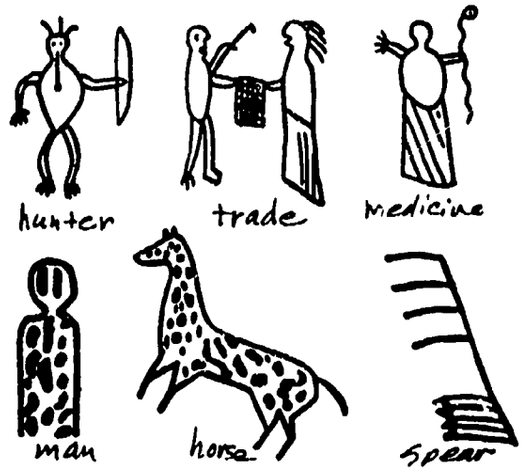
PERSON Sitting 

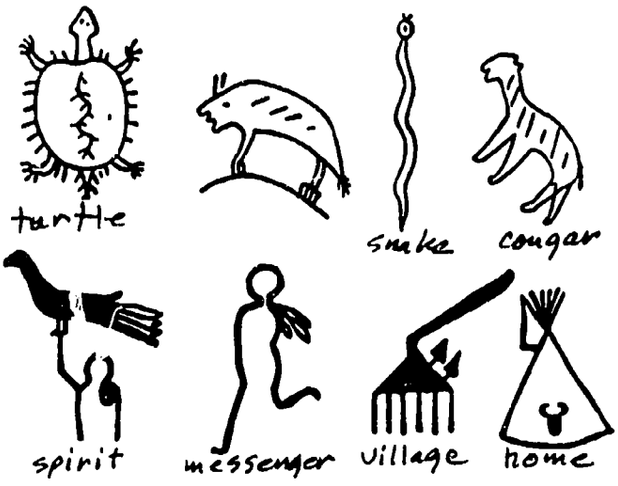
Standing 

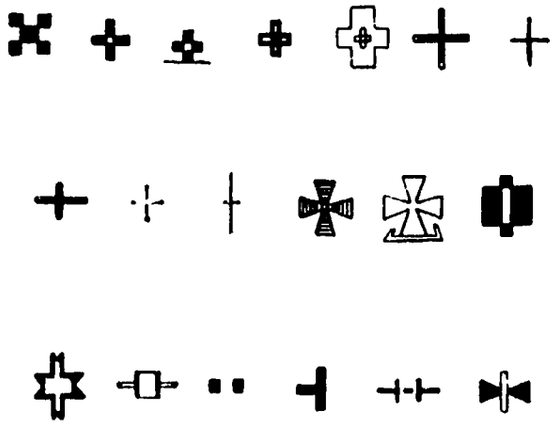
BOW 

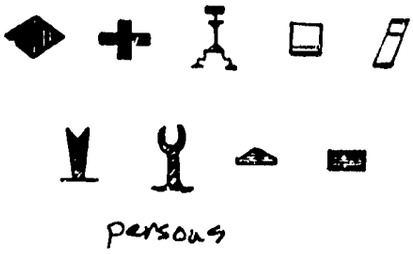
SPRING 











WATERSHEDS

Salmon do not live in streams...they live in watersheds. The common assumption that salmon live in streams has contributed to the demise of fisheries in the Northwest. The common assumption that salmon live in streams has prompted Phase II of the Boldt decision. We do not remember that 99% of what happens to a stream occurs outside of its corridor -- in the watershed. We think that we must only protect activities in or immediately along the stream in order to protect salmonid habitat. Similarly, once damage is done to a watershed, we think we need only repair the stream corridor and fish will survive.

Streams do not rise in the mountains and flow to the sea. They rise from rain hitting every square inch of hillside within the boundaries of the watershed. Until we recognize that every activity in a watershed has the potential to affect the nearest stream, realistic efforts to protect and revive streams and fisheries will not occur.

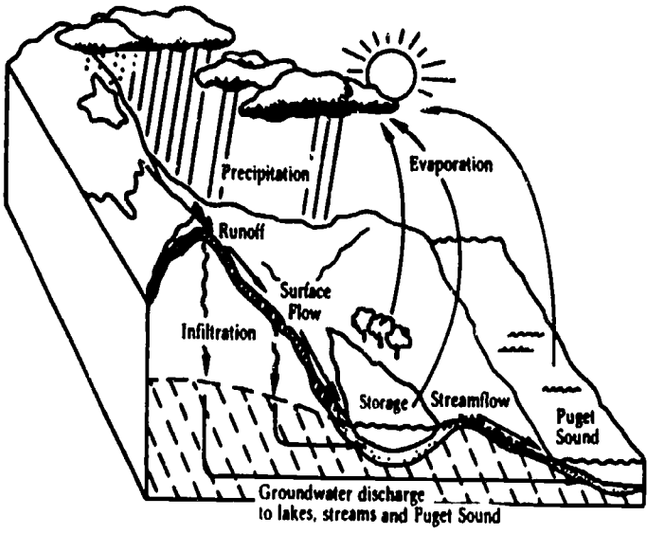
Unfortunately, watersheds are very complex, subtle systems. Each one is unique and will respond differently to disruption. Scientists have not determined the threshold levels of watersheds. For example -- what percent of vegetative cover can be removed before a significant adjustment will occur in the river or stream? So much of the watershed is out of sight -- unknown are the subsurface drainage patterns resulting from springs, soils, geology and aquifers. This is why people may have difficulty with watersheds.

The following demonstration and lessons attempt to expose students to simple concepts about how a watershed might work. Without such an exposure, their understanding of salmon habitat will not only be incomplete, but also inaccurate.

WATERSHED.

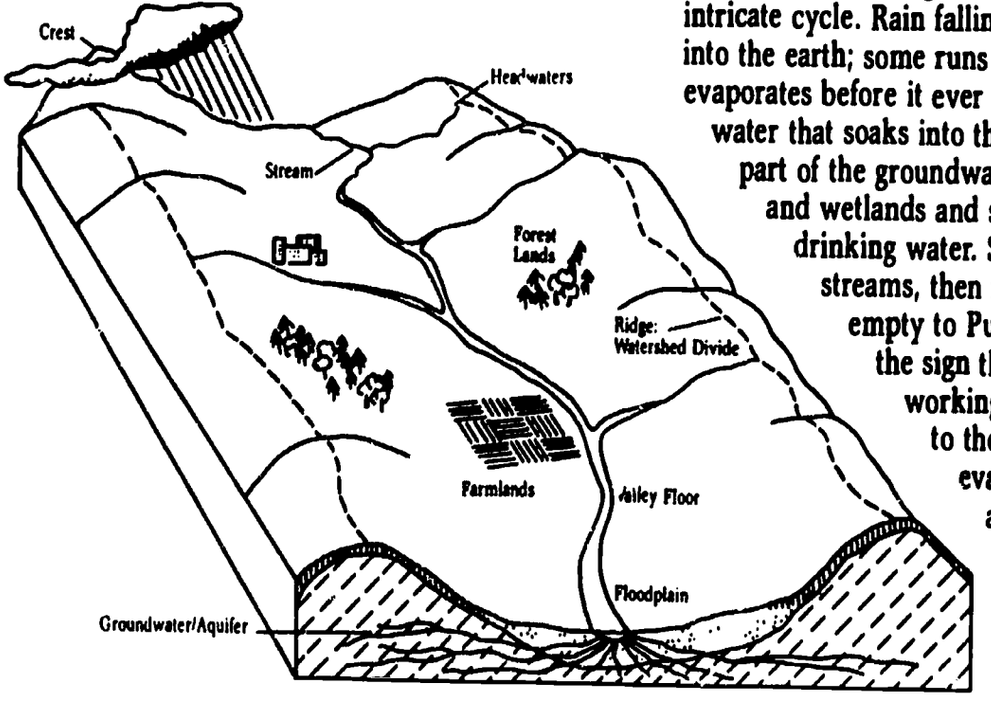
The word means a parting, a shedding of waters. But a watershed is a gathering place, also. It is a place where hills and plains and people's lives are connected by falling rain and flowing water.

A watershed is measured by the hilltops and ridges that are its boundaries. It is shaped by the hills, valleys and plains that are the landscape and is tempered by the forests, fields, lakes and marshes that are habitats for its creatures. Most of us know a watershed through its streams and rivers that connect forest with farm, farm with city and city with Puget Sound . . . and each of us changes the watershed day by day, bit by bit, as we go about the business of our lives.



WATER CYCLE.

In a watershed, the rain, the rivers, the lakes and wetlands, even our drinking water are all parts of an intricate cycle. Rain falling on the land soaks into the earth; some runs off to streams; some evaporates before it ever reaches the earth. The water that soaks into the ground becomes part of the groundwater and feeds streams and wetlands and supplies much of our drinking water. Surface runoff forms streams, then rivers that eventually empty to Puget Sound. Rivers are the sign that the cycle is working . . . returning water to the oceans where it evaporates, forms clouds and falls again.



WATERSHED/FOREST MANAGEMENT

OBJECTIVE

In this investigation, students will explore the trees and forest in your community and region.
BACKGROUND INFORMATION

When the first settlers arrived in the United States, they found a seemingly endless forest. Out of this forest came lumber for buildings, furniture, farm implements, and a thousand other products needed for survival. In those days, little thought was given to replanting trees -- the forest appeared inexhaustible. However, as demands for lumber and agricultural land increased and our forests gradually decreased in number and size, growing new trees became a necessary part of the forestry business. Trees became our most precious renewable resource. The first extensive program of replanting began in our government owned national forest system in the 1930's, but trees were still thought of primarily as a source of lumber. In most recent years, the importance of managing forests for other uses has increased. Today, the forests not only provide lumber; they benefit people as places that provide recreation and wildlife habitat. Trees protect watersheds -- the areas of land around rivers or streams where the rivers get their water supplies. In some cases, forests are also used as grazing lands.

In 1960, Congress passed the Multiple-Use Sustained Yield Act to ensure the management of national forests as a renewable resource with diverse uses. Subsequent acts, such as the 1974 Forest and Rangeland Renewable Resource Planning Act, and the National Forest Management Act of 1976, further delineate process and policies for equitable multiple use management. These laws were designed to provide for the multiple use of our national forests. They are intended to ensure that national forest resources are utilized in the combination to best meet the needs of the American people. Some of the land will be saved for its natural value. Today, over 25% of the U.S. Forests of commercial quality are managed under federal jurisdiction, which attempts to meet these acts.

Designing a multiple use plan now requires the combined knowledge of many experts. A national forest may be staffed with a hydrologist (water specialist), a wildlife biologist, a recreation specialist, a landscape architect and a soil conservationist, as well as with foresters and engineers. These specialists work with the forester to develop a forest management plan. They assist the forester by determining the impact of certain logging procedures on wildlife, recreational use of the forest, and the forest watershed. For example, cutting all of the trees out of small blocks in the forest may allow many new trees and plants to grow. This new growth is close to the ground and more accessible to deer and other animals. Clearcutting (complete removal of trees) of a small area may provide more spring and summer browse (food) for deer.
Selectively removing a few trees in the same area ensures wildlife habitat. Moreover, good forest management practices should incorporate a variety of harvest and tree growth methods to provide a forest mixture that compliments timber, fish, wildlife and human needs.

Logging techniques used in some forests can sometimes increase certain wildlife populations. Foresters can maintain the quality of habitat for such animals as the racoon and woodpecker by leaving standing dead trees to serve as nesting places and food sources for them. Sometimes foresters leave "downed" trees or treetops in place to serve as cover and nesting sites for birds like the junco and ruffed grouse, which are ground nesters, and for mice, coyotes, and other animals.

There are several systems for harvesting trees. Two common systems are clearcutting and selective cutting in its many different forms. The system used depends on several factors including the species of tree being harvested, the species which the forester wants to replant or regenerate in the area, the geography of the tract to be harvested, and the costs involved. Selective cutting simply means that trees are carefully classified before they are cut and that not all trees in an area are cut at any one time. Older trees are usually cut first, along with those that are defective and diseased. Like weeding a garden, this encourages the growth of younger, healthier trees by removing some of the competition.

Clearcutting is the most common system by which blocks of land are completely cleared of trees. On national forest lands, a clearcut can be as small as an acre or as large as 80 acres (special exceptions may allow for larger cuts). Some clearcuts in the past have been as large as 8000 acres. This method is used for Douglas-fir and other trees which are cut as efficiently as possible, have high market value and have seedlings that grow fastest in full sunlight. Clearcutting is a controversial procedure. Some scientists say that undesirable side effects, such as soil erosion problems or the unattractiveness of a clearcut area, outweigh the advantages. Others consider clearcutting an essential logging technique if practiced with care.

From the tribal perspective, clearcutting can be viable if adequate buffers of trees and vegetation along rivers and streams are maintained to protect fish habitat. Adequate old growth is important as well. The tribal biologists would prefer selective cutting to maximize existing natural vegetation and sustain a wide genetic mix of different trees, including cedars, hemlock and spruce.

Forests provide plant cover for watersheds. Watersheds supply us with water by holding rainwater in soils and in groundwater aquifers and channels runoff into rivers and streams. Watersheds can be very small or as large as the Mississippi River watershed, which covers over 1,234,000 square miles and includes many different rivers. They must be carefully managed to ensure a steady supply of pure water throughout the year; forests are essential in this continuing process.

Forest soils have a great capacity for holding water and serve as natural regulators of water flow. When rain falls in the forests, some of the water clings to the leaves and needles of trees and plants where it evaporates. This also cools the habitat around streams and rivers. The rest trickles down the stems and stalks of the plants or falls directly on the forest floor, then filters into the topsoil. When the rain stops, slow drainage through the soil continues until only the water held, as in a sponge, is left for the growth of trees and other plant life.

It is very important for water to be able to soak into the ground in a watershed. Uncontrolled logging or fire can strip land of its cover, decreasing its water holding capacity and seriously affecting its value as a watershed. If too much land in a watershed is paved or not covered with vegetation, too much water will run off. This can cause floods and erosion, and can decrease the available ground water supply during drier parts of the year. If all the water runs off the land at one time or in large quantities, the watershed will not be able to provide a continuous supply of water or sustain whatever forest may be left.

Today the forester works with the soil scientist and hydrologist to make sure that logging techniques do not adversely affect the watershed. For example, if clearcutting is being considered as a harvesting method, the forester must measure the slope of the land where logging is to take place, the composition of the soil, the proximity of the harvested area to streams and rivers, and the locations and type of logging roads or trails that will be used. If the clearcut is on a steep slope or close to a river where increased

runoff causes soil erosion and siltation, a different harvesting procedure might be used. Precautionary measures should be taken, like using helicopters to transport logs, and leaving undisturbed "buffer or riparian zones" of forest along streams or rivers. When roads have to be put in to remove the timber, the road building must be done with great care. The road building process can often have the greatest and longest lasting impact on the forest when they expose hillside soils to possible landslides and severe erosion.

A multiple use concept is supposed to be practiced throughout our national forests for managing wildlife, water, recreation, and timber, but this is not true of all forest lands. Most forest land is privately owned, and some privately owned forest land is managed primarily for timber purposes. This does not mean it's not sustained. Some private forest lands escape proper management techniques altogether. Other private forest lands are converted to housing or business developments and are lost forever.

Until recently the trees in cities and suburbs have not been considered a forest. Urban trees provide other benefits to people. Now urban forests are being set aside as green belts or parks to protect watersheds and wetlands. The urban landscape architect's role is similar in some respects to the forester's. Both are responsible for planning and managing placement and growth of trees, and both consult a variety of experts. While foresters look after the health of the forest as a whole, landscape architects must consider the health and appropriateness of individual trees. They select trees which provide a variety of benefits, but they rarely choose trees for their lumber value. Often they look for trees which provide shade, help reduce noise or air pollution, and add oxygen to our air supply. Trees also may be selected for rapid growth, to help cool the sun's radiant energy, to be resistant to pollution and disease, and to impart a certain grace and beauty to what would otherwise be a relentless succession of buildings.

ACTIVITY

After reading the background information have students:

- give three examples showing how two species of trees are similar and dissimilar;
- list four forest uses to be considered in developing a management plan for a public forest;
- define "watershed";
- explain the relationship between the amount of ground cover in an area and the amount of runoff in that same area;
- predict the effects of specific circumstances (forest fire, large clearcut, human development, climate) on the stream flow in a watershed;
- compare two different groups of trees and locate trees in both groups which are of the same species;
- list five benefits provided by trees;
- explain the difference between clearcutting and selective cutting and circumstances under which each is used.

Students who become involved in CLASS projects and research projects should be able to:

- use a topographic map to outline the boundaries of a local watershed;
- use an increment borer to determine the age of a tree;
- contact the local forester agency to locate the oldest tree in the community;
- prepare information for local citizens about trees and their care.

Adapted with permission from CLASS Project, "Forest/Watershed Management", published by the National Wildlife Federation, copyright 1982.

RUNOFF AND WATER QUALITY

The word "runoff" is used in many contexts--spring runoff, ground runoff, surface runoff, etc. Students should understand that natural runoff from rain, filtered by vegetation, does not cause a water quality problem. If its volume is so great that significant erosion, sloughing, turbidity, or flooding are caused, then there is a water quality problem. Plant, animal and fish survival can be inhibited by the silt, impenetrability of light, force of flow, etc. Floods cause havoc with spawning beds. Perhaps this could be more accurately termed a water quantity problem.

Urban storm runoff, industrial runoff, and road runoff can all pose water quality and water quantity problems. Obviously the runoff from urban or industrial areas can have pollutants: toxic metals from the rubber tires of freeway traffic, industrial wastes, pollutants such as oil, antifreeze, paint, solvents, herbicides washed into the street and into the storm drains from homes.

Urban areas, however, equally create water quality problems by the quantity of surface runoff that results from the amounts of hard surface runoff that the rain cannot penetrate. This problem has been much more noticeable in recent years simply because of the increase in urbanization, resulting in more pavement and rooftops in each watershed. The rain hits these relatively smooth surfaces and, instead of soaking into the ground and gradually flowing to the stream, they are carried immediately to the nearest ditch or storm sewer and into the stream, sound or sea.

Excessive runoff first causes a water quantity problem: flooding of property, erosion, and destruction of spawning beds. If this process is frequent, then accumulated waters also cause a water quality problem. The runoff carries silt and soils from the land into the lakes, rivers, and streams, resulting in nutrient overloading or unnaturally high siltation rates and subsequent changes in water quality.

CROWDS BRING FLOODS

OBJECTIVE

Students will have a better understanding that major destruction of salmon habitat in and near cities is caused by the floods from impervious surfaces..."storm water runoff." Students will also have the opportunity to observe, estimate, graph and use percentage measurement skills.

ACTIVITY

1. Go outside when it is dry and mark off an area on the ground (not pavement) to represent your community or watershed. Using a sprinkling can, have rain fall on your community. What happens? Next, place plastic over this area and sprinkle water on it. What happens" If possible, you might cut holes in the plastic to represent yards, natural areas without roads or pavement. Identify.

2. Punch a hole in the bottom of a can and fill it with dirt. Sprinkle a given amount of water on the can. Collect the amount of water that runs through the soil in a pot below the can. Fill an identical can with dirt. Put elastic wrap over the can with a rubber band around it. Sprinkle an equal amount of water over the second can and collect the water as it runs off.

a. Compare the amount of runoff from each can: How much water does the can with dirt retain? How much water does the can with plastic wrap contain?

b. Compare the time: How fast does the water from the can with dirt percolate through it? How fast does the water on the plastic wrap run off?

