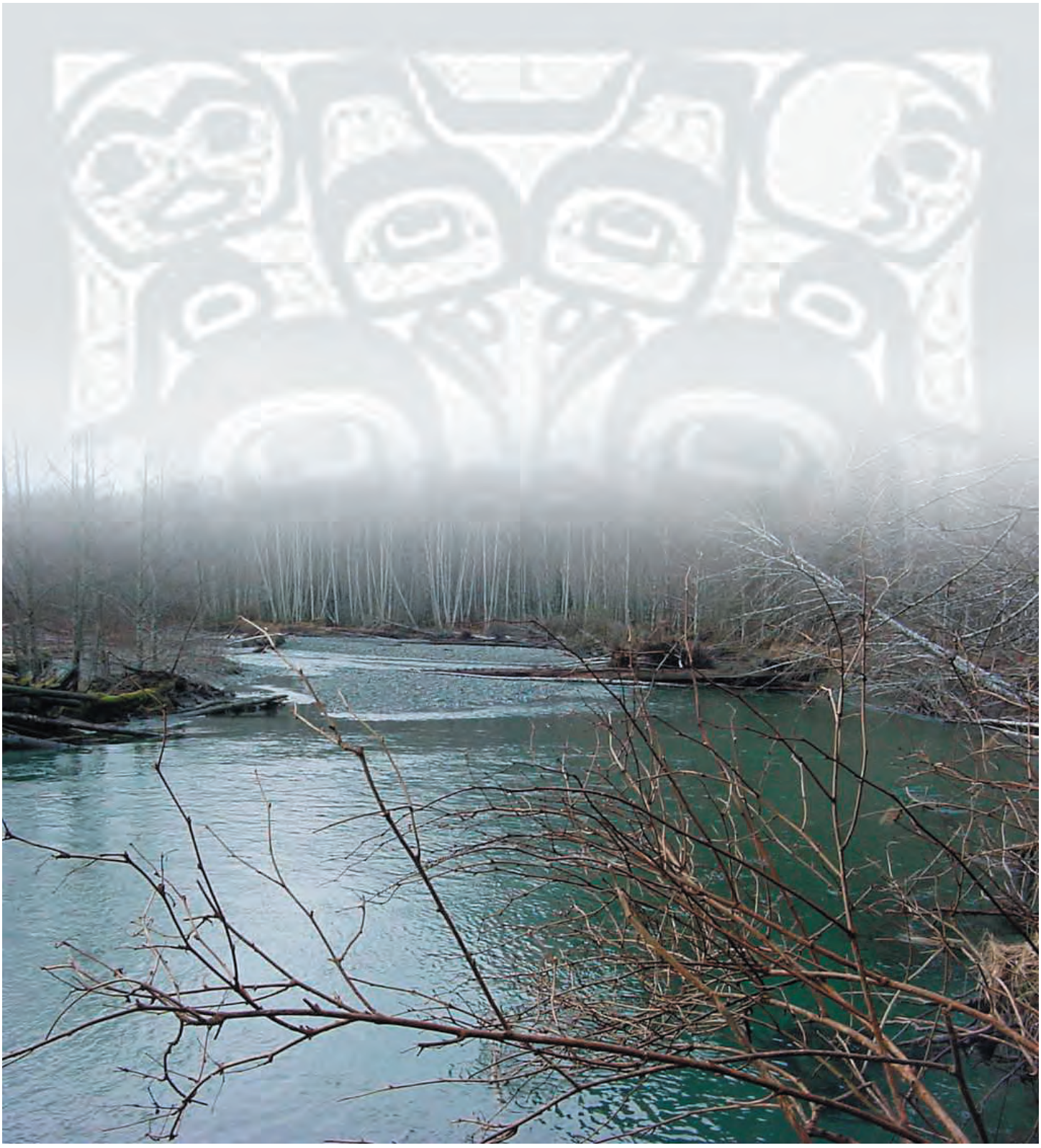
Katlian Watershed Assessment



Cooperatively produced by
Sitka Ranger District, Tongass National Forest &
Sitka Tribe of Alaska

October 2003

Sitka Tribe of Alaska

Sitka Ranger District

The Sitka Tribe of Alaska (STA) and the USFS Sitka Ranger District are pleased to announce the completion of the Katlian Watershed Assessment. This document represents a considerable effort to combine scientific and Traditional Ecological Knowledge (TEK) in the assessment of watershed health, aquatic and wildlife species habitat and the identification of restoration opportunities. This watershed assessment will be used to guide restoration, stewardship and regulatory compliance efforts by landowners, agencies and watershed advocates.

The assessment has been in development for the past three years by the Sitka Tribe of Alaska and the USFS Sitka Ranger District. It uniquely consists of oral interviews with local Tlingit and Tribal Elders and other past and present users of Tl'ayáak Héen (Katlian). Quotes from these interviews were used throughout the assessment to help highlight survey data results collected by STA and USFS field crews. The interviews provide a historic perspective to the changes in species composition and habitat witnessed from pre to post management times.

Finally, the authors, staff and management of the Sitka Tribe of Alaska and the USFS Sitka Ranger District would like to sincerely thank the Tribal Elders and community members who participated in and contributed to this document. Very special thanks also to Shee Atiká Incorporated, whose help and commitment made much of the needed survey data and work in this report possible.

Gunalchéesh! (Thank You)

SITKA TRIBE OF ALASKA

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Yuk ay ee yuh ah yuh. Ah shuk uk too see ah.
"This is a good place that we should anchor."

David Davis II – Tlingit Elder

Introduction and Purpose:

The need for this assessment is based on the importance of the area and its resources to local residents combined with its history of timber harvest that may have effects on these important resources. It was out of concern for the preservation and continued use of the resources for current and future users that this assessment was conceived and produced collaboratively by the Sitka Tribe of Alaska and the United States Forest Service. This assessment provides an overview of the watershed and its resources, both historic and present. This overview includes oral accounts of several local Tlingit elders and local individuals who have first hand knowledge of Tl'ayáak Héen (Katlian). Furthermore, this assessment recommends restoration and management opportunities to improve stream habitat and water quality.

Watershed Overview

The Katlian watershed is located in Southeast Alaska, on the west side of Baranof Island, approximately 8 to 10 miles north of Sitka. Approximately 93% of the 37,384 acre (58.4 mi^2) drainage area is public land, managed by the Forest Service for multiple use recreation and timber production, among other uses. The remainder of the watershed is owned by the Shee Atiká Corporation and primarily managed for timber production.

The watershed is characterized by high rainfall, steep topography, and small proportion of valley bottom area relative to higher slopes. The valley supports abundant fish and wildlife, including large salmon runs, deer, goat, and bear, as well as marten and other furbearers. Katlian's close access to Sitka and abundant resources are why many people use the area. Native people of this region have used the valley for hundreds and likely even thousands of years.

Shortly after the turn of the 20th century, several Presidential Proclamations between 1902 and 1906 created what is now, the roughly 17 million-acre Tongass National Forest. This change in ownership to Federal control, along with few granting's of land use claims under the Alaska Native Allotment Act of 1906, has greatly reduced local Tlingit family and Tribal traditional use areas which have been used for generations. Despite this change in ownership, traditional use in many areas without explicit ownership continued until the mid to late 1940's when many seasonal subsistence camps deemed unoccupied, were torn or burned down. Many areas, including Katlian, were abandoned for subsistence gathering after this time period.

In 1971 the Alaska Native Claims Settlement Act (ANCSA) was signed into law. Under ANCSA, the Shee Atiká Corporation was formed and selected 2,557 acres in the lower Katlian valley and retains the above and below surface rights. Although these lands are once again in native ownership, management of these lands under a corporate structure often differs from the subsistence lifestyle of old.

Large-scale logging occurred in portions of the watershed in the early 1960's prior to ANCSA, removing more than 120 million board feet of timber. This included large diameter spruce and hemlock trees that were located primarily in the valley bottom areas.

Disturbance and Current Floodplain Vegetation

Valley bottom channels in the Katlian watershed are dynamic due to powerful stream flows. This promotes undercutting of tree root systems along the stream edges and in the flooded bottomland areas during heavy rainfall and high stream flows. Undercut trees often fall into channels and create structural fish habitat as they move and stabilize within the streams.

The main channel migrates regularly, changing its path throughout the floodplain area. Heavy rainfall combined with steep slopes that lead to the valley bottom produce large flood events that promote shifts in the river channel. These flood events carry large sediment loads that eventually settle out in the floodplain of the river, establishing new gravel bars where the river turns and reduces its speed.

Approximately 3,270 acres were logged in the 1960's, primarily in the valley bottoms using clearcut prescriptions without stream buffers. Large conifer trees were removed along most of the lower reaches of the Katlian Rivers and their tributaries in the lower valley area. About half of the valley bottom trees were harvested, depleting future sources of available large wood for the main river channels. About half of the total productive forest is currently in a small tree size class, mostly in 35 to 40 year old stands that established after logging. Red alder trees dominate much of the floodplain, overtopping younger conifers and suppressing their growth and vigor. Current young-growth conifer trees are dense and slow growing.

Comparison with Pre-Large Scale Harvest Conditions

The amount of forest within the harvested areas dominated by large conifer trees (crown diameter >= 36 feet) was reduced from 69% before harvest to 13% after. This coincides with the large increase in both small conifer and red alder dominated stands.

Frequent shifts in the main channel due to flood events and associated sediment regularly create new non-forested gravel bars. Although the size and occurrence of these gravel bars change over time, their overall area has remained approximately the same.

Stream Habitat Trends

Timber harvest and road construction removed most streamside trees along 17.5 miles of fish streams (37% of Class I and 8% of Class II). There has also been harvest along the banks of larger non-fish (Class III) streams that directly influence downstream fish channels. The loss of large streamside riparian trees will decrease future large wood input into these streams for many years. This loss of forested riparian vegetation can have the following effects on the channel:

- Reduced bank stability
- Loss of temperature moderation
- Loss of overhanging bank cover
- Change in type and quantity of leaf litter and terrestrial insects to the channel
- Decreased input of large wood

These changes, along with the possibility of increased sediment input, can reduce the amount and quality of fish rearing and spawning habitat.

Xaat, uh tai ee yay uh tee.
"*The fish are under the rocks or trees.*"

David Davis II – Tlingit Elder

Most streams still have abundant amounts of old large legacy wood, still in place from before timber harvest, however the condition of the impacted streams in the watershed will decline as the older in-stream wood and streamside stumps decompose, and are washed out of the system. This process will have the greatest impact on species such as coho salmon and Dolly Varden char, which spend several years of their life cycle rearing in streams.

Management Guidance and Restoration

Although timber harvest reduced the amount of old-growth canopy and increased red alder dominated stands, existing data indicates this disturbance has not yet dramatically changed the stream channels. The large wood supply in the stream channels, other than the main channel, is currently adequate to high as compared to the USFS R10 Fish Habitat Management Objectives.

Timber harvest in the valley bottom areas removed large amounts of productive forest along many stream banks. The decrease in the amount of large conifer trees, and the increase in small conifer and red alder trees in this area after logging indicate a loss of future large wood sources for the stream channels. As the existing current large wood in the streams breaks down and moves out of the system, there will likely be a shortage of large trees for many years to replace those structures. There will be a period of time when the quantity of large wood in some streams sections will likely become insufficient to maintain high quality fish habitat.

Existing old-growth trees, as well as larger young growth located in the valley bottom riparian areas should be left intact until the surrounding young-growth forest is of adequate size to contribute structure to the streams. Young-growth stands can be thinned to produce healthy larger diameter trees to provide future stream structure and habitat in a more expedient manner than will occur naturally.

Stream reaches that already have a shortage of large wood, but have the potential to provide high quality fish habitat could benefit from the placement of large wood structures. This work should focus initially on smaller tributary stream channels where it is more likely to be successful. Very large key pieces of wood are necessary to anchor and function in the large main channels.

Over 17 miles of roads were constructed in the Katlian watershed between 1960 and 1965 in support of the logging activities at that time. During a recent low intensity survey of the road system in 2001, a total of 42 stream crossing sites were identified. Of these 42 sites only one appears to obstruct fish passage and one potentially contributes significant sediment load to a fish (Class I) stream. The low impact levels are primarily due to the fact that most of the drainage structures (bridges and culverts) were pulled out years ago, allowing stream channels to re-stabilize. Future road maintenance restoration work should include placing drainage structures and/or ditching at existing washout sites, cleaning or removing partially plugged culverts that remain, and removing artificial barriers to fish passage.

> *"This river changes bed, it's bed every year. In other words, after a spawn and next spring after a runoff, you might find a different riverbed there…"*
>
> **Mark Jacobs - Tlingit Elder**

This assessment documents information collected, reviewed, and analyzed to help evaluate current conditions in the Katlian watershed. Its purpose is to give:

- An overview of how the watershed and its resources have been affected over the past few decades. This includes the oral transcription accounts of several local individuals;
- A description of the current condition of the Katlian watershed; and
- A list of opportunities for restoration and future management of stream habitat and water quality.

The Katlian Watershed Assessment was designed to combine local traditional ecological knowledge held by long-time residents of the community of Sitka with information from fieldwork, and new and existing resource management data for the Katlian watershed system. The goal is to establish Management Guidance and Restoration Opportunities for the Katlian River watershed.

Information provided in this assessment may not follow the contemporary format for watershed analysis. For example, a key component of the assessment are interviews, perspectives and accounts of local users of the watershed who were able to provide a history of developments tied to Katlian. These are personal and honest opinions regarding historical actions that shaped the Katlian watershed and are important in understanding the cultural and social values associated with it.

Thus, while the Katlian Bay Watershed Assessment should be regarded as a technical watershed analysis, it must also be understood as an effort to document social, cultural and historical geography for a small but very important local watershed. Whether or not you agree with every personal quote, perspective or management prescription, we hope the reader can respect the value of this collaborative approach to improving our understanding of the Katlian River, known as Tl'ayáak Héen to the Tlingit people.

Brief Overview of Watershed

Lower Katlian Watershed. (Photo courtesy of Shee Atiká, Inc.)

> *"You can even go into Katlian and not run into people, it's so big. You can see four, five boats anchored in there, right on the beach, and still not run into anybody."*
>
> **Erin Kitka**

The Katlian watershed is located in Southeast Alaska, on the west side of Baranof Island, approximately 8 to 10 miles north of Sitka (Figure 1). The drainage empties into Katlian Bay, and is located within the Tongass National Forest, Sitka Ranger District. The watershed has been delineated into Main Katlian and South Katlian to simplify assessing the condition of these two primary drainages.

Main Katlian is a large watershed of 29,014 acres and South Katlian (located just south of Main Katlian) is 8,370 acres. Approximately 93% of the entire watershed is public land, managed by the United States Forest Service. The current management direction for the area is identified in the 1997 Tongass Land and Resource Management Plan (Forest Plan), and includes Semi-Remote Recreation (17,874 acres) and Timber Production (15,361 acres). Shee Atiká Corporation owns approximately 2,557 acres, which is primarily managed for timber production.

Figure 1. Project Area Vicinity Map.

Figure 2. Customary and Traditional Use Territory of the Sitka Tribes.

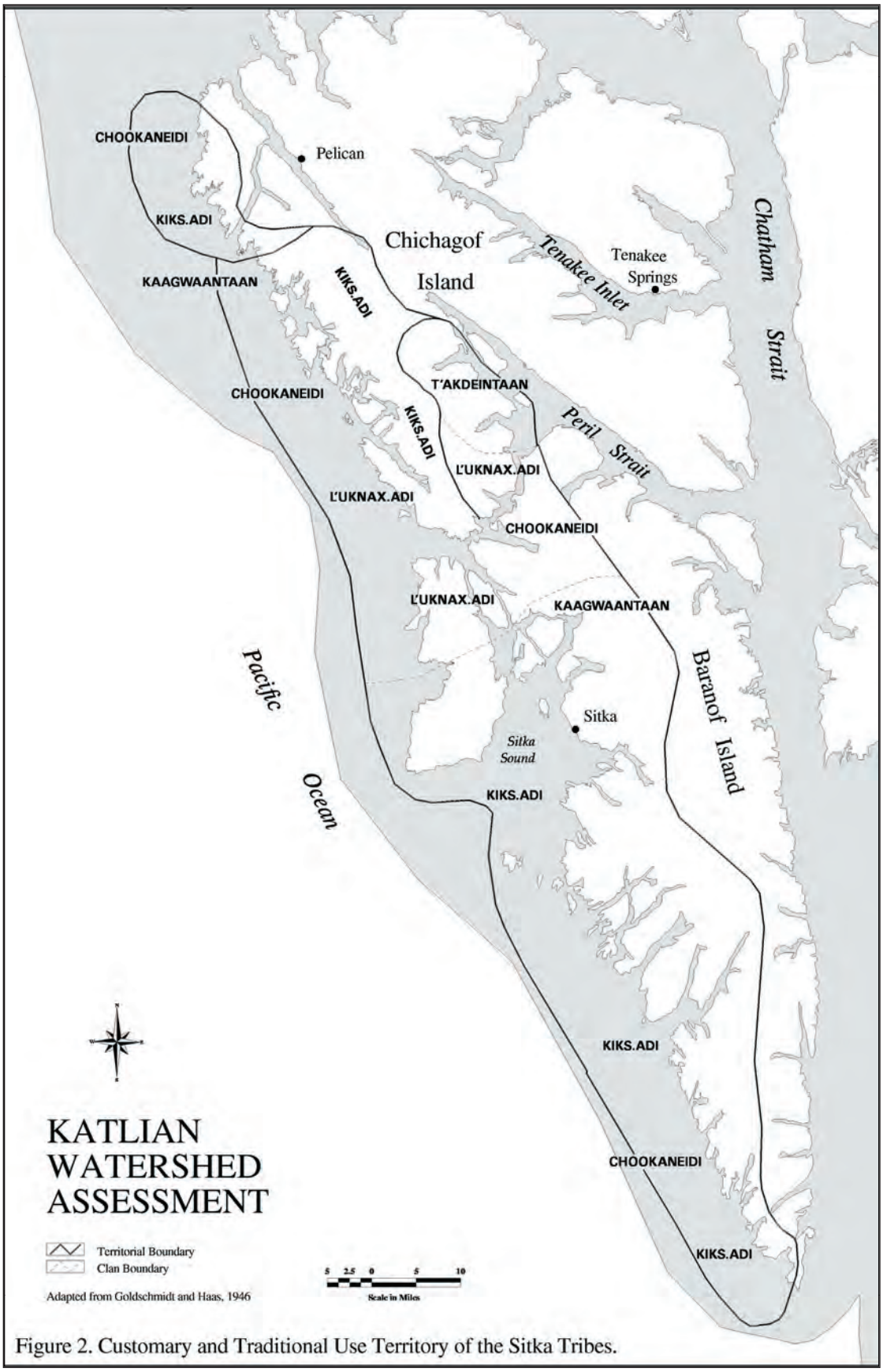
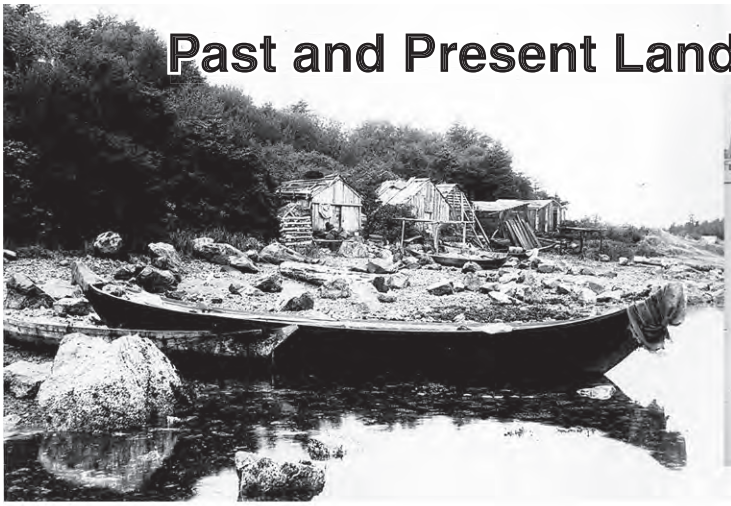


Figure 2. Customary and Traditional Use Territory of the Sitka Tribes.

Past and Present Land Use of Tl'ayáak Héen



Interview Explanation

To help determine the actual use and history of the area by local residents, Sitka Tribe of Alaska conducted interviews with several long-time residents of Sitka (native and non-native). This information gives us insight into the history, culture, use, and the valley's condition in the past and today, according to people who have spent most of their lives in the area. The following sections include descriptions, observations, or opinions from these interviews, relating to the information in that section. Please see Appendix A for a complete record of the interviews.

Tlingit Culture and Background

Tl'ayáak Héen (Katlian River)

Tlingit people two or more generations (50 to 75 years) ago had a different relationship with the land than most people have today. For one thing they lived on the wild lands of the present day Tongass National Forest. This gave them an inherent respect for Haa Aaní (our land). This feeling was further ingrained in them by the Tlingit culture, which strictly taught respect for and a spiritual connection to the wild animals, fish and plants that lived on the land (or in the oceans and streams) alongside the Tlingit people. The relationship between Tlingits, their land and the wildlife is too deep for a short discussion. It would be impossible to describe in this report, so we will not claim we know all about it and can describe it.

When the Tlingit elders speak of their memories about a place such as Tl'ayáak 'ak (Katlian Bay), they do not always speak in a politically correct and scientifically acceptable fashion. The elders will sometimes speak directly and without apology if asked in a respectful way by people they trust. When they speak that way in their Tlingit language, it is best to listen attentively because you are watching a passing culture, which can be an almost spiritual experience for those who belong to, or care deeply for native cultures and traditions. Their spoken memories are not often accepted as fact in scientific circles. This is often a shame, because like the saying goes, "they have forgotten more than we will ever know [about the land]."

The Tlingit culture has survived in a harsh environment without modern amenities for millennia. In doing so, a cultural and genetic approach to the land was established that balanced human interaction with environment in a way that modern forestry and fisheries harvest, management and research techniques have yet to achieve.

When a Tlingit elder speaks openly of his memories of Haa Aaní, his or her memories will not always agree with Federal, State, local or other historical agency data. This can be explained two ways:

1. Tlingits were here long before fish and game resources were so heavily harvested and sometimes depleted as they have been in recent (20th Century) times, and

2. Knowledge of those more plentiful days and close association with the land has been orally passed on to the present day Tlingit elders.

As a result, that generation of Tlingits is acutely aware of changes in their environment. If an apparent contradiction (for example between recent USFS / ADF&G / STA data and Tlingit elder testimony) occurs in this report, we leave it to the reader to decide which account is more credible.

Contemporary Tlingit Elder's Memory of Tlingit Use and Occupancy of Tl'ayáak

David Davis II gave the following Tlingit language account of the Katlian River watershed. Mr. Davis is a Tlingit Elder from Sitka, Alaska. Although his clan (L'úkuax.adi) was not the traditional steward of Tl'ayáak Héen, Mr. Davis frequented the area and knows for what resources Tl'ayáak Héen was and still is valued.

David Davis says first in English:
"Just like I told you, we use to go up there in January to get our cohos . . . We would make some dry fish. We used to be a very good hunting family. The whole river basin used to be like this table, flat. Big timber. Nothing to step over. We use to get a lot of deer out of that bay. We use to get our winter fish out of there too. We can't do that now."

"Why? Two reasons. What the fish and gaming people don't know is from place to place the deer, fish all have different taste. Now if you go some place. Watch it sometimes. And the taste will change."

"The Fish and Game gave us only one place to get our sockeyes – Redoubt. Same way with the fish. Go to a different place and the flavor will change. The cohos we used to get out of Nakwasina. The winter cohos. You'll never find that again, never. And now we can't . . . the Fish and Game was on my back there last fall when I was trying to get some fish out at our camp up there in Hoonah Sound. Just to get some boiled fish and they wouldn't even let me do that."

[Interviewer asks: "You couldn't get humpies?"]
Nope! They stopped it right there. "If you get fish, we are going to arrest you."

Then, when asked to speak it in Tlingit language, Mr. Davis gives the following account of his memory of Tl'ayáak Héen:

Yaa adaat yoo x'ayeetani <u>G</u>eey.
The bay that you (all) are talking about.

Yáa aadáx áyú wé héen yikda<u>x</u> táakwx' <u>G</u>ewu aadéin too.a<u>x</u>yin.
We used to get [fish] from the river in the winter.

Wé de <u>G</u>uwuteen áwú yan tusa yé<u>x</u>jin January yát.
We would take the seine there. We would set the seine in January.

Aaá, taakw eetíx' áyú áa atoolóonin <u>G</u>uwakaan.
Yes, in the spring we would hunt for the deer.

Yóo a taaká yá<u>x</u> yatee yú héen yikt.
The place would be flat around the river.

Daá sáwé a kaaná<u>x</u> ka <u>k</u>a<u>x</u>toolyaas.
How would step over things?

Ách áyú kunax auy k'éiyin yu aadax xaat ka yú Guwakaan dleiyi.
The fish would always taste good from there, and the deer meat.

A áyú too. Eenín yú <u>G</u>uwakaan <u>k</u>a yóo l'ook, ha Jahuary yá.
We hunted the deer from there and the cohos, also. In January.

Aa<u>x</u> áyú at <u>x</u>'eeshi tula yei<u>x</u>in yú l'ook.
We would make dry fish from the cohos.

<u>K</u>una<u>x</u> k'éiyin aada<u>x</u> l'ook.
It tasted very good from there.

Tlingit Possessory Rights to Tl'ayáak

The Tlingit people of Southeastern Alaskan have a long and unbroken history of occupation of the myriad of islands and coastal communities of the Southeast Panhandle of Alaska. While it is likely that the rising ocean waters associated with the melting of the glaciers from the last ice age destroyed many ancient archaeological sites, the archaeological record for Baranof Island begins at least 10,000 years before present. Beginning in the 1700s traders, merchants and explorers began traveling to Southeastern Alaska and in 1867 the United States purchased Alaska from Russia.

However, it was at the turn of the 20th Century that life began to change for Alaska's indigenous people at an accelerated rate. Through a series of Presidential Proclamations executed between 1902-1909, President Theodore Roosevelt established the Alexander Archipelago Forest Reserve. Eventually the President would create a 17 million acre National Forest from lands, which had previously been under the stewardship of the Tlingit and Haida nations since time immemorial. In 1906, Congress passed the Alaska Native Allotment Act in an effort to provide some opportunity for Alaska's indigenous people to retain possession of lands that were being privatized and/or put into the hands of governmental entities.

The Allotment Act mandated that a successful applicant be a head of household and document in his or her claim, exclusive *personal* use of the requested lands. However, the concept of exclusive personal land ownership and disrespect for ancestral use was in direct opposition to traditional Tlingit land stewardship practices and many potential allotments were denied due to the applicant citing ancestral and family uses of requested lands. The concept, acknowledgement and requests of individual native ownership of these lands, has largely gone unanswered by the United States Government. Out of 45 allotments filed within the Sitka Tribe's traditional territory (Figure 2), to date only seven have been certified.

Starting in this era, certain businesses in Sitka and other areas of Alaska posted 'No Indians Allowed' signs on their doors. According to one Tlingit Elder, a sign bearing this insult was often posted in front of the land office building where allotment applications were to be filed. Another account dating from this era suggests that allotment applications were simply dumped in a desk drawer until the pile grew too large at which time the applications were discarded.

Additionally, while small non-native settlements were protected from being incorporated into the Tongass National Forest, this same consideration was not afforded similar small Tlingit and Haida settlements. One such Tlingit settlement was located at *Daxéit*, located north of Katlian Bay in Nakwasina Sound. Daxéit is a traditional territory of the Sitka *Kiks.ádi clan*. Many Kiks.ádi stories and legends originate from Daxéit and attest to the long history and the importance of Daxéit to the Tlingit people. Further, these stories preserve and teach local geography, natural resource conservation and respect while capturing the original Tlingit names of the traditional territory of the *Sheetká Kwáan*, the traditional territory of the people of Sitka/*Sheetká*.

In 1946, the Federal government issued a report as an Indian land claims document entitled, "Possessory Rights of the Natives of Southeastern Alaska." The report was prepared by anthropologist Walter Goldschmidt, and attorney Theodore Haas. Both were in the employ of the United States government and their assignment was to document Tlingit ownership rights of places like Katlian Bay. The results of the report indicated the Tlingit Indians did indeed have such rights.

The following excerpt from their report, is from Goldschmidt's interview with *Thomas Sanders*, who later became the recognized leader of the Sitka Kiks.ádi clan of Tlingits:

> *A Sitka woman married a white man and settled at the mouth of Katlian River. In later years a dairy was established there but it is now gone. The area is valuable to the Sitka Natives for its salmonberries, its deer, and its many fish. It is*

particularly important because the cohos run as late as Christmas, and it is the best place for the Natives to get fresh fish late in the season. (Thomas Sanders #56)[1]

George Lewis was the recognized leader of the Sitka Kiks.ádi clan at the time the Goldschmidt and Haas report was compiled. His account of Katlian Bay is as follows:

There were smokehouses at Katlian Bay, which belonged to the Kiks.ádi. Got humpies, dog salmon, mountain blueberries, salmonberries, and wild currants. The humpies were obtained from the Coxe River. We also gathered a potato-like root there called tséit. We went up the head of the river to get cohos because they taste better. We still go there to fish, but we bring them back here to smoke them.

Past Kiks.ádi clan use and ownership is established in Katlian Bay. However, it has not been fully recognized and the creation of the Alexander Archipelago Forest Reserve in 1902, and eventually the Tongass National Forest, further obscured Indian possessory rights to this land. Historically, natives were evicted from their ancestral homes by the War Department and the United States Forest Service during and after World War II, when it was common practice to burn down tribal fish camps deemed unoccupied. These fish camps were actually food processing locations that had been in active seasonal use for generations upon generations. Tlingit "shacks" and smokehouses were burned and torn down, while no one was home. Many local people stopped making the Katlian Valley their subsistence camp after logging operations moved in.