ACTIVITY 2

Measure the length and width of your (school) yard. Draw a diagram of your school yard to scale on a piece of graph paper. Measure the length and width of buildings (school and yard) and place on the diagram. Measure the length and width of the roads, driveways and parking lots and place on the diagram. Color in the impervious surface areas. Calculate their area. How much of your school area is impervious? What percentage of the total school area is contributing to flooding?

Have students do the same for all of their homes and yards.

ACTIVITY 3

1. On a map of Washington, locate Puget Sound. Ask students to locate rivers and streams flowing into South Puget Sound in King, Snohomish, Kitsap, Thurston, and Pierce counties. Ask them if they think these rivers and streams have salmonids? (yes)

a. Can salmon use these areas for spawning? What problems might they encounter?

b. Can salmon use these areas for rearing? What problems might they encounter?

c. How many miles (average) do fish have to migrate on the west side of the Sound to get out of an urban environment?

d. On the east side?

e. Locate the areas of Snohomish and Kitsap counties on the map. State that these are two of the fastest growing counties in the entire country. What might the map look like in the year 2000? What does this mean for salmon?

2. Conclude by asking students what actions people in cities and suburban areas might take to reduce the problems for salmon?

ACTIVITY 4

1. Explain that taxpayers can pay to have drainage from a developed watershed piped into ponds or basins that will release it slowly into streams during rains. The same amount of water will eventually go into the stream, and the stream must adjust to take more water than it did before development, but the floods and some erosion can be reduced by these ponds. Sometimes Public Works takes care of this, other times a storm drainage utility is formed.

2. Ask your students if they feel that taxpayers would be willing to pay for a storm drainage utility if:

a. It reduced flooding problems for the community?

b. It provided some protection for salmon?

c. It reduced downstream river, lake, bay and ocean pollution?

SALMON AND THE RIPARIAN ZONE

The vegetation bordering a stream which is occasionally flooded or at least wet due to its proximity to a stream may be called a "riparian" habitat. Riparian means: at the bank of a river or natural watercourse lake or tidewater. Species inhabiting this zone face a number of extreme conditions. Depending upon the variability of the summer/winter water table, plants may need to be not only "water tolerant" but also to a degree "drought tolerant." As well, they must have a "hold-fast" root system for maintaining their posture during winter floods.

The riparian zone, with such a life-giving water supply, causes rapid growth and decomposition rates. This huge primary productivity and subsequent decomposition of highly nutritious litter offers a massive food base for bugs, birds, reptiles, fish and mammals.

One benefactor of riparian vegetation is salmon. By far the largest food supply for salmonids originates from outside the stream. This external input of organic and inorganic material provides a food base for a multitude of aquatic insects and other invertebrates. Leaf material is shredded and eaten by herbivores while decomposers break down material into smaller and smaller chemical bonds for later vegetative nutrient supply which lends itself to more herbivores. Chunks of vegetative matter, herbivores, decomposers and their predators are, in turn, eaten by salmon. Representative food species are the caddisfly, mayfly, and stonefly. Also, the varied streamside habitats created by vegetation (such as root balls amidst an overhanging bank or log and twig debris) harbour a further food supply for fish. Many aquatic insects use streamside vegetation during emergence and in the adult stages of their life cycle. Terrestrial insects, therefore, are available to fish as food through an accidental slip of one too many feet.

Streamside vegetation is important in maintaining water temperature suitable for spawning, egg and fry incubation, and rearing. Because small streams are more susceptible to temperature changes than rivers, it is most critical to have their banks vegetated. Small streams have a large percent of surface area to overall volume and the water is more vulnerable to the heat from the sun's rays. Note that the narrow width of small streams means that they tend to be either totally insulated by streamside vegetation or totally exposed.

Riparian vegetation also acts as a buffer or "filter" against sediment and debris which would otherside be deposited in the stream. Suspended sediment accumulates on fishes' gill filaments and suffocates the ability of the gills to get oxygen into the blood. It also prevents the fish from seeing to feed. Bedload sediment reduces the flow of intergravel water, thereby limiting the oxygen supplies to the eggs and alevins and hindering the removal of waste products. It may also prevent the emergence of newly hatched fry up through the gravel. Large quantities of sediment smother organisms upon which fish feed: one "slug" of bedload sediment will slowly move downstream suffocating most everything on or under the previous substrate.

Last, riparian vegetation offers shelter from predators. The stabilization of the stream bank by extensive rooting results in undercut banks, in contrast to the exposed "ditched look" as shown by channelization with armoured or bare rock banks. These overhangs, further exaggerated by grasses and shrubs, act as protective cover from predators such as birds and mammals. Overhangs define territory and predation among fish depending upon the scale of the undercut, height of water and existence of root balls to hide amongst. Small fish will hide under certain overhangs, larger fish under others. Also, they serve as resting or holding areas for fish so they don't have to constantly fight the current.

Reprinted from Clean Water Streams & Fish, A Holistic View of Watersheds, Elementary Curriculum, pages 167-245

START OF A NEW CYCLE

1. Fertilization

- Immediately the eggs are released by the female
- Spermatazoa locate and enter microphyle (funnel-like opening) an outer shell of egg.
- Only one sperm cell will enter the egg membrane.
- There it discharges the nucleus from its head into the cell body and it travels to the egg nucleus.
- Meanwhile, egg absorbs water which closes the microphyle and makes the eggs sticky. This makes the eggs stick to the gravel and saves them from being washed away by the current.
- Water also makes the eggs hard and round, and thus able to absorb bumping and jostling. Eggs tested in labs were able to withstand pressure of up to 80 kg. per square cm.

2. Egg Development

- Fertilized eggs (now called zygote) go through a series of cell cleavages.
- After 7-10 days, the head and body regions begin to develop.
- Now egg becomes extremely fragile and subject to injury or loss through movement or crushing.
- Eyes begin to develop, the sign that the eggs are now able to be safely handled, e.g. to be moved or planted in fish hatcheries.
- Embryo moves within its shell, getting food from a yolk sac attached to it. Yolk consists of highly concentrated mixture of water, fats, proteins, and salts, which will be the embryo's food supply until it hatches.

3. Hatching

- "Eyed" stage lasts a few weeks, then the egg hatches.
- Special enzyme erodes egg wall and young fish bursts out.

4. Alevin

- When it first emerges from the egg capsule, the young fish is called an "alevin". (pronounced al-e-vin)
- It feeds off an elongated yolk sac, which gradually shrinks as the fish becomes larger.
- During this stage, the water must have plenty of oxygen and must be of the proper temperature; i.e. between 5 and 10 degrees Celcius.
- Alevins and eggs are vulnerable to strong light and heat, hence the need for shaded waters. This is why the removal of streamside trees by logging companies is so serious a problem to the alevin.
- Because of their small size at this stage, alevins are particularly vulnerable to predators and the casualty rate is over 90%.

5. Fry Migration

- When yolk sac is absorbed, the young fish, now called "fry", emerge from gravel beds as free-swimming fish.
- They burrow up from under the gravel into the open water, possibly as a response to the force of gravity.
- Usually emerge at night, since they are still not accustomed to light.
- Different species of fry migrate in different directions -- sockeye head for lake "nursery" areas; chums head directly for the sea; most, however, migrate by night.

6. Smolt Migration

- When ready to head for the sea, they undergo physiological changes to prepare them for salt water. This is called "smolting" and the fish are called "smolts."
- Some smolts head directly to sea; other, e.g. the sockeye, may stay up to 3 years in fresh water before migrating.
- They stay in estuaries up to 3 or 4 weeks getting used to salt water, then head out to sea.

Editor's addition; Completion of Cycle

7. Ocean Migration

- Adult salmon generally stay in ocean for one summer to six years, depending on species and individual fish.
- They range half way across the Pacific Ocean, roughly between the latitude of Oregon and Alaska.
- Salmon are found near the surface, not much deeper than 24 meters.
- They prey upon plankton and fish, and are preyed upon by whales, seals, larger fish and humans.
- Only 2-4 salmon will return to spawn from every 3000 eggs.

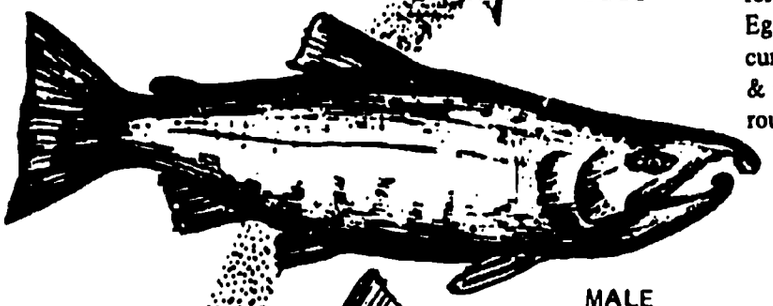
8. Spawning Salmon

- When entering native stream to spawn, their physiology changes. They do not feed once they enter fresh water, but instead burn stored body fat.
- Physiology changes differ between species but prominent jaws and a brilliant coloring are typical.

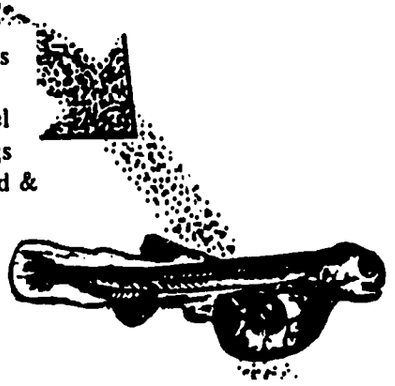
Summary of Biology of Pacific Salmon by R.A. Bams, Pacific Biological Station, Fisheries and Oceans

EGGS

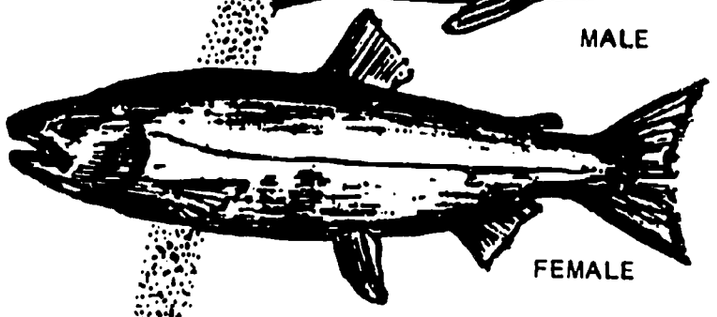
Female release eggs for fertilization. Eggs stick to gravel current washes eggs & makes them hard & round.



MALE



When fish first emerge from the egg they are called Alevin. Alevin are vulnerable. need shaded waters for protection. 90% casualty rate.



FEMALE

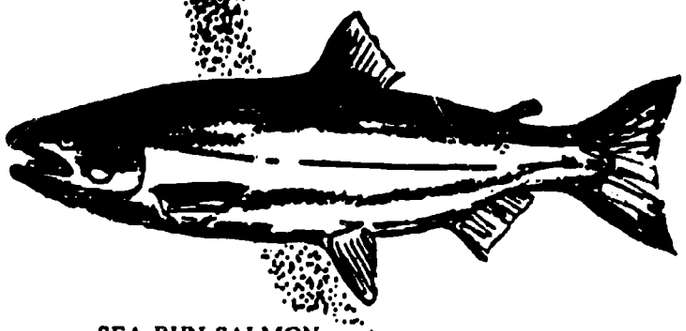
ALEVINS

Spawning salmon enter native stream and fast while physiological changes occur.

FRY When yolk sac is absorbed, young fish now called "fry" emerge from gravel as free-swimming fish. Different species of fry migrate in different directions.

SPAWNING SALMON

JUVENILE FISH IN FRESH WATER 1 TO 2 YEARS



SEA RUN SALMON

SMOLTS

Adult salmon stay in ocean for one summer to six years, depending on species & individual fish.

When ready to head for sea, physiological changes are undergone to prepare them for salt water. This is called "smolting". They stay in estuaries up to 3-4 weeks.

U.S. v WASHINGTON (Boldt Decision) Phase I

OBJECTIVE

The students will be able to explain the treaties that were signed 130 years ago between twenty western Washington Indian nations and the U.S. government. The parties agreed that the Indians would give up rights to the majority of their land in return for reserved natural rights to some land, to their fisheries, and to peace. Those treaties are the supreme law of the land, and were nation to nation or government to government agreements.

PROCEDURE:

1. Have the students define "treaty", "sovereign", and "peace". Try using several dictionaries and compare definitions.

2. Pass out student reading "What is a Treaty?" and read the first paragraph aloud.

3. Set up a role play situation using some familiar area of conflict or disagreement, i.e.: sports, use of equipment at school, etc. Have the students take sides, disagree and decide on a settlement. Ask students to write down the rights held by each of them in the conflict.

4. Read paragraph 2 and 3.

5. Project map of treaty areas on overhead. Where do students live in relation to treaty areas?

6. Discuss the meaning of "usual and accustomed fishing grounds". Using a map, explain that the various Indian tribes did not just fish near their reservations. Do research on the means and extent of Indian travel, resource harvest and trade. Contact nearby tribes and interview tribal officials and elders.

FISHGAME

LEARNING OBJECTIVE: The student will be able to problem solve ways to resolve fish not returning to their place of hatching.

A Puget Sound Salmon Fishing Game

What's it like to be a salmon fishermen in Puget Sound? What kinds of risks do fishermen take? How easy is it for fishermen to find fish, and how easy is it for fisheries regulators to tell when too many fish are being caught? How are all of these things affected when different groups of fishermen are required to fish at different times, as is the situation after U.S. v. Washington?

These are some of the questions about the Washington fishing rights controversy that can be explored with FISHGAME.

FISHGAME is a very simple model of Puget Sound salmon fishing. In FISHGAME student fishermen compete for a single run of salmon migrating to the Dungeness River near Sequim, while other students, working together as the Indian Fisheries and Department of Fisheries, co-manage the run from being overfished to extinction. All of the fishermen use the same kind of fishing gear (gill-nets). Random accidents (bad weather, boat trouble) cause some fishermen to lose fishing days.

Of course, in real life there are hundreds of runs of salmon and fishermen use many different kinds of gear.

Your class will get the most out of FISHGAME if they first understand the migratory life-cycle of salmon. Draw the migration path of the Dungeness salmon run used on the FISHGAME board and discuss these questions:

- Where are the salmon closest together and easiest to catch? Farthest apart and hardest to catch?

- Where are the salmon easiest to find? Easiest to tell apart from other runs of salmon? Hardest to tell apart?

- Where are the salmon largest and fattest?

- What are some different ways people could fish for salmon?

- On the basis of what you know about the life-cycle of salmon, where and how would you prefer to fish to make the most money? To catch the largest numbers of fish?

- How can anyone tell how many salmon have already been caught during a season? How many are still left in the water uncaught?

DEMONSTRATION

As an extra exercise to demonstrate the problems of counting fish in the water when stocks are mixed and there are seasonal fluctuations in numbers of each stock, fill a box with four or five different colors of beads, marbles or jellybeans in some fixed ratio. Write this ratio on the board. Now mix up the contents of the box and pour about half out into a smaller box. Have a student draw out most of the contents of the smaller box and write the results of this sampling on the board. Now ask your class to determine as best they can how many more beads (or whatever) of each color are left in the smaller box. Conclude by explaining the meaning of probabilities.

FISHGAME: GENERAL INSTRUCTIONS

OBJECT OF PLAY

1. There are two groups of players. Twelve students (or if you wish, twelve teams of students) will be fishermen. All of the rest will be the Indian Fisheries and Department of Fisheries.

2. There will be one run of salmon, migrating to the Dungeness River to spawn. It will make the trip in six days, following roughly the path indicated on the FISHGAME board. The salmon will be spread out on both sides of the migration path for ten miles or more.

3. Both natural and hatchery fish can be harvested in a ratio of 60% natural and 90% hatchery fish. The job of the fisherman is to catch as many fish as they can. Any fishermen who catches no fish can't make the payments on his or her boat and loses it.

4. The job of the Indian Fisheries and Department of Fisheries is to preserve the Dungeness salmon. This requires that at least 800 salmon reach the river to spawn; 800 is the "minimum escapement number."

FISHING

1. Each fisherman will have a scorecard, consisting of a map of the Strait of Juan de Fuca and spaces to record his daily catch. Fishermen can use their scorecards to plan where they will fish and to add up their scores.

2. Before each fishing day each fisherman will be dealt a "bad news card." Most of these cards are blank, and can be ignored. A few, however, mean boat trouble, storms, or other problems that will keep fishermen from fishing. Fishermen must follow the instructions on the cards they draw.

3. When the teacher announces the beginning of a fishing day, each fisherman indicates where he wants to fish by writing in his boat number (from his scorecard) on that spot on the large FISHGAME board.

4. After all boat locations have been written in for the day, the teacher will score that round. If a fishermen has caught any fish, the teacher will announce it (for example, "boat number five, 100 fish!"). Fishermen should not only keep careful count of their catches, but find out how well other fishermen are doing to get a better idea of where the fish are running most plentifully.

REGULATION

1. Each member of the Indian Fisheries/Department of Fisheries has a scorecard, too, to try to keep track of how many fish are being caught, and where.

FISHGAME: GENERAL INSTRUCTIONS

2. Members of the Fisheries have a right to look at any fishermen's scorecards at any time.

3. The Fisheries, at the beginning of any fishing day, close down all fishing that day, or close down all fishing in any part of the FISHGAME board that day. If any fisherman is caught fishing in violation of one of these Fisheries orders, the Fisheries can, after checking with the teacher (who is final judge in these matters), take away his day's catch, his boat, or both.

FISHGAME: SPECIAL INSTRUCTIONS FOR TEACHERS

PREPARATION

1. Assign students to be fishermen and regulators and distribute instructions the class day before you play FISHGAME. There must be only twelve individuals or teams fishing.

2. FISHGAME is most beneficial when played twice. Once as a pre-treaty simulation, once as a post-treaty simulation.

3. Each student will need a copy of the general instructions and a copy of the student "scorecard" included in this packet. Explain the use of the scorecard when you distribute it. Number the fishermen's scorecards from 1 to 12. These will be their identifying "boat numbers."

4. Before your class meets to play FISHGAME, paste or tape together the four sheets that make up the FISHGAME board. Also make a transparency of the "fishcard" included in this packet and cut it out with a scissors. Finally, make ten copies of the "bad news cards," cut them apart, and shuffle them like a deck of playing cards.

5. Just before your class arrives, arrange all tables and chairs in a semi-circle around your desk, leaving plenty of room in the middle. Lay the FISHGAME board on your desk facing the class.

BEGINNING PLAY

1. Have a student helper deal out the "bad news cards," one card to each student fisherman. Students must follow the instructions on these cards.

2. As soon as all the fishermen have been dealt cards, announce that fishing will begin. Each fishermen indicates where he wants to fish by writing his boat number on that spot on the FISHGAME board. Given fishermen no more than five minutes for this.

3. When everyone has returned to their seats, score the round using the transparent fishcard. Never let the class see the fishcards!

4. After scoring, ask the Department of Fisheries to announce any time or area closures they wish to make for the next fishing day. Then have the "bad news cards" dealt again and start over. FISHGAME is designed for six fishing days or rounds.

SCORING

1. The fishcard has printed on it 36 dots in 18 squares. Each dot represents 100 salmon.

2. To score each fishing day or round, place the fishcard on the board so that it corresponds with the marker (a star) for that day. There are six markers numbered 1 to 6.

3. To help the Department plan what action it will need to take to see that at least 800 salmon make it back to the Dungeness, these historical statistics are offered:

1989 Tribal Hatchery Releases

Tribe	Fall Chinook (A)	Spring/ Summer Chinook (B)	Coho (C)	Chum (D)	Sockeye (E)	Steelhead (F)	Total Fish (G)	Total Pounds (H)
Lummi	2,089,700 *	31,400	2,797,930 *	450,000	0	0	5,369,030	183,675
Nooksack	0	200,000 *	0	239,000	0	0	439,000	2,183
Skagit Coop	0	0	99,385 *	0	0	47,451 *	146,836	21,664
Stillaguamish	0	41,115	0	971,044	0	0	1,012,159	2,574
Tulalip	625,000 *	0	588,618 *	5,800,000	0	0	7,013,618	56,850
Muckleshoot	2,221,833	0	0	699,001	0	96,370 *	3,017,204	15,630
Puyallup	499,679	0	303,279	362,167	0	4,515	1,169,640	4,565
Nisqually	1,000,000	0	1,117,955 *	161,525	0	0	2,279,480	48,486
Squaxin	814,860 *	0	2,451,000 *	4,235,948 *	0	0	7,501,808	430,977
Port Gamble	0	0	553,645 *	2,302,681	0	0	2,856,326	44,663
Suquamish	2,910,341 *	0	664,380 *	2,403,595 *	0	13,614	5,991,930	75,776
Skokomish	665,887	0	0	2,422,000	0	0	3,087,887	12,213
Lower Elwha	370,627	0	413,479	0	0	59,469	843,575	43,048
Hoh	0	0	76,500 *	0	0	95,377 *	171,877	14,817
Makah	0	0	70,449	0	199,767	59,220 *	329,436	4,826
Quileute	0	410,000 *	0	0	0	0 *	410,000	13,706
Quinault	1,048,197 *	0	1,439,738	174,500	0	715,293 *	3,377,728	155,011
Totals	12,246,124	682,515	10,576,358	20,221,461	199,767	1,091,309	45,017,534	1,130,664

***All or part of these fish were produced in cooperation with the Washington Departments of Fisheries and Wildlife, U.S. Fish and Wildlife Service, or Trout Unlimited and other sportsman and community groups.**

Salmon and Steelhead Releases from Treaty Indian Hatcheries

Year	Pink	Coho	Chinook	Chum	Sockeye	Steelhead	*Total Fish
1976	409,000	4,244,000	1,992,000	1,700,000	1,237,600	341,000	9,929,000
1977		5,319,000	1,848,000	11,504,000	186,000	288,000	19,145,000
1978	220,000	4,072,000	6,151,000	17,103,000	368,000	197,000	28,111,000
1979		4,067,000	4,998,000	18,478,000	483,000	470,000	28,496,000
1980	287,000	5,068,000	6,083,000	11,899,000	328,000	389,000	24,054,000
1981		6,959,000	5,577,000	12,647,000	297,000	1,162,000	26,642,000
1982	105,000	8,932,000	10,971,000	13,368,000	469,000	1,399,000	35,244,000
1983		9,581,000	9,965,000	12,892,000	476,000	1,127,000	34,041,000
1984	737,000	10,111,000	8,832,000	11,268,000	10,000	1,788,000	32,746,000
1985		17,605,000	10,108,000	27,788,000	200,000	2,654,000	58,355,000
1986		11,261,000	11,870,000	22,812,000	240,000	2,360,000	48,543,000
1987		11,238,000	11,425,000	24,415,000	12,000	1,935,000	49,025,000
1988	882,000	11,119,000	14,240,000	20,844,000	133,000	1,485,000	48,700,000

4. If a boat number falls within a square containing any dots, cross off one dot in that square, calling off the boat number and its catch, that is, "boat number ___, 100 fish!"

5. Allow only 10% of the total fish caught at each bay. For instance, 10% Vancouver Island. (111,000 fish) 10% Skagit (10,000 fish) 10% Nisqually (100,000 fish) 10% Columbia (1 million fish).

6. When the game is over, each fisherman should have his own record of how many salmon he caught, and you should have a record, on your fishcard, of how many salmon survived to "spawn."

U.S. v. Washington version

1. As just described, FISHGAME simulates a salmon fishery before the Indian treaty fishing rights decision, U.S. v. Washington. It does not distinguish among different groups of fishermen.

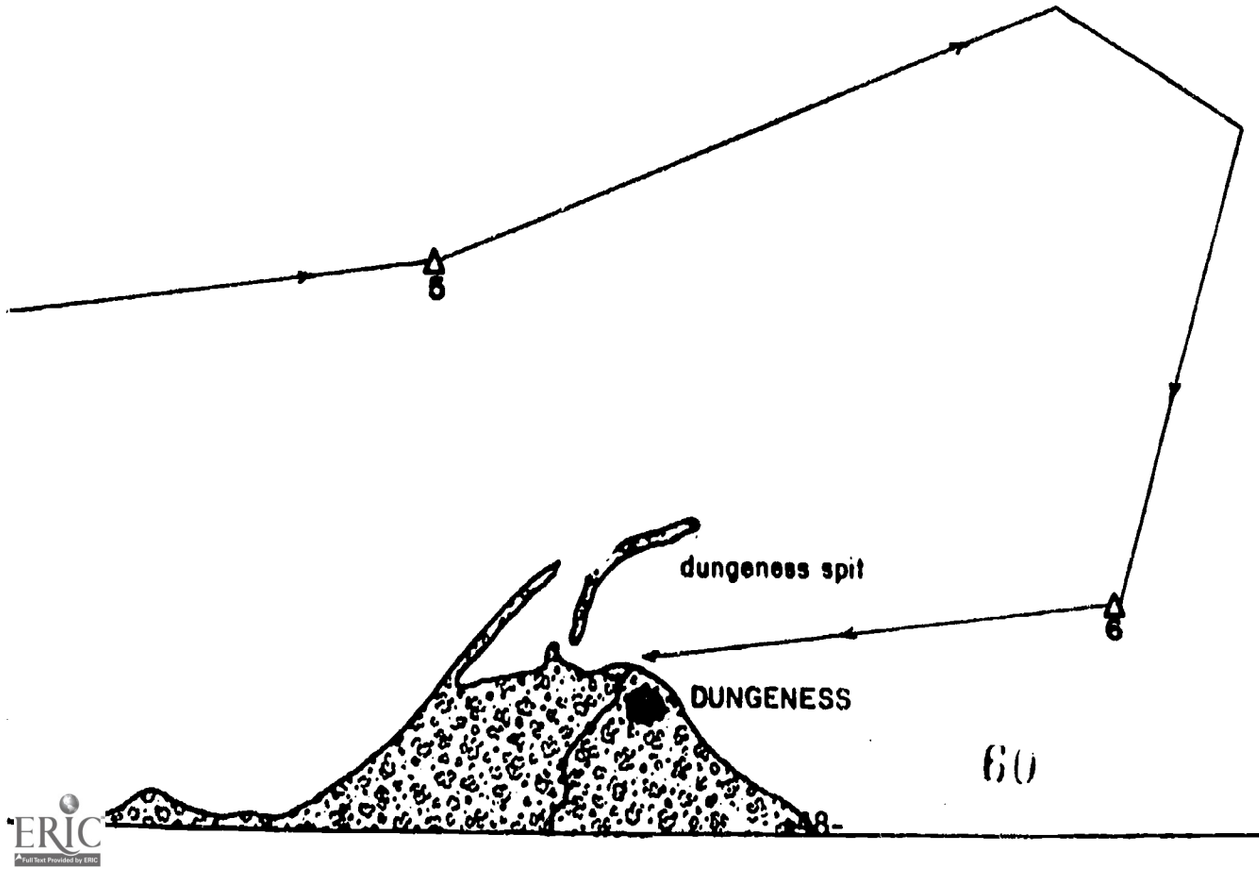
2. To play FISHGAME as a simulation of the treaty-fishing situation, identify, before game play, three fishermen (or fishing teams) as tribal fishermen. All rules of FISHGAME stay the same except that non-tribal fishermen can only fish on even-numbered fishing days.

3. This version of FISHGAME is most instructive if played after the standard version.

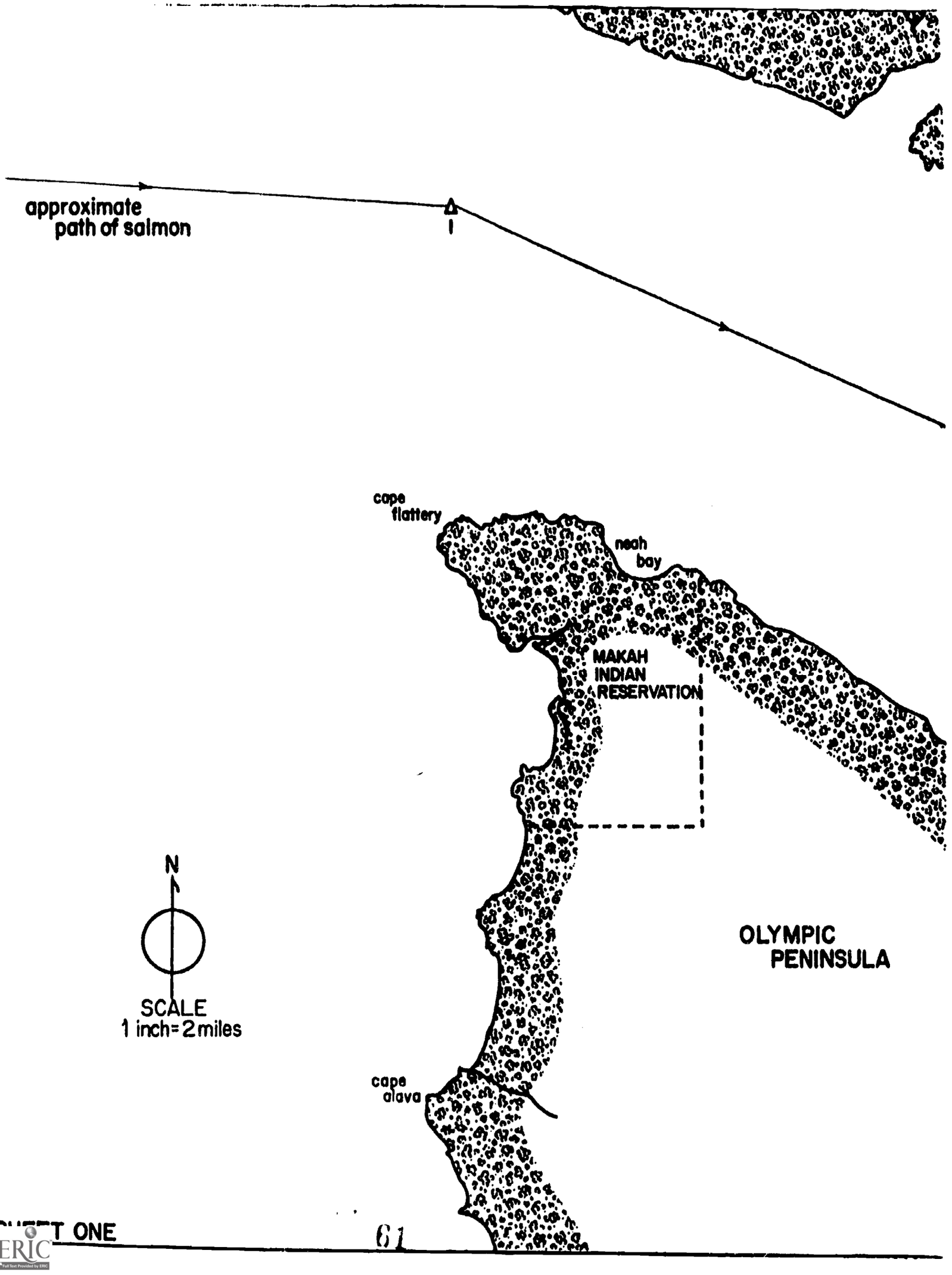
4. After you play this version of FISHGAME, discuss with your class the following questions:
- How much better off were the individual tribal fishermen as a result of the fishing-days rule? Will this advantage last long if other tribal members, attracted by the new law, start fishing too?
- Was it harder for the Department of Fisheries to do its job as a result of the fishing-days rule? Why?
- How did the fishing-days rule affect the total salmon catch of both groups?