"We kept going up there until the Pulp Mill opened up. The loggers moved in and they destroyed my camp. So we quit going there."

Herman Kitka, - Tlingit elder

Regardless of these unfortunate acts during this period of history, Tlingit Indians still have a tie to Tl'ayáak today. Shee Atiká Corporation and Sealaska Corporation have title to the above surface and below surface rights to Tl'ayáak. This dual ownership by two corporations is nothing even remotely similar to the customary and traditional lifestyle of Tlingit Indians of past millennia. Corporate ownership is often driven by motives other than the subsistence lifestyle of old. But there are still some Tlingit elders who remember frequenting Tl'ayáak. They remember how it was. Their memories are of an almost paradise-like land of plenty.

It was out of the significance for these facts that the Sitka Tribe, in collaboration with the United States Forest Service, conceived this watershed assessment. The Sitka Tribe was funded by the Environmental Protection Agency, while the United States Forest Service provided its own funding and staff expertise to participate in this project and the Shee Atiká Corporation permitted access to its private land holdings at Katlian Bay. Finally, the authors of this assessment wish to sincerely thank Tribal Elders and community members who participated in this project and shared their unique perspectives regarding the Katlian River watershed. Gunalchéesh!

Shee Atiká Land Selection

"Then there comes along the land claims [ANCSA] and Shee Atiká selects her lands in Katlian Bay."

Mark Jacobs - Tlingit Elder

The Alaska Native Claims Settlement Act (ANCSA) was signed into law in 1971. This piece of legislation established 13 regional corporations, over 200 villages, and four urban corporations across Alaska. As one of the urban corporations, Shee Atiká received no cash as part of the settlement, but was given the option to

select 23,040 acres of land within fifty miles of Sitka. Because there was no cash settlement, Sitka's new native corporation needed to select lands that would turn a profit for its shareholders.

Shee Atiká Corporation currently owns approximately 2,557 acres (7%) of the area. This had been National Forest lands, but in 1971, the land selection of this area by the corporation was completed.

Many factors went into the reasons the Shee Atiká Corporation selected this land in Katlian. There are differing accounts of why lands around Katlian were selected by the original Shee Atiká Board. Ted Borbridge is a local Tlingit Elder, and was on the Board of Directors at the time of selection and remembers some of the discussion that led to the decision.

> *"…you ask me today we picked it for proximity to the native community. Maybe build homes out there, and it never came-to-pass. I think we had a number of discussions to the pros and cons. Number 1, being access. Number 2, was timber."*
>
> *"We reasoned that the reason for selecting that land was for shareholders receiving some of that land; maybe an acre or half an acre. They could build their own home. That never came-to-pass…"*
>
> *"…but we had a vision, if you will, of building five homes in Katlian and maybe a central building to use as the …community house. The vision we had for this, we would build five homes in if any of these [people] had a drug problem or alcohol problem; instead of just bringing him or her, bring the whole family."*
>
> *"But that's what we envisioned. Bring families, not just that person out. Bring the whole family and they can realize what the person is going through and somebody can say in the back of their head… the right word that can get them on the path to healing. So that's what we had thought about, and it never came about."*

Herman Kitka, also a local Tlingit Elder and the original chair of the Shee Atiká Board, had this insight: *"Some of the valleys, it's clear way back in there. Would have made a good ski resource. That was part of our plans for Katlian Bay."* Mr. Kitka also stated the land was *"selected to go along with [the Shee Atiká] hotel."* He said that the idea was that people could be lured to stay in the hotel and go fishing on Katlian River. At that time, there was a relatively new logging road running up the river that would give access to guests. This road has fallen into disrepair since that time.

It is difficult to speculate as to whether or not Katlian lands were selected with any intention at all of logging. Several accounts taken suggest that the technology was not available to log the last remaining valued timber when the land selection was made.

Past Land Use

The Katlian watershed has always been an important resource for Sitka Area Tribal people. Although hunting and fishing were the predominant uses in the memories of Sitkans, a wide variety of activities were reflected upon.

> *"I always wondered what happened to Dr. Moore's cabin. Dr. Phil Moore... built his clinic… two-room cabin. Had a stove in it.*"
>
> **Oliver 'Porky' Bickar**

"Bill Hollywood… when they had horses and cows up there [at Katlian River]… he used to take care of them in [the] off season. He went over . . . hunt[ed] over… hike[d] over the hump here [from Indian River Valley north fork] and go down the South Fork Katlian] River…

They used to take their cows up here [to Katlian River flats] to eat out the grass. He used to start up Indian River and take the Indian River trail. And you'll come to the forks after about 2 miles up and there's a left hand trail that follows the left hand river. You keep following that until you get to the ridge, then you go over the top and then you go down into the creek [South Fork Katlian River]."

Mark Jacobs - Tlingit Elder

" There's remnants of chicken wire; there used to be a sign that says FOX FARM. Some of the wire fence is still there "

Leo Evans

"Well there used to be cut timber. It was old, where they kept marten. Marten fence of 2x4, 4x4 drove into the ground. Chicken wire fence. Marten farm, yea…"

Oliver 'Porky' Bickar

"…They used to have a homestead up there… There used to be a hay farm, or something. Just like when I was a kid they had one where the pulp mill is. I heard about that but I just know it was up in Katlian."

John Littlefield – Tlingit Elder

Abundant numbers of Coho, Pink, and Chum Salmon have attracted large numbers of area fishermen.

"Biggest set we ever made was in Katlian: 3000 fish in 1 set. Humpies. We can't handle 3000 fish at Dog Point. We ended up giving those away. We took to everything we needed from camp. Buck Ellen got his truck. We brought it down [and] filled it up with fish. Started at that end of the village: "You guys want 50 fish?" come get whatever you want. We didn't have anymore when we got down here. They were all fresh fish."

John Littlefield – Tlingit Elder

The Katlian watershed has not only been important because of its proximity to Sitka. It has long been recognized as a great place to go hunting for deer and sheep.

"It was a favorite place primarily because of the heavy timber in there. You could gather in the winter months. It was pretty well protected."

Ted Borbridge – Tlingit Elder

[Did you operate a fish weir in 1976?]
"Yea. We had a weir. I think in South Katlian is where the weir was - not in Katlian. I think it was one that got washed out real quick

Did you know they went in to Katlian to take out gravel? It's nice, hasn't really hurt anything in there. One year I seen herring in there. Low tide went way out and the herring stayed in there.

At any rate, some of these things I don't think really do much damage."

James Parker

Present Use

Katlian Valley as seen from saltwater. (Photo courtesy of USFS – Becker)

"I think we're so lucky Shee Atiká hasn't kept its land to themselves. I mean that's just an awesome place."

Leo Evans

The Katlian watershed is somewhat unique in what it offers Sitka residents and visitors. Katlian's access and abundance of resources are two distinct features that attract a lot of area use. The close proximity to town gives people in the community a place to go for short boat trips off of the limited local road system. The valley supports abundant fish and wildlife, including deer, goat, bear and fish for hunting, fishing and wildlife viewing, as well as marten and other furbearers for trappers.

Many people have used and still do use the area recreationally for hiking, berry picking, and wildlife viewing. All-terrain vehicles (ATV's) are used on the old logging roads in the area for both access to hunting and for recreation. Their use on the Katlian road system is probably lower now compared to immediately following logging when the roads were open and clear of vegetation. However, recent years have seen a resurgence in their abundance. Specialized models, as well as price, has made them more affordable and the popularity of recreational their recreational use has once again grown since their introduction to market. In addition, organized groups such as the Dog Point Fish Camp and Raven's Way have visited the area.

Description of Watershed

Climate

Seew dakw wustaani kunax. Seew dakw wusitaan.

"When it rains . . . It rains!"

David Davis II – Tlingit Elder

Southeast Alaska is within a humid temperate region where cool temperatures and moist conditions prevail year-round (ECOMAP 1994). Temperatures are moderated by the Alaska Current, which circulates counterclockwise up the coast (Johnson and Hartman 1969). Data from the nearest climatic station in Sitka indicate there is only 22.6ºF difference between the mean average temperatures of the warmest (August, 56.7ºF) and coldest (January, 34.1ºF) months. The climate is predominantly cloudy, cool, and wet throughout the year. This station also indicates the average yearly precipitation at Sitka is 87.5 inches. Precipitation occurs throughout the year, with June being the driest month (3.42 inches) and October the wettest (12.60 inches). This station in Sitka is located near saltwater, at less than 50 feet in elevation, approximately 8 to 10 miles south of the Katlian area. The actual climate data within the watershed is likely to be much colder and wetter at higher elevations and further from saltwater.

"it is colder up there, I used to know when I go to work, even the water would be colder than it was in town,…you get up the valley, the difference between camp you know ,and up here would be 10, 15 degrees...you get back up in the hills, sun doesn't get up in it."

Kenneth Kimball

Geology/Geomorphology

This watershed is characterized by the following:

- 7% covered by ice,
- Large elevation ranges with much of the area at higher elevations,
- Small proportions of valley bottom land relative to higher slopes,
- High rainfall,
- Extremely steep topography, and
- Broad valley floodplain (gentle terrain). Percent of valley floor higher than most watersheds in its eco-region (Central Baranof Metasediments).

Landforms

The Katlian watershed lies within the Central Baranof Metasediments Eco-Region, which is characterized by large U-shaped valleys with precipitous valley walls and hanging valleys. Many sediment-laden streams form

floodplains and alluvial fans at the bottom. Almost 50 percent of this ecological subsection is alpine, and only 10 percent is hemlock-spruce forest. The steepness of the terrain limits wetlands (USDA 2001). Glaciers cover about 7% of the Katlian watershed. Both the Main Katlian and South Katlian watersheds are predominantly composed of mountain summits (35%) and very steep, mountain slopes (44%), with much less valley floor and lowlands (14% combined) (Table 1, Figure 3). Both watersheds are noticeably absent of muskeg wetland areas, which is typical for this eco-region (see Vegetation section).

Table 1. Landform Distribution by Watershed.

Landform	Main Katlian	South Katlian	Total (acres)	Percent of Total Area
Glaciers	2529	60	2589	7
Mtn Summits	9994	3089	13083	35
Mtn. Slopes/ Hills[1]	12365	3790	16155	44
Valley Floor	3276	1182	4458	12
Lowlands/ Coastal	649	250	899	2
Total	28813	8371	37184	100

Source: Common Land Unit Cover, Tongass GIS Database, February 2001.

1 Hills comprise a very small portion of this category (<1% of the watershed area). Most is steep mountain slopes.

Figure 3. Katlian and South Katlian Landform Acreage

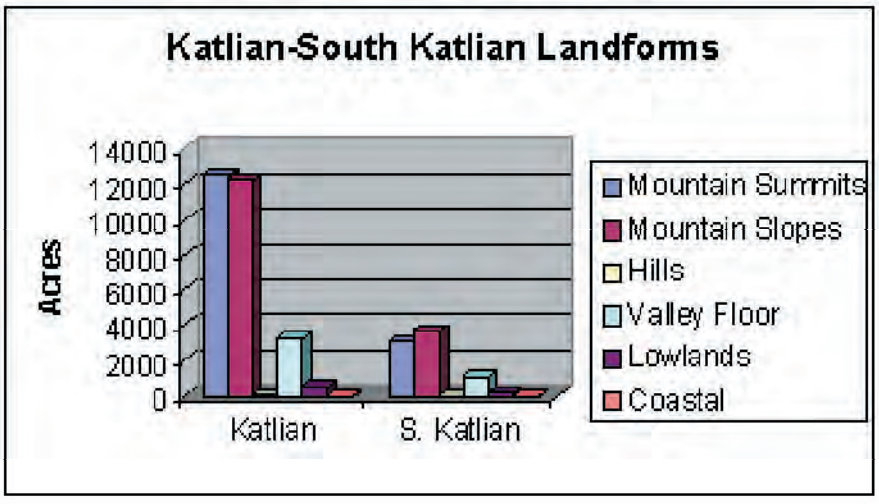
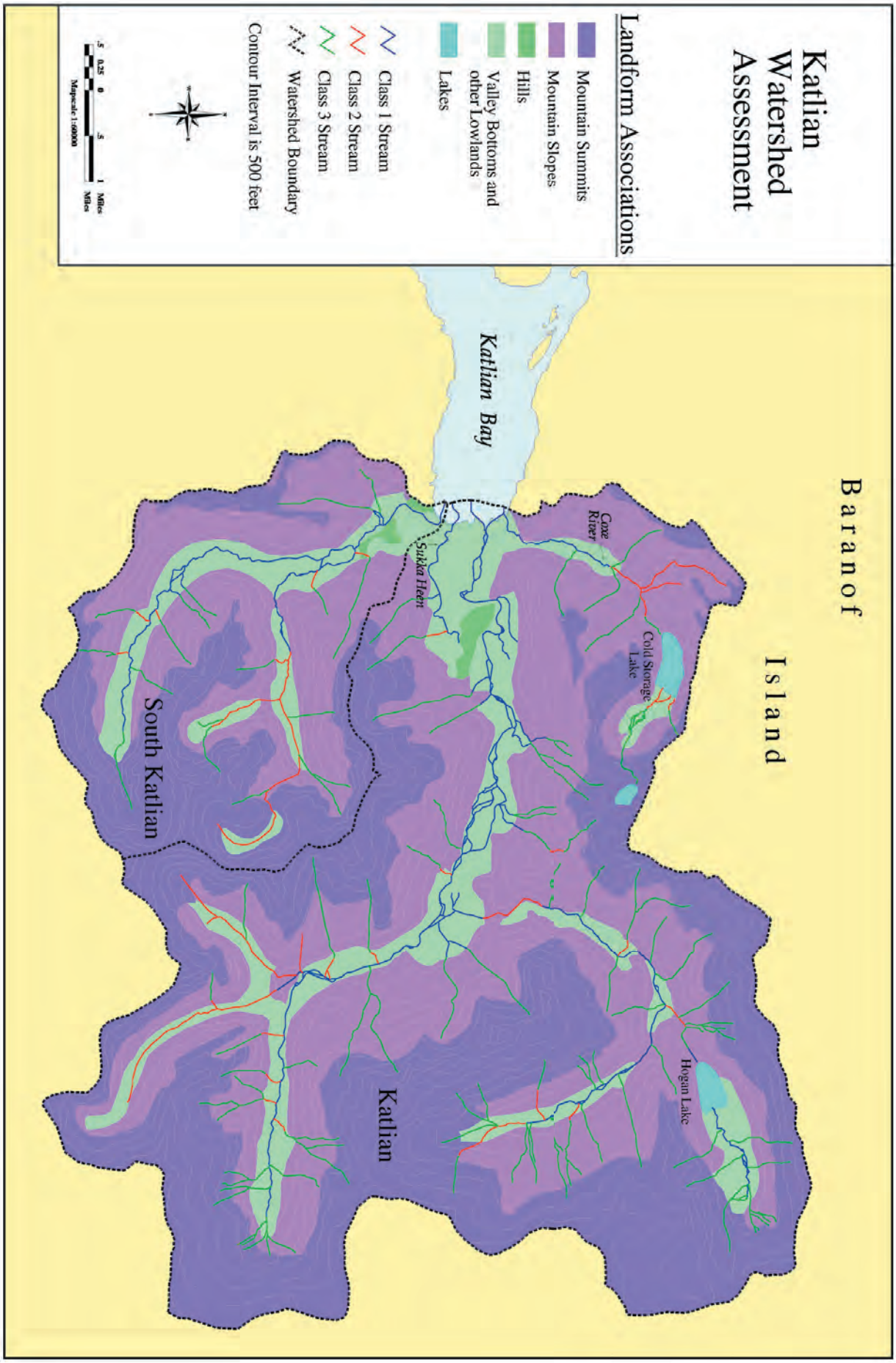


Figure 4. Landform Associations and Stream Classes.



Approximately 74% of the land area in both watersheds has slopes greater than 75%. There are over 1,000 acres of mapped landslides in the area. High proportions of avalanche slopes, and numerous deeply incised V-notch streams indicate the very steep terrain in the watershed.

Landslide along Katlian Bay. (Photo courtesy of USFS – Becker)

"Had some massive slides over the years, I can't remember where they were, had some up here, had a big slide over here, one morning had over 30 feet of snow across the road"

Kenneth Kimball

"…you get great big avalanches that come down these canyons every year, and they bring a lot of material down, in the form of rock and in uh, woody debris, you do, you get an awful lot of stuff and a lot of that is not logging related at all…"

Les Kinnear

High elevation areas (>1500 feet) comprise 67% of the Main Katlian and 55% of the South Katlian watersheds. Rainfall near the higher elevations and at the back of the valleys is likely to be much higher than measured levels at low elevations near saltwater (see Climate above).

Wildlife

Specific wildlife conditions in the watershed were not analyzed as part of this assessment, which focuses on the stream system. However, Katlian's wildlife resources are very important as indicated by the following statements:

"Goat and deer is all I used to hunt. I let the bear alone, and also the late run dog salmon and coho…

Off to the side of the valley and there's a big lake up there – Cold Storage Lake. We used to hunt this area there…"

Mark Jacobs - Tlingit Elder

"Just recreational hunting. The majority of my experience is in there at Boulder Creek. I hunted South Fork many times, not every year."

Leo Evans

"Pre-logging, logging - hunted and fished there, during the logging and after we continue…

Been up all those ridges - basically all the Shee Atiká land hunting.

We used to hunt in Cedar Cove all the time. I got a spot in there that was pretty much [a] guaranteed spot…

My uncles took me in there in the late 50's. I remember going in there late 50s taking fish out of there, and certainly in the early 60s when they were logging it. We'd go up, you know, drive up there. It was pretty good hunting when they had the roads in there. When they first logged it, you could pretty much see everything."

John Littlefield – Tlingit Elder

"Goats, deer and coho - dollies occasionally."

[Interviewer: Regarding whether his whole family goes?]
"Oh Yea. My wife and kids. It's close to town, easier to get to. I took a lot of deer this year. Eleven deer and a goat - still not enough meat…

My grandpa used to go up here a lot--like 10 guys. Before they logged they carried an inflatable raft all the way up the back and they go up this area, Hogan. They'd hunt their goats, and they get their goats and they'd lug their meat out to the raft, and float it all the way out. They'd stay up there for a considerable amount of time, 10 days or so…"

Erin Kitka

"I trapped this country for 20 years…Katlian, Nakwasina. Trapped the whole area for every year I was here, and up until 1990."

James Parker

"Off to the left hand side Cold Storage Lake there's goat hunting up here too."

Mark Jacobs – Tlingit Elder

"Bear? No. We see 'em but we don't hunt 'em. Looks like there is more now. I don't know. I was fishing one summer. I was halibut fishing out of the Camp at Dog Point and I remember seeing 23 bear in Nakwasina on the beach around Halleck Island. I think there's more bear but that's just my personal opinion."

John Littlefield – Tlingit Elder

"Shot a buck I think half-way up. Basically, right in the middle of native land. Right there going towards south fork. And they say deer don't like that alder habitat. Well he was in there. I called up 2 bucks that day."

Erin Kitka

"There were quite a few taken out this year. They might be down a little bit now. It seems like you can always get a goat out of there if you want. I don't know. I understand that the goat population is pretty high."

Erin Kitka

"There's a lot of bear in there. It's such a big area. Such a long river they don't need to come all the way down to the ocean. The bigger ones stay up there."

Erin Kitka

"I don't think there's [a] shortage of bear anyplace in this country."

James Parker

"Katlian's real good for duck hunting.

I don't think anything changed much since it was logged as far as fish animal life. Still a lot of deer around there."

James Parker

"There was some bear… I'm not saying there was a lot. Quite a few was all."

Oliver 'Porky' Bickar

"You could talk to the loggers that were in there years ago, and they will tell you that, those that will admit it, they had a contest between Katlian and Nakwasina to see who could shoot the most bears out of their camp in one year, and according to fairly reliable sources they shot thirty-five bears in there in one year."

Les Kinnear

[Do you thinks there's anything out there that can be done or is the best thing just to leave it alone?]

"I think the only thing that could be done to begin to restore some of that top end country would be to stick twenty or thirty beaver in there, and just leave em alone… you let em go anywhere in that creek and they'll move to their own choice of habitat. And beaver are going to move up into everyone of these little creeks and streams, and this is some beautiful beaver country up in here. They'll build dams on those back waters, they'll hold up the flow of the water, they'll suspend a lot more of that moisture and give you a, a more continuous, steadier runoff through the winter. You won't have those huge surges of water that come down and just move everything at one time. I think that would probably be the only thing that could be done, I mean it wouldn't cost anything to do. It couldn't hurt, I don't see what it could hurt to do that [What about…] they're gonna, [the beaver] pull some of the alder down, they'll pull a lot of the alder down."

[Was there beaver in there before?]

"No, not where you're still going to find evidence. I know there's a few in Redoubt, there's some in Rodman, there's a few beaver scattered up the north end of the island, Corner Bay creeks got beaver in it. …the only reason that they haven't moved over a lot of this island is the extremely rough conditions and the fact that every time they try to re-establish, some local kids go out and pound em."

Les Kinnear

Vegetation

The vegetation in the area, particularly directly adjacent to the stream channels has significant impacts on the water quality, structure, and nutrient input into the streams and rivers of the Katlian watershed. This section discusses the forest and non-forest characteristics of the watershed, followed by a description of the riparian vegetation in the Main and South Katlian watersheds. The next section covers the natural and human disturbance processes that shape the vegetation of the area. The conclusion will show a comparison of current vegetative conditions to pre large-scale harvest conditions to help us determine changes to the landscape that may have important effects on the streams and fish habitat within the watersheds.

"We used to go hunting. It was real close; you could never get lost in there. There's only one way out to the bay, and only one way in. It was a favorite place primarily because of the heavy timber in there. You could gather in the winter months. It was pretty well protected."

Ted Borbridge – Tlingit Elder

"I cut the biggest there was up there. Oh yea, by far. Spruce was... I had one... 9½ foot diameter butt, and there was a whole bunch around 9 foot. Bunch [of] 8 foot."

Oliver 'Porky' Bickar

"When we walked in this area when I was a kid, I remember that was kind of like a park. Just huge big trees, wide open under growth. Stuff that no one alive will ever see again. Maybe 300 years from now they might but...

Alders choke 'em out. For awhile, 'til eventual[ly] they get overtaken, but it takes a hell of along time to do that."

John Littlefield – Tlingit Elder

"Katlian hillside, there's a lot of yellow cedar with straight grain. We took some of that and there was no restriction from the Forest Service at that time. Mostly small ones so that [we could] bend them for ribs…"

Mark Jacobs – Tlingit Elder

Forest and Non-Forest Characteristics

Approximately 33% of the total area is forested. The remaining 67% of unforested ground is composed of mostly rock, glaciers, and alpine. The Katlian watershed contains brush fields and snowfields dominated by Sitka alder although some snowfields are slowly regenerating with conifers. Both watersheds contain over 1,000 acres of landslide areas. These contain various types of vegetation including Sitka alder, red alder and herbaceous vegetation. Most of the forested area is dense with almost no muskegs (bogs or fens) (see Table 2). Wetlands that do occur are forested floodplains.

Table 2. Non-forested Acres by Non-forest Condition.

Watershed	Non-forested	Alder	Freshwater/ Riverfill	Alpine	Ice/ Snow	Muskeg/ Meadow	Rock	Slide/ Mass
M.Katlian	20087	312	388	6019	922	65		1876
S.Katlian	4939	18	0	1387	0	22	2441	1071
Total	**25026**	**330**	**388**	**7406**	**922**	**87**	**12947**	**2947**

Source: GIS Timtyp cover, June 2001

A total of 12,259 acres is forested, and just over half (56%; 6,828 acres) of that is considered productive forest (Table 3). Productive forest is capable of growing a commercial crop of trees for wood production. These areas would typically produce the larger diameter trees some of which might end up as large wood in streams. They also provide larger tree canopy that provides stream and riparian area cover.

The species composition of the productive forest areas is primarily a mixture of western hemlock-Sitka spruce (72%). Red alder dominated stands occupy 25% of the area. (Table 3), and typically occur on areas that have been harvested.

Table 3. Productive Forest Acres by Dominant Species and Size Class.

Watershed	Forested[1]	Productive[2] Forest	Red Alder	Spruce	Hemlock	Hemlock/ Spruce	Size	Less than Size Class 3[4]
M. Katlian	8841	5008	1071	111	211	3615	2579	2430
S. Katlian	3419	1820	635	38	169	978	885	935
Total	**12259**	**6828**	**1706**	**149**	**380**	**4593**	**3463**	**3365**

Source: GIS Timtyp cover, June 2001.

1 Contains at least 10% tree cover.

2 Is capable of growing a commercial crop of trees (at least 20 cubic feet per acre per year).

3 Size Class >=3 are areas where the trees have an average tree DBH of >=9 inches.

4 Size Classes < 3 include areas dominated by seedlings, saplings or pole sized trees.

Approximately half of Katlian's total productive forest area is currently in a seedling, sapling or pole size class of trees (Table 3). Most of these areas are 35 to 40 year old stands that established after harvesting. Larger trees close to the stream channels are important for providing large pieces of wood in the streams for structure and habitat. Loss of these trees may cause a shortage of these pieces in the future that are needed to replace wood that is currently rotting or moving out of the stream channels.

Riparian Vegetation

Stand examination plots were taken in harvested areas along stream channels to determine the current vegetation characteristics in the riparian areas. Plots were randomly located within 200 feet, on either side of the main channels at fixed distances along the stream. Although the entire floodplains were not sampled, the results represent the characteristics in much of the unsampled floodplain areas as well.

Main Katlian Floodplain.

The second growth in the harvested areas has relatively dense stocking that averages 362 trees/acre of which 65% is red alder, 30% Sitka spruce, and 5% is western hemlock and cottonwood. Red alder are larger in diameter (mostly 5-9") and spruce and hemlock are still quite small (1-5"). Cottonwood are also present in a range across all diameter classes.

Coxe Creek Watershed. (Photo courtesy of Shee Atiká, Inc.)

Red alder is a faster growing species that establishes quickly after soil disturbance. The conifers will eventually dominate the stands in height and diameter but are slower to establish and grow. The larger size of the red alder combined with the overall density of the stands slows the initial growth of conifers by shading them out. This is significant in that large conifers are an important source of future large wood into the streams for normal watershed function and fish habitat. The floodplain areas adjacent to the streams are the most important source of this large wood.

South Katlian Floodplain.

South Katlian contains even denser stocking levels (585 trees/acre) with more conifers dominating the stands. Western hemlock makes up 40%, Sitka spruce 39%, and red alder 21% of the forest. Cottonwood is not present. Hemlock represents the larger diameter trees (mostly 5-9”) while spruce and red alder tend to be very small (spruce-mostly 1-5”, red alder-mostly 0-7”).

South Katlian Valley. (Photo courtesy of Matt Goff)

The amount of red alder compared to conifer is less significant than the overall density of these stands. Western hemlock is already the dominant larger tree species. However the very high stocking levels are decreasing the growth rate and vigor of these trees.

Disturbance

Disturbance processes are important factors that shape forest structure and help determine the vegetation occurring in an area. The intensity as well as the frequency of disturbance significantly influences the resulting forest composition.

Natural Processes.

The primary natural disturbance processes include snow avalanches, landslides, and windthrow in the upland, and stream erosion, flooding, and windthrow in the lowlands. The snow avalanches appear to be slowly regenerating to conifer although many are composed of primarily Sitka alder.

> *"And all this sand and gravel - where does it come from? Look at the top of the mountains. People don't imagine them coming from the top, but they do.*
>
> *This creek here [last mile or so of Boulder Creek], coming out of this canyon [top of Boulder Creek] raised 5 feet. Again, it's scary. Why this place is called Boulder Creek: you'll be up there, at a time like that, and you'll hear the boulders. It's just nothing but roar. These rocks are rolling and its white water.*
>
> *And about an hour later my buddy came over and said, 'You know that creek is really coming up. I don't know if we can make it across.' I said...I looked around and it was misting where we were but up top, it must have been pouring up there. And about an hour later we were packed up and headed out. We walked to the*

creek, and I took one look and said, 'Oh my god, we can't get across.' Well he said, 'Well I mentioned that.' And I said, 'I didn't fathom this.

'I've been there in September and there's still a lot of water. When it gets cold up top, the stream drops down and you can actually walk in the creek.

But I was telling him, this stream here came up over 5 feet in 4 hours."

Leo Evans

"No [the stream will] *dry up in winter time - frozen solid where it trickles out.*

I've seen it pretty high. I've seen it wash out the logging roads, parts of it, but not where it's not passable [Boulder Creek]*."*

Erin Kitka

"All the years I've been there it's pretty much the same basic channels. You know, it'll swap here and there a little bit. It depends on the logs being washed down, or falling over from the bank, but the overall stream hasn't changed hardly at all."

Leo Evans

"*Positive it has, but the reason it changes is* [that] *streams change every year. Blame it all on the logging. It may have something to do with it, but streams change every year. They just re-route themselves wherever they want to go. It's pretty hard to say. This stream has always been here. They just don't do that. I know there was some people that blamed all of it on the logging, but.. it's obvious that some of that might have affected it, but high water, rain, heavy freezing up - all of that affects it. Its just going to go from up here to down there whatever way it can go.*

Nothing comes to mind that it has changed, the front of [the mouth of Katlian]. For them to say that logging has caused all the sediment, I mean the sediment has always been there."