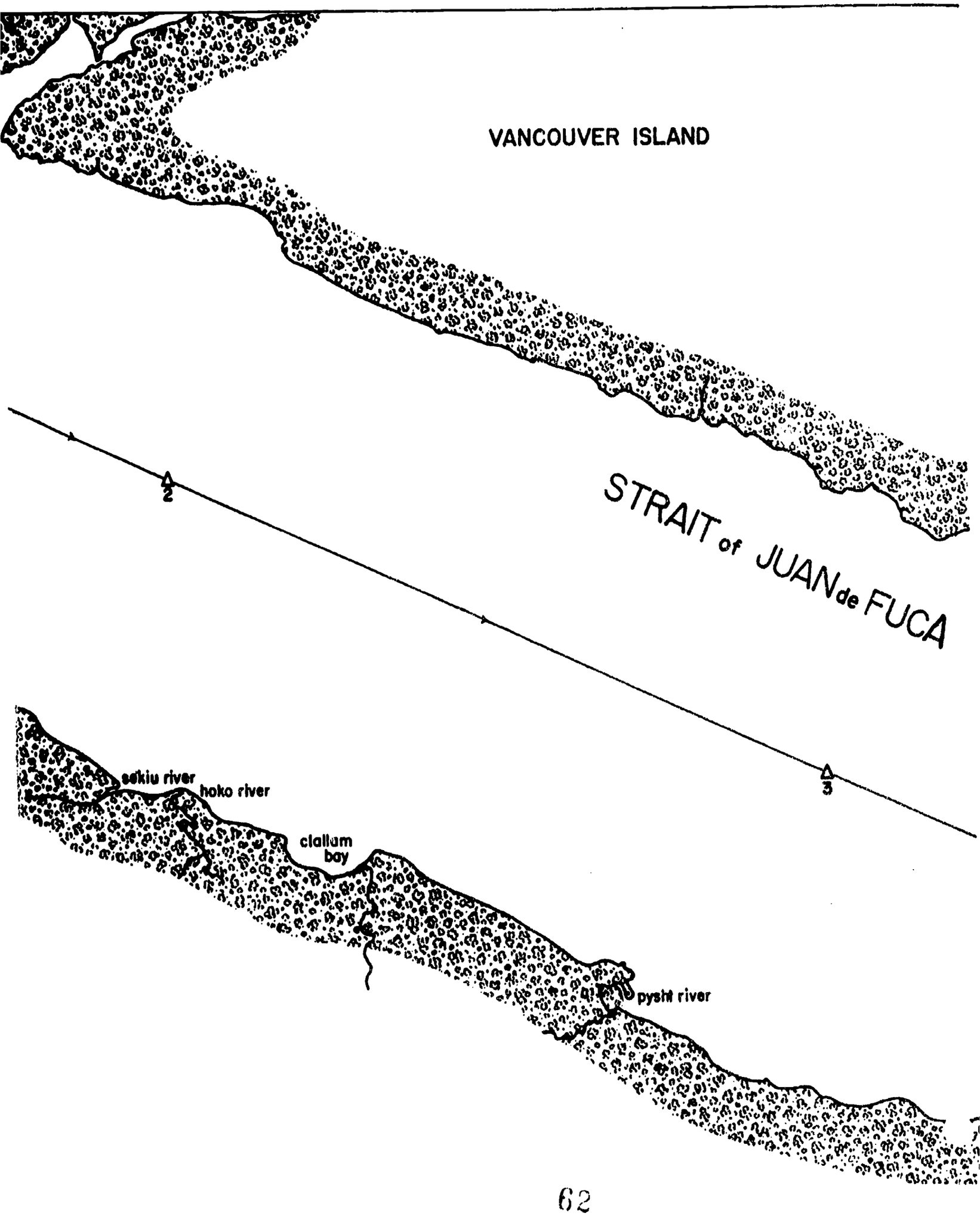
the fishgame

GAME BOARD

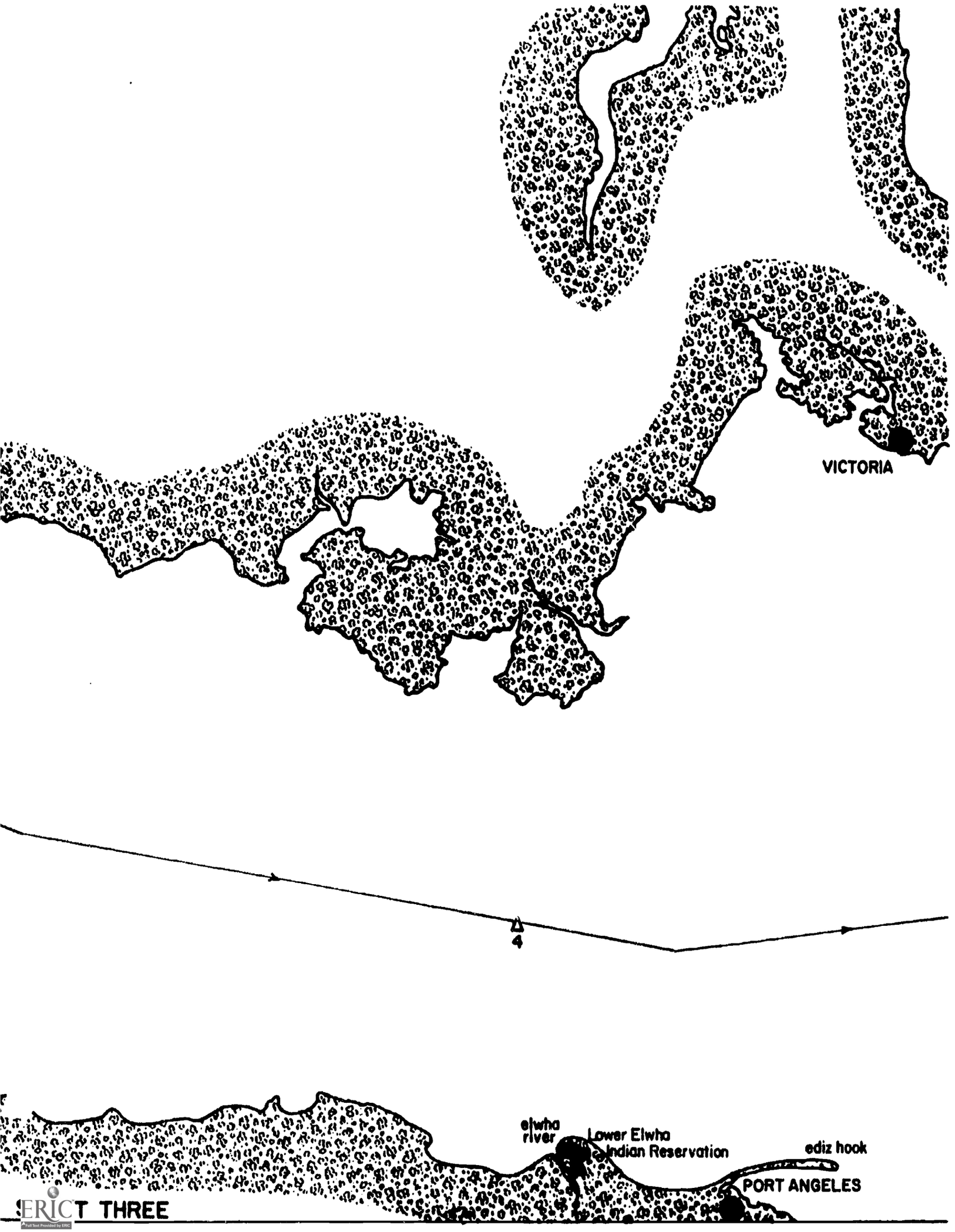


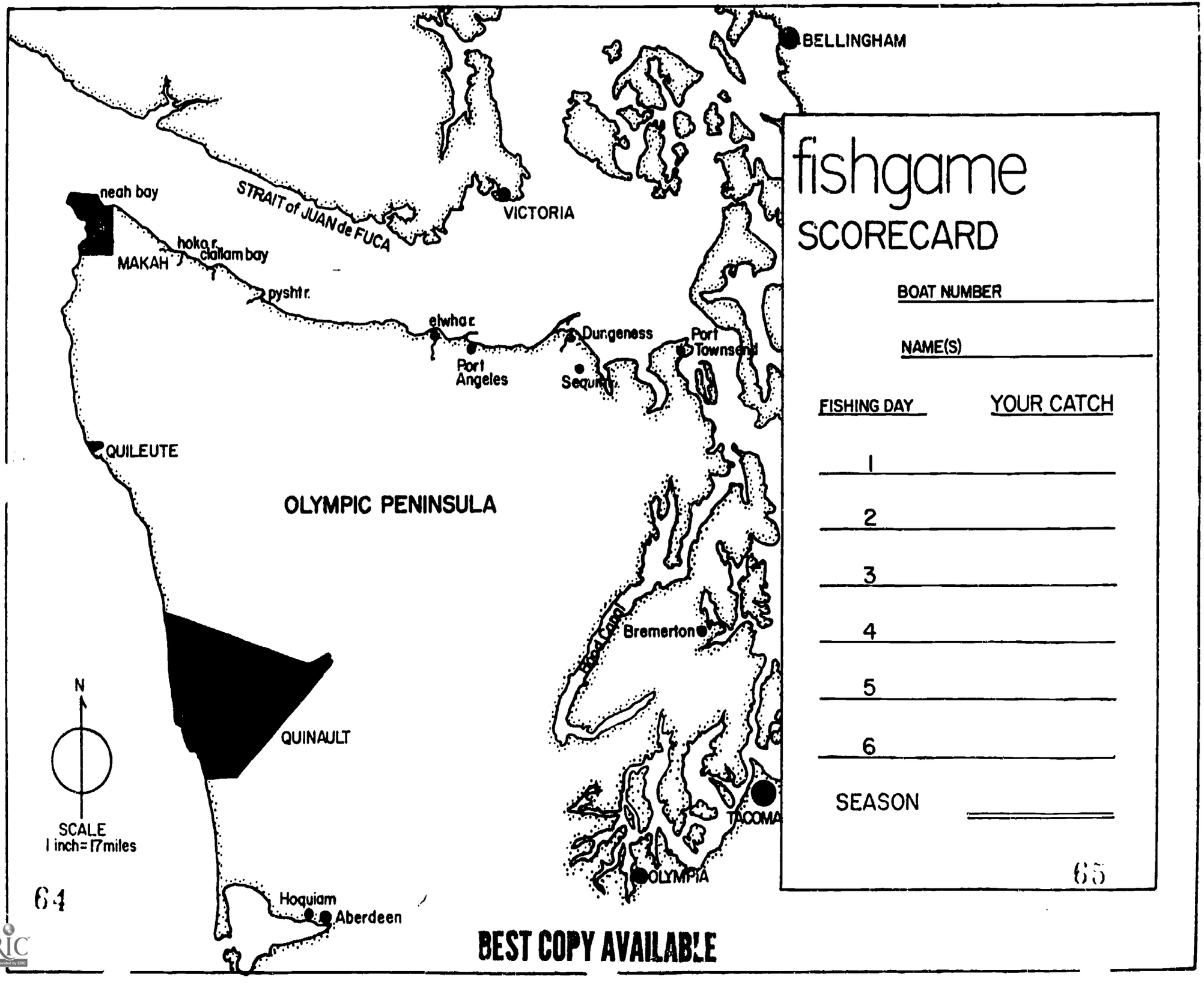
SHEET FOUR


approximate
path of salmon
1
cape
flattery
neah
bay
MAKAH
INDIAN
RESERVATION
N
SCALE
1 inch= 2 miles
OLYMPIC
PENINSULA
cape
alava


VANCOUVER ISLAND
STRAIT of JUAN de FUCA
2
3
sekiu river
hoko river
clallum bay
pysht river

EET TWO


VICTORIA
4
elwha river
Lower Elwha Indian Reservation
ediz hook
PORT ANGELES



fishgame SCORECARD

BOAT NUMBER _____

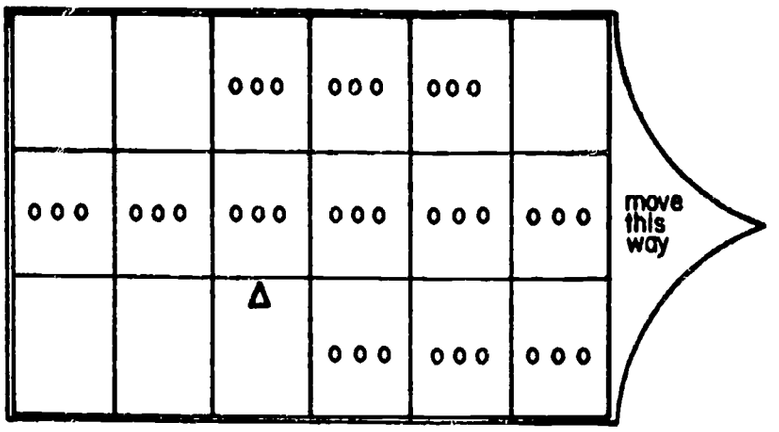
NAME(S) _____

FISHING DAY	YOUR CATCH
1	
2	
3	
4	
5	
6	

SEASON _____

this is your fishgame FISHCARD

Each o represents 100 SALMON
The Δ is the point of alignment



BAD NEWS *YOUR BOAT SPRINGS A LEAK. GO BACK TO THE DOCK; NO FISHING FOR YOU TODAY!*	BAD NEWS *STORMY WEATHER KEEPS YOU TIED UP AT THE DOCK; NO FISHING FOR YOU TODAY!*	BAD NEWS	BAD NEWS
BAD NEWS	BAD NEWS	BAD NEWS	BAD NEWS
BAD NEWS	BAD NEWS	BAD NEWS	BAD NEWS
BAD NEWS	BAD NEWS	BAD NEWS	BAD NEWS

FISHGAME DEBRIEFING QUESTIONS

Debriefing questions for fishermen:

1. How did you go about trying to predict where to find the salmon?
2. How successful were your predictions? Why?
3. How often were you unable to fish where and when you wished?
4. How well were your own efforts and skills rewarded? Did your catch reflect your effort and abilities?
5. How would you change the fishery to give yourself a better chance to make a good catch in the future?

Debriefing questions for regulators:

1. How did you go about trying to predict the numbers and movements of the salmon?
2. How successful were you? Why?
3. What could you have done to do a better job of prediction?
4. How effective were your regulations in protecting the salmon runs? Were problems caused by:

    a) poor information
    b) badly-designed regulations
    c) little compliance from fishermen
    d) poor enforcement
    e) all of these? How?

5. How would you change the fishery to make your job easier the next time?

Adapted from Understanding Indian Treaties as Law,"Fish Game - Washington Fishing Rights," Dr.Brouillet, SPI.

U.S. v WASHINGTON (Boldt Decision) PHASE II

"FISH ARE NOT SEPARATE FROM THE LAND"

OBJECTIVE

Students will be able to explain that if watersheds of Washington are not protected, Indian treaties will be broken.

ACTIVITY

1. Read the following problem and discuss:

"John and Jim are given a jar of 50 marbles from their grandmother. They have to make an agreement on how to share them..."

Ask: What would you do?. . . Get several answers.

Discuss.

"They decide that if they are each playing marbles with different friends at the same time, they will each get half of the marbles - 25. However, if only one of them is playing with the marbles he may use all 50 marbles. . ."

Ask: Does this seem fair? What will be the responsibility of each of them?

Discuss:
"After several weeks, John uses all the marbles one day, and loses 5 of them. The next day he is careless and loses 2 more. A week later, he takes all of them and again loses 5. . ."

Ask:
What if this were to continue? Discuss.
What is John's responsibility to Jim?
What would happen if John lost all the marbles?
Would he have kept his agreement with Jim? Discuss.

Remind students that a treaty is one way of making agreements between two parties, in this case, John and Jim, when resources must be shared. Fish are alive and marbles are not, but both fish and marbles can be considered resources. We made treaties with the Indians to share and protect fish, and about protecting salmon habitat. But there are now fewer fish. Soon there may be very few left to share. This is the problem considered by Phase II of U.S. v Washington.

2. a) Review treaty language - "The right of taking fish, at all usual and accustomed grounds and stations, is further secured to said Indians, in common with all citizens of the territory.

b) Review what it means to "secure" or "guarantee" rights.

c) Ask: What are the activities in a watershed that cause salmon runs to decline? List answers on the blackboard. (Dams, logging, siltation, construction, urban run-off, agricultural animals, erosion, dewatering) List natural causes. (weather, snow melt, floods, drought)

Ask: What is the state and federal government responsibility to Indian people? What will happen if we lose most of the salmon? Will the government have kept their agreement with Indians? Discuss.

d) Explain the conclusion of the U.S. v Washington decision in its second phase. (Teacher Reference U.S. v Washington, Phase II) i.e., The tribes have a right to have their treaty fishing protected from environmental degradation.

e) Explain the relationship between states and federal government - re: states' rights, etc.

3. Return to the story of John and his marbles. What are the solutions to the agreement of John not losing the marbles? Discuss. (Prevent loss, replace marbles)

4. Replacement: John could replace the marbles. This is what our hatchery system in Washington is trying to do - replace the fish we are losing from habitat loss. A second aspect of the Boldt II was to determine if the Indians had a right to take hatchery fish, produced by a combination of federal and state money. Steelhead, notably, are paid for by the licenses of sports fishermen.

Ask: Should the Indians have the right to fish for steelhead with nets and commercial gear? Discuss.

The decision of the court stated that the Indians had a right to hatchery fish because they were the replacement for lost fish. The Indian culture does not distinguish between sports fish and commercial fish, so they may take them also. Point out that fish raised and released from tribal hatcheries are shared with non-Indian sports and commercial fishermen.

Discuss with class.

ACTIVITY 2

1. Review the activities listed in the lesson on Watersheds in Washington. Review the Environmental Chart. Ask students to star or mark the activities that might be halted by U.S. v Washington, Phase II, because they could lose fish and thus break the treaties.
2. Have students list all the ways in which their daily lives are connected to watersheds, salmon, and Phase II.

Anadromous Fish

The most valuable commercial fish in Washington waters are "anadromous." This means they live and feed in the sea but return to fresh water to spawn. Salmon mature while migrating through the coastal waters of the west coast of North America. When they reach maturity they begin to migrate towards their

rivers and streams of origin. Once in fresh water they stop feeding and live off of stored fat until, having spawned, they die. Each race of salmon returns to the same location on the same stream at the same time of year. A minimum number of spawning fish or "minimum escapement" is necessary to perpetuate each run.

How has salmon fishing changed?

In the 1800s and long before, Indian tribes harvested most of their salmon in freshwater nets and traps. They waited for the fish to come to them and managed each stream independently. Non-Indian fishermen originally imitated tribal traps, building larger and stronger ones. Trap fishermen did well financially and were able to pay off the cost of their gear in two or three seasons. After 1900, however, three new kinds of gear were developed which could intercept salmon before they reached the traps. Gill nets are drawn across the path of the fish, which get caught in the mesh by their gills trying to get through. A purse seine is like a huge drawstring bag stretching around a school of fish and enclosing them. In deeper waters fishermen began trolling--dragging hooked lines through the water. It costs more to catch salmon with gillnets, purse seine and trolled lines than with traps, but once these new kinds of gear were put to use their ability to intercept salmon first out at sea put the trap fishermen out of business.

How do we regulate commercial fishing?

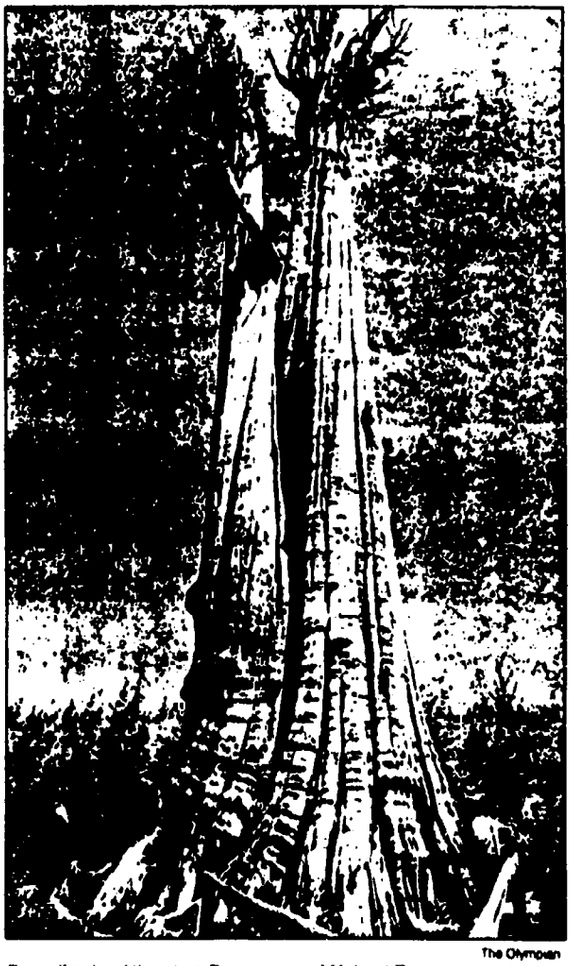
In 1935 Initiative 77 banned all trap fishing and increased the powers and duties of the Department of Fisheries. Until 1974 no limit was placed on the number of people who could fish, but to prevent overfishing salmon to extinction the Department began the practice of limiting the times and places of fishing, and putting restrictions on the size and efficiency of each fishermen's gear. The most severe restrictions have always been on the most efficient gear--purse seines. This way, although the number of fishermen more than tripled, the salmon have survived. Of course at the same time the number of salmon caught by each fishermen has decreased.

How do we regulate sport fishermen?

For forty years or more there have been more sport fishermen than commercial fishermen, and their number has been growing constantly. There are today nearly a hundred sportsmen for every commercial fisherman. As a group, sportsmen take about one out of every six salmon in state waters. Like commercial fishermen, sportsmen must pay a fee to fish, but there is still no limitation on the number of licenses. To prevent overfishing, sportsmen are subject to a limited fishing season, a "bag limit" and limits on the size of fish they may catch and keep.

Adapted from Clean Water, Streams and Fish, Elementary Curriculum pages 297-299

SESSION III



The Olympian

Two officials of the state Department of Natural Resources measure the circumference of a Western red cedar – reputed to be the largest in the world – on the Olympic Peninsula.

TIMBER/FISH/WILDLIFE HIGHLIGHTS

Purpose: To replace traditional legal confrontation and political bickering over forest management with cooperative and adaptive management of the state's forest-related resources.

Participants:

Audubon Society
Colville Confederated Tribes
Columbia River Intertribal Fish Commission
Georgia-Pacific Paper Company
Northwest Indian Fisheries Commission
(and its 20 member tribes)
Plum Creek Timber Company
Simpson Timber Company
Boise Cascade Timber Corporation
ITT Rayonier Paper and Timber Companies
Scott Paper Corporation
The Weyerhaeuser Paper and Timber Companies
Washington State Departments of Ecology, Fisheries,
Wildlife, and Natural Resources
Washington Environmental Council
Washington Farm Forestry Association
Washington Forest Protection Association
The Yakima Tribe

Area Covered: Potentially 17.7 million acres of commercial forest land in Washington, including lands controlled by the state Department of Natural Resources, private individuals, the forest industry, Indian tribes, and other entities.

Facilitators: The Northwest Renewable Resources Center, formed as a non-profit corporation in 1984 by leaders of industry, Indian tribes, and environmental organizations.

DESERT ISLAND

A Game of Survival Through Collective Action

* * * * * *

It's easy to say that governments exist to pool citizens' resources and efforts for their benefit, but it's sometimes hard, in our complicated world, to appreciate just how important that part of government can be.

DESERT ISLAND is a game involving a much simpler world and a single, clearcut problem: survival. Students playing DESERT ISLAND will have to combine their efforts and make some very hard choices about individual rights and responsibilities, if any of them are to "win."

The basic theme in DESERT ISLAND is the unavoidable conflict in every society between private property and public necessity. As DESERT ISLAND illustrates, even the simplest society must set up institutions to deal with this conflict.

DESERT ISLAND requires no preliminary discussion, other than an explanation of the rules. Several discussion questions are, however, especially useful in "debriefing" and are included at the end of this game.

DESERT ISLAND - GENERAL INSTRUCTIONS

-- Object of Play

1. You are all stranded on a desert island. Your only food is coconuts, and coconut trees are hard to find. Every day you explore the island, individually, trying to find enough coconuts to eat.

2. Each of you must have five coconuts every day to survive.

3. There are some native people on the next island, close enough to swim there. They have a boat they will sell for 100 coconuts. It can carry six people at a time to safety, or five, if one person sails it back and forth.

4. The object of the game is to get off the desert island alive. Anyone who runs out of coconuts, or is left on the desert island with no means of escape at the end of the game, loses.

Coconuts

1. There are plenty of coconuts on the island, but because they are scattered around and there are only a few coconuts on each tree, it's just a matter of chance how may each of you find each day.

2. At the beginning of each "day" or round of DESERT ISLAND, the teacher will deal each of you a "coconut card." It will show you how many coconuts you found that day. You can save you coconut cards, keeping coconuts from one day to eat another day.

3. Several students can pool their coconut cards together. Coconut cards can also be stolen.

4. At the end of each round the teacher will collect five coconuts from each student (either by taking

a 5-coconut card or by marking down a larger card). Any student who can't come up with five coconuts is out of the game.

Escape by boat

1. The teacher or a student helper will represent the natives on the next island. Their boat cannot be stole or taken by force. It can only be obtained by paying its owners 100 coconuts in whatever form they demand through their representative.

2. Students can make any arrangement they choose to pool coconuts.

3. If obtained, the boat can make one round trip to safety each "day" or round of the game. If it returns to pick up more passengers, one student must return with it to sail it back.

DESERT ISLAND: SPECIAL INSTRUCTIONS FOR TEACHERS
Preparation

1. You will find in this packet a sheet of "coconut cards" in demoninations from 0 to 25 coconuts. Make as many copies of this sheet as you have students in your class playing DESERT ISLAND, cut the individual cards apart, and shuffle them thoroughly.

2. Describe DESERT ISLAND to your class the day before you play it. You may find it helpful to appoint a student helper.

3. Just before your class meets to play DESERT ISLAND clear your classroom as much as possible so that there is plenty of room to move around.

Beginning play

1. Break the class hour up into DESERT ISLAND "days" or round of ten minutes or so.

2. At the beginning of each round, deal one coconut card to each student.

3. Students have the whole round to make arrangements for pooling or even stealing coconut cards. Any arrangements is as good as students' ability to enforce it themselves without your help. (CAUTION: do not encourage or condone the use of much more than symbolic coercion to enforce arrangements!)