John Littlefield – Tlingit Elder

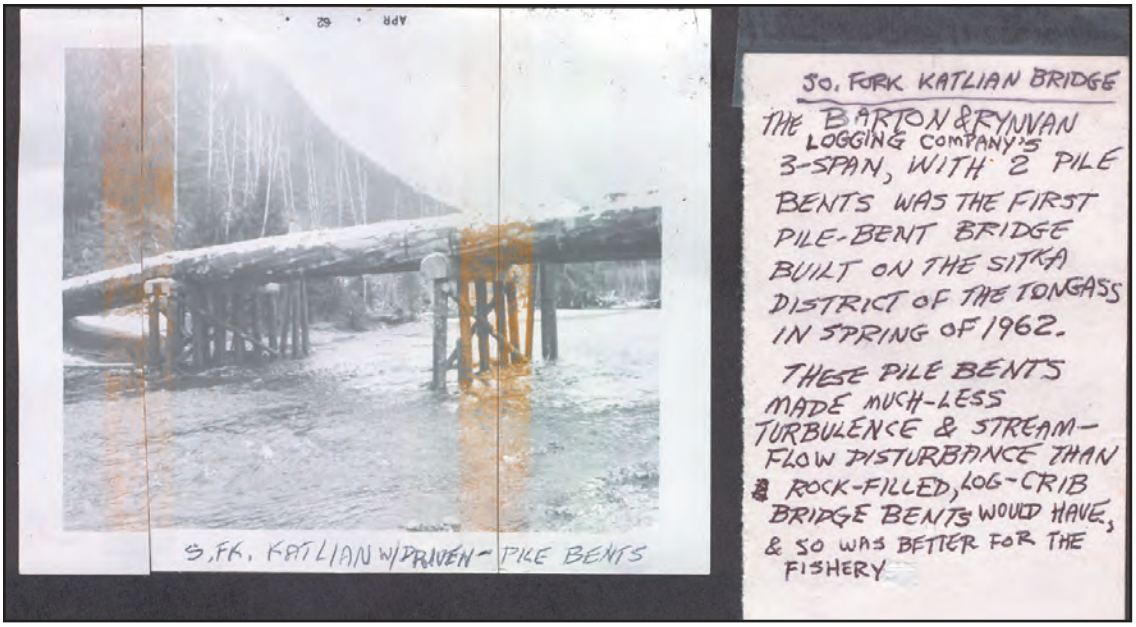
Both of the main channel stream flows are extremely flashy and powerful. This combined with the naturally high bedload of the system and high bank erodibility has lead to convergence and divergence of inchannel flow, promoting channel braiding and lateral migration in the lowland areas. Erosive banks and lateral migration promotes undercutting of tree root systems along the stream edges. These undercut trees often fall into the channels and create structural fish habitat as they move and stabilize within the streams (refer to Hydrology and Stream Habitat). During high rainfall or runoff periods, flooding occurs over much of these bottomland areas. Flooding not only causes trees to fall from erosion around the root systems, but it influences the abundance of trees and species that will regenerate in these areas.

Katlian River. (Photo courtesy of Shee Atiká, Inc.)

> *"But that's the characteristics of that river. The heavy rainfall, the heavy feeders from the valleys in the back; it goes heavy flood stage in no time."*
>
> **Mark Jacobs - Tlingit Elder**

The main channel migrates regularly changing its path throughout the floodplain area. Heavy rainfall that produces flooding events, combined with the steep slopes that lead to the valley bottoms promote very powerful shifts in the path of the river. These flooding events carry large sediment loads that settle out in the floodplain of the river and create new gravel bars where the river turns and reduces its speed. Although the size and occurrence of the non-forested gravel bars changes with these events, their overall area has remained approximately the same.

> *"November. It just turned into a sluice, it was always a real heavy river, you know, …when they were logging it and they had problems with it washing out bridges and tearing stuff out but any more, everything's gone, the big stumps have come off the hills it's really nothing to hold anything it's just, you've seen what it's done to those few stands of trees that are left in those corners, you know, it's just eating away the edges on them, and they're all falling in, and everything is going down the creek, and that's exactly what'll happen in here if you open it up too. It'll just turn into a gravel shoot and that'll be it."*
>
> **Les Kinnear**



South Fork Katlian Bridge. (Photo courtesy of Ron Welsh.)

> *"I mean that rivers taken in that whole valley back and forth, and it was moved while we were there. I mean you could see it. Yea one time we had a big flood and it took the bridges out. One time the river wasn't even going under the bridges, it was going around the end of it."*
>
> **Kenneth Kimball**

Windthrow commonly uproots or breaks off individual trees or small groups of trees, creating openings in the canopy for regeneration. Less frequent stronger winds create bigger openings by blowing over larger areas of trees.

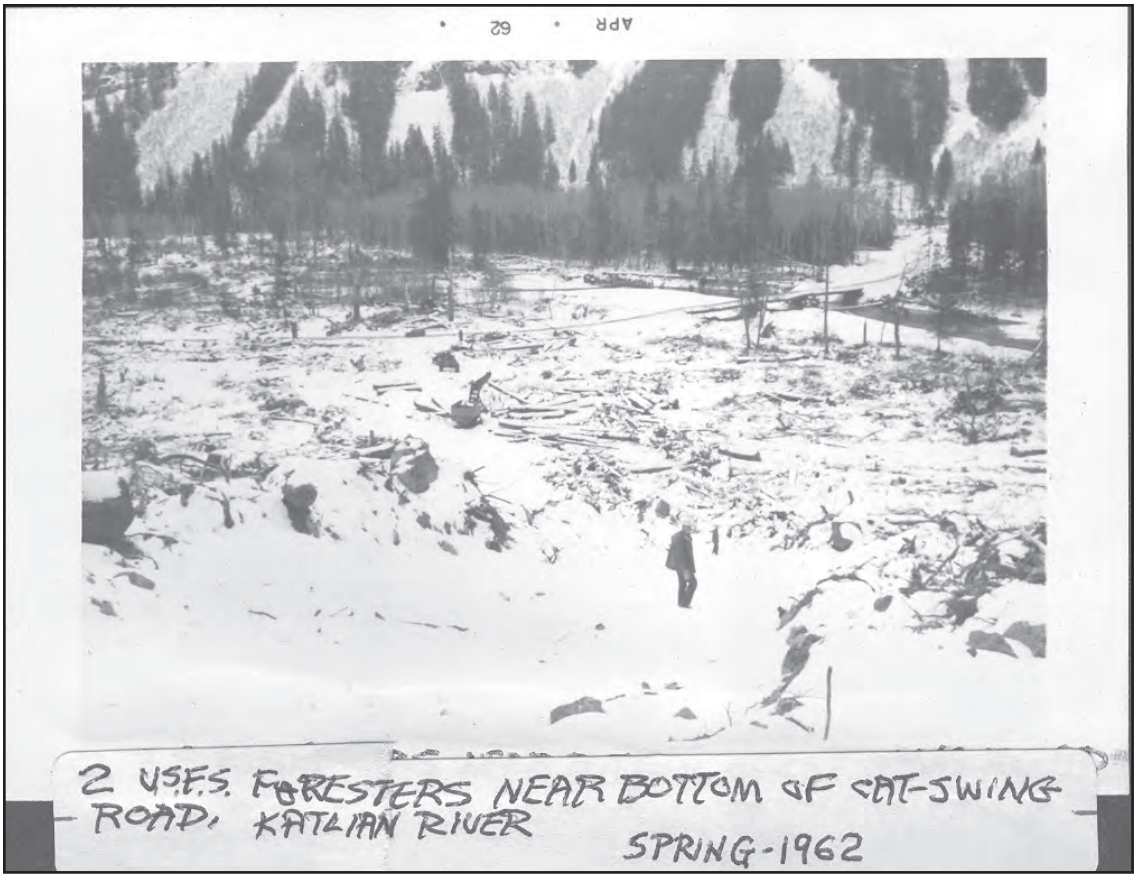
Human Processes

> *"You look at Katlian and you can see the large scars, where its been washed out. They want to show you a bad method of logging, just cruise the shoreline hillside. [The] place has been washed out."*
>
> **Ted Borbridge – Tlingit Elder**

Although humans have used the area for thousands of years, the greatest perceivable impact to date has been from large-scale logging and road construction. Logging in the valley has likely occurred since the early 1900's. The earliest logging was concentrated along the shoreline and usually individual trees were singled out for harvest based on their size, form, species, and accessibility.

Logging

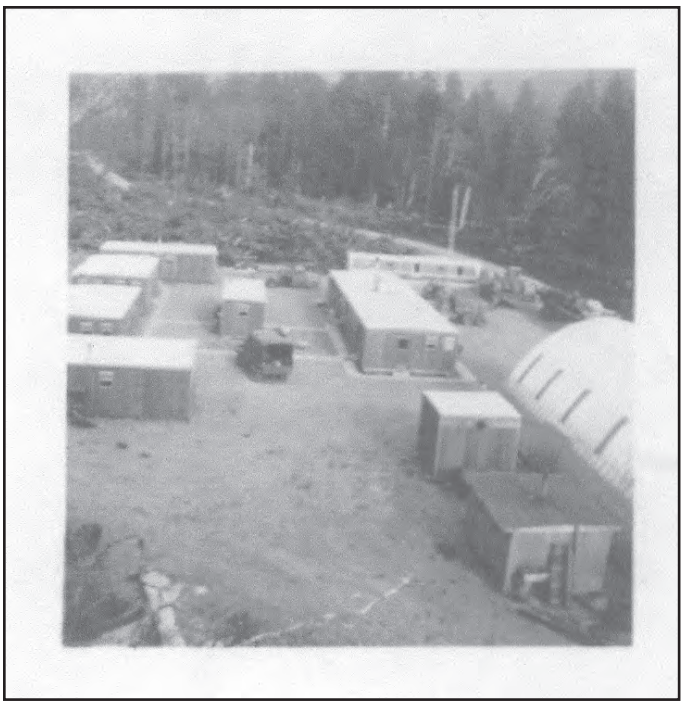
Industrial scale logging and road construction began in the main valley in the early 1960's as part of the Alaska Pulp Corporation's long-term contract managed by the Forest Service. Harvest was completed around 1964 with salvage logging continuing through 1965.



Katlian Logging. (Photo Courtesy of Ron Welsh.)

In this section, Porky Bickar and Kenneth Kimball share some of the details associated with the logging that occurred. Mr. Bickar and Mr. Kimball worked for Barten and Rynvan Logging Company (contracted by the Alaska Pulp Company for the logging) Mr. Bickar was one of the primary timber fallers who worked the Main Katlian and South Katlian timber sales. Mr. Kimball was the primary boom boat operator. Both recall a little over 120 million board feet was harvested from the Katlian valley. And as Mr. Kimball states of the two, "*he's the only one left, Porky and I are the only two left that moved up with Barten and Ryndvan that worked here, that really know, remember much about it* [logging in Katlian]"

Oliver 'Porky' Bickar:
[Were you involved with building the camp?]
"I never stayed in the camp. A lot of them did, but I never stayed there."



Katlian Logging Camp. (Photo courtesy of Ron Welsh.)

[Were there cement bases for the camps?]
"Footers, not cement floors. But the kitchen had…the cookhouse. They buried that whole camp. They took the whole camp. Bunk houses. Tore it down. Put it in a fire. Burnt it. Put it in a hole and buried it."

[Did you build bridges?]
"Bridges [were] not up to me..I felled the timber that built the bridges…Fall big spruce 4-5 footers...."

[Is that a larger tree?]
"Yea. …53[inch]...full length, 5 of them. Lay 'em down and put some rock over the end. We built all kinds of bridges."

"Millions and millions of board feet, if they know where to get it… I could tell em exactly where it is. I could go up there in a chopper, in 2 hours, 20 million feet of timber."

"You could see where the old spruce division got the green number 1 trees. [They] got probably two dozen or so. They were the number 1 trees. They just took them. Soldiers, that's all they did. They did that right along [the] front of Katlian. They went over here, up this creek on the right [Coxe River] way up that, then back up the mountain."

Kenneth Kimball:
[How did you get a hold of that rafting job there?]
"Well, they needed somebody… So I thought I'd try something different, I'd never rafted a log in my life, but come up here and built myself a wooden boom boat [built yourself a boat] *and in fact we used the whole boom boat for the one job we were there about five years, took about 120 million feet out of there.* [wow]

Originally it was supposed to be more than that. We thought, they thought they had 10 years logging but had it done in five."

A-Frame Logging. (Photo courtesy of Ron Welsh.)

[So when you worked there, did you work all the way up river?]
"Well you know I helped them get the road built up on the first pass, and I… helped them on the bridges, and lets see… three bridges, and… one outside of camp, a little one."

[Camp]
"We brought a brand new camp up, everything was brand new, we had concrete sidewalks… in fact if you go in there you'll find a 40x80 concrete slab that the shop was setting on, you'll see the slab this one on, you'll still see the concrete sidewalks down around camp…"

"Barten, he run that camp for one year and he got tired of hiring cooks and hearing people complain about the food. So he decided,…he'd give people living allowance to live in town or go up and buy a house or something and he closed the cookhouse down. So all they kept out there was the mechanic and his wife just to watch over the camp, but uh, it was just one year actually that the camp was utilized it was never…[Just one year huh?] *Yea, he said there's nothing to logging, but there's plenty to running a camp."*

[So how many guys in that company working up there?]
"We had a 25 man crew. We started out, they were gonna run a bigger operation, but then that didn't work out too good."

"…it very seldom ever slowed down, I know, I was on the receiving end in the water. [Oh, yea] *No, they were loggers, those guys would put out a million feet per*

year per man, that was their goal and they'd do it every year. That first year when they had two sides running they'd put out 35 or 36 million feet with 35 guys…"

[How'd they move the logs down river…on trucks?]
"Oh yea, they were all trucked. Even back in them days you know, we had uh, they were pretty strict about letting us use the water."

Approximately 3,270 acres were logged primarily using clearcut prescriptions. Harvest practices at the time did not require keeping trees along the stream banks (buffer zones). Not much attention was paid to salmon habitat protection, as Porky Bickar states in his interview:

"Well when you go up the valley you didn't worry [about stream buffer zones] as much. It's when you're right down next to the beach. We spent only a couple 3 days down next to the beach. Rest is all up in the valley, way up. Didn't even know what a buffer zone was." Consequently, trees were removed along most of the lower reaches of Main Katlian River and South Katlian River and their tributaries in the lower portions of the valley (Figure 5).

Although only 8% of the Main Katlian and 11% of the South Katlian watersheds were logged, the proportion of productive forest harvested was 47% and 50% respectively[1]. Productive forests are those that are capable of producing 20 cubic feet of wood fiber per acre per year.

Valley bottom (floor) areas have the greatest effect on the adjacent rivers and streams that provide fish habitat. Harvesting without buffer strips along the stream banks increases the potential impacts to these streams. Approximately 75% to 80% of the productive forest that occurred in the valley bottoms was harvested[1], decreasing available future large wood for recruitment into the stream channels.

The relatively heavy logging effort in the valley bottoms may have had the most impact on the watershed, since the amount of valley bottom area is much smaller in proportion to mountain summits and mountain slopes (Table 4). Both Main Katlian and South Katlian have relatively broad valley bottom areas, relative to other watersheds in this same eco-region, but the extremely high proportion of harvest within this area (75-80%) has and will continue to induce elevated channel instability until these riparian stands mature back to a large conifer dominated cover type.

"I understand that you got to do the 100 foot buffer, but that river moves a couple hundred feet a year all by itself with out being logged around it. Imagine how much more it is going to move."

Erin Kitka

Table 4. Total, Forested, Productive, and Harvested Acres by Landform.

Landform	Main Katlian (acres)				South Katlian (acres)			
	Total	Current Forested	Current	Harvested	Total	Current Forested	Current	Harvested
Mtn. Summits[1]	12523	173	0	0	3148	217	16	0
Mtn. Slopes	12258	6312	2808	807	3729	2173	925	253
Hills	107	107	107	6	61	61	49	7
Valley Floor	3276	2111	2035	1536	1182	894	811	652
Lowlands	562	124	57	7	238	74	19	0
Coastal	87	0	0	0	12	<1	0	0
Total	**28813**	**8827**	**5008**	**2357**	**8370**	**3419**	**1820**	**913**

Source: CLU, all_std_clu, and Timtyp covers, Tongass GIS database. June 2001.

1 Includes areas covered by ice.

2 Is capable of growing a commercial crop of trees (at least 20 cubic feet per acre per year).

The most common natural disturbance processes in the forested valley bottom areas are likely to be from small-scale windthrow or from small numbers of trees being undercut and root systems weakened by stream channel erosion or flooding. The scale of disturbance from the harvest that occurred in the valley is far greater than what is commonly expected under natural conditions.

Figure 5. Map of Past Harvest and Streams.

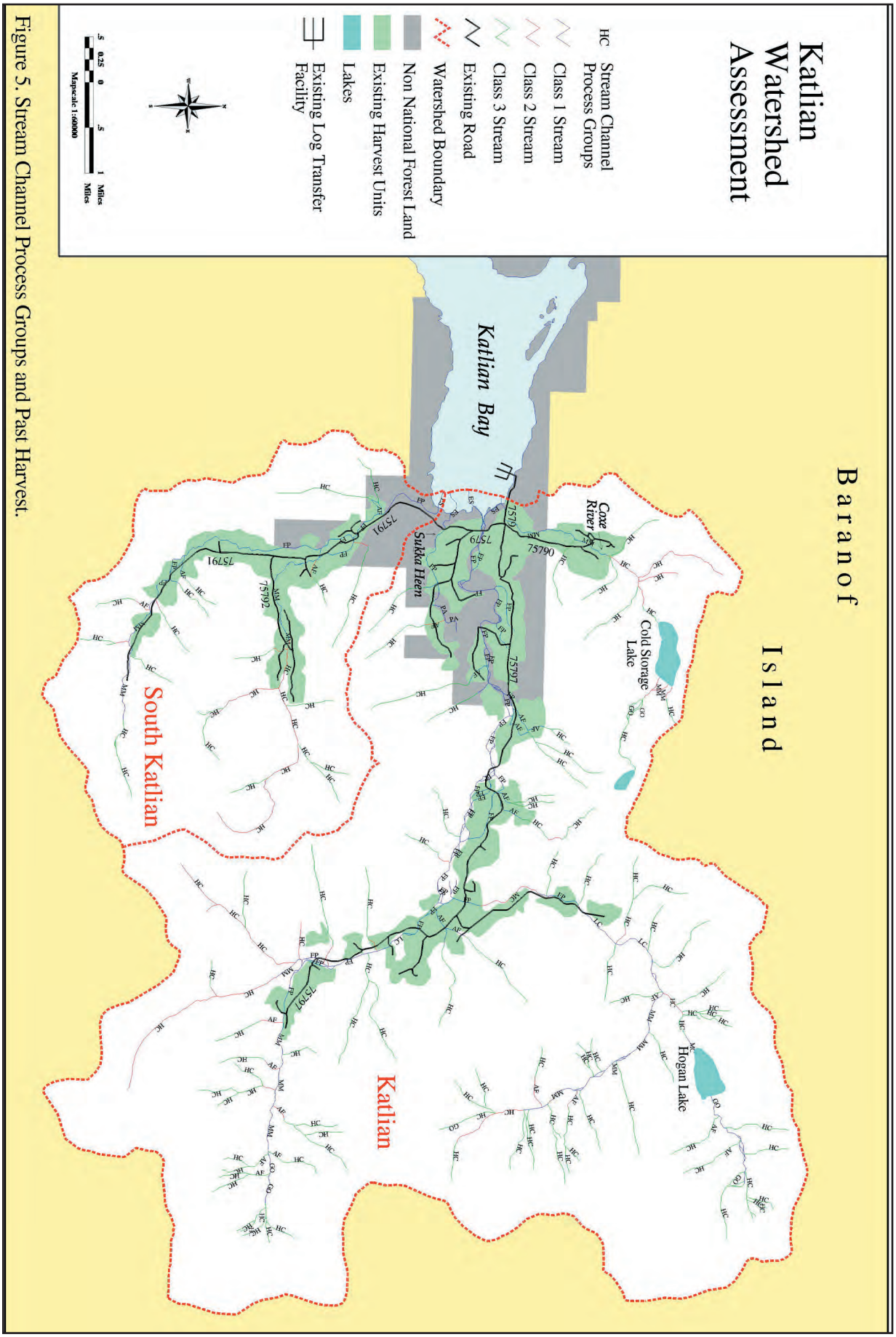


Figure 5. Stream Channel Process Groups and Past Harvest.

Forest management treatments on the area after logging have been minimal. Some aerial seeding of hemlock and spruce took place in 1961 just after large-scale harvest had been initiated. In 1981 and 1985 approximately 590 acres received "fill-in" planting of Sitka spruce in areas where natural regeneration appeared sparse. In addition, 229 acres received girdling treatment of red alders in an attempt to slow their growth and promote conifer establishment and dominance of the stands. Only 140 acres have been thinned to reduce tree densities and promote faster growth of desired trees.

Roads

Over 17 miles of roads were constructed in the Katlian watershed between 1960 and 1965 in support of the logging activities at that time. Most of the drainage structures (bridges and culverts) were pulled out years ago. Many of the remaining bridges were removed with explosives in the 1970s and early 1980s. Hikers, hunters, fishermen and other visitors still use sections of the old roads to access areas of the watershed.

> *"Years ago when the road was in there we drove all those roads here and Nakwasina. But right now I know the kids do. I don't go up there. But quite a bit of traffic now-a-days. We used it routinely, from 60, 59-60, 61-62, spent every weekend I was in high school. In the wintertime we spent all the time in Katlian."*
>
> **John Littlefield – Tlingit Elder**

> *"The quad trail in there now, you go the first two miles on the old road, there on the left side of the bay, and then cross and they work through the timber on that one big corner, and then up the river bed for the rest of the way, and you can still get in there, five miles now, if you try real hard."*
>
> **[That Hogan Creek road, did you go up it?]**
> *"You'll never get a quad on that thing again, uh, it's gonna take a chainsaw to open that back up, we hunted that this year and the clients called that the one mile road to hell."*
>
> **Les Kinnear**

The Katlian watershed mainline roads (Forest Service road numbers: 75791, 75797 and 75790) were surveyed in May 2001 to assess their current condition and impacts on fish habitat. The survey included photographs and descriptions at locations where stream channels intersect a road, and additional information at each site where a road obstructs fish passage or may contribute excessive sediment to fish spawning habitat. A total of 42 sites were identified, 14 on road 75791, 17 on road 75797, and 11 on road 75790. Of these 42 sites only one appears to obstruct fish passage and one potentially contributes significant sediment load to a fish (Class I) stream. The low impact levels are primarily due to the fact that most of the drainage structures (bridges and culverts) were pulled out years ago, allowing stream channels to re-stabilize. Also, there are many alluvial channels in this watershed that are very active and mobile during periods of flood. However, for most of the year, they are dry with subsurface flow in the porous gravels deposited by these channels.

Only one ditch relief culvert was found on road 75791. It was intact, but failing. All of the bridges over the main stem of the Katlian River and the South Katlian River are gone and the banks appear to be stable. There are three intact log stringer bridges on tributary streams, two of which were dry during the survey. None of these obstructed the stream channels. Most of the remaining sites were dry flood channels that intersect the road. Failed log stringer bridges lay in two channels, and one of these bridges obstructs the channel, causing erosion of the road bed. This may be contributing elevated added sediment to the system, but the extent of this contribution is judged to be minimal. Because of the large amount of bedload in this system, active stream flow is subsurface in most of these channels much of the year.

Road 75797 runs through flood plain valley bottom areas or near the slope break between footslopes and the floodplain. The road crosses alluvial fan channels or low gradient fish streams. At the fish streams, two bridges are intact and functioning, and elsewhere the streams cross the road with no fish passage obstructions. There is one notable exception, the fish passage obstruction at site 19, where a stream is diverted to the road and follows the road for about 80 feet. This appears to be a Class I or II fish stream, although the extent of upstream habitat above the road may not be substantial. The current streambed likely impedes fish passage due to a precipitous drop from the roadbed. The original stream channel location is not apparent, but there are lower gradient routes to the valley bottom, which would likely allow for fish passage.

Road 75790 differs from the other roads in that it traverses a steep side slope above the Coxe River. Almost exclusively small class III steams, most of which appear stable, cross it. Site 38 is the only site that cuts deeply through the road. Though it obviously contributed significant sediment load to the Coxe River in the past, the channel now appears stable. Some exposed topsoil slopes high on the cut-bank may benefit from seeding.

Logging Road in Katlian Valley. (Photo courtesy of Ron Welsh)

The location of each survey site is marked on an aerial photograph, and the photograph number and notes taken at each site are referenced in Appendix J.

Comparison with Pre-Large Scale Harvest Conditions

To assess forest conditions in the Main Katlian and South Katlian watersheds prior to large-scale harvest in the early 1960's, photo interpretation was used on photos taken in 1928 and 1956. Refer to Appendix B, the Katlian River Watershed Study report by Bob Smith. The areas looked at were harvested by the Alaska Pulp Company in 1960-1965. These areas were primarily in the valley bottoms along the main channels and the lower elevations of the drainages (Figure 5). The photo interpretation included texture typing to assess tree sizes and species composition of stands. Comparisons were also made on the change in the stream channel, and riverbed sizes, and locations.

Decrease in large conifers

The resulting vegetation comparison (Table 5) shows a reduction of large conifers (crown diameter>=36 feet) in both the Main Katlian and South Katlian drainages. Approximately 68% (1543 acres) of the area harvested in Main Katlian was categorized as large conifers prior to harvest. Currently only about 14% (329 acres) of that area is large conifer. In South Katlian, 72% (737 acres) of the area was large conifer prior to harvest, and only 11 % (133 acres) of the area is currently large conifers. This coincides with the majority of the logging occurring in the more productive valley bottom areas where the larger, more accessible trees were.

Table 5. Acres by Cover Type Before and After Logging in Harvested Areas Only.

Main Katlian (acres)			South Katlian (acres)		
Cover Type	**Pre-Harvest (1956)**	**Current**	**Cover Type**	**Pre-Harvest (1956)**	**Current**
Large Conifers	1543	329	Large Conifers	737	133
Small Conifers	38	674	Small Conifers	75	217
Red Alder[1]	297	983	Red Alder	8	545
Stream Course	277	212	Stream Course	32	0
Non-Forest	121	147	Non-Forest	175	288
Total[2]	**2276**	**2344**	**Total**	**1027**	**1182**

Source: 1956 TimTyp GIS cover prepared by Bob Smith, January 2001

1 The amount of pre-harvest red alder may be underestimated due to the difficulty in distinguishing alder from conifers on the 1956 photography (see Appendix B, Katlian River Watershed Study Vegetation Mapping Report).

2 The pre-harvest acreage totals are less than current totals due to slight differences in the GIS covers for 1956 and current.

Figure 6. Katlian Cover Types in the Floodplain – Before and After Logging.

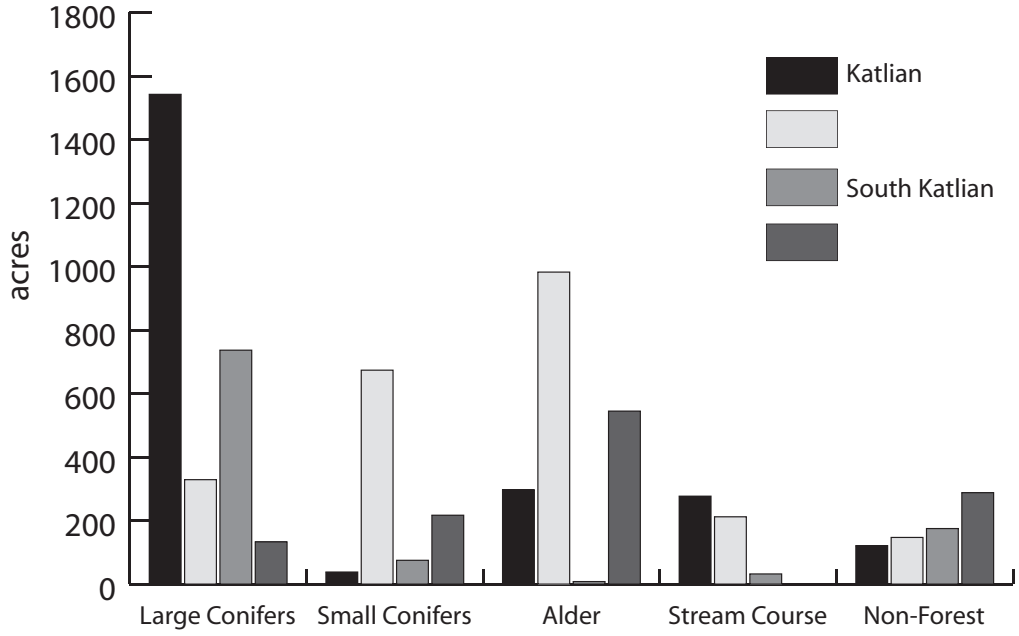
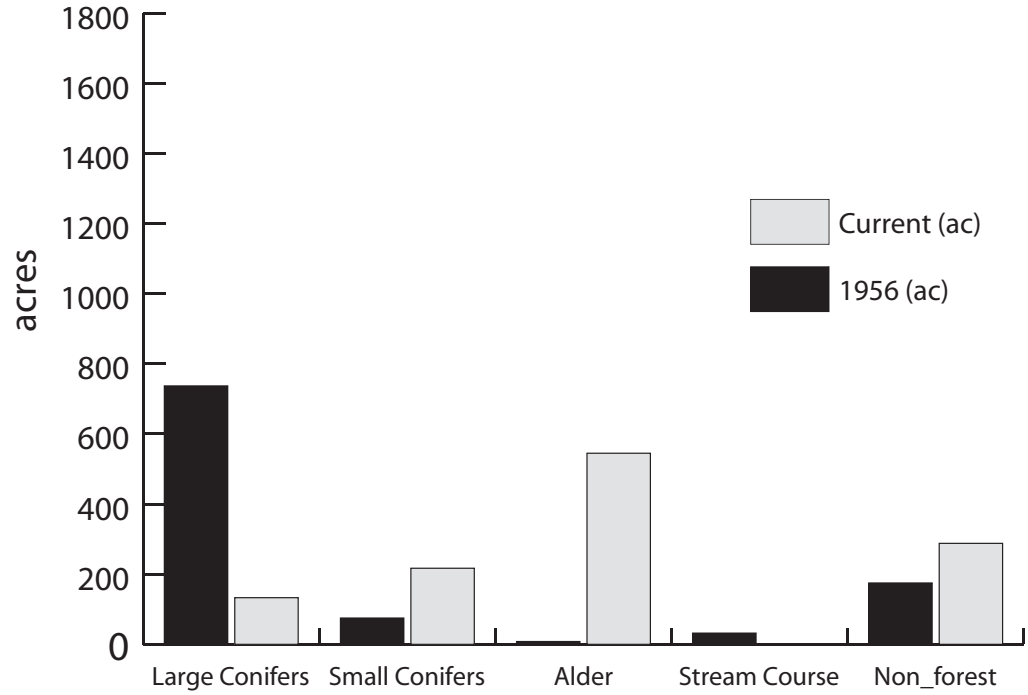


Figure 7. South Katlian Cover Types in the Floodplain – Before and After Logging.