4. It is permissible for students to arrange for one of them to get the coconut cards for all of them.

Scoring

1. At the end of each round, you must get five coconuts from each student. If a student can't give you five coconuts he is out of the game.

2. Take a five-coconut card if the student has one; otherwise, mark a 10-, 15-, 20-, or 25-coconut card clearly in ink with the words "less five" or "minus five."

3. Destroy all of the cards you have collected. Do not return them to the shuffle deck of coconut cards or leave them around where some enterprising and "hungry" students may find them.

4. If all or some groups of students "buys" the boat from you, they must choose who will sail away first. Have these students leave the room; they all have "won". At the beginning of the next round, go out and see if any of these "escaped" students is ready to sail back into the room to pick up five more. If not, the game is over and all students left behind have lost.

5. If the boat has been obtained and an arrangement has been made among the students to sail it back and forth, but for lack of time, the game ends before everyone is off the island, the whole class must decide whether, had the game continued, the people in the boat would have taken it back for more passengers. If yes, those people left behind at the end of the game are winners just as if they had escaped. If not, they all lose.

Adapted from Understanding Indian Treaties as Law, Dr. Bailed, SCI, pages 33-37

0	0	0	0
5	5	5	5
10	10	10	10
15	20	20	25

DESERT ISLAND: DEBRIEFING QUESTIONS

1. Did anyone ever "own" any of the coconuts?

2. What is the difference between "possession" and "ownership"?

3. How were students' claim to coconuts protected (if at all)?

4. What happened when students broke their agreements with one another?

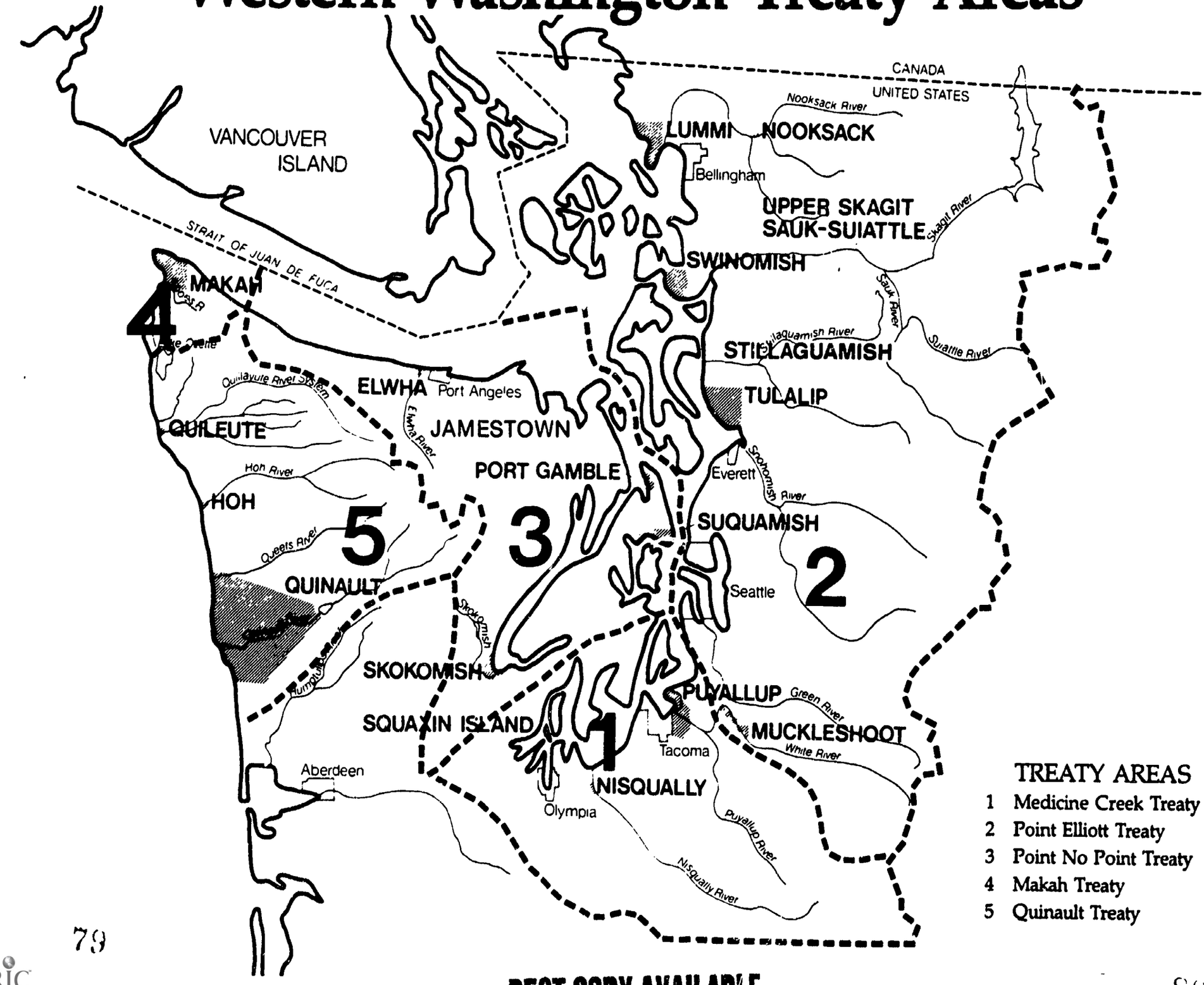
5. Were students reluctant to pool their coconuts together even though it was their only hope to escape? Why?

6. Suppose one student had the power to "tax" everyone's coconuts to pay for the boat. Should the students with the most coconuts pay the largest tax?

7. Suppose everyone got together and bought the boat. How could the students left behind on the first trip make sure that the boat would make the trip back for them?

8. Which students made out the best? Why?

Western Washington Treaty Areas



Treaty and Non-Treaty Catch in U.S. vs. Washington Case Area† 1970-1985

Year	Treaty Catch	Treaty Percentage	Non-Treaty Catch	Non-Treaty Percentage
1970-73 (average)	328,888	5.0%	6,231,044	95.0%
1974	688,582	11.9%	5,845,482	88.1%
1975	827,356	12.1%	5,987,374	87.9%
1976	986,153	13.8%	5,600,131	86.2%
1977	1,360,399	16.9%	6,691,223	83.1%
1978	1,391,890	27.2%	3,727,355	72.8%
1979	1,938,388	22.4%	6,742,089	77.7%
1980	1,526,571	42.9%	2,030,845	57.1%
1981	2,784,258	33.8%	5,450,628	66.2%
1982	3,019,250	45.7%	3,590,968	54.3%
1983	2,145,373	43.3%	2,809,077	53.7%
1984	2,033,362	49.0%	2,112,526	51.0%
1985*	5,273,838	49.6%	5,369,147	50.4%

*Preliminary commercial catch data
†Catches include marine areas 1 through 13

Treaty and Sport Harvest of Steelhead in the U.S. vs. Washington Case Area 1961-62/1985-86

Year	Sport Harvest†	Treaty Harvest#	Total
1961-62	79,100	18,000	97,100
1962-63	85,900	21,700	107,600
1963-64	113,200	21,600	134,800
1964-65	80,400	18,000	98,400
1965-66	108,700	18,000	126,700
1966-67	100,100	18,000	118,100
1967-68	103,700	18,000	121,700
1968-69	86,600	18,000	104,600
1969-70	49,300	18,000	67,300
1970-71	77,100	17,300	94,400
1971-72	94,600	27,500	122,100
1972-73	56,400	25,000	81,400
1973-74	58,900	35,600	94,500
1974-75	60,200	61,400	121,600
1975-76	29,900	57,000	86,900
1976-77	32,200	42,500	73,700
1977-78	69,100	49,700	118,800
1978-79	57,100	47,000	104,100
1979-80	70,900	48,400	119,300
1980-81	55,100	41,400	96,500
1981-82	46,600	60,600	107,200
1982-83	42,400	55,400	97,800
1983-84	52,100	61,200	113,300
1984-85	85,000	103,778	188,778
1985-86*	56,467	88,076	144,543

†Sport harvest data provided by Washington Department of Game.
#Data prior to 1974 is incomplete due to lack of an accurate catch reporting system. No data was collected betweens 1964 and 1970, the numbers presented are estimates developed by WDG. The data from 1974-75 through 1977-78 was compiled by the USF&WS. Data after 1978 was jointly compiled by WDG and the Treaty Tribes.

*preliminary commercial data.

A HISTORY OF WILDLIFE MANAGEMENT

OBJECTIVES: Students will be able to: 1) define resource and environmental management; and 2) describe major trends in wildlife management philosophies and practices.

METHOD: Students generate questions and contact their state wildlife agency for information.

BACKGROUND: Wildlife is considered to be a public resource in the United States. That means that even where lands or waters are privately owned, the wildlife is not. Primary legal responsibility for managing and conserving most wildlife in the United States is delegated to government agencies, to serve on behalf of the public. A state wildlife agency has legal responsibility for managing most of the wildlife in your area.

Interaction with wildlife was an integral part of Native American tribal life for thousands of years. A harmony with nature was maintained by Indian people out of respect for "Mother Earth" that was reflected in their spiritual practices, rituals and hunting practices. Management of wildlife was management for survival, not for sport.

Contemporary agency wildlife management may be seen as part of the large field of resource and environmental management.

The major purpose of this activity is to provide students with some background in understanding wildlife and resource management, as a result of studying the development and present philosophy and practices of the agency responsible for wildlife conservation and management in their own state.

PROCEDURE: 1. Ask students to generate a list of questions about the agency or tribe responsible for wildlife management in their state. Their questions might include:

Washington State Department of Wildlife, Director's Office --

When was the agency organized? -- What were its original purposes?
What are its purposes now? -- Have its purposes changed in any major way since it was established, and if so, in what ways? -- What major programs is the agency responsible for at this time? -- Are these the same kinds of programs for which they have been responsible since the agency was established? --
What major similarities and differences are there in the programs, practices, and underlying philosophy of the agency since it was established? --
What are the major sources of funding for the agency? -- What, if any, changes in the major funding sources have there been over time? -- What are the difficult problems facing the agency at this time? -- What do you think are the most important things we can know and do to be informed and responsible citizens concerning wildlife?

Supervisor of Game Management - What kinds of animals is the agency responsible for managing? Are there any kinds of animals they are not responsible for? Have there been changes in the kinds of animals they are responsible for over the years? Which animals are considered game animals? What programs are underway affecting these animals in our area? What regulations and laws affecting game animals should we know about?

Supervisor of Non-Game Management - What programs are underway to manage non-game animals? Which animals are considered non-game? Are there threatened, rare, or endangered species in our area? If so, what programs are underway specific to these animals? If the agency has a refuge system, how did the refuge system begin? Has the philosophy by which refuges are established and managed changed over the years, and if so, in what ways, with what results? What regulations and laws, other than those affecting game animals, should we know about?

Supervisor of Fisheries - When, if at all, did wildlife stocking programs begin in our area, e.g. stocking fish in streams? What are the reasons for such programs? What, if any, are positive and negative consequences of such programs? What regulations and laws affecting fishing and fisheries should we know about?

2. Once the major questions of interest have been identified, ask the students to send a letter to the agency asking for information in response to their questions. Before the letter is mailed, be sure to review it for clarity and appropriateness. One concise letter to the Director's office, with all the questions included, is recommended. Under the circumstances, as a class project, the students should not each send individual letters. The letter might request a response in writing, or ask for at least one representative of the agency to visit to respond to the students' questions in person and bring related background information.

3. Following the visit from the agency representative or the written reply, ask the students to summarize their findings, including each student's being able to offer a concise definition of resource and environmental management.

4. Ask students to compare similarities and differences between the resource management policies and philosophies of the agency they researched, and those of Native American Indian people of their region -- today and in early historical periods.

5. Request speakers from a local Indian tribe to visit the classroom and share Native American experiences concerning management of wildlife and the associated environment.

Adapted from Project Wild, "History of Wildlife Management", page 155-157.

PHILOSOPHICAL DIFFERENCES

OBJECTIVES -- Students will be able to: 1) describe points of view of groups and organizations concerning the Timber, Fish and Wildlife negotiations; 2) describe possible effects of various groups and organizations having different points of view about environmental and natural resource issues.

BACKGROUND -- The major purpose of this activity is for students to recognize that organizations and groups may have differing perspectives with respect to environmental and natural resource issues, and to describe possible effects of several different points of view.

One definition of the word "philosophy" describes it as a "system of principles for guidance in practical affairs." Private and public organizations and agencies frequently have an identifiable philosophy. Most organizations involved with natural resources and environmental issues support their actions and recommendations with statements of their philosophy. These may be made available in the form of speeches, newsletters, news releases, goal statements, and position and policy papers.

PROCEDURE

1. Read article "TFW" (following this page).

2. List pertinent information about the issue on the chalkboard. Identify the individuals, organizations, agencies, and other groups who seem most involved. Ask students to select several of the groups, trying to identify those groups that seem to have strongly different points of view on the issue.

3. Write a position statement on index cards. Divide your class so that every student represents an agency. Give students from the same agency an opportunity to discuss and agree upon their agency philosophy. One student will be chosen as mediator.

4. Each agency will choose a spokesperson. Review the importance of listening skills, patience, and speaking skills in negotiating an agreement.

5. Form a large round table (if possible) and have the representative from each group sitting around it. Allow the other agency members to sit close to their representative for conferencing. On a note card place the following organization names and interests for TFW players:

Washington State Pioneers New Management Approach

The TFW Project: an insider's view.

By Malcolm R. Dick, Jr.

TFW: Is it a car? An insurance company? A new conglomerate? No. It's the shorthand acronym for the Washington State Timber/Fish/Wildlife Project, and it's a whole new way of doing business. This extraordinary negotiation resulted in unprecedented agreement among the Washington forest industry, Indian tribes, state agencies, and environmental groups on management of the state's natural resources. To the participants, who labored over the agreement for six long, often difficult months, drafting the U.S. Constitution looks like child's play.

A Troubled Beginning

Environmental and industry groups had been at war with each other since at least 1975. In that year, after log truckers literally overran the state capital, the legislature passed an amended Forest Practices Act. It pleased no one. Industry groups were convinced the new act took away their operational freedom and increased their costs significantly. Environmentalists were certain they had been patronized with a document that had no teeth. In retrospect, both positions were overstatements, but the stage was set for an 11-year war.

That war reached a climax in 1986. The Washington State Forest Practices Board, the administrative body that writes rules and regulations under the act, published a draft set of proposed regulation amendments as unpopular as its predecessor. Battle lines were drawn, court suits were threatened, and legislative action was proposed.

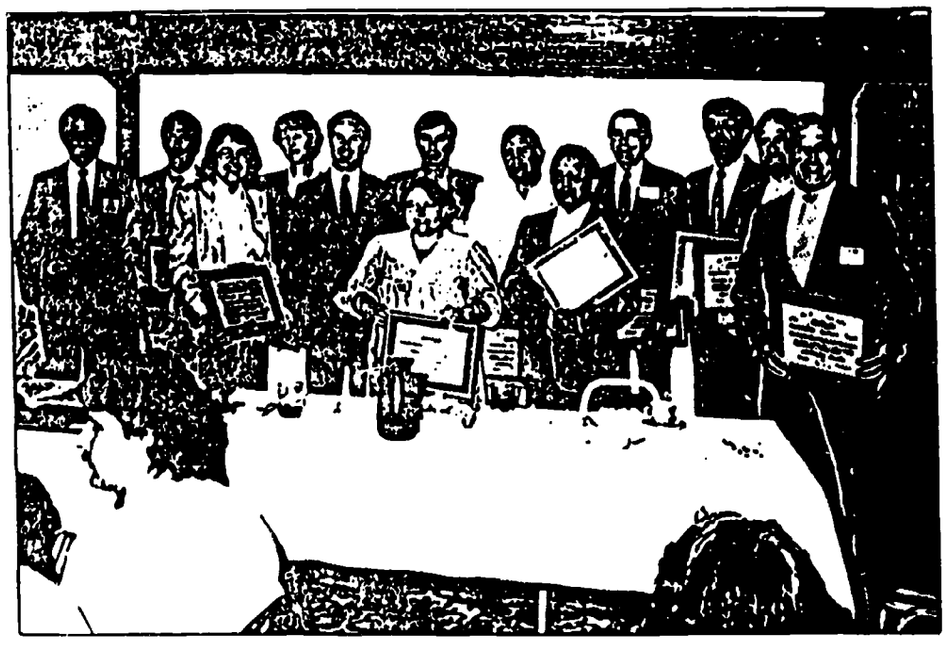
The elements for a classic environmental confrontation were in place, and all parties were polishing up tactics, dirty tricks, and counterattacks. The only sure loser was the Forest Practices Board that, like Solomon, had to divide the baby. The only sure winners were the attorneys and consultants who stood to make money. The hard way.

A chance eleventh-hour meeting between Stewart Bledsoe, executive director of the Washington Forest Protection Association, and tribal leader Bill Frank, Jr., raised the possibility of a nonviolent solution to the forest practices issue. Both had been involved in the aftermath of the 1974 Boldt Treaty decision involving fishing rights. The two old warriors had grown to respect one another deeply. The decision was yes, agreement could be reached. The rest is history.

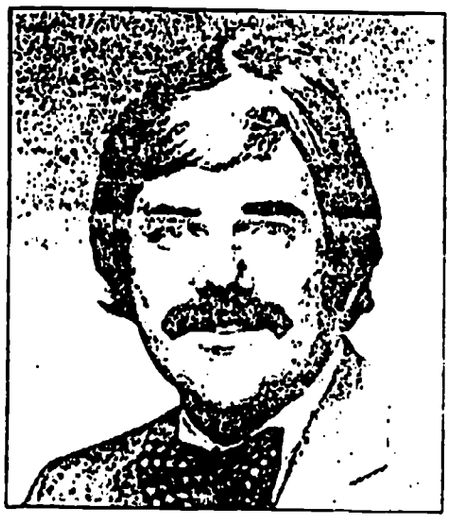
The Long Road Home

June 1986: Negotiator/attorney James C. Waldo was contacted by Bledsoe and Frank. A veteran of many previous negotiations, Waldo quickly contacted key tribal and agency heads. They, too, agreed that a negotiated solution might work. Public Lands Commissioner and Forest Practices Board Chairman Brian Boyle, initially skeptical because of the deep philosophical divisions of the players, became a key leader in the negotiations. Environmental leaders and nonindustrial landowners were also brought aboard as necessary parts of the solution.

July: The improbable occurred. A three-day retreat, now known as "Port Ludlow II," was held. Port Ludlow is a sleepy Puget Sound resort that in 1984 hosted the first of a long and painful series of negotiations that ultimately settled Washing-



Booth Gardner (fifth from left) presents TFW participants with the state's Environmental Excellence Award for their work hammering out the agreement.



William Wilkerson played an important role in the final negotiations.

Bill Frank, Jr., helped initiate the TFW process.

ton's salmon and treaty wars.

Port Ludlow II was a collection of 50 foresters, biologists, Indians, environmentalists, and others who actively disliked working together. Waldo opened the meeting with a series of house rules: check your weapons at the door, respect your neighbor's opinion, and listen a lot. What followed left its participants stunned. The foresters learned the environmentalists didn't want all forest landowners shipped to Siberia. The environmentalists found tree choppers loved Washington State forests as much as bird watchers. The tribes spoke eloquently of their culture, history, and the signficance of the salmon to their life. At the end of the third day, Waldo asked the question everyone knew was coming: "Are you willing to lay down the arms and try a negotiated solution?" The answer was best summed up by Washington Department of Game assistant director Joe LaTourrette: "I'm not sure I like it but it's the best game in town."