Increase in small conifers

Prior to logging, the Main Katlian area was only 2% (38 acres) small conifer (crown diameter <25 feet). This area is now 29% (674 acres) small conifer. South Katlian went from 7% to 18% small conifer (Table 5). These trees are the 35 to 40 year old trees that have regenerated following harvest.

Increase in red alder

Although much of the harvested area in both drainages has regenerated in conifer dominated stands, there also has been a large increase in red alder dominated stands. Red alder was present prior to logging, however it was typically a much smaller component of the forest, especially in South Katlian where there was almost no mapped red alder stands prior to harvest. The logged area in the Main Katlian watershed changed from 13% (297 acres) red alder to 42% (983 acres) currently. The amount of red alder dominated stands adjacent to Katlian River appears similar to pre-harvest conditions, but the amount away from the stream and on the

upper floodplain and terraces has increased since logging. The South Katlian harvest area was 1% (8 acres) prior to logging, and is now 46% (545 acres) red alder (Table 5). This shows a substantial increase in red alder dominated stands.

Time Sequence Photo Comparison

> *"This river changes bed, it's bed every year. In other words, after a spawn and next spring after a runoff, you might find a different riverbed be there, and it's not caused by logging. It's natural! There may be other streams like that, where the main riverbed works itself around back and forth. That's true with Katlian [River]."*
>
> **Mark Jacobs – Tlingit Elder**

Aerial photos were obtained for two given locations in the Katlian watershed that were taken at three different points in time. The photos from each location are from the 1920's, 1950's, and the 1990's. These provide a visual display of how the river system and the surrounding vegetation have changed over time. The large-scale harvest occurred after the 1950's photos and before the 1990's photos were taken. The time series photos provide information on the potential effects of logging on the river system.

Series #1: Aerial photos of the mouth of the Main Katlian River (Figure 8)

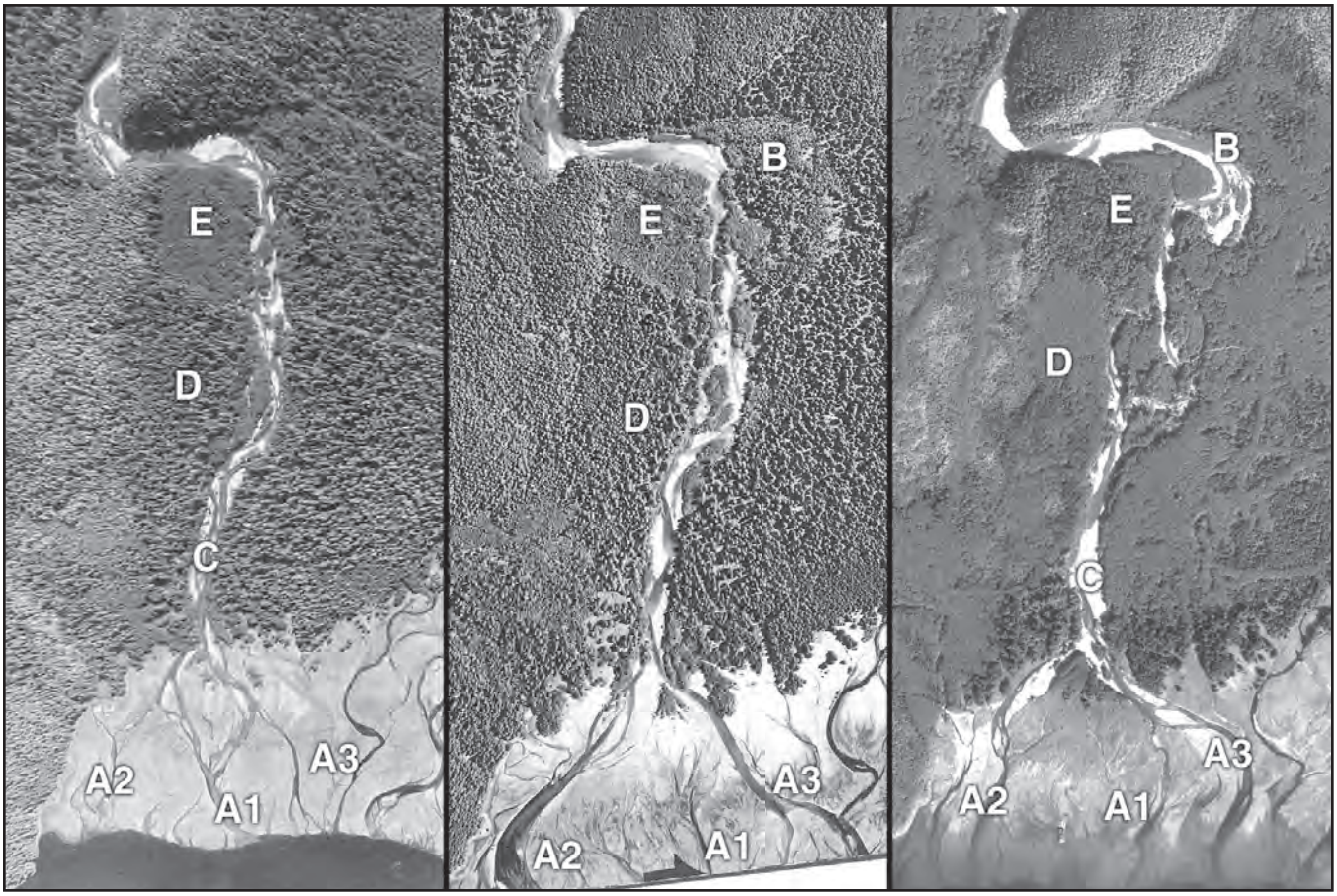
From these photos we can see the main estuary channels changed between the 1920s and 1950s photos. Point A1 on Figure 8 shows where the main flow through the estuary is occurring in the 1920s. This path is no longer used in the 1950s where Points A2 and A3 show very defined new routes through the estuary. These new channels are still used in the 1990s, although the main channel is starting to break-up into smaller separate segments.

There was a wide shift to the right (south) in the main river (Point B) between the 1950s and 1990s. However, the primary channel location that occurs in the 1990s was visible on both the 1920s and 1950s photos (Point B), indicating that the river had previously used this route within the surrounding floodplain.

Changes in the non-forested gravel bars are also visible. There is an apparent change over time to fewer but larger, continuous gravel bars. The 1920s photo shows far more but smaller gravel bars throughout the river. In the 1990s photo, the river is sweeping across the floodplain in a wider path, creating larger gravel bars with narrower active channels connecting them together. An example of this trend is shown at Point C on the photos.

The vegetation change is distinct before (1920s & 1950s) and after logging (1990s). The vegetation surrounding the river is small and dense with high levels of red alder in the 1990s (Point D). The tree crowns are distinct and large in the 1920s and 1950s. There also is a large apparent disturbance patch (likely from blowdown) located in the pocket where the stream takes its widest turn (Point E). This appears to be a small, dense forest in the 1920s and 1950s, but shows larger crowns in the 1990s (Point E). The stand has the appearance of a disturbed, broken canopy even today.

Figure 8. Time Sequence Comparison: Series #1



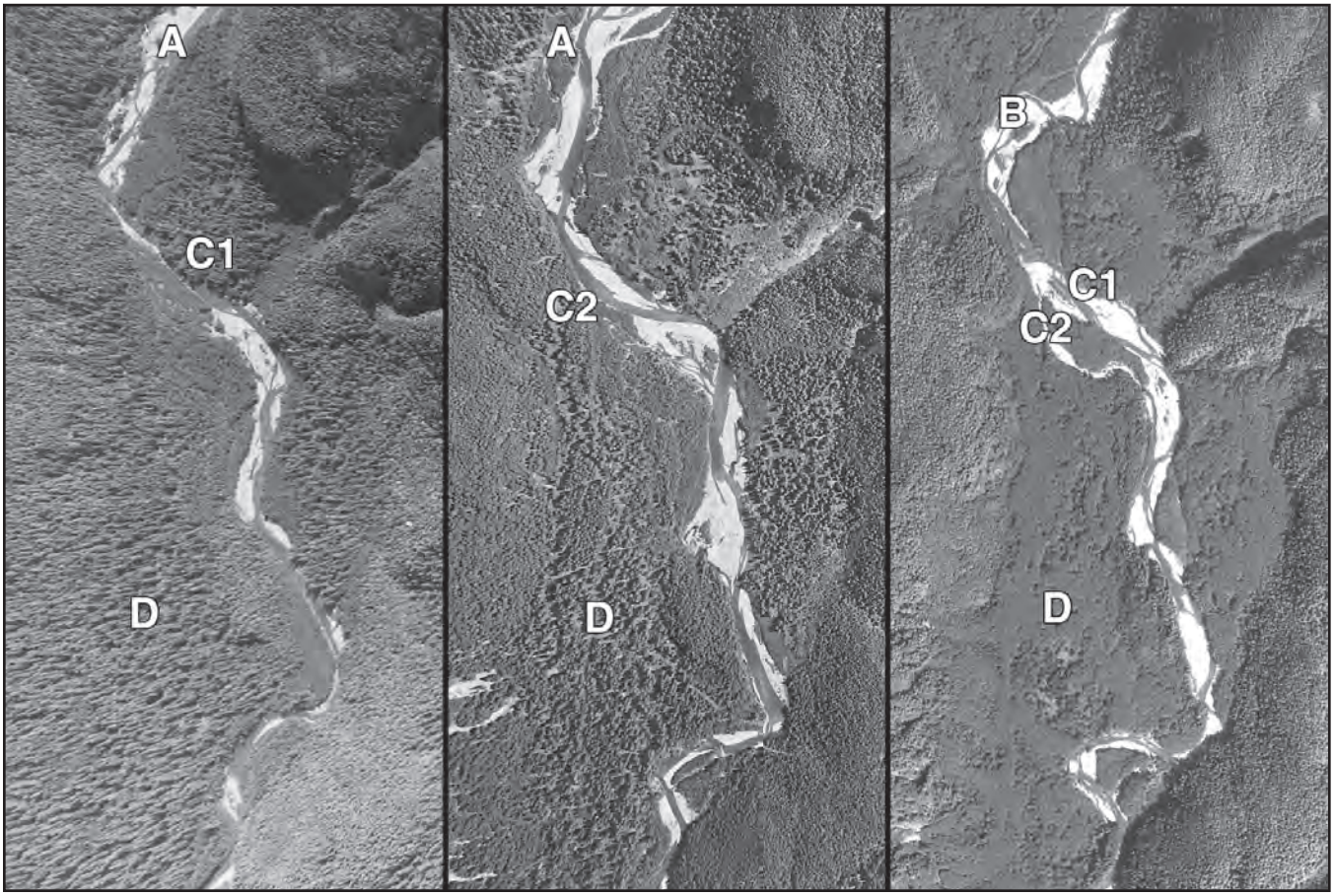
Series #2: Aerial photos of the Middle Valley of Main Katlian (Figure 9)

Figure 9, Point A is where the river forks toward the left (north) of the photo. This fork was a defined route in the 1920s. By the 1950s photo, the stream channel was dispersed throughout the canopy. Then by the 1990s, the river had moved sharply to the north (left) (Point B), establishing one primary route, and creating large gravel bars to widen its path.

Further down the river at Point C1, the 1950s photo shows the river using a second branch that was not used in the 1920s. The 1990s photo then shows one primary active channel using the new established route (C1) but mostly abandoning its previous path (Point C2).

Many of the forested stands closest to the primary active channel appear to have frequent, large-scale disturbance. On all three photos, these areas remain characterized by small, dense tree crowns, with a large red alder component. The trees in these areas are unlikely to reach large size due to the frequent disturbance. The floodplain forest areas further from the primary channel (Point D) have been significantly altered from the harvest in the 1960s. These areas that had been dominated by large conifers (widely spaced and large tree crowns) in the pre-harvest photos now contain smaller, denser canopies in the 1990s photos.

Figure 9. Time Sequence Comparison: Series #2



Hydrology and Stream Habitat

This section explains background information used in evaluating stream conditions and fish habitat to determine if they meet USFS regional habitat objectives. This information includes a description of the current condition of stream features such as pools, in-stream large wood, and bankfull width to depth ratio. The current condition data is then compared with the natural range of variability of similar stream habitat in Southeast Alaska. The final portion summarizes stream habitat trends and their possible implications to the Main Katlian and South Katlian river systems.

Overview

> *"…That's the characteristics of that river. The heavy rainfall, the heavy feeders from the valleys in the back…It goes heavy flood stage in no time."*
>
> **Mark Jacobs - Tlingit Elder**

There are four major stream systems in this watershed that run directly up from the mouth of Katlian Bay (Figure 2):

- Coxe River,
- Katlian River,
- South Katlian River, and
- Sukka Héen.

Coxe River runs almost due north from the mouth of Katlian Bay to Cold Storage Lake. It is also smaller, but appears to have good holding areas for salmon because of the presence of an extensive network of undercut banks riddled with conifer root wads. Because of this, many coho were seen in uppermost reaches in pools that did not appear to be reachable by these fish.

Katlian River is the main river of the watershed and stretches four miles back into the valley where it forks. At the split, one branch leads in from the south and one branch leads in from the north. The south branch is fed mostly by ice fields, some of which are up to five miles away. The north branch is fed by both ice fields and Hogan Lake. The lake is approximately three-and-one-half miles upstream from the main stem Katlian River.

South Katlian runs almost due south from the mouth of Katlian Bay. It is fed evenly by both springs and ice fields. Approximately two miles from the end of the river, there is a split where the river is fed by Boulder Creek (this creek is not named on the USGS map).

> "Came up over 5 feet in 4 hours. You could hear the boulders and rocks. Just, boom-boom-boom-boom! all night long. I assume that's why it's [called] Boulder Creek - it's so loud.
>
> **Leo Evans**

The smallest stream that flows to Katlian Bay is not named on the USGS map. However, local native people know this stream as Sukka Héen. Sukka Héen is spring-fed and lies between the Main Katlian and South Katlian rivers.

Lakes

Though the Katlian watershed is impressively large, there are only three lakes in the entire watershed.

> *"One lake is named Hogan Lake after Pete Hogan, owner of a marine supply store in Port Alexander, who was a frequent visitor to the lake."*
>
> **Mark Jacobs – Tlingit Elder**

Hogan Lake feeds Katlian River from the north and is located approximately eight miles from the mouth of Katlian River at an elevation of 1460 feet above sea level.

Cold Storage Lake feeds Coxe River from the north and lies at an elevation of 1533 feet above sea level. It lies only about two-and-a-half miles from Katlian Bay. The only other lake in the entire watershed is about one mile upstream from Cold Storage Lake. This lake remains unnamed, but lies at an elevation of 2729 feet above sea level.

Water Quality

The state of Alaska, under it's 1998 303(d) listing, currently reports the mainstem Katlian River [ADF&G catalog number: 10203-002] as a Tier I: Impaired Waterbody (ADEC 1999). This list, which was published in June 1999, is updated every two years by the Alaska Department of Environmental Conservation (ADEC) and submitted to the Environmental Protection Agency (EPA). The Tier I priority ranking is defined as water quality-limited waterbodies for which ADEC has documentation to indicate that the requirements of Section 303(d) list criteria are met. However, the waterbodies have not yet undergone comprehensive water quality assessments to: 1) verify the extent of water quality criteria exceedances; and 2) confirm that they cannot meet water quality standards under existing technology-based or similar controls by the next listing cycle (ADEC 2002).

Sources for this impairment designation are listed exclusively as nonpoint sources, namely, sediment and turbidity caused by prior timber harvest activities. Designated uses affected by this impairment are: Growth and Propagation of Fish, Shellfish, other Aquatic Life and Wildlife; and Recreation. The Katlian River is among 58 Impaired Waterbodies statewide on Alaska's current federally approved Section 303(d) list. According to the ADEC 1998 303(d) listing:

> *Katlian River is placed on the 1998 Section 303(d) list for sediment and turbidity. Past land use (i.e., timber harvesting) has created a number of concerns for water quality, and fish habitat. The harvest of riparian timber and location and lack of maintenance of the road system has created the following concerns: decreased channel stability, landslides and small slope failures, increased sediment levels, loss of aquatic habitat, siltation of holding pools for migrating salmon, and alteration of watershed hydrology. Watershed effects are believed to have resulted in use (aquatic life) impairments (ADEC 1999).*

Section 303(d)(1)(C) of the Federal Clean Water Act and the U.S. Environmental Protection Agency's (EPA implementing regulations (40 CFR Part 130) require the establishment of Total Maximum Daily Loads (TMDL) for achieving water quality standards when a waterbody is water quality-limited (i.e. impaired). A TMDL identifies the pollutant reductions and controls needed to meet state water quality standards.

The Sitka Ranger District will be coordinating with the state of Alaska – Department of Environmental Conservation to complete a Water Quality Management Plan for the Katlian watershed in the near future to specifically address sedimentation and establish a TMDL that fully supports the watershed's designated uses.

Background Information

Regional Fish Habitat Management Objectives

The USFS Regional Fish Habitat Management Objectives (RFHMO's) are a set of physical stream habitat measurements that describe the natural range of conditions for different stream channel types in Southeast Alaska. These habitat attributes are useful indices for determining relative fish habitat conditions in a watershed. Value ranges for these objectives, reflecting natural variability in stream channel morphology and habitat conditions, are summarized in Appendix C. Pool frequency and large wood density objectives are explained below.

Pool Habitat

Changes in the number of pools, can indicate shifts in the balance between sediment input and transport associated with changes in stream erosion or stream-flow pattern. Pools are closely correlated with channel features such as key pieces and clusters of in-stream large woody debris (LWD). Pools also provide important fish habitat including a place for rearing juveniles, cover for adults, and optimal spawning sites where pools become shallow at their lower edge.

Large In-stream Wood

Large wood objectives are typically based on the number of large wood pieces per length of stream by channel type. In this analysis, unit area was chosen for a reference measure rather than unit length of stream because accurate stream segment lengths could not be determined from stream survey data. Large wood is defined as woody material greater than 4 inches in diameter and 3.3 feet long that protrudes into the bankfull width of the stream channel area. Large wood is critical in many streams for forming pools, and for maintaining habitat cover and complexity for salmonids as well as for aquatic invertebrates that provide an important food source for fish.

> **Xaat, uh tai ee yay uh tee.**
> *"The fish are under the rocks or trees."*
>
> **David Davis II – Tlingit Elder**

Width-to-depth Ratio

Width-to-depth ratio is a general index of channel stability in floodplain channel types. Channel segments with consistently high width-to-depth ratios indicate an increased rate of bedload storage and accumulation. For example; a floodplain channel segment with high width-to-depth values is likely to have less pool habitat (due to bedload and sediment accumulation), than a similar segment where bedload accumulation and transport downstream are close to equal (lower width-to-depth ratio). Bedload and associated sediment accumulation in alluvial channels is correlated to shallower stream depths, loss of pool size, drying out of spawning habitat, and loss of macroinvertebrate habitat. Indirect effects may include changes in the range of stream temperature and increases in anchor ice formation in winter. Bankfull channel width-depth ratio objectives were adopted for alluvial (AF), floodplain (FP), and moderate gradient mixed control (MM) channel types.

Meeting these quantitative fish habitat objectives is part of the desired condition of these watersheds. Additional desired conditions include maintaining the distribution of fish and other aquatic species over their natural habitat range and maintaining key side channel habitat in floodplain areas, where fish and other aquatic animals can find refuge during high stream flows.

Current Condition

Stream Class and Channel Types

Streams are mapped into classes and channel types based on their physical habitat and accessibility to fish. Class I streams have anadromous (salmon and other fish that go to sea but spawn in freshwater) or adfluvial fish habitat (fish that do not go to sea, but live in lakes and enter streams to spawn). Class II streams contain

resident fish populations with limited sport fishery value. Class III streams contain no fish but have potential water quality influence on downstream aquatic habitat. Table 6 shows the stream class distribution for the Main Katlian and South Katlian watersheds.

Table 6. Stream Miles by Stream Class.

Stream Class	Main Katlian	South Katlian	Total	Percent of Total
Class I	34.5	9.2	43.7	35
Class II	12.6	4.9	17.5	14
Class III	53.9	11.0	64.9	51

Source: Streams layer, Tongass NF GIS database, June 2001.

Class I habitat is primarily located in the floodplain (FP3, FP4, FP5) and palustrine wetland (PA1 and PA2) channel types, which provide high value fish habitat. (Channel types are defined in the Region 10 Channel Type User Guide (USDA 1992).) The large floodplain channels account for 39% of the Class I stream miles. Alluvial fan (AF) channels account for 6% of Class I stream miles. The remaining 55% is distributed within the moderate gradient contained (MC), moderate gradient mixed control (MM), and large contained (LC) channel types.

The Class II habitat is located in the high gradient contained (HC2, HC3) channel types with minimal amounts in moderate gradient mixed control (MM) and alluvial fan (AF) channels. Class III streams are mostly the high gradient contained (HC) channels.

There are approximately 40.7 miles of streams mapped as valley bottom channel types (FP, AF, PA, LC). More than half of these are floodplain channel types. Channel types typically on steeper valley bottoms and mid-slopes (MC, MM) total 10.6 miles of stream, and steeper mountain slopes (HC) consist of 73.3 miles.

Stream Habitat

Approximately 8.4 miles of the Katlian watershed streams were surveyed in July 2000. Data collection included large pool frequency, total count of large wood, and width-to-depth ratios. Representative channel type segments of Class I or II streams were sampled using a random selection process. (Refer to Appendix D for more detail.)

The habitat survey sites (segment) and data summarized in Table 7 show the quantity, type, and variability of stream habitat within the Katlian watershed.

Table 7. Summary Data for Year 2000 Main Katlian River Aquatic Habitat Surveys. (Includes side channel habitat associated with each segment.)

Segment	Channel Types	Distance (miles)	Total Large Wood	Large	Key Large Wood/ mile	Total Number Pools	Pools/ mile	Bankfull Width/ Avg Depth*
181	FP3	0.63	344	546	59	3	5	55.2
190	FP3	0.66	652	988	256	60	91	---
276	AF1	0.49	307	627	55	15	31	11.3
164	AF1	0.24	338	1408	83	12	50	10.4
232	AF1	0.17	100	588	18	4	24	34.9
292	PA1	0.43	136	316	56	21	49	12.4
219	FP5	0.39	580	1487	59	5	13	---
322	FP5	1.05	147	140	10	10	10	51.0
182	FP5	1.13	1089	964	45	4	4	190.2
424	FP4	0.45	573	1273	51	37	82	---
425	MM2	0.72	369	513	36	16	22	20.2
171	MM2	2.03	1701	838	63	58	29	3.4

*From Stream Morphology Data Card

Comparison to Regional Standards

The stream survey data were used to determine habitat variability within the Katlian watershed, and to compare with Regional Fish Habitat Management Objectives. The surveyed stream data are compared with the habitat objectives in Tables 8 and 9. The Alaska Region habitat objectives are listed in Table 8 as regional (R10) percentiles. The 25, 50, and 75 percentiles are what the measured, unmanaged streams in southeast Alaska average for that channel type. For example, for smaller floodplain (FP3) stream channels, only 25% of these streams have less than 31 pools/mile and 75% of these streams have less than 96 pools/mile. Measurements falling within this range are considered to be within the normal range of variability.

Pool Habitat Assessment

The number of pools/mile averaged 49 in surveyed FP3 channels and 27 in MM2 channels, which fall well within the Alaska region habitat objectives (R10 percentiles) (Table 8). The number of pools/mile averaged 82 in FP4 channels, which is nearly two times the 75% Region 10 data percentiles, whereas, the pools/mile averaged only 7 in FP5 channels, three times less than the Region 10 data percentiles. Katlian is a very large, wide river, and the FP5 large main channel is unstable with more bedload (see next section) than most Southeast Alaska island streams. This low pools/mile in the FP5 channels may be due to the high amount of bedload movement and lack of large key pieces in the main channel, as well as bedload material moving into the surveyed segments from nearby high gradient channels.

"This river changes bed (it's bed every year). In other words after a spawn and next spring after a runoff you might find a different river bed be there, and it's not caused by logging . . . It's natural!"

Mark Jacobs - Tlingit Elder

"You used to have huge big pools in areas now where there were pools where there's 15 or 20 feet of gravel deposition in them, you know they're, they're completely filled in and leveled off and the river just runs over the top and there's nothing there for man or beast anymore."

"…fish can still get in there, that come in and spawn in those ripples, and uh, you get so much deposition over the winter because of, of the heavy rains and then the spring runoff. Humpies might do alright in there cause they don't overwinter, but Cohos, you know, long term fish that are gonna be in that creek for more that six or eight months, if they don't get buried by the gravel deposition, if the eggs aren't, you know, buried three or four feet deep in gravel where they can't work their way up through it. There's no pools, there's nothing for em when they do get up, it's just turned into a great big gravel sluice all the way down through there, and it wasn't that way twenty years ago."

Les Kinnear

Overall, the number of pools/mile in most surveyed Katlian streams are within or above the natural range of variability for Southeast Alaska streams, and should provide the pool habitat necessary for productive fish streams. However, the large, main channel of Katlian River has less pools/mile than would be expected. (Refer to Appendix C, Table C3 for data on pools/mile excluding side channel habitat.).

Table 8. Number of Pools/mile for Surveyed Segments in Main Katlian River Compared to Forest Service Alaska Region (R10) Averages.

Channel Type	R10 Percentiles			Main Katlian River
	25%	50%	75%	
AF1	---	---	---	34
PA1	---	---	---	49
FP3	31	---	96	49
FP4	23	---	44	82
FP5	20	---	28	7
MM2	11	---	41	27

Large Wood Densities

The abundant in-stream large wood (LW) throughout Katlian in the valley bottom streams and pools indicates a healthy aquatic system at this time. The large wood is providing complex habitat and cover, necessary for highly productive fish streams in Southeast Alaska.

All the floodplain (FP) and moderate gradient mixed control (MM) stream channels surveyed within the Katlian watershed averaged between 707 and 1274 pieces of large wood per mile. This is two to nearly five times the

Region 10 Fish Habitat Objective 75% level (Table 9). These elevated numbers, which are above and beyond the regional averages, can be explained by looking at the species, size and distribution of this wood within the Katlian system. As seen in Figure 10 below and noted earlier, the migratory nature of this channel within its alder dominated floodplain has led to the recruitment of large numbers of small (< 12" diameter) pieces. These pieces are smaller and lighter, and therefore more mobile than the mature conifers that were recruited to stream channels before timber harvest and tend to accumulate in large debris jams on gravel bars and river bends No regional percentiles currently exist for alluvial (AF) and palustrine wetland (PA) channels. (Refer to Appendix C, Table C4 for data on LW/mile excluding side channel habitat.).

Figure 10. Aerial Photo Showing Distribution of Large Wood within Stream Channel (USFS - 2000).

Table 9. Pieces of Large Wood/Mile in Main Katlian River Compared to Forest Service Alaska Region (R10) Averages.

Channel Type	Large Wood (pieces/mile)			
	R10 Percentiles			Main Katlian River
	25%	50%	75%	
AF1	---	---	---	828
PA1	---	---	---	316
FP3	83	---	551	772
FP4	158	---	533	1273
FP5	104	---	145	707
MM2	184	---	304	753

Width/Depth Ratios

Width to depth ratio (W/D) is an indicator of channel stability. Higher width to depth values are normally associated with low gradient, alluvial systems such as the flood plain channel types. These lower valley channels readily adjust channel form in response to changes in bedload and stream flow. Gravel bar development normally occurs in channels with low gradients and bankfull width to depth ratios of greater than 12:1 (Swanston 1991). Contained or high gradient alluvial channels with W/D ratios less than 12:1 have more stable channel forms and are less likely to migrate back and forth across the valley bottom, and build up bedload material.

The floodplain channels sampled in Katlian River are nearly two to three times the 75th percentile values (Table 10). These data suggest that the FP channels are very unstable. In particular, the FP5 segment 182 has a W/D ratio of 190.2 (Table 7) and an average of only 4 pools/mile. The FP5 segment 322 has a W/D ratio of 51 and averages 10 pools/mile, which indicates it is in the range of normal variability for these habitat measures. The FP3 segment 181 W/D ratio is also very high compared to the regional percentiles. The moderate gradient mixed control channel (MM2) has a W/D ratio below the 25th percentile value indicating a lower than average bedload.

Table 10. Width to Depth Ratios for the Main Katlian River Compared to Forest Service Alaska Region (R10) Averages.