August-November: The TFW project settled into a 3-layered structure. The policy group was composed of leaders and policy-makers with Waldo as negotiator. The work group was co-chaired by Christine Drivdahl, game department habitat division manager, and me, as industry association representative. Technical subgroups were assigned topics ranging from road construction to wildlife habitat to cumulative effects. The pace was grueling. Drivdahl and I met with the work group about once every 10 days. The technical subgroups met almost daily, and countless rump meetings and endless phone calls consumed days, nights and weekends. Judy Turpin, legislative policy analyst for the Washington Environmental Council, aptly described the process as "a black hole for time."

As summer turned to fall, progress was made. One by one, the technical issues were torn apart and rebuilt, and solutions hammered out. It was not a clean, comfortable process. Waldo, cigar in hand, ever the unflappable stoic, gently but insistently pressed for results. The work group meetings were long, loud, and sometimes unruly, but they began the healing process that closed some very deep wounds. In the process, previously unresolvable technical issues unraveled and became solvable. Everyone learned the art of giving to get. Everyone gave and everyone got.

The policy group met frequently as work group results accumulated. The policy group, with its agency heads and leaders, was much more ordered and quiet than the work group, but there was no less tension. The group made the tough political trade-offs caused by work group impasses. Again, Waldo was the implacable taskmaster. His unceasing, forward motion - careful and calculated - kept things moving when others were convinced the end was near.

December: The technical groups and work group finished up. It was the policy leaders' turn. The tough issues had been kicked forward, picked at and around, but it all boiled down to one meeting on December 2. Day dragged into night. Night edged into early morning. Stream protection versus ability to operate and remove timber value was a major sticking point. The then-director of the Department of Fisheries Bill Wilkerson acted as catalyst throughout the meetings. Wilkerson was negotiating for his department, but his actions also affected the tribes, who were nervous with the wheeling and dealing. At 1:45 a.m. on the 3rd, it was guts poker at its finest. Finally, industry's Stewart Bledsoe said to the group. "That's all there is. There's no more." Bledsoe, the chief negotiator for the industry, could concede no more. His nervous constituents were near revolt. There was a quick recess, whereupon Tulalip tribal member Terry Williams said, "Stu, I think we've got a deal." It was done.

The Solutions

The negotiated settlement has three components. First, the agreement itself is an unsigned 44-page document that is a Magna Carta of resource management issues. Second, the legislative package contains several important changes to the Forest Practices Act along with a $6.5 million legislative general fund request for implementation. Finally, the proposed regulation revision contains changes and planning process additions carefully crafted by TFW negotiators.

Several issues addressed by the TFW project potentially have nationwide significance. Following is a brief summary of the more noteworthy pieces of the agree-

ment.

Riparian management - Washington State forest landowners agreed to leave trees along fish-bearing streams. Regulatory timber leaves will be stratified by stream size, timber type, and geographical location. Alternative planning processes have also been developed that accomplish the same result as the regulations but in a manner more acceptable to the landowner/operator. Small acreage harvesters have a special provision that reduces riparian leave tree requirements on their property.

Roads - The most significant and potentially far-reaching change deals with so-called "orphaned roads." Over the past decade, several people have been killed and millions of dollars of damage caused by old state logging road failures. The TFW participants agreed on the need to identify and fix the problem sites. Landowners insisted on a mechanism to limit liability incurred by identifying potential trouble spots. Public interest advocates insisted landowners share identification and mitigation burdens. To address this, attorneys from all sides hammered out signficant new legislaitve language that passed both houses with no dissenting votes and was signed by Gov. Booth Gardner, a remarkable feat.

Timber harvest - Clearcuts and clearcut size have been perennially controversial. TFW was no different, but several elements provided a solution:

1. Nonindustrial timberland owners (NITOs) were seen as an insignificant part of this problem because of their random harvest patterns.

2. Leading industrial landowners voluntarily agreed to cooperate with an open planning process and exchange of "points of concern" with public resource managers and others.

3. Annual preharvest planning sessions are scheduled with Department of Natural Resources and other resource managers, tribal representatives, and others.

4. On-site assessments and appropriate monitoring will be conducted to answer questions about environmental impacts of harvesting and road use.

Wildlife areas - Wildlife was seen as an important issue to be addressed by the project. The outcome was a novel idea entitled "Upland Management Areas:" actually, swamps, bogs, rockfaces, or other sites. Industrial landowners, with varying amounts of land inventoried as inoperable, have agreed to locate and designate wildlife leave areas. The suggested ratio of 2 acres leave per 160 acres cut should serve to focus attention on protection and enhancement of these wildlife habitat areas without posing an expensive hardship on the landowner.

Management system - Flexibility with accountability was a major goal of the TFW project. Participants agreed the existing regulations satisfied no one and, in some cases, inadequately protected nontimber resources or over-regulated with little or no benefit to other resources. All participants agreed a better way was needed to manage natural resources through something other than new layers of regulations. Some of the solutions were obvious: reorganization of DNR's enforcement division, more technicians, and better monitoring, evaluation, and research. But more was needed. A series of planning processes was the answer, including preharvest planning, annual evaluations, and, in certain cases, site-specific resource management plans or basin plans that would supersede published regulations.

The management system and other administrative adaptations, when combined with an effective monitoring, evaluation, and research program, allow for management and regualtory change based on fact and need versus on the preferences of the side with the most votes.

TFW Today

The TFW agreement was completed. The state legislature has budgeted $4.5 million for agency implementation. The $2 million shortfall from the original request means tightened budgets, but the show will go on. Lobbyists claim that legislators have not forgfotten TFW. And it is probable that the former adversaries will go hand in hand to the next legislature asking for enough money to implement the program fully.

The Department of Natural Resources has begun its reorganization and training. The Washington Forest Protection Association is holding a series of implementation workshops, and the Department of Game has hired SAF member and former forest consultant Rollie Geppert to increase its ability to work with foresters. The Forest Practices Board has adopted draft regulations as proposed under TFW negotiations. Hearings concluded in June with regulations promulgated by late summer.

Smooth sailing ahead? No.

TFW is a new way of doing business, and problems have already surfaced. Eastern Washington environmentalists, tribes, and landowners feel left out. Their geographic remoteness and TFW's fast pace lend credibility to their concerns. Complex planning processes are yet untested, and the extensive public input requirements have landowners nervous. Environmentalists wonder if working with a traditional foe is really a good idea, and tribes are hesitant to embrace anything that might weaken their legal positions.

All participants remain committed to close monitoring, research, and discussions as the terms of the agreement become reality.

Would a TFW process work elsewhere? Perhaps, but several factors would have to exist. Participants must be truly willing to negotiate and to give ground on some painful issues. Everybody has to pull together equally, and a first-class negotiator is essential. The most important ingredient, however, is a group of people unequivocally committed to making the process work.

TFW will work for Washington. Why? Because traditional adversaries are united in wanting and even willing it to work. Participants have discovered they are all tired of fighting. Working together is hard and, at times, frustrating. But it beats the hell out of an 11-year war.

Malcolm R. Dick, Jr., is director of forest management for the Washington Forest Protection Association and a former chair of Washington SAF and of the House of Society Delegates.

Reprint from National Update

TIMBER-FISH-WILDLIFE Agencies and Interest Groups

Washington State Dept. of Wildlife - State agency - your main interest: game habitat; you want upland management for game and riparian management for fish.

Colville Federated Tribes - Eastern Wash. Indian tribe - your main interest: protection of active timber enterprise as well as natural resources on and near reservation. Maintenance of treaty rights.

Western Washington Timber Companies - multi-national - corporations and large timber companies - ITT Rayonier, Simpson Timber Co., Weyerhaeuser Company - your main interest: forest management, regulations to allow slash burn and clearcutting. Protection for your real estate.

Washington Farm Forestry Assoc. - small non-industrial - private landowners - your main interest: to protect your timber investments; you want flexible management for Christmas tree harvests and nurseries.

Washington State Dept. of Ecology - state agency - your main interest: air, soil and water quality, regulations for monitoring hydraulic activity & incentives for everyone to work together to protect water resources.

Washington Forest Protection Assoc. - association of private forest landowners - your main interest: private timber landowners; flexibility in forest management, liability relief on orphaned roads, to be able to spray herbicides & protection for land owners.

Eastern Washington Timber Companies - large timber companies - Plum Creek, Boise Cascade - your main interest: to ensure eastern Washington issues are addressed; you want different timber management regulations than westside.

Audubon Society - your main interest: diversity of habitat for non-game wildlife; you want the Dept. of Natural Resources to manage land to keep old growth timber stands, flexible land management (site by site) and riparian zones left unlogged.

Northwest Indian Fisheries Commission - 20 tribes - tribal Fisheries Commission - your main interest: fish spawning habitat, developing trust with industry/agency personnel; you want regulated game and fishing rights, sensitivity to ceremonial interests (archeology), a seat on the Forest Practice Board and protection of fish habitat; protecting and maintaining cultural & archeological grounds.

Washington Environmental Council - your main interest: clean air, water, and wildlife diversity; you want land management to protect the environmental.

Skagit & Whatcom County Timber Companies - Georgia-Pacific, Scott Paper - your interests: roads and logging effect on landslides; you want regulations for road maintenance and not to be liable for orphaned roads.

Washington Dept. of Natural Resources - state agency - your main interest: timber and mineral rights, public timber owners and regulations; you want guidelines for monitoring land use and public/political image upheld.

Washington State Dept. of Fisheries - state agency - your main interest: hatchery and spawning area protection; you want regulation for fish protection.

Columbia Inter-Tribal Fisheries Commission - multi-tribal Indian fisheries management agency - your main interest - co-management of fishery resources, fish and wildlife habitat protection, maintenance of treaty rights in the Columbia River system of Washington and Oregon

Yakima Tribe - Largest land area of any Indian tribe in Washington state. Concern for extensive timber resources, maintaining fishing and hunting treaty rights.

6. Ground rules for the negotiations can be taken from the article. The student mediator is responsible for politely enforcing groundrules. (see next activity "Call in the Experts)

7. One at a time student spokespersons will present the philosophy and position regarding natural resources from their groups point of view.

8. Next students begin the process of reaching an agreement. Suggestions can be made from any spokesperson when recognized by the mediator.

9. In summary, ask the students to identify and describe points of view, if any, which some or all of the groups share in common, and points of view, if any, in which the groups strongly differ. In what ways, if any, is it healthy for there to be groups with differing points of view? In what ways, if any, might it be damaging? What possible effects are there from individuals, groups, and organizations having different points of view with respect to the environmental and natural resources issues?

EXTENSIONS & VARIATIONS

1. Invite local members or representatives of the various groups to present their point of view in person!

2. Invite the students--as a group or as individuals--to decide (write, discuss, or present orally) their own position statement of the issue. How is it like, unlike others?

3. Emphasize the potential for communications skills, including analysis of points of view, in this activity. For example, analyze the stated positions of each group according to the following criteria:

- substantiated beliefs; i.e., the scientific community accepts these as accurate

- questionable beliefs; i.e., there is some evidence, but it is inconclusive

- inaccurate beliefs; i.e., rejected by the scientific community

To what degree are groups with opposing views similar and different, when analyzed by these criteria? Are these areas where it is appropriate and feasible to work for compromise? Why or why not?

Adapted from Project Wild, "Philosophical Differences", page 39-40

CALL IN THE EXPERTS

OBJECTIVE

Students will be able to discover workable solutions to a complex problem.

ACTIVITY

Use the previous activity "Philosophical Differences" to familiarize students with the negotiation process.

Have your students choose a situation at school in which there is conflict. The task of this activity is in allowing students to discover through negotiation, a solution that everyone agrees with.

Review the Timber, Fish, and Wildlife negotiations pointing out that:

- Round table negotiation process has been used by Indian people for making decisions for hundreds of years.
- One person must act as a mediator who has the power to impose time limits.
- Each group must prepare a presentation stating their position.
- Students task is to find a solution.
- Negotiations are a peaceful means of researching an agreement.
- Everyone is given an equal chance to state their position without interruptions.
- Everyone must realize that in order to find a mutually agreeable solution to a problem, they must compromise.

Ask students to describe a situation causing conflict at school. Using the TFW negotiations as a model, set-up a round table negotiation complete with representatives of interest groups and moderator. Have students come to an agreeable solution that should lead to resolution of the conflict.

INDIAN PEOPLE AND NON-INDIAN CONTACT TIMELINE
HISTORICAL PERSPECTIVE

From Time Immemorial - 1792

THE TRADITIONAL PERSPECTIVE was to manage resources. Take only what was needed and leave the rest.

Shellfish, Salmon, & Cedar

Resources shaped their lifestyle. Because of the abundance of resources in Puget Sound and Coastal Washington, the people spent time together in longhouses crafting tools, clothing, household wares, carving and storytelling. The culture was rich in arts and spiritualism.

Trade Between Tribes - Chinook

1792 brought the arrival of Captain Vancouver. Trade with non-Indians began. Indian people had been trading with other tribes for centuries and had exchanged technology and ideas. Trade with non-Indians allowed a surge of technological ideas and changed the economic structure. From these early years of contact on, foreign-introduced diseases killed many Indian people.

Missionaries

The 1830's took over trade routes and brought in more non-Indians and disease. The arrival of Father George Thomas, a catholic missionary, brought social changes as well. Indian people were told that their communal living in longhouses was evil and they were forced into separate housing. Storytelling diminished considerably.

Settlers

Settlers took prime agricultural land. This was acceptable to indigenous people to the extent that it did not interrupt fishing, hunting and gathering of natural fruits and vegetables, or interfer with sacred lands.

Treaties

Treaties were signed to provide land for the non-Indians (settlers and the government) to inhabit and to insure peaceful relationships between Indians and non-Indians. The treaties specifically reserved small parcels of land for the tribes, and the right to hunt, fish and gather other traditional foods.

This was an era of rapid change. Disease was widespread. As the non-Indian population grew. Indians were forced out of traditional fishing and food gathering areas, despite treaties.

* December 26, 1854 - Treaty of Medicine Creek - Affected Puyallup, Nisqually, Squaxin Island Tribes.

* January 22, 1855 - Treaty of Point Elliot - Affected Lummi, Muckleshoot, Tulalip, Swinomish, Suquamish, Sauk-Suiattle, Stillaguamish, Upper Skagit, Nooksack tribes.

* January 26, 1855 - Treaty of Point-No-Point - Affected Port Gamble Band of Klallams, Lower Elwah Band of Klallams, Skokomish.

* January 31, 1855 - Treaty of Makah - Makah Indian Tribe.

* January 25, 1856 - Treaty of Quinault - Affected Hoh, Quinault, Quileute tribes.

1887 - The Dawes Severalty Act, or the "Allotment Act" was enacted in Congress to divide lands among individual Indians. Reservations were divided into 160 acre parcels. One parcel for each Indian family.

"Americanization" movement was to turn Indians into farmers, but the non-Indians had taken the good farming land and the Indians, who had been fishermen and hunters for thousands of years, resisted being changed.

Early 1900's. During this time the children were sent off to boarding schools where they learned to speak English, wore American clothing, and were forbidden to participate in their own cultural activities. Most of the Puget Sound children of tribes were sent to one of several Indian Schools in Tacoma. From age 5 - 18 their culture was all but lost. Elders felt that this way of life was not worth passing on, in story form.

1924 "Citizenship Act". Because of Indian people fighting in World War I, President Roosevelt and Congress enacted a statute to provide for citizenship to all Indians not already citizens. Indians needed to register for citizenship. Many Indians did not register however. The Citizenship Act specifically stated that it was not to diminish the rights of Indians as citizens of their own tribal nations.

1934 "Wheeler-Howard Act" was passed (Indian Reorganization Act). It allowed tribes to incorporate with the government and constitution. The government realized that the Americanization policy was a failure. Reservation living was at poverty level. Settlers farmed productive lands. Indians had not been allowed to make any of their own decisions.

The Wheeler-Howard Act allowed Indians to handle their own affairs. Tribal councils were setup. People (usually five to nine) were elected to make decisions for the entire tribe. The Bureau of Indian Affairs could easily influence a handful of people.

1949 The Hoover Commission recommended that certain tribes be terminated from federal trusteeship. Puget Sound tribes were not involved.

1970 "Self Determination Act" Established as federal policy that the tribes handle their own resources. Tribes were given federal dollars depending on their resources: minerals, fish, timber, wildlife, etc. Tribes are responsible for managing their own resources.

1974 Boldt Decision (United States vs Washington) - "The right of Indians to fish at their usual and accustomed grounds and stations...in common with all other citizens" means that the Indians and non-Indians are guaranteed half the catch." Tribes are responsible for managing their own fisheries with state enforcement of regulations only for conservation. The state must regulate all citizens fishing to provide 50% of harvestable fish to Tribal fisheries. (i.e., state has legal duty).

1979 Boldt Decision (U.S. vs Washington) Phase II: 1979 Supreme Court Decision (U.S. vs. Passenger Vehicle). With some minor modifications, the Supreme Court reaffirmed the Boldt Decision.

Non-Indians and Indians must protect fish habitat because of treaty fishing rights. State has the legal duty to protect fisheries habitat upon which fish depend. The full impact of Phase II was to be described in continuing litigation. The state and the tribes are conducting ongoing government-to-government negotiations to develop the perameter of Phase II by mutual agreement, and for joint presentations to the court. If this effort succeeds, both the state and the tribes feel that the result will be a "win-win" agreement. Phase II has provided the impetus for major environmental activity in recent years, including the Timber/Fish/Wildlife Agreement.

INDIAN RESERVATIONS IN WASHINGTON STATE

RESERVATION & COUNTY	ACREAGE	RESERVATION POPULATION	AMERICAN INDIAN POP. IN COUNTY*
Chehalis	2,076	185	
Nisqually	925	338	
Grays Harbor Co.			2,293
Thurston Co.			1,726
Colville	1,059,199	2,994	
Ferry Co.			983
Okanogan Co.			3,233
Hoh	443	39	
Quinault	129,308	1,021	
Grays Harbor Co.			2,293
Jefferson Co.			440
Kalispel	4,557	129	
Pend Oreille Co.			192
Lower Elwah			
Klallam	427	247	
Makah	27,027	571	
Ozette	719	---	
Quileute	814	250	
Clallam Co.			2,113
Lummi	7,678	1,445	
Nooksack	1	270	
Whatcom Co.			3,252
Muckleshoot	1,275	467	
King Co.			12,437
Port Gamble			
Klallam	1,303	454	
Suquamish	2,871	254	
Kitsap Co.			2,020
Puyallup	101	800	
Pierce Co.			5,919
Shoalwater	335	25	
Pacific Co.			357

Upper Skagit	74	400	
Swinomish	3,602	337	
Sauk-Suiattle	23	90	
Skagit Co.			1,138
Skokomish	2,984	714	
Squaxin Island	883	160	
Mason Co.			1,008
Spokane	133,237	581	
Stevens Co.			1,504
Tulalip	10,667	1,200	
Stillaguamish	20	90	
Snohomish Co.			4,141
Yakima	1,130,014	7,480	
Yakima			6,656
		Total	51,705
*Indian population estimate for 1990			69,803

Statistics from: United States Department of Interior
Bureau of Indian Affairs
Annual Report of Indian Land
Sept. 30, 1984, except Stillaguamish whose acreage was reported directly from Puget Sound Office.

United States Department of Commerce
Federal and State Indian Reservations 1974

U.S. Department of Commerce
Bureau of Census, 1980
Census of Population and Housing-Washington, March 1981 representing American Indian, Eskimo and Aleut populations by county. Some tribes are not shown and only 16 out of 39 counties are given.

Note: Since 1978 additional Indian reserves have been restored or established: Jamestown Klallam, Sauk-Suiattle, and Upper Skagit.

Jurisdictional LAND AREAS FOR WASHINGTON STATE*

Political Subdivision	Land Area in Acres	Area in Square Miles	Percent
U.S. Bur. of Land Mgmt.	311,292	486	.7
U.S. Natl. Forest Serv.	8,865,530	13,852	20.3
U.S. Natl. Park Serv.	1,965,530	3,071	4.5
U.S. Dept. of Defense	630,197	985	1.4
Tribal Lands	2,085,937	3,259	4.8
State, County, City, and Private Lands	29,784,693	46,539	68.25
TOTAL Land Area	43,642,880	68,192	100.00

*November 1, 1989, Department of Natural Resources

For More information, contact these
INDIAN TRIBAL COUNCIL OFFICIALS AND AGENCIES

Colville Tribe Bus. Council
P.O. Box 150
Nespelem, WA 99155
(509) 634-4711

Hoh Tribal Council
Mary Leitka, Chair
HC 80, Box 917
Forks, WA 98331

Kalispel Tribe Bus. Comm.
Glen Nenema, Chairman
P.O. Box 39
Usk, WA 99180
(509) 445-1147

Lower Elwha Klallam Tribe
Carla Elofson, Chair
1666 Lower Elwha Road
Port Angeles, WA 98362
(206) 452-8471

Makah Tribal Council
Dan Green, Chairman
P.O. Box 115
Neah Bay, WA 98357
(206) 645-2323

Northwest Indian Fish. Comm.
Billy Frank, Chairman
6730 Martin Way E.
Olympia, WA 98506
(206) 438-1180

Quinault Indian Nation
Joseph DeLaCruz, Chairman
P.O. Box 189
Taholah, WA 98587
(206) 276-8211

Columbia Inter-Tribal Fish. Comm.
Public Information Dept.
975 S.E. Sandy Blvd., Suite 202
Portland, OR 97214

Jamestown Klallam Tribal Council
Wm. Ron Allen, Chairman
305 Old Blyn Hwy.
Sequim, WA 98382
(206) 683-1109

Lummi Indian Nation
Sam Cagey, Chairman
2616 Kwina Road
Bellingham, WA 98226
(206) 734-8180

Muckleshoot Tribal Council
Virginia Cross, Chair
39015 172nd S.E.
Auburn, WA 98350
(206) 939-3311

Quileute Tribal Council
James R. Jamie, Chairman
P.O. Box 279
LaPush, WA 98350
(206) 374-6163

Nisqually Tribal Council
Dorian Sanchez, Chairman
4820 She-Nah-Num Dr. S.E.
Olympia, WA. 98503
(206) 456-5221

Nooksack Tribal Council
Joe Johnson, Chairman
P.O. Box 157
Deming, WA 98244
(206) 592-5176

Squaxin Island Tribal Council
David Lopeman, Chairman
W. 81 Hwy 108
Shelton, WA 98584
(206) 426-9781

Puyallup Tribal Council
Bill Sterud, Chairman
2002 E. 28th St.
Tacoma, WA 98404
(206) 597-6200

Yakima Tribal Council
Melvin Sampson, Chairman
P.O. Box 151
Toppenish, WA 98948
(509) 865-5121

Stillaguamish Tribe
Gail Greger, Chair
3439 Stoluckquamish Lane
Arlington, WA 98223
(206) 652-7362

Swinomish Tribal Council
Robert S. Joe, Sr., Chairman
P.O. Box 817
LaConner, WA 98257
(206) 466-3163

Upper Skagit Tribal Council
Floyd Williams, Chairman
2284 Community Plaza
Sedro Wooley, WA 98284
(206) 856-5501

Point No Point Treaty Council
Jerry Charles, Chairman
7850 N.E. Little Boston Rd.
Kingston, WA 98346
(206) 297-3422

Skokomish Tribal Council
Denny Hurtado, Chairman
N. 80 Tribal Center Road
Shelton, WA 98584
(206) 426-4232

Port Gamble Klallam Tribal Council
Jake Jones, Chairman
P.O. Box 280
Kingston, WA 98346
(206) 297-2646

Spokane Tribe Business Council
Joe V. Flett, Chairman
P.O. Box 100
Wellpinit, WA 99040
(509) 258-4581

Sauk-Suiattle Tribal Council
Lawrence Joseph, Chairman
5318 Chief Brown Lane
Darrington, WA 98241
(206) 436-0132

Suquamish Tribal Council
Georgia C. George, Chair
P.O. Box 498
Suquamish, WA 98392
(206) 598-3311

Tulalip Confederated Tribes
Stan Jones, Chairman
6700 Totem Beach Rd.
Marysville, WA 98270
(206) 653-4585

OTHER INDIAN TRIBES in Washington State

Chehalis Tribe Bus. Council
Percy Youckton, Chairman
P.O. Box 536
Oakville, WA 98568
(206) 273-5911

Shoalwater Bay Tribal Council
Elizabeth Fanning, Chair
P.O. Box 130
Tokeland, WA 98590
(206) 267-6766

Tribes seeking Federal recognition:

Chinook
Cowlitz
Duwamish
Kikiallus
Lower Skagit
Samish
San Juan
Snohomish
Snoqualmie
Steilacoom

Non-Indians Who Came to the Indian Lands of Washington State

Generalization: Each culture tends to view its physical habitat differently. A society's value system, goals, social organization and level of technology determine which elements of the land are prized and utilized.

The following section identifies the types of non-Indians who came to the area and their affiliation. This information is included for the educator's convenience and is readily available in greater depth from most historical sources on the area.

1. Explorers came to this area and sought to claim land for their home or sponsoring nations.

   1579 - Sir Francis Drake sailed up the Pacific Northwest Coast and named the entire region New Albion (British).

   1592 - Greek navigator in the service of the Viceroy of Mexico, Apostolos Valerianos (Juan de Fuca) charted the strait named in his honor.

   1775 - Spanish schooner Sonora repulsed by the Quinaults on the Washington coast.

   1778 - Captain James Cook landed in Nootka Sound and took with him sea otter pelts to China thus initiating fur trade in the area (British).

   1792 - Captain George Vancouver surveyed the Puget Sound area and named many landmarks. (British)

   1805 - Lewis and Clark's American expedition reached the confluence of the Columbia/Snake rivers with the assistance of Sacajawea, originally of the Shoshoni Tribe.

2. Fur trappers and traders came to establish and conduct fur trade in the area.

   1793 - British Alexander MacKenzie trekked to the Pacific Coast to attempt fur trade with the Indians for the North West Company.

   1818 - Fort Walla Walla built by North West Company. Fort Vancouver founded by McLouglin. John Jacob Astor moved the North West Company to Fort Vancouver.

3. Catholic and protestant missionaries came to the Northwest to convert the Indians to Christianity, to colonize and promote non-Indian settlements of the region.

   1831 - A Nez Perce delegation went to St. Louis on a spiritual mission asking former explorer Clark's help to get Christian missionaries.

   1834 - Methodist Jason Lee builds a mission in the Willamette Valley of Oregon.

   1836 - Whitman mission established among the Cayuse near Walla Walla.
   Spalding mission established near Spokane.

1836-1840's - Large scale non-Indian settlement of the area.

1838 - Roman Catholic secular priests Blanchet and Demers arrived in the Pacific Northwest.

1847 - Whitman incident.

4. Miners, stockman and farmers invaded Indian lands to exploit the natural resources and to colonize the area.

5. The United States Army came to protect the lives and property of the colonists.

6. The United States Government sent representatives to enlarge land claims for the government and the colonists, to settle land claim disputes, to survey the route of the Great Northern Railroad, to reserve lands for the Indians and to organize and develop the reservation system.

1849 - Oregon Territory established by the Federal Government.

1854 - In preparation for the construction of the Great Northern Railroad, the territorial governors were instructed by the Federal Government to buy out Indian rights and the period of treaty-making began in which tribes were placed on reservations. Indians of Western Washington were relocated first by Governor Stevens.

1855 - Governor Stevens established reservations for 17 plateau tribes by treaty.

The result of settlers coming to Indian lands was the exploitation of land, people and resources. They were intruders to a highly developed way of life. They brought disease and destroyed life.

1889 - Washington granted statehood by Congress.

* * *

THE QUINAULT INDIAN NATION

History

The people of the Quinault Indian Nation are among the small number of Americans who can walk the same beaches, paddle the same waters and hunt the same lands their ancestors did centuries ago.

The Quinault Indian Nation consists of the Quinault and Queets tribes and the descendants of six other coastal tribes: the Hoh, Quileute, Chehalis, Chinook, Shoalwater, and Cowlitz. All these tribes spoke dialects of Salish and were culturally and socially akin. They lived in family groups up and down their rivers amid great natural wealth, in longhouses built from hand-felled red cedar. They made canoes, clothing, and baskets from this gracious tree, too. Four species of salmon and steelhead "filled the waters to overflowing."

As well as carving river canoes, the tribes carved enormous ocean-going canoes. A stable, highly social people, they attended the annual gathering of many tribes on the Columbia River for social events, games, arranging marriages, and fishing for chinook salmon.

This ancient way of life ended for the coastal Indians on July 16, 1775 when the first recorded meeting between white and Indian took place. Spanish explorers raised a cross on the stretch of beach between Point Grenville and Moclips. From Spanish descriptions of this bloody meeting, the Quinaults had western knives, thus prior contact with or knowledge of whites, perhaps through trade, had already occurred.

Four years later, the Spanish returned to the coast, bringing the first of the devastating smallpox epidemics. Then, Grays "discovery" of the Harbor and the Columbia River led to settlers and the eventual formation of the Oregon Territory.

By the mid-19th Century, settlers were clamoring for Indian removal from ancient lands for their own use. Thus, on July 1, 1855, the Treaty of Olympia was signed by three of the coastal tribes. In 1890, in a final attempt to carry out the U.S. policy of removing tribes from ancestral lands to one reservation, the Quinault Reservation was enlarged. Coastal tribes refused to leave their ancient homes. Today, each tribes has a small reserve or headquarters on its ancient settlement. Many Coastal Indians are either off-Reservation Tribal members or allotted owners of timberland on the Quinault Indian Reservation.

Future Goals

The Quinault Indian Nation and Washington State are making plans to extend the road between Taholah and Queets. If agreements are met and funds arranged, Tribal Highway 109 could be completed by 1991. Under discussion is construction of two view points on our spectacular coastline between Taholah and Queets.

The Quinault Historical Foundation, an incorporated, non-profit organization, representing all the Tribes of the Quinault Indian Nation, is raising funds to build a Museum/Archives/ Cultural Center on the Reservation, too.

Natural Resources Today

The Quinault Indian Reservation's 200,000 acres of lands and waters were formed by glaciers that moved down from the mountains millennia ago. Its abundance of natural resources includes sealife, four salmons species, steelhead and other trout, over half a dozen conifer species, several deciduous species, and plants. Elk, bear, deer, and a rare cougar are among our large mammals. Birds range from the Bald eagle to the small hummingbird.

Our western boundary is a magnificent 25 miles of wild, driftwood strewn, northern Pacific beaches. Several miles of sandy beach is populated by Razor clams, the only commercial clam beach left in the Copalis National Wildlife Refuge.

The Reservation's easternmost angle encloses beautiful Lake Quinault, which covers 3,729 acres and has 12 miles of shoreline. It is the holding waters for the justly famous sockeye, **Quinault Blueback.**

Animals played an important role for the ancients in food, clothing, and legend. For us, who are alive today, they remain important for food, and, as they always have, they enrich our eyes and spirits. They serve us too, as kinds of yardstocks to measure the results of our activities on the land.

For thousand of years, the land and its contents were encouraged to produce the animate and inanimate residents by natural phenomena, i.e. geology and climate. The ancient Quinaults had little effect upon the land, because their numbers were small. But with an exploding population and development of the ever new products of a technical civilization, demands upon the land and its contents are great. Beginning in 1922 Quinault lands had a new phenomena reshaping them: the human being.

It is up to us to manage the land and its contents well. How good the land is to us depends on how good we are to it.

A Quileute Legend

HOW KWATEE MADE THE RIVERS AND ROCKS*

Chief Wolf looked around on the beach early in the morning. He wanted to get anything that was washed in. Chief Wolf sometimes murdered people. When Kwatee learned about the murders, he decided to do something. He put up a cabin near the beach. Under the cabin he dug a well. He planned to murder Chief Wolf.

Later, Chief Wolf had a surf duck for Kwatee. "Here's a surf duck for you," he said.
"I am sick," answered Kwatee. "I can't go out of my house. ill you stay with me tonight?"

Chief Wolf stayed that night. Kwatee made a big fire. When Chief Wolf was snoring, Kwatee took his knife and killed him. He put Chief Wolf's head in the well under the cabin and burned it.

Chief Wolf's family came to look for him. "He passed by late in the evening." Kwatee told them. "Come in. I'll find where he is through my spiritual."

Kwatee sang a song. "Leave the door open wide," he sang. "Leave the door open wide. Stand back, so that there is open space before the door."
Kwatee had his comb and his vessel of hair oil hanging in the doorway.
He sang his song again. In this song he admitted that he had murdered Chief Wolf. Then he ran away. He seized his comb and his hair oil and ran.

The Wolf family followed him. When the Wolf in front reached to grab him, Kwatee stuck his comb in the sand. The teeth became the hills and rocks on the point. Then Kwatee ran down the coast. When the Wolf family came close, he poured hair oil on the beach and made a river. And with the teeth of his comb he made rocks along the shore. That is how he made the Quillayute River and the Hoh, the Queets River and the Quinault -- all the rivers along the coast, from Neah Bay to the Columbia. And he made all the rocky points with his comb.

When he got to his canoe, Kwatee pulled it out into the ocean, out over the breakers. So the Wolf family gave up the chase.

Out in his canoe, Kwatee sang a song about a man-eating shark. He would kill the man-eating shark out in the ocean, he sang. But the man-eating shark swallowed Kwatee and his canoe. From inside his stomach, Kwatee killed the man-eating shark. Its dead body was washed in on the shore.

Early in the morning a man saw that a shark had been washed in. He called to the others, and they planned to cut it up for food, after breakfast. When they started to cut it, Kwatee hollered from inside the share, "Be careful. Don't cut me."

"What is that?" the men asked, "Someone is inside his stomach."

They cut a hole in the stomach of the shark, and Kwatee ran out. He ran into his house. The people hollered at him, "That's Kwatee! That's Kwatee!"

*From: Indian Legends of the Pacific Northwest, by Elia W. Clark, University of California Press, 1953.

Indian Fish Trap on Quinault River, Washington
Quinault Natural Resources
P.O. Box 189
Taholah, WA 98587-0189

The illustration, originally in color, was first printed in the October 11, 1889, issue of Westshore, a magazine published in Portland, Oregon, and Spokane Falls, Washington. The University of Washington's Northwest Room has copies of several issues of this old publication. The "U" kindly permitted us to copy this unusual drawing.

The text accompanying the illustration contains an inaccuracy - paragraph one - but it is very worth printing in full.

"The chief item of food of the Quinault is salmon. They have improved upon their fishing with the inventions of the white man. . . a weir is built across the stream and a trap catches a portion of the immense number of fish which collect below.

The weir is made of six inch poles placed six feet apart. The wicker work is 2 x 6 feet frames made of willow poles two inches in diameter upon which is woven a network of willow branches with meshes of sufficient size to let the water through, but not the salmon.

The Quinault River averages two to four feet deep at the weir and the weir is six to eight feet high. The weir is simply to delay fish and of course renders the stream just below it alive with them.

"The weir is only kept in place when someone is fishing and the hindrance of the fish ascending to their spawning grounds is not material. The trap consists of four piles, 14-feet apart cut off 14-feet above the water. A pulley is fastened at each corner with a line through it attached to one corner of a drop net. The net is lowered and when full pulled up by the Indians and the fish tipped into canoes. The emptying of the nets is a very thrilling piece of sport.

"The trap belongs to the Indians in common and each family has its turn to fish."

THE NISQUALLY INDIAN COMMUNITY

History

For thousands of years, Nisqually Indians have lived along the Nisqually River -- our river. The Treaty of Medicine Creek of 1854 was signed near the mouth of the river. The Nisqually Indian Tribe of today is the governmental successor of the Nisqually Indian leaders who signed the Treaty with the United States of America, and our Tribal members are the descendants of those Nisqually Indians of treaty times.

History of Natural Resource

The Nisqually Indian Tribe has always been a fishing society, and the rich country of the Nisqually River and nearby Puget Sound supplied us good fisheries year round. Fishing was, and is, central to our culture and way of life. The Nisqually Indian Reservation, established under provision of the Treaty, is located along six miles of the Nisqually River. In 1917, approximately 2/3 of the Reservation was condemned by Pierce County for inclusion in the Fort Lewis military reservation. At present, our reservation, including the river, contains about 1650 acres and is located in rural Thurston County, Washington, about 10 miles east of Olympia, and 18 miles southwest of Tacoma.

Government

The Nisqually Tribe is governed by the General Council, made up of all the members of the Tribe over the age of 21. The General Council meets twice yearly, or more frequently if necessary. Tribal business is conducted by the Business Committee, elected every two years by the General Council. The Business Committee members are the elected officials of the Nisqually Indian Tribe and they oversee the day-to-day operations of Tribal programs.

There are approximately 1400 Nisqually tribal and community members today. About 400 community members live on the reservation, with most of the remainder living in the nearby communities of Yelm, Lacey, Olympia, Tumwater, as well as throughout the Thurston County area. A number of community members also live in the Tacoma area.

Future Goals

One of the major goals of the Nisqually Indian Tribe is to insure the future of itself and its members through the establishment of programs to protect our reservation and our fishery, to provide social, health and educational services for Tribal members and other Indians in the community, and to secure our identity as a sovereign Indian tribe.

Natural Resources Today

In recent years the Tribe has developed an extensive fisheries management program. We manage our own fishery through our Fish Commission, elected by the General Council. The Commission establishes annual and seasonal regulations. The Tribe also has a catch monitoring program, and an enforcement and court system. In addition, the Tribe conducts biological assessments of the salmon and steelhead stocks of the

Nisqually River and is active in environmental protection on the river and nearby marine areas. The tribe has its own mini-hatchery and releases one million chinook salmon, 300,000 coho salmon, and over one million chum salmon every year. Extremely significant to fish production in the river system will be the development of a major Tribal hatchery, which will be located on the river near the north boundary of the reservation, and is now under construction.

Finally, the Tribe is involved in a number of business enterprises, and continually works towards increasing its economic base. The Tribe is involved with a new oyster growing operation in Pierce County, and hopes to expand upon that to include processing of oysters and other seafood products. The Tribal Trading Post, located along Highway 510 on the reservation and operating under a lease agreement, specializes in convenience store items as well as carrying Indian products such as crafts and smoked fish. The Tribal construction crew is involved in construction of new Tribal facilities, such as the library, as well as projects outside of the reservation, including a recently completed log structure at the Pioneer Farm Museum in Eatonville.

SQUAXIN ISLAND TRIBE

History of Natural Resources

A loosely knit band of many peoples lived and roamed everywhere in south Puget Sound for thousands of years. They lived in the inlets and fished the waters. They ate clams, oysters, shrimp, and some crab, taking only what they could eat. They used cedar for baskets and clothes, cat tails and reeds for mats and baskets. They hunted elk, deer, water fowl and seals.