Channel Type	R10 Percentiles			Main Katlian River
	25%	50%	75%	
AF1	---	---	---	18.9
PA1	---	---	---	12.4
FP3	8.1	13	17.6	55.2
FP4	16.5	25	35.3	---
FP5	30.3	45	69.7	120.6
MM2	16.8	24	33	11.8

Stream Habitat Trends

Within the Main Katlian and South Katlian watersheds, most of the timber harvest activity within riparian areas included cutting up to and along 17.5 miles of Class I and II stream bank with little or no buffer (Figure 5). These timber harvest activities have impacted some riparian areas.

Loss of forested riparian vegetation along streams from timber harvest and road construction can have numerous negative effects on the channel including:

- Reduced bank stability,
- Loss of temperature moderation,
- Loss of overhanging bank cover,
- Decreased input of leaf litter and terrestrial insects to the channel, and
- Decreased input of large wood.

These changes, along with the possibility of increased sediment inputs, can reduce the amount and quality of fish rearing and spawning habitat. Loss of riparian vegetation associated with blowdown along existing harvest areas and roads initially may provide high levels of large wood into streams but can destabilize banks and eliminate future sources of large wood.

In the Katlian watershed, streamside harvest occurred along more than 37% of the length of Class I and 8% of Class II streams. There also has been harvest along the banks of Class III streams that directly influence downstream fish channels. The loss of these streamside riparian trees will decrease future large wood input into these streams for many years. The habitat surveys completed in July 2000 indicate that most streams, besides the main channel FP5 reaches, still have abundant amounts of old legacy wood. However, the condition of the impacted streams in the watershed will decline as in-stream wood and streamside stumps decompose, and are washed out of the system. As dense young-growth riparian vegetation matures, it can shade smaller stream channels, reducing the input of solar radiation and potentially lowering stream temperatures during the summer. This can reduce fish growth rates. All these effects along with increased sediment inputs can reduce both the amount and quality of fish-rearing habitat. This would have the greatest impact on species such as coho salmon and Dolly Varden char, which spend at least several years of their life cycle rearing in streams.

> *"…any more everything's gone the big stumps have come off the hills it's really nothing to hold anything it's just, you've seen what it's done to those few stands of trees that are left in those corners, you know, it's just eating away the edges on them, and they're all falling in, and everything is going down the creek, and that's exactly what'll happen in here if you open it up too, just, it'll just turn into a gravel shoot and that'll be it."*
>
> **Les Kinnear**

One of the most significant losses to habitat may be the shortage of main channel segments, which have undercut banks formed by large root wads of living giant conifers. Adult cohos and other fish find daytime refuge from predators in these undercut banks, and some even spawn near or under these streamside caverns. The undercut banks provide superb, irresistible hiding places and eddies where mature silver salmon can perform their mating rituals undisturbed.

Fish Observations

Xaat uch too too
"Fish. We're gonna count."

David Davis II – Tlingit Elder

This section describes direct observations of fish and habitat that have been made by the Alaska Department of Fish and Game (ADF&G) and the Sitka Tribe of Alaska (STA) on the Katlian stream systems.

"The Cohos seem to be heaviest right here where they're getting ready to log, …where the fish lie back in the corner."

"Start showing up? Well they don't leave there 'til…I saw one in February. I guess you might find one [at the] end of July. Good time to start looking. Usually you'll find some in there. Fishing in wintertime, you're looking at November, October. It gets pretty thick in there. They come in there steady."

"As far as brights, it fades out towards the end as far as what are good keepers, obviously in November."

"There are some big dollies up in there."

Erin Kitka

"All these streams…if you put 'em all together, especially those that are good for chums and pinks - they don't have very good production for cohos. But they do have some *production for coho, and you can put them all together and it adds up to quite a bit."*

"These little streams - they can support a few cohos, but not too many. They [other fish] force them out if it becomes too crowded. They force each other out."

James Parker

"The silvers were in there with all the timber - fantastic fishing. Fantastic place for silvers. We['d] go [to] the main river, then side trip the rest. Right here where the log transfer site was; go down there and fish right off the float. August through September - also dogs and chum."

"I used it [area], but not as much [after logging]. There was still some good fishing out of there."

Ted Borbridge – Tlingit Elder

"They come into both sides here [Main Katlian and the South Fork]*, used to, in these pools along here you had, you know, sixty, seventy big Cohos laying in there into November, December. I walked the whole river this year after I finished hunting in there and saw six Cohos, six fish in this whole stretch of creek."*

Les Kinnear

Fish Count – Background Information

The following discussion of salmon observed in the streams is a combination of records obtained from the Alaska Department of Fish and Game (ADF&G), and actual field observations by the Sitka Tribe of Alaska (STA) in the year 2000.

The Alaska Department of Fish and Game has walked Tl'ayáak Héen (Main Katlian River) five times and Xaaw Xaach Heeni (South Katlian River) 14 times since 1960 to attain adult salmon counts for pink, chum or coho. However, they usually depend on aerial surveys due to the immense size of the watersheds. The Sitka Tribe of Alaska walked the four main streams of the watersheds 20 times in the year 2000 to obtain fish counts. Six of these counts were below surface (dive) counts for cohos, which provide a better view of the fish in the pools resulting in more accurate surveys.

Numbers of fish observed during these surveys are not intended to indicate the total species number of adult fish returning to the stream in a given year. This can only be accomplished using fish weir data that does not exist for the Katlian Rivers. However, the peak counts do not require handling fish or altering their movement pattern, and are much less expensive than weir counts. Peak fish counts can provide a good year-to-year index of fish run strength. Peak daily counts are one-day counts of the number of fish observed in the stream at or near the peak of the run. The number of fish counted is usually substantially less then the entire fish run entering the stream that year.

Comparisons of peak counts and weir counts in the same stream elsewhere in Southeast Alaska, indicate that half or less of the entire fish escapement back to the stream may be counted during a one-day count, even when it is timed during the peak of the run. However, fish counts over many years are used to analyze trends in fish populations. This can lead to a better understanding of the factors that may be effecting the populations. The year 2000 counts are current evaluations that can be used with past ADF&G data and future collections to analyze possible trends in fish populations. Year 2000 data in this report is also compared to surveys conducted by ADF&G in the past to help evaluate the effectiveness of different survey methods.

Coho

"…gone up there in conjunction with Dog Point Fish Camp to fish. Years ago, when we fished at Dog Point for a family we would fish Cohos up there in Katlian."

[When was Fish Camp fishing?]
"July and August fish camp."

John Littlefield – Tlingit Elder

"…Spinning gear, fly-fishing gear. [There are] quite a few every year. [It's] Where I get all my cohos. You don't see a lot of natives in there fishing."

Erin Kitka

"That's where the coho go: smallest streams. Might look muddy, shallow, but that's their spawning grounds."

Mark Jacobs - Tlingit Elder

"Deer Point [mouth of Katlian Bay], we'd troll in there. Pick up 10-30 coho in a night."

John Littlefield – Tlingit Elder

"I know each one of these streams has their coho runs, but I don't think they ever amount to much. And with the charter fleet, sport fleet, and commercial fleet all operating on one mouth those numbers are going to dwindle, which may or may not be bad. It might be, for example, that Katlian River can only support a hundred coho-- spawning coho. Otherwise, smolt start forcing themselves out too soon and it may be that they're consistently get[ting] too many in there. But I would kind of doubt it now with the pressure that commercial and sport fish put on there."

James Parker

"And you can go out there. I know I've been out there in September, mid-September, and we were already seeing cohos on the flats. They could have already passed through there. In fact I remember fishing several hundred coho there in late September - sport fishing."

James Parker

"So I think that the way things are going with recent years, I think some conservative effort should be put on there to preserve the smaller runs of coho in there. I think if you went up there in November, December, you'd find cohos too. I've seen 'em to the end of December."

James Parker

Year 2000 Fish Count

The early coho salmon run and its build-up to peak run strength was not observed during field surveys in the year 2000 due to heavy rainfall during the run period (Appendix E). A field survey on September 23rd revealed a strong coho run, and sport fishing was near or at its peak.

In 2000, the coho population for Katlian River was monitored on 12 different days between September 23rd and December 27th. During the peak of the run, from September 15th to November 15th, surveys were taken six times for an average of one survey per 10 days.

The bulk of the coho run had entered Katlian River by October 24th. After this day, coho density in the main channel pools began to diminish slowly. Although data were not collected weekly to determine a distinct trend in the rate of coho density decrease in the main stream pools, STA estimates that coho numbers per pool dropped by 1/3 (from 60 to 40) between October 23rd to November 21st, and to almost zero by December 23rd.

On October 20th, 23rd and 26th, STA field crewmembers conducted snorkel surveys of South Katlian River, Coxe River and Katlian River. Cohos were found in the deepest pools of each river and beneath woody debris piles (log jams) or large, semi-submerged logs. This was most significant in Coxe River where cohos appeared calm while hiding beneath undercut banks and streamside root wads.

On December 6th and 8th, cohos were found in the undercut banks of tributaries 190 and 181 (Table E-1). These tributaries of the Katlian River are found just inside the northeast corner of the Shee Atiká property boundary. Some reaches of tributary 181 still have excellent coho rearing habitat; good gravel, a good network of undercut banks, and a few large pools connected by shallow riffles, which cohos can swim without difficulty. It also has a consistent water supply, and was never observed to go dry.

Year 2000 Estimated Harvest

STA estimated year 2000 harvest based on field surveys and the following method: Based on interviews with sport fisherman on September 23rd, sport fishing (within 400 feet upstream of the river mouth) was at its peak. An average weekend day brought approximately six anglers that averaged three cohos harvested each for a total average of 18 cohos harvested per weekend day. The peak fishing time (September 15 through November 15) contains 16 weekend fishing days. Assuming the average weekend harvest rates, we estimate 288 cohos (18 cohos/weekend day x 16 weekend days) were harvested in two months by weekend anglers only.

Upon returning to the Katlian Watershed Rivers, the cohos face capture from both sport fishermen and natural predation from wildlife species. Silver salmon are renowned as a succulent tasting and fierce fighting sport fish. Katlian River and South Katlian River are popular spots for anglers to chase silver salmon. Most of these fishermen congregate in the first few hundred yards above and below the high tide line. Most silver salmon are caught in pools near the mouth of the streams. Fishermen line up along their favorite deep pools because the cohos use pools as "rest stops" as they migrate upstream.

This year the sport fishermen's favorite coho fishing pool went from being deep to being almost non-existent. The pool was formed by a hundred-foot long spruce tree with its root wad intact. High rainfall and subsequent floodwaters shifted the tree to midstream and caused a decrease in pool depth. The tree will likely be washed out of the stream by next year. This instance of pool dynamics is a common occurrence in the rivers of the Katlian Watershed.

The coho sport fishing effort was considerably less on weekdays than on weekends. No surveys were taken to determine an estimate of weekday catch. However, sport fishermen do frequent the watershed on weekdays. Charter boats were also seen visiting the Katlian River, Coxe River and South Katlian River on weekdays. There are 40 weekdays during the peak fishing period. If you assume only one person per weekday fished and caught on average 3 cohos (a weekend day's catch average), then a total of 120 cohos were caught during the combined 40 weekdays.

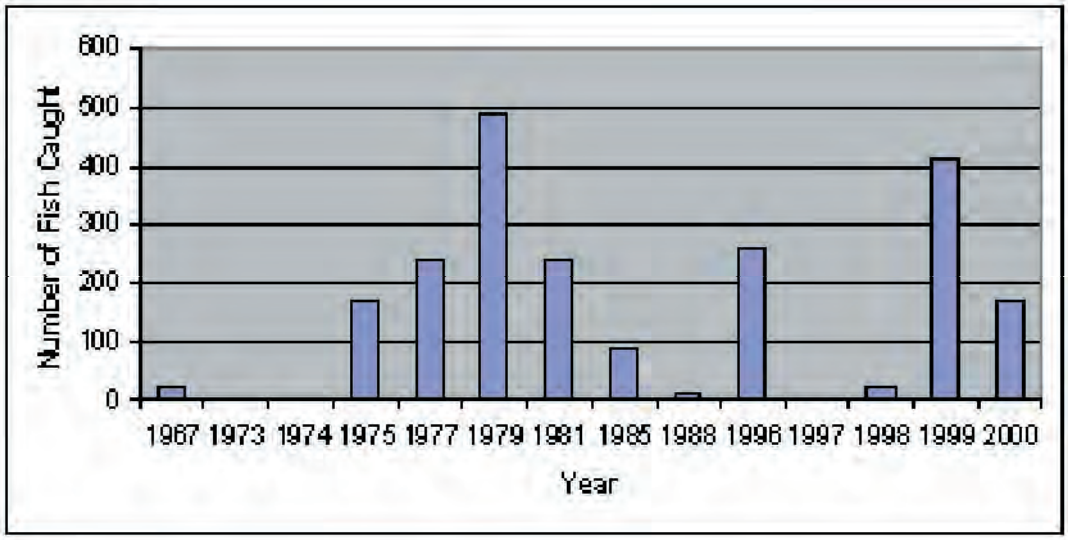
Using these assumptions, the estimated year 2000 coho catch for sport fishermen angling in Katlian River is 408 cohos (288 weekend + 120 weekday). It is possible that the actual year 2000 coho sport fish catch was even higher for Katlian River. These assumptions may be somewhat conservative and do not account for illegal activity.

The coho sport fishing catch estimate is at best an educated guess. A well-designed creel survey is recommended over the next several years to provide an accurate measure of the coho salmon harvest at Katlian. This will help to determine the impact of sport / subsistence fishing on the Katlian River coho population.

The catch (interception) of Katlian coho by commercial, charter, sport and subsistence saltwater fisheries cannot be accurately measured since no juvenile coho have been marked and released from the Katlian River. However, we estimate that between 55 and 75% of Katlian adult coho are caught in the various saltwater-based fisheries, with only 25 to 45% returning to the freshwater streams. This estimate is based on years of research completed by ADF&G at Ford Arm Lake (West Chichagof Island) and more recent work on streams in Sitka Sound.

The annual Katlian Bay Purse Seine catch totals for most years between 1967 and 2000 are displayed in Figure 11 (Alaska Department of Fish and Game Harvest Data 2001.). With continued monitoring by ADF&G, we will be able to establish how trends in this fishery compare to Katlian Watershed escapement totals.

Figure 11. Annual Coho Salmon Catch Totals for Purse Seiners in Katlian Bay.



Data courtesy of the Alaska Department of Fish and Game, 2001.

Pinks

"I've noticed the dogs and humpies through there in the fall. By [the] time those fish are showing up in the creek, its hunting season. You're not really looking at the fish, you're looking towards the hill."

Erin Kitka

"I've seen so many pinks in there. [It] doesn't take any water at all for them to go from one pond to another. Be 3 or 4 in this [pool] and no water at all; they run up there on their bellies with everything else sticking out. Make it to another one and rest--pretty amazing. In my years out in the woods, I've been up on a lot of high elevation. I've talking about 1500 foot elevation muskeg and saw fish some kind or another "

Leo Evans

Only two surveys were taken during the pink and chum salmon runs in the year 2000 by Sitka Tribe of Alaska (Table E-1). The pink run was just beginning during a visit on August 16th. Due to heavy rainfall, the next survey did not occur until September 23rd, at which time the pink salmon run was going strong. The pink salmon runs appeared healthy, strong, and on time in relation to the runs in adjacent watersheds. Torrential rainfall prevented an in-depth escapement study for the two species.

Pink salmon in Katlian River advanced as far inland as the Shee Atiká Corporation / Tongass National Forest land boundary (2 ½ miles inland). There was no impasse at this point, so the reason for the halted push inland was either:

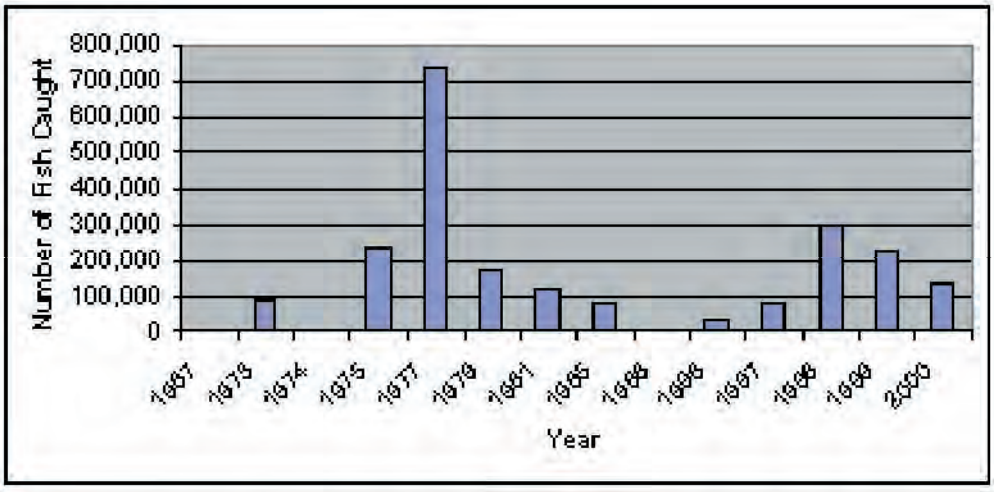
1. The run strength was insufficient to push the fish further upstream; or
2. Natural runs of pinks and chums don't generally advance much further.

Pink salmon in South Fork Katlian River did not advance much further than 1-½ miles upstream. The reason for this was the river dried up and went underground. During the moderately heavy rains of the year 2000, the riverbed of the South Fork Katlian River did not produce surface flow (the river remained underground) in its

middle reaches. See Table G-1 in Appendix G for a comparison of 2000 monthly precipitation totals and historic averages. The headwaters were separated from its mouth by a dry creek bed, which was easy for survey crews to negotiate on foot. At the confluence of Boulder Creek and South Fork Katlian Rivers, the waters alternately went underground and raised sufficiently to join the two rivers. Boulder Creek contained no pink, chum or cohos when STA field crews surveyed it for salmon escapement.

Coxe River appeared to have a very healthy run of pink salmon. Records of salmon escapement by species for all streams are noted on salmon escapement spreadsheets in Appendix F - ADF&G Escapement Data.

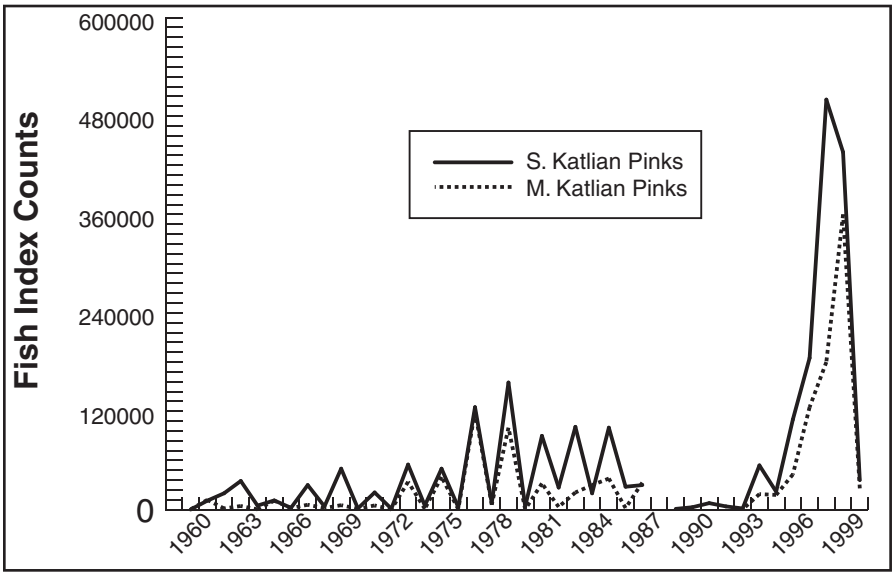
Figure 12. Annual Catch Totals for Pink Salmon by Purse Seiners in Katlian Bay.



Data courtesy of the Alaska Department of Fish and Game, 2001.

The ADF&G collected peak count data on pink salmon in both Main Katlian and South Katlian Rivers most years between 1960 and 2000. Figure 13 shows the trends in estimated pink salmon index counts for each river.

Figure 13. Pink Salmon Index Count Trends.



Data courtesy of the Alaska Department of Fish and Game, 2001.

Caution: The data used in this graph in no way reflect actual escapements to these streams. These data represent estimates of the number of fish seen on a particular day observed while either on foot walking the stream or from a fixed wing aircraft or helicopter. The department generally refers to these counts as “index counts”. Generally, pink salmon counts can be used for looking at yearly trends in escapement.

The peak count data show substantially increasing adult pink salmon returns to the Katlian Rivers in the 1990s. This correlates to a region wide trend in this area of Southeast Alaska of increasing pink salmon escapement during this time.

Chums

"There used to be some hatchery fish up in there at one time.

We used to get fish in a lot of these places like this creek. [The] dogs used to go in there - there's no more dogs."

John Littlefield – Tlingit Elder

"There used to be real heavy Chum runs up as far as where my camp was, and that was in there four miles. Back in, oh I don't know, 79' or 80' when we shot those bridges out in there."

Les Kinnear

Fish Counts

ADF&G uses aerial surveys to determine numbers of chum salmon upstream in the Main Katlian and South Katlian rivers. Since 1960, 39 aerial surveys were conducted in 16 different years on the South Katlian River. Chums were only sited on 10 of those flights, all occurring in different years.

Sitka Tribe of Alaska field crews conducted walking surveys for chum salmon in the year 2000. The beginning of the chum salmon run was observed by STA on August 7, 2000. During the next visit on August 16th, the chum run was going strong. The last visit on September 23rd showed the chum run tapering off. STA's two chum counts can be compared to two historical ADF&G counts conducted at approximately the same time of year:

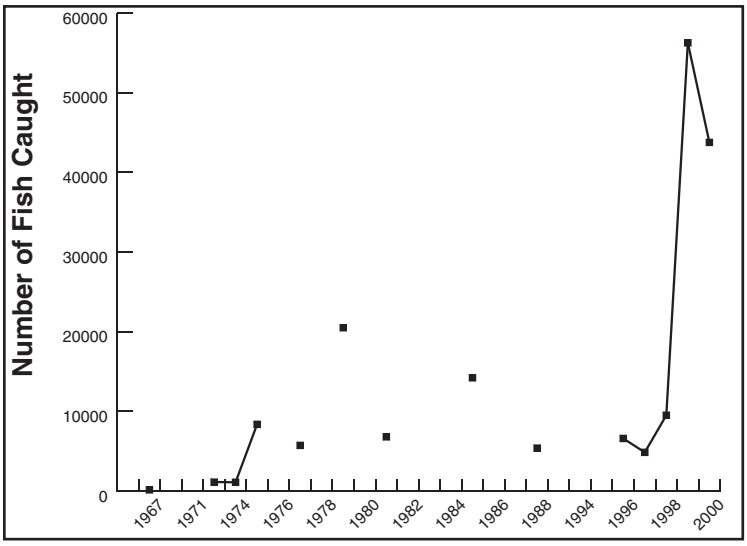
- The STA field crew conducted a foot survey of the South Katlian River on August 7, 2000 and counted 50 upstream chums. On August 1, 1973, the ADF&G counted 200 in an aerial survey.
- On August 16, 2000, STA counted 1,246 chums upstream on the South Katlian River. On August 14, 1995, the ADF&G counted **100** during an aerial survey.

Quality peak count data for chums is limited for the Main Katlian River. Additional annual surveys are needed during the peak of the run (mid-August) to provide a better year-to-year index and measure of long-term population trends.

Harvest Data

The collection of harvest data by ADF&G has been more consistent since 1996. The following graph (Figure 14) shows the trend in chum harvest for the years where data has been collected. There was a substantial increase in recorded chum harvest in 1999 and 2000.

Figure 14. Chum Salmon Catch (Katlian Bay)



Data courtesy of the Alaska Department of Fish and Game, 2001.

Management Opportunities

Management Guidance and Restoration Opportunities

Timber harvest reduced the amount of old growth canopy and increased red alder dominated stands. However, the vegetation and stream habitat data indicate that this disturbance has not yet dramatically changed the stream channels. The Katlian watersheds have the potential to produce and transport very high levels of bedload and sediment, and the main channel shows a history of migration across the valley floor, both before and after logging. The very steep slopes, landslides, high rainfall, and small proportion of valley bottom to steep side slopes create a naturally unstable system of stream channels. The non-forested riverbed areas have shifted locations, but this total area has remained about the same before and after logging. The large wood density in most stream channels, other than the main channel, is currently adequate to high. However, key piece large woody debris that forms and maintains lasting fish habitat components such as pools is lacking.

The intensive harvest in the valley bottom areas removed large amounts of productive forest along many stream banks, which is the source of the future in-stream large wood. The decrease in the amount of large conifers and the increase in red alder and small conifers in this area after logging, indicate a loss of future large wood sources for the channels. As the current legacy key piece large wood in the streams breaks down and moves out of the system, there will likely be a scarcity of large trees for many years to replace those structures. There likely will be a period of time when the large wood quantity in some stream channels will become low and possibly insufficient for maintaining high quality fish habitat.

Eventually even-aged second growth stands will change as some trees die from lack of resources, while the remaining trees begin to grow faster. However, the current high stand densities and dominance in some areas by red alder indicate that the growth of the existing conifers will be slow, delaying future sources of large riparian and in-stream wood for a long time.

Maintain Existing Large Wood Sources

The extensive past harvest of the valley bottom stream riparian area leaves little opportunity for additional harvest near the main channels. An emphasis should be to maintain the relatively few existing large trees (old-growth trees, as well as larger young growth) in the valley bottom riparian areas. The surrounding young-growth riparian forests need time to obtain adequate size to function in the riparian areas and adjacent streams. The shortage of large trees near fish streams warrants protection of remaining large trees within the stream riparian areas.

Thinning

Active management practices such as pre-commercial and possibly commercial thinning can accelerate differentiation of the stands. Young-growth stands can be managed to produce healthy large diameter trees to provide future stream structure and habitat in a more expedient manner than will occur naturally. It is recommended that stands should be selected that are likely to respond well to thinning, that are located in the floodplain channel types (large wood source for streams), and that are less likely to be eliminated by movement of the river.

Photos should be analyzed to find areas that do not have a long history of red alder domination. These areas are prone to disturbance from either wind or river movement, and will likely continue to experience stand replacing disturbance. Stable, forested floodplain areas should be selected that have significant conifer component that will benefit from release (from competing trees).

In many areas, much of the red alder is large enough to provide economical return on its removal. These trees could be removed and sold to help pay some of the costs of thinning. This option may be only viable on the lower valley Shee Atiká Corporation lands where a timber sale has recently been completed. In conjunction with this sale, the mainline logging road from the mouth of Coxe Creek through the length of the Shee Atiká

Corporation property has been brushed out to allow 4-wheeler access to their harvest areas. The original road bed along this access route is primarily intact and could easily be used again to either transport future loggers to these alder stands or improved to allow vehicle access for a more widespread red alder sale from both USFS and Shee Atiká Corporation lands.

Addition of Large Wood Structures

Portions of the streams that are already experiencing shortages of large wood and lack of pools may benefit from placing and constructing large wood structures in the streams. Sites have to be chosen where enough large tree material is available to use for construction. In some cases, several moderate sized trees may be bound together to act more as a larger structure. This may prove impractical on the main river channels due to their power and instability but could effectively enhance smaller tributary and side channel habitat within the lower gradient floodplain areas. This would improve rearing habitat for coho salmon and other salmonids, as well as stabilize spawning gravels. Smaller stream channels already identified as debris or pool deficient should be looked at for in-stream restoration work. This includes sections of the smaller floodplain channels (FP3) where survey segment 181 and 192 are located.

We recommend a collaborative effort be undertaken between such agencies as the U.S. Forest Service, Sitka Tribe of Alaska, the Alaska Department of Fish and Game and Shee Atiká Corporation, to replenish the diminishing supply of LWD. Part of this effort could be accomplished during the any future proposed logging operation on Shee Atiká-owned lands or National Forest lands in the Katlian watershed or as an independent restoration project. Although funding was not available to do this type of restoration during recent timber harvest on Shee Atiká Corporation lands in 2002, helicopters used for either future hillside logging or restoration efforts could be used to move large logs and rootwads into stream channels lacking adequate large wood. It might even be possible to transport large enough logs and rootwads (with boles) that could be effective in some locations in the main river channels. The source of this debris could also be established through this collaboration between agencies.

During the summers of 2002 and 2003, employees from the Sitka Ranger District and the Sitka Tribe of Alaska, with the cooperation of the Shee Atiká Corporation, completed in-stream large wood restoration projects on stream segments 181 and 192 on Shee Atiká lands. These projects incorporated the addition of 110 and 85 large wood structures, respectively, along FP3 tributary stream channels. These structures were designed to created pool and cover habitat to areas void of these natural habitat components.

An additional option for providing off-channel fish habitat and recruiting large wood to stream channels is the colonization of beavers within the watersheds. Research should be put into looking at the feasibility of establishing a viable population in areas like the mid and upper valley tributaries. In these locations, beaver could provide much needed off-channel ponds for salmonids rearing habitat, water retention for continued perennial flow during low flow periods and also, reduce the amount of red alder, thereby promoting the release or regeneration of conifer tree species.

Road Maintenance

Restoration work should involve placing drainage structures and/or ditching at existing washout sites, cleaning, or preferably removing partially plugged culverts that still exist, and removing artificial barriers to fish passage. Potential road restoration sites were identified during the road surveys, and are listed in more detail in other sections of this report and in associated survey documents, as well as in Appendix J.

Water Quality

The development of a Water Quality Restoration Plan for the Katlian watershed to address its 303d listing for sediment and establish a TMDL will soon be conducted by the Sitka Ranger District. This plan will identify the key sediment sources within the watersheds and incorporate many, if not all of these restoration opportunities to reduce sediment production and improve water quality. However, the analysis of this assessment indicates that most sediment sources within this watershed are natural and there is little likelihood for effective mitigation outside of restoring riparian composition and function, minor road repairs and preventing any further management induced disturbances.

Future Logging Activities

If future logging practices are to occur in the watershed, they should be undertaken with remedial measures that prevent or maintain stream channel stability and protection. No further management activities, such as timber harvest or road construction or rebuilding, should adversely effect or impede floodplain function, stream routing or channel dimension, pattern and profile. Large standing conifers supplying stability for the main streams, tributaries and their pool systems should not be removed. In addition, stream stabilizing trees, as well as those in the Riparian Management Area (RMA), must be protected from erosion and windfall caused by insensitive logging practices. No more conifers should be taken from the immediate stream corridor.

State guidelines require a sixty-six foot stream buffer on private lands. However, the current Shee Atiká Corporation policy for their property within the Katlian watershed is to use 100-foot stream no-logging buffer zones. This additional stream buffer width will help protect Katlian's valuable resources for future generations.

Additionally, providing 100-foot buffer zones on all Class I, Class II, and Class III streams in the Katlian watershed, would ensure that environmental factors such as water temperature, sediment load, or water velocity do not negatively affect the valuable Katlian fish population.

Literature Cited

ECOMAP. 1994. National Hierarchical Framework of Ecological Units. USDA Forest Service, Washington, D.C., 21 p.

Forest Plan. (See USDA Forest Service. 1997.)

Goldschmidt, W.R. and T.H. Haas. 1988. Haa Aaní, Our Land: Tlingit and Haida Land Rights and Use. University of Washington Press, Seattle, WA. 219p.

Johnson, P.R. and C.W. Hartman. 1969. Environmental Atlas of Alaska. Inst. Arct. Environ. Eng. and Inst. Water Resour., Univ. Alaska, College. 111p.

Murphy, M.L., and Koski, K.V., 1989, Input and depletion of woody debris in Alaska streams and implications for streamside management: North American Journal of Fisheries Management v. 9, no. 4, p. 427-436.

Swanston, D.N. and D.A. Marion. 1991. Landslide Responses to Timber Harvest in Southeast Alaska. In Proceedings of the Fifth Federal Interagency Sedimentation Conference, March 18-21, 1991, Lan, S.S. and Huang Kuo, Y. (editors), Las Vegas, NV, p 10-49 to 10-56.

TLMP; or Tongass National Forest Land and Resource Management Plan. (See USDA Forest Service. 1997)

USDA Forest Service. 1992. Channel Type User's Guide, Tongass National Forest. R10 tech. paper 26, S.J. Paustian (editor), Juneau, AK, 179 p.

USDA Forest Service. 1997. Tongass National Forest Land and Resource Management Plan (R10-MB-338dd, 1997), Land Management Plan Revision, Final Environmental Impact Statement (R10-MB-338b, 338c, 338e through h, and 338n, January 1997, and Errata May 1997, and Record of Decision, May 1997).

USDA Forest Service. 2001. Ecological Subsections of Southeast Alaska and Neighboring Areas of Canada. October 2001. Technical Publication No. R10-TP-75.

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Appendix A: Transcribed Oral accounts of the Katlian Watershed

Nine local individuals who have had experience with the Katlian watershed over the course of their lives were interviewed for this assessment in order to get an idea of what life in the Katlian area was like before, during and after logging. Included are loggers, subsistence users, and representatives of local governmental bodies who dealt with the watershed regularly.

Following is the transcribed taped interviews of these people. Kim Perkins and Paul Hill conducted the interviews. Paul Hill did the transcribing. Michael Stringer performed the final editing of the accounts.

The accounts are documented in alphabetical order:

- Oliver 'Porky' Bickar, Former Logger
- Ted Borbridge, Local Tlingit Elder and Former Member of Shee Atiká Board of Directors
- Leo Evans, Subsistence User
- Mark Jacobs, Local Tlingit Elder
- Kenneth Kimball, Former Boom Boat Operator
- Les Kinnear, Hunting Guide
- Erin Kitka, Subsistence User
- Herman Kitka, Local Tlingit Elder and Former Chairman, Shee Atiká Board of Directors
- John Littlefield, Local Tlingit Elder and Subsistence Representative on Board of Northern Southeast Regional Aquaculture Association (NSRAA)
- James Parker, Former employee of the Alaska Department of Fish and Game
- Ron Welsh, Former Logging Engineer

Account of Oliver 'Porky' Bickar

"I cut the biggest there was up there. Oh yea by far. Spruce was. I had one... 9 ½ foot diameter butt"

GENERAL

[When was your first time up Katlian? Ever been there before?]
No. Nobody did. Started it there. Finished it there. Barten and Rynvan logging company.

[120 million board feet?]
Little over that.

[Did people frequent the area while you were logging?]
Yea.

[What do you think of the timber sale?]
[No response]

[Did you log before Katlian?]
All my life. Well you got paid for how much timber you cut, not for how many hours you worked. How much work you done.

[Did you work year round?]
Yea, usually. Sometimes you take off a couple months, depends on the year.

[Is there any timber left?]
I think there's some good timber. Yea. The Forest Service made 'em leave after... watershed....

[Did any loggers explore the area?]
No.

[Is there anything left from logging? Ships etc? Vehicles?]
No. No. I know what you're looking for, some old things been wrecked in there before, they just left it and logged around it. No equipment or ships.

CAMP

[Were you involved with building the camp?]
I never stayed in the camp. A lot of them did, but I never stayed there.

[Did they camp there whole time?]
Yea. Probably there.

[Were there cement bases of camp?]
Footers, not cement floors. But the kitchen had. The cookhouse. They buried that whole camp. They took the whole camp. Bunk houses. Tore it down. Put it in a fire burnt it. Put it in a hole and buried it.

BUILDING

[Did you start on the beach and work back?]
Yea. We started on the beach. Built a boom there where we dumped the logs. We dumped the logs in the water. We built that first the dump. Then we started yardin'. Did truck loads at a time.

TREE FALLING

[You did work with B&R first year?]
Yea. I fell timber.

[Was that your job the whole time]
Yea.

[Did you build bridges?]
Bridges [were] not up to me. I built the bridges. I felled timber that built the bridges. We'd fall big spruce 4-5 footers....

[Is that a larger tree?]
Yea. ….53...full length 5 of them. Lay 'em down and put some rock over the end. We built all kinds of bridges.

[Did you have stream buffer zones back then?]
Well, when you go up the valley you didn't worry about that as much. It's when you're right down next to the beach. We spent only a couple 3 days down next to the beach. Rest is all up in the valley, way up. Didn't even know what a buffer zone was.

[Did you work on North and South Katlian?]
I worked in every one of those.

[What were the boundaries?]
We just cut up to the hillside.

[What were the Biggest trees?]
I cut the biggest there was up there. Oh yea by far. Spruce. I had one... 9 1/2 foot diameter butt. and a whole bunch around 9 foot. Bunch 8 foot.

Millions and millions of BF. If they know where to get it, I know where it is. Along the back...go up the valley like this, go far up the valley...here, back here… here. I could tell em exactly where it is. I could go up there in a chopper in 2 hours…20 million feet of timber.

You could see where the old spruce division got the green number one trees – [they] got probably two dozen or so. They were the number one trees. They just took them. Soldiers. That's all they did. They did that right along front of Katlian. They went over here up this creek on the right [Coxe Creek] way up that. Then back up the mountain.

BEARS

[Bears?]
There was some bear there was...I'm not saying there was a lot. Quite a few was all.

HOMESTEAD

[Homestead on flats?]
Yea. I knew where they where. Right here. The river's here. Here's the river too. On this side is where it was. The homestead is on this side.

HOTSPRINGS

[Do you know of any hot springs?]
No, I never knew of any. There's a creek - Coxe Creek coming out right there.

FISH

[Any Cohos?]
Went up to the first gorge. Right there...Didrickson's camp...

[Salmon runs went how far upriver?]
Yea I was thinking. They got some roads that are screwy [on the map].

MARTIN FARM

Well there used to be cut timber - It was old - Where they kept martin. Martin fence of 2x4, 4x4 drove into the ground. Chicken wire fence. Martin farm yea. Right there. Go into the main river - go way over to the right - over half way. That timber there: start cutting there. That's where I found it.

MOORE CABIN

[Ever visit Katlian again?]
No, not really. I always wondered what happened to Doctor Moore's cabin. Doctor Phil Moore. Built his clinic. He had one right there. Go to the left of that road. Go up there.

[What was it like?]
Two room cabin. Had a stove in it.

OTHER

I know we had some…they made a Jap[anese] movie. The idea was a series of pictures for a TV show of this young man coming to Alaska and learning different occupations. He came to Sitka to learn to log. They were out there for a week. Got a hold of ALP in Tokyo. Because they had a camp. He got the devils club in the finger and he wouldn't go to the hospital because he was showing them how to fall the trees. So there was this young girl - very attractive - was there and he wasn't about to go to the hospital. In a week he almost lost his hand. His hand was all red...one Japanese. He took bunch of pictures. We had a whole stack.

Account of Ted Borbridge

"You ask me today why we picked it: for proximity to the native community"

GENERAL

My name is Ted Borbridge born in 1928. I was in there [The Shee Atiká board of Directors] '74. 13 and ½ years.

LAND SELECTION

I was on the original board in 74. Mark, was one the interim board and Herman. A number of others, Nelson.

We had a(n) execut(ive) director, Warren Weathers, and he recommended we select the land in Katlian. We reasoned that the reason for selecting that land was for shareholders receiving some of that land- maybe an acre or half an acre. They could build their own home. That never came to pass.... [tape unclear]

We knew Juneau received a regulation wherein we could select within a fifty-mile radius of Sitka. And the primary reason for that was all the land in Sitka was already taken - and we got a exemption to where we could actually go to. We went and selected Hood Bay - over there on the island. During all this discussion and everything else, we ended up with Cube Cove and that's Cube Cove down to Lake Florence. That's the biggest chunk of land we have. There is about 3000 acres in Katlian. Twenty-some thousand acres between Cube Cove and Lake Florence.

Angoon. Even if we had a fifty mile radius, we didn't even get to Admiralty Island. So that's why we got the exemption - to be able to choose further out, and actually Juneau did the same thing 'cause they got Hobart Bay just above Petersburg.

That was just the general idea that we had. One of the reasons we selected Katlian, but nothing came of it.

We primarily selected the total of Hood Bay below Angoon - fantastic timber in there. Then we talked about Katlian said "Well why not select Katlian for the native community, where they could build their homes." But it never came to reality. Like I was saying earlier I have mixed feelings about the logging. Well Katlian River is already designated as a...[impaired water body]. The logging runoff will create problems.

They're going to look at that land and timber that's left…some of those trees along the river.... The number one was cost prohibitive to even consider a road 'cause a road south shore would cost a million dollars. So that's the primary reason. Can imagine today probably 2 million dollars. It's a nice place.

Well, we had talked to, I don't know whether we talked to the Shee Atiká Board or not, but we had a vision, if you will, of building 5 homes in Katlian and maybe a central building to use as the…community house. The vision we had for this we would build five homes if any of these [people] had a drug problem or alcohol problem. Instead of just bringing him or her, bring the whole family because in my mind that is where all the problems start: "I don't like you, you don't like me…." Get mad at each other and all sorts of things to each other: "Hell with you, I'm going out to get drunk tonight… fine, I'm going to have a pot party."

But that's what we envisioned. Bring families, not just that person out. Bring the whole family and they can realize what the person is going through and somebody can say in the back of their head … the right word that can get them on the path to healing. So that's what we had thought about, and it never came about.

We thought, one of the original ideas we had when we selected Katlian was that maybe and everybody, believe it or not, a lot of people in the native community said, 'I want this, I want that.' They already picked their spots.

[Still do that?]I don't think so: number one, it freezes up in wintertime, and water will freeze a ways out. Wind whistles 'Dixie' coming out of there. Considering the…ground structure. I think I...just to get the foundation. I think it would be limited to single story. 'Course I could be wrong.'

We picked it…you ask me today we picked it for proximity to the native community. Maybe build homes out there, and it never came to pass. I think we had a number of discussions to the pros and cons. Number 1 being access. Number 2 was timber.

Originally we selected Hood Bay. We selected all 20,000 acres in there…

We could select 9 townships, finalize down to one.

LOGGING

Well, I have mixed feeling about it. It's going to be an expensive proposition, as I understand it. [They are] Helicopter logging it. So I'm…my feeling is... the amount of timber they have in there. They're not going to realize any type of profit. They will get some profit. When they LTF log transfer site. They had a float that you could walk down.

If you look at Katlian, most of it's small little spheres are not covered. Take that drag line. First thing you do is [you're] going to get a scoop of gravel. It's all gravel.... they have claimed the gravel on the surface even though its a subsurface right.

[What about after logging?]
Christmas trees. There's money to be made by Christmas trees.

Logging company was already in there we counted our chickens before they hatched and if you read the paper today. A lot of native corporations are looking at what is the max-minimum amount of growth before you can actually harvest the timber.

You're not going to get any nine-foot trees in there. A lot of timber companies say you can harvest timber 80 to a hundred years old. Hundred year old trees [are] only that big.

The timber that Rainier is going to take out is better than that [in] some areas.

You look at Katlian and you can see the large scars, where its been washed out. They want to show you a bad method of logging, just cruise the shoreline hillside. [The] place has been washed out.

CUBE COVE

The timber had been harvested. Tourists look at the color of the timber up high and you can see it's darker than down below. About 4 or 5 of us went South there from the board to Cube Cove in a boat. We were restricted by a 50-mile radius, and the 50-mile radius we got an exemption. And actually Goldbelt selected Cube Cove and we selected Hood Bay and Chi Eek.

FISH

The silvers were in there with all the timber - fantastic fishing.

Fantastic place for silvers. We go [up] the main river, then side trip the rest. Right here where the log transfer site was go down there and fish right off the float. August through September - also dogs and chum.

I used it, but not as much [after logging]. There was still some good fishing out of there.

HUNTING

We used to go hunting. It was real close - you could never get lost in there. There's only one way out to the bay, and only one way in. It was a favorite place primarily because of the heavy timber in there. You could gather in the winter months. It was pretty well protected.

OTHER

Sealaska is just getting through inventory of all their land here last year. I don't think they're going to do much.

[Regarding a military base?]
I think they approached us once and that was the end of it. Because they went down in to Lynn Canal. '80 something. We gave it some thought but nothing came of it.

[Regarding selling property?]
They're trying to trade Cube Cove, Lake Florence area for other lands...Forest Service would rater have.... more acceptable to [the] Forest Service.... I think it would still be a feasible thing maybe we could convince fly fishermen to come. They use lighter line.

Silvers dance on their tail fighting you. Maybe I was contributing to the decline out there.

[Winds] come down that valley whistling Dixie...spinning rod - caught a king with a ten pound test. Best place we found to sleep to stretch out a sleeping bag is right in a bear trail.

Account of Leo Evans

I think we're so lucky Shee Atika hasn't kept it's land to themselves. I mean that's just an awesome place.

STREAM DYNAMICS

I think it's really important that we don't let anybody believe that all this sand is caused by logging.

People were talking about gravel and sand down here [main stretch of Boulder Creek] and how unstable it is, but I know Smitty's got some photos from 1920's, aerial photos, and he says it pretty much looks the same. All the years I've been there it's pretty much the same basic channels. You know, it'll swap here and there a little bit. It depends on the logs being washed down or falling over from the bank, but the overall stream hasn't changed hardly at all.

And all this sand and gravel - where does it come from? Look at the top of the mountains. People don't imagine them coming from the top, but they do.

This creek here [last mile or so of Boulder Creek], coming out of this canyon [top of Boulder Creek] raised 5 feet. Again it's scary. [That is] Why this place is called Boulder Creek: you'll be up there, at a time like that, and you'll hear the boulders. It's just nothing but roar. These rocks are rolling and it's whitewater.

And about an hour later my buddy came over and said, "You know that creek is really coming up. I don't know if we can make it across." I said...I looked around and it was misting where we were, but up top it must have been pouring up there. And about an hour later we were packed up and headed out. We walked to the creek, and I took one look and said, "Oh my God, we can't get across!" Well he said, "Well I mentioned that." And I said, "I didn't fathom this."

I've been there in September and there's still a lot of water. When it gets cold up top the stream drops down and you can actually walk in the creek.

But I was telling him, this stream here came up over 5 feet in 4 hours. You could hear the boulders and rocks. Just, "Boom-boom-boom-boom!" all night long. I assume that's why it's Boulder Creek - it's so loud.

My son Paul [Evans] went down in this creek one day. His pack was holding him under. Kelly Pellet was there with him, and his feet washed out from under him. Kelly Pellet grabbed his pack and pulled him up. Then he went back up there and found his rifle. They had a younger kid with him. Went out there and found it with his feet.

USE AND OCCUPANCY

Right, here [see map of old structures] the right hand stream... There's reminisce of chicken wire, there used to be a sign that says "FOX FARM." Some of the wire fence is still there right behind this gravel bar.

Used to be a 6 by 8 or 8 by 8 cabin right here. Trail comes through; the cabin is just off of that knob. Do you have the photo that goes with this? Its pretty well fallen down now. Last time I went by, it was pretty much gone. I wouldn't even get into it years ago; afraid it might fall on me.

Fox farm is a little more over here like this, little muskeg here. Right along the creek and then this road joins its right beside this road. This little road that comes across. You can see reminisce of chicken wire from pens.

FAUNA

I'm primarily hunting. Just recreational hunting. The majority of my experience is in there at Boulder Creek. I hunted South Fork many times, not every year.

...running on the rain water up this area. All these little creeks on this side. I've seen so many pinks in there. Doesn't take any water at all for them to go from one pond to another. Be 3 or 4 in this and no water at all they run up there on their bellies with everything else sticking out. Make it to another one and rest. Pretty amazing. In my years out in the woods I've been up on a lot of high elevation. I'm talking about 1500 foot elevation muskeg and saw fish some kind or another. Don't know what they were. No way in or out. So uh, maybe it was a special breed.

LOGGING

I'm not afraid about what the logging will do, personally.

I was upset. My son was very upset. [about people cutting down trees in the buffer strip along the beach]

Well people that cut that tree down should know better. 'It was going to get cut anyway' - that's a 'giving up' attitude.

I'm an ex logger, too. I spent 11 years laying down timber, but that doesn't mean I don't care for the forest. Being a conservationist, I'm not a preservationist, but I believe in conserving it. Using things, I think it's really important that we don't let anybody believe that all this sand is caused by logging.

Account of Mark Jacobs

"There's no need to worry about environmental damage 'cause what has been done has already been done."

Goat and deer is all I used to hunt, I let the bear alone and also the late run dog salmon and coho. Those are the activities in Katlian bay. I used to hunt the left hand side of the valley of the main stream.

Off to the side of the valley and there's a big lake up there – Cold Storage Lake. We used to hunt this area there. Is that what is going to be logged?

Ok. This is all good hunting in here. We'd stop at the waterfall and never go any further. On goat hunting: we used to go up the river here, and make the right side turn here on this mountain here. Had a lot of goat [there].

This river changes bed (it's bed every year). In other words after a spawn and next spring after a runoff you might find a different river bed be there, and it's not caused by logging. It's natural! There may be other streams like that. [Where] the main riverbed works itself around back and forth. That's true with Katlian [River].

There's one elder gentlemen at the hearing that said he's seen it [Katlian River] change 5 times since 1950, but I never noticed that.

I've definitely been told by my dad that the changes in the old riverbed main streambed is...the left side here is a short distance across here bench line of Starrigavan, and up Indian River valley also is another.

Bill Hollywood…when they had horses and cows up there [at Katlian River]…he used to take care of them in [the] off-season. He went over…hunt[ed] over… hike[d] over the hump here [from Indian River Valley North Fork] and go down the South Fork Katlian] river. When they abandoned the place they left the horse there to fend for himself. He [the horse] made a good living off the grass and flats.

One day the bear wouldn't attack him; he was a fighter. Then one day they couldn't approach the horse. Wild. And the owner…[the horse] wouldn't let the owner come close. The reason they found that out was he fought with a bear and he killed the bear. But he was not taking any chances and letting any person come near him [anymore].

Ok, well the logging will be in the shaded area [of the Shee Atiká logging plan map]? Both sides?

This will all be beach logging, eh?

Yeah, what I read on it was…the mail…what I got in the mail…about selective longing. Ah, it's pretty steep in here [referring to chart].

Yeah. But there's no need to worry about environmental damage 'cause what has been done has already been done. I think they could go ahead and get the best use of the timber out of here.

Now what happened was the city of Sitka and the Department of Transportation was talking about extending the road from Sitka to Rodman Bay to eliminate the

ferry's need to negotiate Sergius Narrows. There was a lot of talk and even plans of how much it [the road] would cost, surveys and so on.

Then there comes along the land claims [ANCSA] and Shee Atiká selects her lands in Katlian Bay. Now this place here is all cliffs in here. Further out is steep cliffs. It can still be used for a road. Get the right kind of drillers and powder men. Now the land has been taken by Shee Atiká. Its potential development for housing and so on. Way up in here it's beautiful land. I don't think there was any plans on that. What had happened is when Shee Atiká took these lands there was no more talk of the road to Rodman Bay because they didn't want to help develop the Indian lands. But now they concentrate on the other side, where there is short distance if they tunnel under the mountain to Warm Springs Bay. Get a larger map and I can show you.

Bill Hollywood looked white, but he's got Tlingit ancestry. His ancestry is from T'akdeintaan from Hoonah . . . in fact his Indian name is Shk'enaan. That's a T'akdeintaan name. I think Edwin Lindoff had the same Tlingit name. He lived in Sitka. He had a cousin by the name of Merta Hollywood…I forget the guy's name. He used to have little trolling boat that he used special for these cattle he had in here. The Deanwood. Now he disappeared along with his boat and nobody ever knew what happened to him. But Bill Hollywood used to have that job just to report the welfare of the horse, I guess.

Katlian Bay...[from] Starrigavan Bay you can see the ridge. Between the mountains here just over the hump you get this river...[South Fork Katlian River]. Over on the same side...the same ridge is approachable through Indian River left hand [fork] sport trail. Used to call 'em Bill Hollywood's trail, but that's not important. Just the idea that the area used to be used by white man. They used to take their cows up here [to Katlian River flats] to eat out the grass.

He used to start up Indian River and take the Indian River trail. And you'll come to the forks after about 2 miles up and there's a left hand trail that follows the left hand river. You keep following that until you get to the ridge, then you go over the top and then you go down into the creek [South Fork Katlian River].

Indian river...You can see after about 2 miles the river branches off into 2 places... Indian River Falls is up in here. And that's 6 miles up. Cohos used to go in here, and they still do I guess. I served on the fish hatchery for SJ School. At that time [there] was a Japanese teacher…I forget his name now. He says he was trying to find where the cohos were spawning.

It's been a known fact that in the woods there are streams about 2 or 3 feet wide at the banks. Underneath the banks you'll find cohos when they're running. That's their spawning ground.

Now when the Fish and Game classed these streams for anadromous fish class... Class 1, 2, 3…so on. The buffer zones. The environmentalists pushed through 100 feet...a hundred yards I guess. And the state I think is 66 feet. And the state comes along and says they cut off the class A stream at 10 feet wide. In other words they'll be not important smaller than 10 feet [wide]. Then telling the loggers not to worry about it [the buffer zone for small creeks]. In my testimony I said even if it's 2 feet wide that's where the coho spawn. That's where the bears feed in the fall.

Is this [interview] for the purpose of polls in the logging?

[Not at all not at all. It's purely an assessment. It's an inventory a holistic inventory of the status of the area History. (Paul Hill answering Mark Jacobs' question.)]
Yeah, we did testify in this last when the…F&G advisory board was called upon by environmentalists, but the chairman forbid a vote. We just came there with our expressions, pro and con. But he wouldn't allow votes. He didn't want to be involved in it, being opposed or pro. Bill Pennan [?]I think ran that pretty good.

They…area I'm talking about it's not logged yet. Off to the left hand side Cold Storage Lake there's goat hunting up here too. The plane would land in there. Very short. The way some of those pilots land, they approach it lower than the level of the lake. And just before they get to it they rise up to settle down on the lake. Same way with taken off - they don't have enough speed they just...there are no trees here so they just need inches to get over. Then they'd have it made.

…with 2 passengers they wrecked a plane in there. They kept going in there. Keith Snowden[sp?] and his son were going in there to hunt and they got fogged in. Before he got too far in, he changed his mind and turned around. When he saw he wasn't going to make it, he picked out two trees and busted his wings off on the trees, saved the lives of his passengers. By breaking off they wings it helped slow - it jarred them a bit - still slow enough to prevent fatal crash.

I never visited it but I know it's there. About a mile and a half up, I think. I don't know how far it is.

Now when we hunted goats up in here, we took a flat bottom skiff and there was eight of us. There was my dad, my younger brother, my older brother, myself -four of us. And Frank Kitka, Herman Kitka, David Kitka and Andy Kitka. There were 4 brothers and 2 family. We took this flat bottom skiff way up.

We each got one, but Herman, he emptied his rifle at it and gave it to us guys "you can take this rifle, it's no good" he was bragging about it. Saying he could drive nails with it when he was sighting on the beach. It was shooting accurate he had too much pride. Live with the fact that he was the only one that didn't get one. Suggest we stay another day. So we stayed another day. Heavy rains came, the river started lifting. I was out on the point was nice gravel. We started raising. Our beds had water coming up through the ground. We already had our goat and we were going to hunt another day but the rain kept us.

My dad, the 2 old timers, Frank Kitka and my dad wanted to look at the situation. They walked up the river, they came rushing back said, "pick up all gear, pick some food, get your dry bed we got to get to higher ground. The river was cutting a new path behind our camp and it was eroding pretty fast. We rushed and grabbing what we can running up a hundred yards to higher ground. I thought I was pretty safe and settled down. Now to get the meat and hang 'em on the trees out of the reach of the bear.

I shot one with Pete Hogan. Yeah, Pete Hogan was with us. There was 9, Pete Hogan used to own the marine supply. I don't think Andy Kitka was with us 'cause

there was only 8 of us another party came up and that was uh.... Servila[?]…3 of them. They left before we did. They didn't get anything.

Pete Hogun used to have a big marine supply in Port Alexander.

We ran out of cigarettes and the river was real big and when we ran out of cigarettes we decided to move. We cut poles and ten…the old timers instructing us make sure your pole in down dug in cause the river will take it out of your hand at the wrong time when you've lost your footing. Make sure you got that down first before you dig for another one.

You can hear the rocks rolling down, river it was so flooding so big. We all made it across. We made it about 2 hundred yards and found a mountain stream blocking us - 12 feet deep was the pool. We couldn't make it. The only alternative was to fall a tree across.

We fell a tree, then two of us had to crawl across and get another tree this way so the 2 of them would cross like that and Pete Hogun thought he could cross that stream. It's a wonder there were no fatalities. My brother and I got across and started falling the tree but Pete Hogun couldn't wait. He lost his balance about half way - hung on to the tree and the tide took him underneath, and he had to let go. The guys on the other shore were running down and we were running down this side to cut him off, and it was impossible - he just went out of site.

Pretty soon we heard him hollering from the other side of the stream, "I'm ok! I'm ok!" He grabbed onto an alder that was swinging in the water. He hung onto that and it slammed him against the side of the river. He got ashore on the same side he was trying to get across from. But anyway, we got that tree - we got his one that was ready to break. We fell it up river. The others got across pretty easily.

But that's the characteristics of that river. The heavy rainfall, the heavy feeders from the valleys in the back: it goes heavy flood stage in no time. It's a wonder no one lost their lives up there. The instructions we got if you lose your footing: don't fight the current, don't let go your hold. Run with it, relieve the pressure of the river and move towards the beach - whichever side is safer to get to. None of us lost our footing except for Pete Hogun. We thought he was a goner.

Anyways, instead of overnight hunting we spent 8 days up there. We ran out of cigarettes and it caused our camp to move. We stashed a couple rifles and packed all our gear out of there. Then we found the skiff still ok - on an island out in… found on an island tied up to one of the trees. One single tree holding it. By that time, river was so flat you could wade out to it and get a hold of it and get your gear aboard it. Let the skiff drift down the beach.

By that time there was a search party after us. A plane flying up overhead about 1500 feet up. I was jumping up and down and hollering. I got teased afterwards, "Did you really think that pilot can hear you?"

Anyway, that's very interesting. Maybe a geologist can study this river. So there was no permanent camps in here except off to the side here.

It's a major stream. The humpies that are heading here will stop in front of Starrigavan. For years and years when they killed Starrigavan. Not like a big run

there. The Starrigavan valley was logged by Leo Neilson, one of the early day loggers for the pulp mill. And they took everything there.

They're all the way down to the edge of the stream. And the fish that came in had no shade - sunshine killed them. See them be weakened by temperature 'cause it's shallow so the river was dead. Uncle Pat took one big humpy for boiled fish. His kids, he told his kids to take it. Kids came up, Fish and Wildlife sittin' right there, arrested - charged the dad with a [Fish and Wildlife] fine.

Nakwasina River. I don't know too much about that, but it's owned by Kiks.ádi. One of the first times I marshal him out for the school started and they were still out at fish camp. Arnold Sursh was arrested, get their kids to school.