These people were grouped together by the Europeans who considered them all to be salt water Indians, and were named after one of the band, the Squaxins.

As a party to the Treaty of Medicine Creek in the mid-1800's, the Squaxin Indian Tribe gave up most of its land, hoping to live peacefully with the non-Indian community. The tribe even agreed to share the opportunity to harvest natural resources with the settlers.

But the tribe was subject to broken promises and atrocities, and the natural resources they depended on were endangered by a multitude of problems.

Tribal rights were finally reaffirmed in 1974, and the logic of cooperation in natural resource stewardship has become clear to state and tribal policy makers in recent years.

Natural Resources Today

The Squaxin Island Tribe operates the largest delayed release coho salmon netpen program in the Northwest, producing more than 2.5 million fish per year. This on-reservation project is a cooperative state/tribal venture. Salmon released benefit both Indian and non-Indian commercial and sports fisheries. Salmon are also raised for "pan-sized" and adult fish products in the tribe's aquaculture program.

Hatchery-produced fish are released only when it will not adversely affect the survival of native stocks. Tribal biologists work in cooperation with state and private individuals and groups to protect and rehabilitate the habitat needed by native and hatchery fish.

The tribal-operated hatchery on Elson Creek and the tribal/ state operated hatchery on Johns Creek produce millions of healthy salmon and steelhead every year. By 1989, the total number of salmon released by the tribe reached 7.5 million.

Shellfish are as inseparably connected to the tribe's history, culture and survival as salmon and steelhead.

The Harstene Oyster Company is a modern day example. The tribe acquired the company in 1976, along with 1/2 mile of tideland frontage which has been planted with oysters almost every year since.

Many tribal members harvest shellfish on traditional tidelands, and the tribe is currently working with the state to determine the most favorable shellfish management areas.

Future Goals

The Squaxin Island Tribe performs a key role in the production of fish harvested by Indian and non-Indian fishermen in the South Puget Sound. The wise use and conservation of natural resources is a top priority and the tribe dedicates much hard work and professional mangement to this end.

TULALIP TRIBE

Natural Resource History

The name Tulalip (Dhu-hlau-lup) stems from the native word meaning "almost land-locked bay," which refers to Tulalip Bay north of present-day Everett. The name was used for the reservation, and the Indians who became known as the Tulalip Tribes of the Tulalip Reservation. Tulalip is not the name of a hereditary tribe but is a federation made of coastal Salish peoples including the Snohomish, Stillaguamish, Snoqualmie, Skykomish, Skagit, Pilchuck, and Kikialos Indian tribes.

The beginning of the Tulalip Tribes was at the Point Elliott Treaty of January 22, 1855. The Indians did not adapt quickly to agriculture, as the government had hoped. The heavily wooded reservation was poorly suited to farming, and the Indians did not want to change their ancient way of life: fishing, hunting, and gathering.

These Indians of Snohomish County were dwellers near the water, greater fishermen than hunters, and had great skill in building and navigating their cedar canoes.

The Tulalip Indian Reservation in Snohomish County is the United States headquarters for all Puget Sound agencies. About 200 Indians settled on the new reservation after the treaty was signed. Over 1,000 members live on the reservation today with another 2,000 members living off the reservation. There are over 4,000 non-tribal people living on the Tulalip Reservation also.

Natural Resources Today

The Tulalip Tribes manage the Snohomish and Stillaguamish Rivers. These two watersheds cover 3,000 square miles and contain over 450 miles of salmon and steelhead resources.

The Tulalip fish enhancement program began in 1940. It was an effort to restore salmon runs in Tulalip Creek by constructing a fish ladder over an earthen dam at the mouth of the creek.

By the 1970's, the program had expanded to include a cooperative coho and chinook salmon rearing program with the Washington Department of Fisheries, and a simple tribal rearing and release program of chum salmon. Today, a hatchery facility constructed in 1981 on the Tulalip Reservation, produces salmon and steelhead.

When in full production, the Tulalip Hatchery will release:
12.0 million chum, 1.5 million chinook and 1.2 million coho salmon and 250,000 Steelhead each year.

"The wise use and conservation of fish resources are our foremost objectives. If these objectives are met, all people will benefit. The abundance of salmon and steelhead in the past is legendary. Coastal streams ran thick with salmon during the fall. PERHAPS THEY WILL AGAIN, IF WE ALL WORK TOGETHER."

- Stan Jones, Sr.
Tulalip Tribal Council

Future Goals

The Tulalip Tribes are actively engaged in Watershed Management to protect their heritage, their culture and the natural resources on which they depend.

They have dedicated themselves to oversee and safeguard the fish habitat and to protect the watersheds from degradation and pollution.

Location

The Tulalip Reservation is located north of Everett and west of Marysville, bound on the south and west by Puget Sound.

The original Reservation of the 1800's contained 24,300 acres, but by 1970's more than half (13,995 acres) had been sold to non-Indians.

SHE HANDS DOWN LEGENDS
by Maria Sneatlum

Seattle Times, pg. 5-7, May 15, 1966

Although serious illness 12 years ago sidetracked Maria Sneatlum's expectation of becoming an exponent of her ancestor's tribal music, she has found another way to make a personal con-tribution to Indian culture.

Miss Sneatlum, who had lived on the Tulalip Indian Reservation, near Marysville, but now lives in Seattle, is the great grand niece of Chief Seattle and the great-granddaughter of Whidbey Island's Chief Sneatlum, for whom Snatelum Point is named. The point - its name misspelled by whites - is east of Coupeville and was a principal campsite of the Skagit tribesmen.

Marie never knew her Whidbey Island ancestors, only her father, George, who died when she was 10. She was steeped in Suquamish tradition by her mother's father, Sam Snider, who in his later years lived with the family in a farm house on the Tulalip Reservation. The grandfather, half Suquamish and half British columbia Indian, was a prime storyteller.

"He used to make our hair stand on end with his tales of how the Northern Indians came down upon Puget Sound and how Chief Sneatlum defeated them," Miss Sneatlum says.

She first set down her grandfather's words in longhand as a school girl. Lately she has rewritten them.

Miss Sneatlum was educated in the Marysville elementary and high schools and the New England Conservatory of Music in Boston. She went there with the help of the tribal council, a women's club in Everett and a scholarship to study for the concert stage. She had a rich contralto voice. In 1953, before completing her studies, she was stricken with tubercular meningitis.

"By the law of averages," she said, "I should be dead. But I fooled everyone and got well."

A Tulalip Legend

The following Pacific Northwest Indian legends were written by Marie Sneatlum as she heard them from her grandfather, Sam Snider.

WHEN DU-QUEE-BUTH BECAME IMPATIENT

Once upon a time, near the present city of Bremerton, lived an old, old women. She was dark, swarthy, with long, stringy hair that was kept in place with a worn buckskin kerchief.

Her skinny hands had long fingers; she always walked bent over-her back worn with age. She went from place to place carrying a huge basket made of cedar root, into which she would put the people she would gather to eat. She enjoyed children, especially nice-looking, dark-eyed ones. Everyone knew her by the name Tsugua, though you probably would call her a witch. Everyone in those days knew her and feared her - except the youngsters about whom our story is told.

As this story opens, we find a group of dark-eyes children with black shining hair, playing along one of the dusty trails by the rippling waters. They were running, laughing, throwing clam shells, climbing trees and sometimes stopping to pick a blackberry or two along the trail or underneath a tall tree.

In the distance, almost at the bend of the trail, the bent figure of Tsu-gua could be seen slowly approaching. Slowly, slowly did her aged feet take her until at last she was upon them. On seeing her, the children all hushed in surprise; then they all ran to meet her and help her. To help older people was one of the rules that was taught the little ones during those days, and these little ones remembered this.

As they reached the old woman, she asked them very kindly if they would like some dried fish. This was indeed a delicacy and a treat for the children, and wasn't she kind to offer them some? (The poor old lady!) They all ran forward to get their dried salmon, but instead of giving them the salmon, she quickly grabbed

each one of the little ones and put them into her basket.

She continued her trek along the dusty trail and did the same thing to another group of children. Her basket was soon filled with choice children, and she came to a place where she built a huge fire. She was going to cook the little ones-then eat them!

With a little smile on her crinkled face, she would stoop to stir the coals and would whisper something underneath her breath that the children couldn't hear. She probably was talking about the choice meal that was in store for her when the driftwood coals were just right.

As the flames grew higher and higher and then began to subside, Tsu-gua began to sing and dance slowly around the fire. She was happy at the thought of her soon-to-be feast. The children were frightened and couldn't seem to think at first. Son one of them found the nerve to whisper to the others: "If we can but time it just right so that when she comes around the fire and near us, we could with all our strength push her into the fire."

"But it will have to work," whispered another child, "or she will throw us in. We must be quick."

So it was decided that, as soon as she came around near them, they would push the old witch into the fire. They could hear her steps now as she sang and danced nearer them. They were quiet. She was singing a chant they were unfamiliar with as she danced closer and closer to them. Soon she was exactly in front of them.

Then, all together, they stood up and with all the strength in their little arms, they pushed the old women into the fire. Her shrieks pierced the sunny, once-quiet forest as all the children clambered out of the basket.

They shouted with glee. They danced and sang, and ran everywhere - any where! They were so happy that they out-witted the old witch, Tsu-gua. They made so much noise that they attracted Du-quee-buth's attention. Du-quee-buth was the Great Spirit who had the power to change the world, if he so desired.

Du-quee-buth spoke quietly to the children, telling them that they must not make so much noise. It was not right that they should be that happy over the death of an old being -- even if it were old Tsu-gua. But they continued their loud shouts and gales of laughter.

Du-quee-buth as becoming impatient now as he finally threatened: "If you do not stop all this noise, I will change you right now into another form." Still they persisted with all their rowdiness.

Thus it was that Du-quee-buth followed through with his threat. With one giant breath he blew not only the little ones into the air, but also many an innocent person was affected by his anger. The chipmunk, a once quiet and retiring person, became so alarmed that he climbed the nearest tree, probably thinking that he would be safer that way. He still seems frightened to this day as he leaps from branch to branch chirping various exclamations.

The bluejay also was caught in the last remnants of the Great One's breath and was blown a short way into the air. He, likewise, screeches the exclamations that he must have given that day.

The little disobeying children became the little black-headed birds that we have come to know as the juncos or snowbirds. They still fly together in one flock and chatter as they go along, making the noises that caused Du-quee-buth to lose his composure that fateful day so long, long ago.

HOW THE BLUEJAY GOT THE PEAK ON ITS HEAD

There once was a time long, long ago, when there was no such thing as daylight. All was a complete blackness, day after day, moon after moon, winter after winter -- always darkness. This continued for many a winter, with the tribesmen all sharing a mutual scorn for a bleak and monotonous situation.

Daylight was in the heart of the forest in a shedlike building. This shed had a door which opened and slammed shut once every few seconds. Within the door inside the building on one of the walls, daylight was hung in a bag. Inside the shed, guarding their precious commodity, were many fierce animals which devoured any person who dared to enter the premises.

In this same land dwelt the bluejay. He was a tall, arrogant braggart who also was slightly stupid and stubborn. The bluejay, also weary of the perpetual darkness of the land, one day announced, with all the majesty at his command, that it must have been he who was the appointed one to procure the daylight for his people.

"I, my fellow tribesmen, shall go forth into the forest and get the daylight for you," he announced.

"Oh! No!" echoed the tribe, and then followed a pandemonium. They knew that if bluejay left them on this journey for daylight, they never would see him again. Did not many a brave person with this same intention and with certainly more wit than he disappear into the forest never to be heard from again!

"No, we must not let him go," the people cried again with heavy hearts. Among this teeming throng was bluejay's sister who seemed to cry out the loudest, for she knew she would lose her brother forever. She entreated him not to go on this journey, but her pleas only fell on deaf ears. The bluejay had made up his mind.

One usual black day, the bluejay set forth on his self-appointed journey for the middle of the forest. Only a handful of braver element dared to follow him on this, his supposedly "last journey." With lighted torches made from old, resinous, pine and fir trees, they left the saddened bluejay. As soon as the little group arrived at the destination, the bluejay immediately began to plan his strategy -- based on when the door would open, how long it would stay open, the approximate distance to the bag on the wall from the door, how high the bag was hung from the floor and so forth. Oh yes! Everything must be perfect, for does not destiny hinge on these moments? Was he not the world's most important person especially at this time?

Finally the moment was here! Muscles flexed, head bent forward, ready to dart in the split moment the door began to open, sharp eyes fixed upon the swinging door, bluejay was timing the opening of the door to the split fourth second.

Shut! Open. Shut! Now! With the agility and speed of lightening, the bluejay darted in before the animals within knew it, grabbed the bag on the wall, darted out again even faster than he went in.

He was almost all the way out when - slam! The door had closed on the back of his head. The tribesmen ran forth to pull him, forgetting the door would open again. With one huge tug, the bluejay was freed from the door that would have released him, anyway. During the struggle, the bag dropped to the ground and the daylight spilled over the entire earth.

As daylight enveloped the village the bluejay had left a tumultuous powwow rang throughout the land in great rejoicing. The drum beats were fierce, the songs loud and clear, there was plenty to eat, the dancing and feasting was to last for days and days, for light had come to a dark land and all was gladness.

To this day, the bluejay has the same peak on the back of his head as a result of the slamming door that momentous day that daylight came to a dark land.

THIS IS WHY BEARS EAT ANTS

After the bluejay had succeeded in procuring the daylight for the land, there was yet another problem -- that of giving the days and nights their specific times. This problem was settled by the bear and the ant.

The bear and the ant met one day somewhere in the forest. The people had grown tired of the constant daylight and Du-quee-buth (Great Spirit) had given the bear and the ant the opportunity to settle the problem.

When they met, they immediately began to quarrel about how the night and day should be divided. The bear said in a slow, monotonous voice:

"There should be day; then a long, long night."

The ant, with vigor and in an exceptionally lively voice, countered:

"No, I think there should be night and day, night and day, night and day. I think day and night should be divided almost equally."

The bear continued his argument in the same low, monotonous tone of voice, sounding as though he would fall asleep almost any moment. "There should be day, then a long, long night," he repeated.

The ant tightened his belt around his already tiny waistline and replied with all the vitality he could gather for such an important occasion:

"Night and day, night and day, night and day!"

"There should be day, then a long, long night," bear continued, this time with nodding his head, for he was bored and what was more, he was sleepy.

The ant, still not satisfied with the sound of his voice or the size of his waist, continued his mean pace. The bear was soon fast asleep, and the tiny ant was still arguing, apparently with himself.

Well, Du-quee-buth presently approached the arguing duo and, seeing that the bear apparently had fallen asleep, nudged him on the shoulder. When the bear looked up rather drowsily, Du-quee-buth gave the winning nod to the ant.

The bear stood up in anger (he was wide awake now!) and began to berate his tiny opponent.

"Everytime I see you in the future, I'll eat you!" he shouted, raising his huge paw as though to strike the ant. Du-quee-buth interfered, telling the bear to continue with his rest.

To this day, the ant is still the tiny, slim-waisted fellow with the quick, darting movements, and the bear is still as big and slow as ever. And what is more, the bear still sleeps all winter long, in spite of who won the argument.

The first thing that the bear does upon emerging from his winter's sleep is to search out the first old stump and, with one swipe of his mighty paw, destroys the home of the ants. They run helter-skelter in every direction, and the bear, remembering the argument that he lost, puts them into his mouth as he had promised he would, eating them for part of his dinner.

VIDEO TAPES ON INDIANS IN WASHINGTON STATE

All Things Connected, produced by the Northwest Indian Fisheries Commission,
Olympia, Wash. Shows the relationship between traditional Indian culture, the fishery resource and the environment. 20 minutes.

Come Forth Laughing: Voices of the Suquamish People, produced by the Suquamish tribal Museum, audio-slide show on tape of their history.
30 minutes.

Full Circle: The Story of Indians in Washington State, KIRO-TV documentary produced for the Washington State Centennial-1989. A contemporary overview of some of the cultural, economic and environmental contributions of Indian tribes. 45 minutes.

The Jamestown Klallam, A Strong People, produced by the Jamestown Klallam tribe near Sequim, Wash., as a state centennial project documenting their history. 20 minutes.

Legacy of the Salmon People, NWIFC produced documentary on historic and contemporary relationship of Indian tribes to fisheries. 20 minutes.

Voice of the Elders, Joint production of NWIFC and KIRO-TV, a documentary of the Indian elders council on the past, present and future environment during the 1990 Goodwill Games Powwow at the Tulalip Tribes'longhouse, 45 minutes, available November,1990.

Water Borne, Suquamish Tribal Museum audio-slide show on tape of the origins and culture of their tribe. 20 minutes.

THE ABOVE VISUAL AIDS ARE AVAILABLE THROUGH THE FOLLOWING SOURCES:
NWIFC, 6730 Martin Way E., Olympia, WA 98506, (206) 438-1180, The Washington State Library or the individual tribes.

SUGGESTED READING:

Art in the Life of the Northwest Coast Indians, Erna Gunther, Superior Publishing Co., Seattle, 1966.

Cedar, Hilary Stewart, Douglas and McIntyre Publishers, Vancouver, B.C., 1984.

Cooperative Management of Local Fisheries, Edited by Evelyn Pinkerton, U. of British Columbia Press, 1989.

Custer Died for Your Sins, Vine Deloria, U. of Oklahoma Press, 1984.

The Gift: Imagination and the Erotic Life of Property, W. Lewis Hyde, Random House, New York, 1983.

Indian Givers, Jack Weatherford, Ballantine Books (Random House), New York, 1988.

Indian Fishing: Early Methods on the Northwest Coast, Hilary Stewart, U. of Washington Press, Seattle, 1984.

Indian Legends of the Pacific Northwest, Ella E. Clark, U. of California Press, Berkeley, 1953.

Indians of the Pacific Northwest, Robert H. Ruby and John A. Brown, University of Oklahoma Press, 1981.

Treaties on Trial, Fay G. Cohen, U. of Washington Press, 1986.

Uncommon Controversy, American Friends Service Committee, U. of Wash. Press, 1974.

LESSONS ARE FOUND IN THE FOLLOWING DOCUMENTS

CLEAN WATER STREAMS AND FISH, A HOLISTIC VIEW OF WATERSHEDS:
by SPI, Environmental Programs

Life Cycles /Biological Phases, pg. 9
Start of a New Cycle, pg 20-22
What Causes A Stream To Happen, pg. 72
Watersheds, pg 73
Runoff & Water Quality, pg. 167
Crowds Bring Floods, pg. 172-175
Salmonids and the Riparian Zone, pg. 244-245
U.S. v Washington (Boldt decision) Phase I, page 291-296
Fishland, Bolt 2, page 297-299

NATIONAL WILDLIFE FEDERATION
editor, Judy Braun, 1982

Forest/Watershed Management, pg. 41-42

PROJECT WILD
Washington State Dept. of Wildlife

What You Wear Is What They Were
A History of Wildlife Management, page 155-157
Philosophical Differences, pages 39-40

UNDERSTANDING INDIAN TREATIES AS LAW
Superintendent of Public Instruction, Dr. Brouilett, 1986

Treatytime - A Game of Cross Cultural Negotiations,
pages 19-27
III The Fishing Rights Controversy, page 55
Fishgame, pages 39-51
Desert Island - A Game of Survival Through Collective Action, pages 33-37

ACTIVITIES CREATED BY PLT INSTRUCTORS

Pictionary
Graphic Topography
Call in the Experts
Wondrous Washington
3-2-1 Contact