Matt Rosenberg [something Tlingit]. The cress hero was…David Young. They had the river that was called Yo Wa Héen[sp?]. They were Eagle side, but all this area was Kiks.ádi property. David Young was …their house is still sittin' there below my sister's place - painted green - back of the Pioneer Bar. Now that was Chookaneidi house. There are four Chookaneidi houses in a row. [Tlingit] that's the Iceberg House. It burned down. The next house was David Young, Chookaneidi chief - head of that one. And then his younger brother had the next one - light brown house - was Charlie Young. Ganeix.[Tlingit] is the name of David Young, and his younger brother Charlie Young was Ganeix. And this one was owned by Charlie Search [sp?] Charlie Search was the right in back of the…the next door to the…Didrickson house. Those were the 4 houses. David Young died. His wife was L'uknax.ádi. They continued to live in it. Today L'uknax. ádi claims that house. If you have a party and tell the history, they'll find out they don't own that house.

This campout here, they…Littlefield family filed on it for an Indian allotment. And they still have it today. It's called fish camp today, but the Indian name was washh tunk. You learn the Tlingit speaking. I don't know who we have in class, we have Tlingit language classes Tuesday and Thursday. When I'm in town seminar I help Roby and all the other elders are Paul Jackson and…George Bennet and Al Grey. It seems to me that they've gone too far – as far as a classical language is concerned. We should be still concentrating on the beginners. And now we're trying to revive forgotten words and forgotten expressions. And that's alright. It should be separate from the teaching of the language. After you learn the language, then they could advance to this old time expressions and words. Roby Littlefield is pretty good. Got no Indian blood in her - very sharp, speaks good language. She can understand anything you're talking.

It's not too far up in the main river we went up. It's not very hot either according to what I was told. Should be it in here somewhere. There was going to be some development in there but USFS decided against it. But they were going to develop a tourist attraction for recreation people. Not too long ago. You could find out from them about it. Whether or not they have any future plans for it, and that's on private land now. Usually an Indian can't file a mineral claims. Until 1924, when congress enacted citizenship for all Native Americans, so I was a non- citizen for 1 year.

Ralph Young senior was married my mothers aunt, the sister to Carrie Lewis by that marriage. Ralph Young had one son, Gibson Young. His Indian name: Intla

Sa w[sp?] Just to make fun of him, we'd call him waterspout. That's what that means: a puff in a whale's blow spurt water into the air.

Now my aunt, my mother's aunt, died when Gibson was very young and he remarried [Ralph Young Sr.].

This time he married Kogwonton woman sister to Al Widmark. Al Widmark's sister was Phoebe Widmark. Ralph Young had another son: called him Ralph Young Jr. Ralph Young Jr. got married to a Dog Salmon from Angoon: 2 or 3 children. He named his daughter Phoebe Young. She's down below somewhere now, married. The Young, forget his name now.

Do you know Helen Butler? She's the first wife of Ralph Young Jr. She was Helen Neilson. Neilson family in Angoon. Ralph Young drowned in Craig. Several weeks later, body drifted, was brought to town by Joe Demert. Had a national cemetery burial.

Ralph Young Jr. never married again. He was a gambler. Tough guy! Really, really tough. I remember one time, wife was planned to go get some groceries. Quickly he wrote on a piece of paper folded it up, "Give this to the store keeper."

"This groceries?"

"Yeah."

So she didn't bother to look at it. His wife was really embarrassed as he started laughing.

"Horse cock."

His wife came home fuming. She forgot her own grocery list. But that was the kind of guy he was. Really, really rugged. So the second marriage was Kogwonton. I don't know their Indian names - of any of them.

But Ralph Young and his uncle Don Newel were the one to find the Chichagof Mine. And they knew because of the gold rush that gold was very valuable. They stopped for a drink of water there in Klag Bay. They were going to hunt the hillside. Called D'lux Anei. And they seen that gold. They looked up and course the size of a foot sticking out of the rocks [unclear].

So they took samples...[unclear]...to town. Tried to file claim. Indian could not file claim. They're going to reveal no find till they could file a claim. Ralph Young went to Sheldon Jackson School. Doctor Beck agreed to file for it. Doc Beck said, "I don't want any benefits from the profits. I came to Alaska for souls not gold." is what he says. So he didn't accept any shares in it.

A fellow by the name of DeGroff was a merchant in town. Killed in the old war. Supplied him with 16 dollars worth of groceries, was a lot of groceries in them, and some blasting powder. They blasted enough gold. DeGroff helped them send in to Tacoma for [?]. They got enough money out of that one primary blast to start a gold mine up there. This small community. Now Martin Strand is a direct heir of that gold mine. And so is Rosco Max's children. Agnes Olrick's family. And my connection is through his first wife's aunt.

So when his uncle died, he had 2 big houses built up there Ralph Young moved into the bigger house with his uncle's widow, married her. And Ralph Young comes up to our house. I told my dad, "I want my grandchildren to have that house."

"What price can you pay?"

I didn't have any money - this was the depression. "How about 3000 dollars?"

Dad was hesitant. He just got back home from the Navy.

"Go ahead. We'll pay the bills."

He broke his legs in the war. Bones stickin' out - everywhere crushed. Says "I can't fish anymore. So we're going to fish and pay your bills off."

$12,000 at the Cold Storage to keep him alive. $12,000 at the marine supply stores. $24,000 almost seemed impossible in his crippled condition. He rebuilt the boat with the wages he was working on. Construction - that's where he got hurt so the boat was not finished when I came home. That's what we used to fish. We had to build our own bunks to go to sleep that night.

I don't know - I'm getting off the main story.

Katlian hillside there's a lot of yellow cedar with straight grain. We took some of that and there was no restrictions from the Forest Services at that time. Mostly small ones so that bend them for ribs so we rebuilt the…[Interruption in recording]

...us. Told him Dad better go into halibut fishing. Thomas Young heard about it. Thomas had trolling gear. Ready to change to trolling. Halibut fishing in them days is a game that Indians couldn't stick out. Rough. If you're going to make money you have to work long hours, in rough weather and know how to handle it. So my brother and myself made up our mind were going to learn this game. I was a navigator pointed to every spot were you could find good halibut. We had a good catch. By navigation we loaded the boat up in three days.

We paid my Dad's debts off in 2 years, so made him a rich man. Was able to take my mother on long trips, vacations

Mother used to get embarrassed of him. They landed in San Francisco traveling Indian style: no hotel reservations. Told the cab driver "take us to one of the better hotels." He had the money - you talk big!

Took 'em to Saint Francisco. When he got to the desk they asked him, "Do you have a reservation?"

"I'm not a reservation Indian."

"Maybe you got me wrong. Did you make a reservation?"

"What kind of reservation?" (because they wanted nothing to do with reservations).

Then they found out what he was doing, he was pulling their leg.

Took his bags, gave him a room, made him a hotel guest and everything. People would be gathering around him. Him telling yarns.

My mother just recovered from cancer the other year. Twice she had to have an operation. 20 years later it started coming back. Again it was a good season and dad took care of her.

Katlian Bay's Tlingit name is Tl'ayáakak. Cedar Cove off to the side: Tl'ayáakak Sank.

Irene Jimmy, she worked against me in the election. T[lingit] and H[aida]. I've never lost an election. Thirty-two years now as an executive committee member. I've been a delegate for over 32 years, and she got your dad [Al Perkins] to go in against me. They had 9 delegates. I nominated your dad for delegate. We had a local election that year. I lost that one, but I was still a delegate. Five of the Sitka board. Elect; Herman Kitka, Nels Lawson and Irene. Your dad [Al Perkins] and one more 5 against my side of 4 Meg Hope, [?] Hope, Martin Strand...anyways.

That's far from what we're talking about.

[Regarding hot springs in Katlian]
They tell me it's luke warm. That is one I've never tried to get into.

[Do you fish a lot of cohos?]
Yeah. Smoking and canning. Still got red flesh. Longest shoreline is where we used to pick up cohos. And out here between islands and shoreline towards the fish camp. Sport gear - that was a lot of fun.

We used to pack some cohos out of there. Gunny sacks no no…gaff hooks. Used to carry a treble hook in our pockets. Fishing line. Snag em. Not as you can't snag in fresh water. After the main summer season what we call. We can hunt, then hunt this area once in a while 'till we have a gunny sack. Not a gunny sack. Tie it up in a gunny sack and pack it. Have a rain coat on. Even then you get slam dunked...[?]

Steelheads is been a sportsman. They got a heavy restriction on it. They'll limit you to one or two. But used to get 50 of them in one tide. You have a Salisbury map here...[this is where he described the spot and how he fished it]

It didn't make good dried fish, but it made good fried fish and boiled fish.

[Regarding Indian names for creeks]
No, I don't know the names.

I'm losing track of what I was talking about

There's a lot of creek names after grass. There's two different kinds of grass common around rivers - suk. Short tall white brown is called shukun

And that's where the name comes from. Chukun Héen – Chookaneidi.

They had a stream up in Glacier Bay - sockeye creek that tall heavy grass.

[What do we name these creeks?]
I think they have original names.

[There's no name on the chart, Mark]
No. A lot of these other names that I provided, it's up on the wall up there.

[But there's no name for this creek anywhere]
No, I wouldn't know

[I think we should name it. Any ideas?]
Name it after your dad, Xow Xaach Héen.

There used to be a deep water hole here. In the gully. Nothing but alders growing in there. Richard Katlian was going up there to get some cohos, late fall. Seen a bear diving after them. He decided to watch it. The bear sensed he was present. The bear didn't want to run this way, didn't want to run this way. Started up this gully. He was getting near the top…there was already so much fat on him, so much fish. He lost his footing up there and tumbled all the way down to the creek. By that time, that bear was so mad his [?] spread all over. He still wanted to get away from Richard Kitka. He tried it again up river. Richard felt sorry for him. When the bear came to a stop he didn't want to kill it. He fired a shot and the bear took off again. This time he made it over the top. To him I guess his dear life depended on it.

There are many side streams. Had that classified too, but if there is coho pools in these little streams becomes a Class A stream. That's where the coho go: smallest streams. Might look muddy, shallow, but that's their spawning grounds. Still don't know it. A lot of these coho streams have been logged over, thinking that those little streams are not important for salmon enhancement.

[You got a good name for that one?]
I don't want to be the one. It should be a local.

[Who is Louise Elliot?]
Brother to...sister to Bill Hollywood. They're T'akdeintaan, and she thinks she s Kiks.ádi. T'akdeintaan is from Hoonah.

Harold will give you a lot of information.

Thomas Young. Haines Indian - he's in the Pioneer Home. Tough to talk to. Got to be in the right mood. Give him some praise. Tell him who you are. Don't ask him for any information. Say you heard a lot about him. Seiner for the cannery.

Military weekend cabin up in there, used to have a sign he put in the doorway, "Be careful: wounded brown bear.".

Account of Kenneth Kimball

[Interviewer: Paul Hill, STA]

LOGGING

[So, just wanted to start out for the record, name, age, where you from? You lived in Sitka your whole life?]
No, I come up here in 59'. I moved up here with a logging outfit Barten and Ryndvan that logged that.

[Oh, Barten and Rynddall?]
Barten and Ryndvan

[Ryndvan?]
Yea, I worked with them down below and I moved up here with them. I helped them set up camp, but actually my job after they got going was I had a rafting contract, I did the rafting.

[Okay. Was there any other companies that operated up in Katlian?]
No, we were the first ones in there.

[So it was like an exclusive…]
1959 moved up here, we got to logging in 60'.

[That's why you came to Sitka?]
Yes, I moved up with them, well they moved me up here.

[Been here ever since?]
Yea, we come from down in Grace Harbor, Washington, western Washington. Worked for them down there for quite a few years.

[So you started logging in Washington?]
Yea, down there I drove a logging truck, about 12 years, before I come up here to work for these guys. And I worked for them in the woods too, building roads and logging in the wintertime when they weren't trucking I used to do everything. They were good loggers, nice people.

[How did you get a hold of that rafting job there?]
Well, they needed somebody , and I was getting too fat I guess. So I thought I'd try something different, I'd never rafted a log in my life, but come up here and built myself a wooden boom boat [built yourself a boat] and in fact we used the whole boom boat for the one job we were there about five years, took about 120 million feet out of Yea there. [wow] [320?]

[Did you come on when they were already logging or...?]
No, no I come up and help them build the camp. Yea I moved up with them, in fact they bought a work boat in Seattle and another fellow and I brought the work boat up here that's how we got here in 59'. And we used that boat to move our log rafts around. Yea, it was a fun job, I enjoyed it, nice place to work.

[So Katlian right, you logged the main, see this green part here is past harvest]
Yea, yea we, actually the only logging that ever been done there was during the war, you know the government had what they call, what did they call it, they did

some logging, in fact they had a cabin, there's still probably some remnant of that log cabin, it was along the river here, right in here some place, I'm sure I could find it. The spruce division they called them, during the war they called, you know, they did quite a bit of beach logging around I don't really know what they did with, then of course in the old days they used to get logs for their traps, for fishing, so they got, went on the beach and took big trap logs and built these big frameworks out of them and built, and caught fish in them.

[When?]
When, well they were discontinued before we got here but the old days we, there were an awful lot of traps around the country, there's still remnants along the beaches, you know, they have these old rigging scow they called them that they picked their anchors with and have all their work with scows with an A-frame on the front. And had a hoist in the back end of them that's how they get to work. In fact we had a couple of those old rigging scow when here, when we first came here, that's how we set our big anchors, we had no way of setting those five to seven to ten. Old rigging scows left over from the trap days. I've never heard of any traps that were being up in the Katlian, but I know that there were lots of fish to catch.

[So when you worked there did you work all the way up river?]
Well you know I helped them get the road built up on the first pass, and I caught strick..???.. and some of it over here and I helped them on the bridges, and lets see, one, two, three, three bridges, and I can't remember, one outside of camp, a little one. Big ones were across the main river, I think I got some pictures of them; I can't remember where all those bridges were. Yea I was there the whole time through all this area…and this South fork here, and we went up the back of Katlian, this was a great place in the winter time, the goats up on Mount Katlian were, used to come down they liked this side better, fact there's been a few of em' got shot …working hard….cut down through all we had, then we sneak off and caught the crummy to get a ride (back).

[Kind of like take a break off of work]
Had some massive slides over the years, I can't remember where they were, had some up here, had a big slide over here, one morning went to work up there and had an avalanche, I mean, one morning had 30 feet of snow across the road [Geez] *Just glad no one was there when it happened, those avalanches are kind of scary* [Yea] *We'd hear them in the spring, down where I'd be working down at the dock and we'd hear them darn things come down you know, and I mean, they and the wind in front of them, you know, you go by afterwards and it'd knock the branches out of the trees, no rest for the wicked.*

[So, oh yea, I was asking Kim about these sort of star shapes, what they were from?]
Well, this area here of course has grown up, and there was a big flat of big huge timber in there, that was the biggest timber, not the best, but the biggest timber that we took out of there.

[Diameter?]
Oh we had a lot of 5, 6, feet 7 feet. [Wow] *The biggest timber that we run into, wasn't the best timber, it was so much defect in it is was so big, the scale was what raised.*

[So not really necessarily the biggest trees are the best?]
Hmm? Oh I think so yea, let's see, I, this is the southfork here? [Yea, there you go, yea] *Main river? Yea, it was flat right here, that' where we got the big timber out, it was big.*

[How about in this harvest? Were you involved in this harvest here?]
No, no, that was, LP logged that, that was logged with a slack line and a skidder, they logged that right into the water, no there's no roads into that area, it was all logged right into the water.

[Oh, is that before or after you were there?]
It was, it was, went on, was still going on when we got there, they were logging back, well it should be more of them, this area here, you know it was logged too. [Well, it's not on there] *No, no and the best I can tell the only, there's one block of timber right in here they didn't get into right in that corner, I'm trying to think of where there going to find anything to speak of, seems like, yea this hillside here, in fact there's a big area here logged. That, or that – I know this is right, and they logged here, and here cause they built a road in here, but they didn't do that, that was contracted, around here. Fact, when we came here, we were building the camp up in the Katlian we stayed at shoreline with the AOP operation, pulp mill operation, they had a floating camp right here and we lived in that camp and we commuted back and forth. We built this camp oh right here.*

[Did you work like every morning and you had to cruise from your camp all the way out?]
Oh, yea we had a crew boat. We brought a brand new camp up, everything was brand new, we had concrete sidewalks. Right here's a picture of it, pretty poor pictures in them day. That here's the shop building, cookhouse, bunkhouses. [Look at that, that's great] *I can find you some better ones.*

[This is right in Katlian? Over in…]
Yea, this is right, it was right next to, this is Coxe right here, and the bridge across Coxe creek and the camp is right here, in fact if you go in there you'll find a 40x80 concrete slab that the shop was setting on, you'll see the slab this one on, you'll still see the concrete sidewalks down around camp, we had concrete sidewalks. [Oh, yea they're there yup] *Yup* [God, look at that truck] *We had GI trucks. Yea, that's one of the old GI trucks we brought up for a dumptruck, we started building it from some old GI 6x6's. Yea, this Cox creek, well the bridge, well you can't see it, but the bridge should be right here, should be right here someplace, it takes off it's the first bridge out of camp. You're looking down the bay here at this logging right here* [Yea, yea] *But you're looking at. But this went on right across from us and this went on while we were, first year up there.*

[So, is this from you guys, or from?]
No, no that's ours. This is right up in the corner of the bay over here. In fact I got pictures, here the pictures of the old log dump we had there, the skids as they were in the water …build a wooden boom and build it out of three spruce logs and bolted them together and had the back one cut out. Here's one, here one, here's another one of the camp, here's an old log truck. [Geez, the road doesn't even look the same. The road now is just like a little trail] *Yea.*

[So did you work most days on logging?]

Yea, well we worked, back in those days, this was our business, tie up, we didn't work long, five days eight hours a day.

[Is that only in the summer time?]
Oh yea, we used to, some years we worked all winter, take a month off during Christmas time and work year around, depending on the weather and the amount of snow we had.

[So how many guys in that company working up there?]
We had a 25 man crew. We started out, they were gonna run a bigger operation, but then that didn't work out too good. Had a 25 man crew. Here's the log camp too, fuel storage. [This is right over here?] *Yea, and of course it's filled in now, well we had trouble getting that to dredge out too…. We were just on the west side of the river and just down, when we started there we had plenty of water, but that river floods. Do you know Porky Bickar?* [Naw. Oh, Porky? Oh yea, I know of him] *Well Porky's the other guy you know, I thought about that too, but I've been busy, but he's not as good a help as I am. But he's the only one left, Porky and I are the only two left that moved up with Barten and Rindvan that worked here, that really know, remember much about it, he can feed you full of all kinds of stories.*

[He stayed too, huh? Were there any Sitka people who worked?]
There were a few. Actually most of the crew come with us, and we had a crew from down below, you know, just hear want to come up here. That's a picture of Porky when he was down there, he don't look like that anymore…had the kids out there when they were little. That old mercury outboard. That's me there boring boom sticks, up there boring boom sticks with a big electric drill. I still got them darn tools out in the garage. [Still got em?] *Oh yea, once in awhile we're out in these islands and people build little break waters and stuff and they want a boom stick made or something…*

[It took you five years to log, to finish the logging up there?]
Yea.

[It was like contracted by what like, a million board feet?]
A thousand board feet, so many thousands of board feet. Back in them days they had a contract, the contract they had was not only to log but to build roads and log for the same price. They were wealthy when they got there and a little better off when they left. Yea, they made a lot of money.

[Once you reached board feet is that when the contract was up?]
No, it's when they run out of what the Forest Service had decided to log. [Okay] *...set and load up Katlian, set and load logs in the water …..…yea this is the log dump … old logging truck … Porky you know though, he did pretty much …. probably get a kick out of him.* [Porky, I've only heard of Porky, I haven't met him] *…come up from Seattle….and it was also a crew boat and we'd get all 25 guys in……*[Oh, that's when you went from town..] *Yea, originally the plan was, they were gonna build a camp cookhouse and the whole works. Anyways, this Barten, he run that camp for one year and he got tired of hiring cooks and hearing people complain about the food. So he decided, what he did he'd give people living allowance to live in town or go up and buy a house or something and he closed the cookhouse down. So all they kept out there was the mechanic*

and his wife just to watch over the camp, but uh, it was just one year actually that the camp was utilized it was never…

[Just one year huh?]
Yea, he said there's nothing to logging but there's plenty to running a camp.
…Here's our old yarder.

[What's that?]
A yarder, you know, that they yard logs in. We rigged spar trees up there you know they didn't have these towers like they got now a days, you know guys went up, they top it, they topped the tree and put guys lines in it, you know, and this yarder is what had to haul back to the main line and they'd have tail blocks back and you know they'd choke logs and bring em back to the landing and then they'd load em with equipment like this called a steel boom shovel back in them days. Our dock down there, we had a float and a walkway out, and a boom shack, let me show you a picture of that.

[So you always worked on building the roads and rafting you said?]
Yea, well, actually I've done everything over the years, helped with rigging trees.

RAFTING

[Rafting, that's ah…?]
Building a log raft. You bore the boom sticks, and the boom chains go in between em, they're 7 feet long, there's a ring on one end and a toggle on the other, you probably seen those, haven't you? I got those back there. And then you row, you put 6 to 7 bundles in a row and then the cable goes across em from one boom stick to the other. Boom stick in the end of the raft and the cables go across it. You hold them there temporarily with ropes, until you get a full tier in you know, then you get a cable in and you choke the boom stick on one side and you go over and wrap the boom stick on the other side and clamp it and make em tight so they stay….if you see that, you know, they're limbed and got the top out of em and got guys lines in em up the stump.

RIGGING

[To pull the stumps in?]
No no, that just holds em up there in the air so they can pull from, and then the yarder, the yarder back here's main line and haul backs both go through these blocks in the trees, and there's tailblocks in the back in and they run the rigging out there and get a hold of the logs, that way they can get some lift you know, just to pull em the ground they hang up on everything, you get em up there 120 feet in the air 150 feet you don't even break logs in when you bring em back.

[Hey how'd they move the logs down river?]
Pardon?

[You didn't move them down river though, you loaded them] On the river? [on trucks?]
Oh yea, they were all trucked. Even back in them days you know, we had uh, they were pretty strict about letting us use the water, we couldn't get permits to cross, we were building bridges you know, we didn't have the equipment back in them days we had to get at least one piece of equipment on the other side to build a bridge I think. He was the old crummy the guys rode to work with, here was the

yarder setting here, you can see the lines going up the tree, there's a spar tree back there. You can't see the guys lines they had a haul back to the main line. And the haul back hauled the rigging out there was a 7/8th cable, and then they had like an inch and an 1/8th main line bringing the logs in again you know they'd bring them in to the landing and set them down and the chasers'd unhook the chokers you know and they'd go back out and get another turn. And that's, when they get that row all the logs, then they send all the haywire they send back out and then there was a lifeline and they'd move the blocks over, the tailblocks over you know, then they'd pull the big lines back out again you know, and then they'd start another row. They just logged in pie shape all the way around the tree. They'd land em on the landing then the loaders just load em. Load em on trucks and get em out of there.

ROADS

[How long it'd take, take you to build those roads?]
Well, they built roads the whole time we were there. There were two guys that were partners, full partners and Jack Rindvan was the one who built the roads and Don Barten did the loggin. So they were building road all the time they were logging. If they got caught up they would come down and help and take CAT's and arches and help get extra logs or something out by the road you know where the loader could load em out easy...they built road the whole time.

[You maintained the roads too?]
Yea, oh yea they had an old road grader. You'd laugh if you saw it now, but

[Did they have problems, like roads sinking in?]
Not really, you know we had good material out there in that valley…you know, but they'd scout the ground, scout for pits and most of it was just like river gravel… you know most of the road were built out of you know, gravel out of the ground, you know and there'd be silt on top of it. There'd be 6 or 8 feet of real good river gravel, rivers got bent, well that's how that valley got built, I mean that rivers taken in that whole valley back and forth, and it was moved while we were there. I mean you could see it. Yea one time we had a big flood and it took the bridges out. One time the river wasn't even going under the bridges, it was going around the end of it.

GRAVEL

[Did you get most of your gravel from like, one certain spot or just…?]
No, no if they got to hauling gravel over a mile they were hurting, they couldn't haul it that far, they were scouting for a new pit and just dig it out.

RIVER

[Oh, one thing we were really interested in when we went out there on the beach we noticed a sulfur kind of deposit..]
A what?

[We, we, we kind of on the flat lands right up here..]
Yea that's what, I was chasing up water to see if there was a hotsprings in there, I was not familiar with any…well that's the river there, this is right in front of camp, there's a log dump down in there. Well on the weekends, on Sundays when all of the fish, when the river was full of fish we'd be out there catching them.

[Have you been back to Katlian since?]
Oh, I've been there, but it's been a few years now, you know, I go ashore, I haven't been over into the town…yea, I got that landing craft…that's the last time I really did anything up there with it …[look at that...] *…You know we didn't have cranes, we had these arches on the back of CAT's you know, you just pick up a log with…we'd have to get equipment on both sides to get these huge logs up there to build those bridges …..…fact that two of the bridges, I think this one too, had a center span in it, had to put a pier in the middle, cause you know they're way too long for the logs. And we had those wash out more than once…almost had some of those big logs numbered, after a big flood, take everything out. Finally we had to give up on that and we had to leave, and we drove a pile driver in there, so I drove pilings into the river, for the center pier, that was the trouble, main trouble we had, was the center peir you know [getting washed out] we'd have log pyramids you know, with sand and debris around them, they'd wash out when the river changed it's course.*

[There's still some old bridges washed out – away from the river now]
That'd be kind of fun to go back up there and look at all of that [Yea, take a look at it now after its all gone] *yea* ….[after looking at these pictures, you wouldn't even recognize it] *Oh I know I wouldn't. Last time I was there, I was up there I, I mean you always know going up, 4-wheelers were keeping the trail open then, you know and probably still are.*

[You know the roads are just little trails now]
Yea, yea. Fact the camp, we moved the camp and everything out of there and took it over to Mud Bay ...but I did that, but it wasn't Barten Ryndvan when they finished that job, the pulp mill bought them up, and they left in 65', and the pulp mill bought their camp and all their equipment and it was all, most of it was moved over to Mud Bay and set that camp up over there, and at that time of course I was working for the pulp mill. Those guys left and went south, they left me up there, they didn't want to take me back.

CAMP

[The pulp mill bought the camp and all the buildings?]
Yea, the buildings, all the equipment, everything they owned right down to the last bolt, everything.

[So they left the buildings there or they used them for…..]
No, we moved the buildings. We moved the buildings out of the Katlian and take them over and put them ashore at Mud Bay…part of them, they didn't all go, the shop, we moved the shop to Mud Bay. That shop believe it or not was a 40x80. We jacked it up and put it on logs, made a sled out of it, and pulled it on a log float and towed it over there. Pulled it off , set it up, and they poured a concrete slab and camp building, most of them went over there, I think like we did the same thing we sledded those things, pulled them on log floats, that's how we moved stuff back then, they didn't have barges, big log floats to haul equipment.

BARGES

[It still looks like there's ah, I don't know if they're from the logging but, out there right on the flat, beached on the flats it looks like big barges]
Yea, that was after the logging

[That was after you…?]
That was the John McDonald, and somebody else, he had some partners and they were going to get rich in the gravel business and they stuck that barge on the beach, and I can't remember the story, but it stayed there. Yea, that was after we were out of there. We had a barge up there once, when we first come up here we wanted to take the barge out of Seattle that had everything on it, I mean we couldn't take it on the beach but it had a big ramp on it, no it didn't, we built a ramp up to it.

…Yea we put it up on the beach when they let the tide go out and we took CAT and pushed a big ramp up to this barge, and we unloaded all the equipment down this ramp and took it across the river and over to camp and of course the tide floats the barge off…would come out of Everett, can remember what company it was we moved up in one big barge…

BUILDINGS

[So, when you arrived there, there were no roads or anything, did you notice any old buildings that might have been there?]
Yea, yea there had been a homestead up there and there was remnants of a building I think, as I recall pretty much collapsed. You can see they had a farm, and I heard, you know that there was I think cattle, I don't know what else they had up there. Yea, and I think it's still a private piece of property, right in here someplace. Yea [on the flats or was it up in the trees?] *Yea, unless it's been bought out, the flat in here…*

HUNTING

[Would people still go up there to hunt and stuff when you guys were logging there?]
Oh, a lot.

[Were people allowed up there? Were people allowed on camp?]
Oh sure, as long as they behaved themselves…good access for them…they didn't have the 4-wheelers and fancy stuff they have now, but you could sure bum a ride on a log truck…yea they had goats, deer, bear, there were lots of bear there first year…

BEARS

[Big guys?]
You know, and all the bears along the river were pretty possessive. You know, they got their area, and we had a little problem with them the first year, but after that, they got the message or got something anyway. One year we had one of the pulp mill engineers, his name was Herb Eliason. A bear bit him in the rear end. [Really?] *Yea, but he had a guy with him and he managed to, took his, had his checkbook, fact he got killed in a aerial P airplane that crashed up…anyway got a hold of him and bit him right in the pocket and he had a checkbook in there and he saved that check book and the tooth marks went just by each other in that checkbook. Any rate there's another guy with him, …I can't remember his last name, but he had to shoot the bear but he scared him off, he was afraid to shoot him when he was chewing on Herb. But the bear went aways away from them and started back and then George got him.*

[Yea, I was wondering do loggers ever work alone like, going up…]

Oh yea.

[So do they bring rifles with them or something?]
No, no, 99% of those bears are more scared of you that you are of them. If you go out and try to get close to a bear, it's not easy to do. Out playing with the bears, well you get in between a sow and a cub you know when a loggers out working they make a lot of racket and commotion. There was, back in them days there wasn't an issue, but we had some pretty cranky bears around. We had do away with some because it wasn't safe to work around them…and you have to work around the bear and he won't get out of the way you know, you gotta work there. Nowadays different story than 40 years ago.

[Yea, little different now]
Yea, when we first come up there was still a bounty on seals you know, and they'd just taken the bounty off eagles, you know there used to be a bounty on eagles.

[Really?]
Oh sure.

[Gee, I never knew that]
Fact in the Katlian up there, I was working on the water and I used to take seals, and there were guys that just loved seal. Pretty nice, bright, in fact, the seal meat looks nice. Any rate, we used to just keep the noses and cut the whiskers off and I think we got six dollars a piece for em. Nowadays you're not supposed to talk about things like that.

LOGGING

[Okay, did you log like river by river, then the next, then the next or did you work the whole area at a time, or?]
No, they logged their way back, back up the main valley. [Front to back?] *Yea, they just worked their way back up to the Y's in the road and then went both ways and well, I can't remember now where they finished up. I think they finished up over here, on the south fork. And it was right up here someplace we had that big avalanche, right in this area that time we had 30 feet of snow. We did have avalanches back here too.*

[Well this winter you wouldn't think. This is my first time in Katlian, just this year, and boy I haven't seen much snow at all.]
...it is colder up there. I used to know when I went to work, even the water would be colder than it was in town, the temperature got colder. You get up the valley; the difference between camp and up here would be 10-15 degrees. Difference in temperature you get back up in the hills, sun doesn't get up in it. That was an experience.

[So, 5 years and then I guess it started slowing down near the end theh, right? Or did you just go all out till then?]
Full out. Yea, they put out a lot of wood that outfit. Yea down to 25 men, they were going to run a 35 man camp, they built one actually, you know. They were planning on running two sides, but they logged 95% of that was one side, one operation. It very seldom ever slowed down, I know, I was on the receiving end in the water. No, they were loggers, those guys would put out a million feet per year per man, that was their goal and they'd do it every year. That first year when

they had two sides running, they'd put out 35 or 36 million feet with 35 guys but then they went back to25. Kept one set of machinery running [all the time]. They had two sets of machinery; two yarders, two shovel, two of everything. That was the other thing about the construction crew, you could never tell down at the dump when they'd move, might be a half hour without logs. But whenever the construction crew finished a landing and have everything logged, there'd always be another one all rigged up ready to go. The yarder, the shovel, everything was always there, just a difference in the trucks getting there, get it moved from one to another, you know. The construction crew would always do the rigging, they'd rig the trees, and have them all ready while they were doing the logging on one landing. It might take them three weeks or a month depending on how big of a landing it was, but they'd have time to not only to build roads but to move all the equipment and get the other side all set up. So the logging I mean, it was just like clockwork.

[No down time?]
Yea, they were real loggers them guys.

[So Shee Atiká is going to come up with another timber sale. I'm not sure, nobody's sure of, nobody knows what's going on but, I wanted to get your thoughts on another timber sale, on Shee-Atiká land.]
Well, I'd be the last to complain about it, I'd love to see some loggers in the area, but, like I say, I'm not in the majority I don't think anymore. Yea, but I was born and raised around logging, just like a fisherman I mean. Look at Herman Kitka, he's a great guy you know, but all he's ever done was fish all of his life, and everything to him is based on fish. And well, some other ideas, if they don't have a good year they blame it on somebody else, that somebody's over fishing over there, blame it on the loggers, blame it on the environment you know. But like I say I'm on the other side of the fence, Herman's a good friend of mine, a great guy, I like him you know. We can argue to no end, real proud Indian you know, you got to admire him. [Always have] *Excellent…and I love to get in arguments with him too. He enjoys it too though…*

[So what was the name of that other guy you said, oh yea you were talking about Porky?]
Porky, oh man I don't know what he'd have for pictures, he wouldn't have, he had nothing. He was a bushler, he cut timber, that's all he'd ever do. He came up cutting timber, fallin timber and bundling timber. He was a good one, but he didn't ever work in construction or, he wasn't involved with near as much. Fact he came up when I came up, he was a good guy…he'd do anything for you. He got paid by the thousand board feet, you know, that's how they got paid for cutting and falling timber, so much a thousand.

WAGES

[Is that how you got paid?]
Yea, not everybody though. But I had a contract. There were guys on the rigging, the choker setters, hook tenders and chasers I mean, they all got paid by the hour.

[So how much did you end up getting paid, for your…?]
I got a dollar a thousand for rafting.

[A dollar a thousand?]

Yea, but you know those guys, I mean actually, matter of fact we were laughing, there was a bunch of stuff…part of the time up there, over the first year when we had two sides you know, they put up a little add and hired a guy. We were laughing, cause I think I paid him 8 dollars an hour, 7 dollars an hour, you know back in 1960. But I gotta, I used to know, man, even after, they went back to one side you know, there were very few days I didn't get a hundred thousand board feet down there. 100 dollars a day was big money then, 150 or what ever you know. It really depended on the timber, if it was good timber, the scale would add up fast, than when they were smaller.

FISH

[Another thing on the salmon runs, do you remember how late in the year?]
That varies; you know. We used to have Coho's up there. I heard Les talk about that the other day. You know we'd have the big ol' buck Coho's up there as late as Thanksgiving. I can remember that, but that wasn't every year. I've seen them in the river there, course he said he was up there goat hunting and you could see them. I mean the fishing isn't the same every year. Used to have a lot of Dogs, Cohos, and Humpies.

[Remember how far up river you saw them?]
Mmm, I better not say, up there quite a few miles, depending on how much water was in the river. They couldn't get up if the river's down, you know they stay there so long, they can't wait to get to get enough water to get up. When there's lots of water in the river, they can go a lot farther, just like up Starrigavin. I was in there when they laid out to log that place. Heck, after a flood in there, there'd be Cohos stuck clear out in puddles where there wasn't suppose to be a fish. But you know, when it floods the area…they go everyplace. [Yea, we noticed that] *…looking at some of these aerial photos… clear up to the Y maybe.*

TIMBER

[This is as recent aerial photos as we could find, 1976'. You can see the bridge there, there, and right there.]
Yea, that's down in camp. If you get up there, it was still standing, there was one over in Nakwasina too. There's supposed to be, they did some logging around there you know, during the Second World War. What they did was log that stand of timber…that was purposefully left there.

[For the camp?]
There's some big timber in there. Just back, just up the river from camp just a ways. It's so high up in there it's deceiving.

CAMP

[So where were those cement bases for those buildings…were they here?]
Yea.

[That's where the camp was?]
Well yea, they were right up at the end of the mud flats, just up the bank here. Fact they got all the sand to pour the cement right off the river bank here. Yea, that was an experience of a lifetime. Course I've been lucky to have had quite a few lifetimes over the years. Finally got too old to do that work anymore, bought a boat.

Account of Les Kinnear

[Interviewer: Paul Hill, STA]

FISH

[So there used to be heavy Chum runs -how far?]
There used to be real heavy Chum runs up as far as where my camp was, and that was in there four miles. Back in, oh I don't know, 79' or 80' when we shot those bridges out in there. I got some old… I got some old movie footage. Yea, my camp was right here [pointing] *yea, right there.*

[Just about where Herman was?]
Yea, yea.

[Sullivan Creek here?]
Yup, Herman.

[And this was on the corner?]
Was right out here on the creek, I was right back in here in this in this last batch of heavy timber left. But the Chum runs used to come clear up into here, and there were deep pools all the way along, and uh, it was phenomenal Coho habitat. The Coho's can come up this creek and they still do as far as about here, there's a big falls, right in here, this.

[So they, they don't come up very much past the logging road crossing?]
No, no they don't and there's another blockage in the main creek, would be right here, and that's as far as they can go up the main creek.

[That last impasse where the little falls was?]
Mm hmm. Yea, there's a series of pools and some big rocks and a kind of a cascade right in here, but once you get up into here, there's no fish up in here, but this is all beautiful country up in here, up to about here, and you get into some real big boulder piles way on up. Now where we hunt, like I was talking about, you come up here, those cliffs that Herman's talking about are right in here, there's, several cliffs here you can get up on this ridge you can get up into this basin, you can come around here and get into this stuff, but right across this face there's a series of cliffs that the goats use real heavily, and right here's where that, big snow slide is. That big avalanche run out zone that creates that snow cave. And you come out of the creek bed there's some great big pools in here and real heavy water coming down around this corner, you climb up around on deer trails, and drop back into the creek and come up here, take this fork all the way up here. Now there's a glacier, a hanging glacier right up in here, and there's an ice field up in here that the goats stay all along here and they stay in these cliffs right along here. You can get up on this ridge you kind of switch back up and forth through here, there's a big, big knob that sticks out here you can go around on the backside of it and come up and you can camp right up here and then get up onto this and you can hunt all of this stuff on the top and clear out to about here. There were some old cottonwoods down here that had names carved in em' from 1944 so there were guys in there during the war, that spent a lot of time and when they logged that. Heck, you had access roads clear up to here and guys hunted all through this stuff. This is that little lake that we were talking about before, up on this side, it's a real pretty little shallow basin kind of a lake right in there.

[Oh, as you go up this lip, ledge there?]

Yea, there's a, well this little canyon comes up here, this, there's a hump that comes out on this side and you kind of sneak around the edge of it and you can work you're way all the way up to that.

[So that is yours, as you're coming up this valley, that's the main slanty table you see going up?]
Mmm.

[With trees all over it?]
Naw, it's, it wouldn't be quite that far, there's some open spaces, in here, this is brush fields, and a couple of steep gullies that come up on this side, this terminates in a little waterfall right down here at the, at the mouth of the…

[So this lake is kind of like a small hidden lake on the ledge?]
Mm hmm, yea, there's a…you go up and there's a little bench, and ah it's just a real pretty little spot, and there's some excellent deer habitat up above. Yea, it's a nice big brush field, but as far as the, the fish you know, there's some that go up the Coxe River, and there's some that come up the main fork, and the best fishery now in the whole area is this, the best production, is in the Boulder Creek side.

[For?]
Cohos and Chum and everything else too it's…that's really the heart of what's left.

[You mean?]
Fish production.

[You mean Cohos come in here?]
Yup. Yup, actually they come into both sides here, used to, in these pools along here you had, you'd have, you know, sixty, seventy big Cohos laying in there into November, December. I walked the whole river this year after I finished hunting in there and saw six Cohos, six fish in this whole stretch of creek.

[What month was that?]
That was in November, second week of November. It, it's just turned into a sluice. It was always a real heavy river, you know when they were logging it they had problems with it washing out bridges and tearing stuff out but the, you know, any more everything's gone. The big stumps have come off the hills – there's really nothing to hold anything, it's just, you've seen what it's done to those few stands of trees that are left in those corners. You know, it's just eating away the edges on them, and they're all falling in, and everything is going down the creek, and that's exactly what'll happen in here if you open it up too, it'll just turn into a gravel shoot and that'll be it.

[Oh, you mean this side hill here?]
Yea well, you're going to get all sorts of debris in the creek, you'll get a lot of gravel deposition - the pools will fill in. You know, just exactly like what you got here, you used to have huge big pools in areas, now where there were pools, there's 15 or 20 feet of gravel deposition in them, you know, they're completely filled in and leveled off and the river just runs over the top and there's nothing there for man or beast anymore.

[See, I was talking to Jack and I said okay we're talking about sedimentation now, is it possible that what Les saw here, remember when we were talking at

that last meeting] *Sure* [where that one big Coho pool filled in with gravel] *Mm hmm* [said is it possible that that is just because of natural stream dynamics and it has nothing to do with the logging practice, he said, maybe, okay] *Mm hmm* [When, when you think about it like that you think okay could that be just stream dynamics or is it due to logging, what do you really think?]
Well, you take a look at some of the other canyons, uh, take a look at Indian River, that has not been logged and the, it gets probably the same type of rainfall that you get, you know, just over the hill.

[Indian River is here?]
No, over, you come way…it'd be over here, but uh, you know it. It of course is a different environmental type too though, it's a more stable bottom, there's a lot more rock a lot more solid structure underneath. Katlian has always had a lot of gravel, a lot of fill, a lot of you know, everything that comes off the top. You get great big avalanches that come down these canyons every year, and they bring a lot of material down in the form of rock and woody debris, you do. You get an awful lot of stuff and a lot of that is not logging related at all, that's true, but the fact that there's nothing to hold the main river drainage together, that it, it fluctuates, it moves around it. You know it's gone from one side of the river [valley bottom] to the other and back again in the last few years and when it goes it's catastrophic it just takes everything with it. For a long time the whole river was over on this side, now it's come across and it's eatin' out chunks of these roads, you know, where they, where it just dumps in right in, uh here and here. This is that one sharp corner where you can climb around, you can climb right around this bend up on a rock there's a trail here that goes around. That's where that one big Coho pool was, but this has come, this used to come down this main channel on this side, now the whole thing has come over here and it's just, it's just a complete sluice right around this whole corner that's all filled in, it's eatin' out this whole stand of timber right here and that's all going into the creek. But the big Chum were in these, in these small feeder streams, and these kind of flat lagoons up in there, and those are all gone, they just aren't there anymore.

CHUM SALMON

[You mean no more Dogs get up this high?]
No more Dogs at all.

[And they used to be?]
Used to be Dogs yea, used to be Dogs clear up to here and that's what? Almost five miles.

[All the way to the end pass?]
Yea, Dogs all the way to there, there's still a lot of, real nice Dolly's in there, you know, there's seven or eight pound Dolly's in there right now those big spawners, and a lot of those get frozen in, they get, because of the gravel the water level drops, you know, and it starts to freeze there's not as much water in the creeks. The creek's go down and they filter through the gravel and that isolates pools, and where those Dolly's congregate in those pools - the eagles and the otters and the rest of the critter's just sit there and pick em' off as the water drops down and work em' over and a lot of fish are killed in there every year, which is fine too.

[Why do you think no more Dogs get up there?]

Have you seen the, the big alder jam that was right along this stretch here? Okay, well that didn't used to be there, that used to be just a nice easy, meandering river down through there. Now whether we've had, I don't know the waterfall records, I'm sure they got it somewhere. See what kind of rainfall we've had, in what particular months of the year are. We haven't had two winters alike since I've been here, you know, last twenty-two years, and this year, who knows, no snow at Christmas, no snow at New Years, usually got snow on the ground by Halloween. So, it's entirely possible that what's happening in there is simply creek dynamics but at the same time you go into other places, [like] the bottom of Fish Bay where you still got the big heavy timber. There's area's in Fish Bay where they clearcut, oh, several hundred acres and didn't pull a single stick out they just left all the trees laying there on the ground, you go in on the left side of Fish Bay creek and hike back into the woods and you'll run into that whole situation.

GIRDLING

[You mean they cut the trees down but they didn't…?]
Yea, they cut em' down, bucked em' up and left em' laying on the ground. Yea, there's five or six hundred acres of that in there.

[Why did they do that?]
Have no idea. That was probably thirty, forty years ago, the regrowth in there is nonexistent, you know, they planted that three or four times, they had alder girdling teams in there, they cut alder. They tried every way they could think of to keep the alder from coming back, and they put little plastic tee pees around there…each tree.

[You're talking about in here now?]
The whole thing, yea all the way up every one of those flats you'll still find the little bamboo stakes and the plastic uh, woven cones. Mm hmm sure, and for the most part that doesn't work either, you know, they go in, they had chainsaw chain with a handle on each end they just wrap it around a tree and drag it back and fourth three or four times by hand, go all the way around the tree, and then they drop down a foot and do it again, and ninety percent of those trees would heal up and keep right on growing.

[That kind of goes right in the theory, huh? They say girdling should kill it?]
Yea, it should.

[Maybe they got to cut a little bit deeper than they did?]
Probably a little bit deeper, a little bit wider, wrong time of the year, hard to say. When it saps down in the fall it may not.

TRAPPING

[Well, when you first started going in here was seventy-eight?]
Mm hmm.

[What was it like then?]
Hmm, the roads were thick and heavily brushed. The first year that I spent a lot of time, it was probably right after we shot all the bridges. So that would probably be eighty, maybe eighty-one that I established a full time presence in there, you know. I'd go in and trap martin and a few otters and just hike around, we spent a lot of time. We covered a lot of country, we looked at a lot of different access

routes, and my nephew and I, he was just a kid then, and I was thirty, thirty-two, thirty-three years old.

NEPHEW

My nephew is Tim Holder at southeast glass right around sawmill creek plaza. Tim used to hunt with me a lot when he first got up here. He's only eighteen years old and he used to have a lot of fun. Yea, we've been all through all of this stuff.

WILD DOGS

We shot some dogs up here one year. There was a big red dingo looking dog with a black Alsatian bitch with him and they had three pups, they'd been turned loose up in Appleton cove when there was a thinning crew in there back in eighty-five, eighty-six. They brought em' in for protection in the camp to keep the bears out, and the dogs ran off and discovered a habitat that they really liked and they were seen from Port Alexander to Kelp Bay.

[You're kidding me?]
They covered the whole island; they were all up in there. We went in there one year in fresh snow and found three deer carcasses uh, here, here, and up in here. We were chasing goats and got up into the trees up here, Paul Brodegan and I, and we were sitting right up in the tree line getting ready to shoot a couple goats and the dog and the bitch came out of the trees below us and he shot the dog and I shot the bitch and went down and finished her off with and ice ax skinned her out and tanned the hide. And went back in and camped the next week with a predator call and called in the pups and shot two of em' and never did get the third one though he'd howl at us but he wouldn't come in when we called him, and he finally starved to death in there cause he couldn't catch deer by himself. But they were in there for several years killing a lot of deer, they just found a niche. You know, the deer were easy to catch and they survived and they just turned into wolves you know, just really mean. I used to trapped up above Gavin Hill, up in the basin, you know where the old plane wreck is, up in the basin there between Harbor Mountain and Gavin Hill. Yea, there was a…I think a twin beach that went down in there about twenty-five years ago, crashed straight in, killed everybody onboard. That's right in that big basin between the mountain peaks, used to trap that whole thing. I'd go up and make a circuit in the evening, on the rim, caught a lot of martin up in there, used to be a lot of martin in here too in fact, and there still are, but there are quite a few guys that pound em' pretty good too so…

TRAPPING/HUNTING

[Do you think that trapping has suffered because of the logging?]
No, no I don't think that at all. Only thing that kills the trapping is that guys go in there and martin are easy to trap, and it's not hard to trap em' out. Usually if you go in and run traps for a week, and if you've got em' scattered well enough, you'll catch most of the males in the first week or ten days. Then if you pull out you're okay, but if you stick around and keep pounding it you'll start catching the females and everything else, that's what hurts if you. You yard all the females out of there and the hides aren't worth as much and it's better leavin' em' for brood stock. Guys can't do that, so, and I've always hunted, I've never hunted goats from here down I've always hunted from here up, we've taken goats up in here, up in here, up in here, up in here, and up in here. And I've shot one or two for myself

on this side in like December, late, real late in the year they'll come down to this side, into these bluffs.

[Is that a guide?]
Yea. Years ago another guide proposed operating out of Hogan Lake and he was going to operate out of cold storage and he was going to operate out of Rosenberg. The Forest Service sent me a letter wanted to know how that would impact my operation, I said absolutely not at all, because if they're hunting from the lakes they gotta return to the lakes and will typically hunt uphill from the lakes, and I'm hunting far enough up these drainages and away from them that we're going to be operating on different populations. They'll shoot everything out around the lakes in two or three years and go somewhere else, I've got a steady resource back there that I can count on year after year cause no one else works it and I hunt it conservatively. And the bears in here, this is the best bear habitat left in this part of the country. You get up, and there's a ridge that comes down off this side, probably this one here, comes right down, you get on it, it's kind of a bluff, and it looks, oh you get right on top of it, and you can watch this, you can watch quite a stretch of the creek in here from one spot and you'll see bears in there just about every evening during September till the end of November.

BEARS

[We ran into one big bear last year, and twice this year. How many bears, do you think, are in each of those drainages, do you have any idea?]
Years ago I filmed eleven different bears in one day, but as far as how many are in there I have no idea. You could talk to the loggers that were in there years ago, and they will tell you that, those that will admit it, they had a contest between Katlian and Nakwasina to see who could shoot the most bears out of their camp in one year, and according to fairly reliable resources they shot thirty-five bears in there in one year.

[In Katlian?]
In Katlian.

[Good size, or any size?)
Well, pretty much any size I would imagine. The guys used to tell stories about the really big bears. They'd be punching road in there, and head out in the evening, and bears would come out in the road and just stand there, cause they knew they were the toughest thing in the valley and they'd already proved it to everybody else that lived there so, they were pretty easy pickins for a long time and hadn't been hunted hard. They were available and they snagged a lot of em.

ACCESS

[Do you use a, use a quad to head up?]
I used to, but what I found was that during the spring they'd get a lot of blowdown across the roads, alder particularly, so I'd wait until October to open the road up, and I'd open it up as far as my camp, and the minute I'd get it open there'd be a dozen quads and motorcycles and scooters and more guys than you could shake a stick at, everybody would wait till I'd open up the road and here they'd come. So finally after having my camp raided and ripped off and ransacked a dozen times in as many years, I just decided it wasn't worth my time to maintain the road to have access. And I'd trade off, I'd work Fish Bay one year and come back, and work Katlian the next, and if I see a lot of good prospects I may work it two years

in a row, but seldom, and I usually only take two, three, four goats a year. But working quads, I've got one, I used to have 3 three wheelers in there, I'd put one on the first stretch of road, and when the water was too high to get a bike through the river, I'd pack my stuff across and then use the bike on the next stretch of road and then pack the stuff across and use the last, I had, the third bike I use it to haul all the way into camp. And that was handy for hauling in a couple months worth of supplies, and hauling meat and hides out, but I don't do that any more.

[You really like bushwhacking trail, quad trail, that'd be tough to do……]
The quad trail in there now, you go the first two miles on the old road, there on the left side of the bay, and then cross and they work through the timber on that one big corner, and then up the river bed for the rest of the way, and you can still get in there, five miles now, if you try real hard.

[That Hogan Creek road, did you go up?]
You'll never get a quad on that thing again, it's gonna take a chainsaw to open that back up, we hunted that this year and the clients called that the one mile road to hell, because you get a lot of snow and what it'll do is lay the alder down so you've got like a picket fence to climb through, for a half a mile in there it's really thick. I've opened it up a little bit, you know, with hand tools over the years just to keep it accessible, but now, it's just a slow grind through that stuff for a long way.

[You talking about the first part in Hogan Creek?]
Yea, where you come out of the river and you go up around the corner to tie back into the creek

[On the right hand side?]
Let me show you on the old road map…Yea, the road comes up here, then it forks off, and comes up to here, and there's a trail up this ridge that you can come down here and get around a pool and a series of cliffs and get up into this stuff, up into this basin. But this here, for this area right along here, is really in tough shape, there's several big tree's down, there's several big spruce that have fallen with a lot of limbs that you gotta climb through.

[And that's your trail from hell, right there?]
Yea.

[What do you do, cross over?]
No, no you have to stay on this side, you can't get across this creek, this is big. There's a seventy-foot waterfall and it's just real steep and real fast water. This drops back out into the river bottom here. The trail, the road, the old road pretty much disappears, it's all grown in and washed out, and shot, so you kind of meander back and forth across the creek through here then there's kind of a trail across a couple of these little points, and you get up into here, and then you're into the woods, you're on deer trails.

[Okay……do you have any kind of uh, opinions or recommendations on how Shee-Atika should manage their land as far as fishing?]
Well,…

[Hunting?]
I don't.

[If they want to maintain the resource?]
I don't work that part, so nothing you do is going to impact what happens above it, but for their…your own sake, the prime resource in there is the fishery. If you don't do anything to that creek, that's the best thing you could do, is just leave it the hell alone. Buffer strips, they'd have to be fairly substantial, what has happened all over Southeast is when they open up a stand you get wind throw along the edges and the edges just gradually unravel further and further back, and every year, because those trees on the edge are not protected and they take the brunt, you know, they catch the high wind, and they go down, so all of these clear cuts in Southeast are just gradually unraveling around the edges, and that situation, that other whole upper stretch of river - that whole canyon bottom is essentially shot now anyway.

[Because of that?]
Yea, yea because of the changes in the creek because everything is blowing down, everything is coming into the river. It'll be a hundred years before that stabilizes in there if it ever does. So the fishery above native lands is essentially a dead resource, and everything in the bottom, bears and the fish are, are key to that piece of habitat.

FISH

[So you think that windfall and things have impacted the fishery?]
Oh, definitely, definitely.

[Because it holds uh, the creek bed?] Mm hmm [From getting wiped out and causing] Yup [sedimentation?]
Yea, you know it doesn't do the fish, the fish can still get in there, that come in and spawn in those ripples, and you get so much deposition over the winter because the heavy rains and then the spring runoff. Humpies might do alright in there, cause they don't overwinter, but Cohos, you know, long term fish that are gonna be in that creek for more that six or eight months. If they don't get buried by the gravel deposition, if the eggs aren't, you know, buried three or four feet deep in gravel where they can't work their way up through it, you know, there's no pools, there's nothing for em when they do get up, it's just turned into a great big gravel sluice all the way down through there, and it wasn't that way twenty years ago.

[So do you think it's because that's where the valley widens and get exposed to wind? That the fish thin out, cause you know, I noticed too when we were doing our Humpy and Dog counts that] Yea [we didn't see any past Indian land]
Right

[That's why it interests me when you said that Dogs and Humpies come up this far.]
And they were heavy up that far, it wasn't just that there were a few fish there, it was a heavy thriving resource. What you've got down here on a good year in this stretch of river, you know where you walk up, where the old road comes out into, there's still a few pilings that were shot off, you know blown off when we took those bridges out.

[Off the first bridge?]

Yea, right there at that first bridge site that nice long flat ripple in there. You go in there in September and that place, you can walk across the creek on the fish you know, it's just, it's phenomenal. It used to be that way five miles up the main fork, in everyone of those little slues and those little side channels it'd be just solid fish, and now there's nothing, the slues are gone, there's nothing left in there. The rivers moved across, it just gradually eats those clay banks out…the thousand years of gravel, or ten thousand years and everything that keeps coming in there. Where there were big pools, now it's just flat shallow high speed runoff.

WILDLIFE

[Now, let's see, is there anything more you can tell us about those early years when you were, first got in there?]
There were a lot more deer in there then, an awful lot more deer, there's still some fairly good pockets of deer left, and you've got a big patch of timber up here that you got up there in the spring and you'll find sheds, where the deer winter in there, they drop their antlers in first week in January, so you know they're in there at that time of year, and you go across this hillside and every big cedar that falls over in the winter will be chewed down to the bark because the deer just love those big cedar trees for something to eat…(end side A)

…and there's no shelter, there's no protection, and there's too much snow up on the side hill, the goats stay up in there because, those cliffs and feed areas are wind blown enough to keep it stripped down and they get into the hemlock and feed. On every one of those goats you'll find a, a ridge of scar tissue across the back of the neck, and that's from goats feeding overhead, feeding on a hemlock. They do that with their own horns, when they got their head tipped up to feed out of the trees the horn tips will leave a row of scar tissue across the back of the neck and down both sides when they're feeding.

[So they're eating hemlock branches?]
Yea, they're eating out of the hemlock trees. They get into that scrub hemlock, you'll find all sorts of goat hair, in those, it's in the, in the shin tangles a lot of guys call it, it grows close to the ground. It's knarly, it's twisted, it's so thick you can't walk through it, and it'll be goat tunnels all through that stuff, because it holds, it suspends the snow off the ground and they get in under there and that's where they shelter and that's where they winter, in those cliff and the steep gullies you'll have those little brush patches those little pockets up on top of the exposed rocky knobs, you know where it's fairly stable soil. Everyone of those, all the way across this whole front is going to have winter goat hair in there, where they shelter up.

BEAVER

[Is there any kind of, I know you made a comment last time at that meeting, that you figured that, there's always been a lot of studies, and you've rarely seen anything where there's actual restoration practices]
Mmhmm

[at work]
Mmhmm

[plenty of money going for funding for studies]
Yea

[And nothing ever to do any kind of activities that will actually make an effect]
Yea

[Do you thinks there's anything out there that can be done or is the best thing just to leave it alone?]
I think the only thing that could be done to begin to restore some of that top end country would be to stick twenty or thirty beaver in there, and just leave em alone.

[Into where now?]
Into just, you let em go anywhere in that creek and they'll, move to their own choice of habitat. And beaver are going to move up into every one of these little creeks and streams, and this is some beautiful beaver country up in here. They'll build dams on those back waters, they'll hold up the flow of the water, they'll suspend a lot more of that moisture and give you a, a more continuous, steadier runoff through the winter. You won't have those huge surges of water that come down and just move everything at one time. I think that would probably be the only thing that could be done. I mean it wouldn't cost anything to do.

[Was there beaver in there before?]
No, not where you're still going to find evidence. You know there's a few in Redoubt, there's some in Rodman, there's a few beaver scattered up the north end of the island, Corner Bay creeks got beaver in it.

[Do you think a program like that would work or do you think it could?]
It couldn't hurt. I don't see what it could hurt to do that. They're gonna [the beaver] pull some of the alder down, they'll pull a lot of the alder down.

[What about Giardia?]
It's not a not a public water resource. I've never, the only two places I've ever had Giardia myself are on the Chilkat Peninsula and on the Alaska Peninsula out in a lot of the flat country, but I've drunk water out of the South Fork, out of Windy Fork, out of the Post River, Rainy Pass all, all up and down through the interior and never had a problem with Giardia. I don't know, maybe I'm a carrier now and don't respond but I don't think that would be an insurmountable problem.

HEAVY EQUIPMENT

[Well let's ask Herman if he ever saw beaver in there, would that be a good one to ask?] [Okay, I was talking to um, Bob Loiselle and he said that when they plan to do their logging they also plan some things with their heavy equipment that would help to not destroy the salmon habitat] *Mmhmm* [What could he do with heavy equipment that would do that?]

Boy, I don't really know. I don't think there is anything in there that you could put in on the lower end. The problem isn't in the lower end, the problem is right now from here on down to here. You've already got such a massive flow and a movement, you know this whole shelf out here in the last twenty years has probably moved out two or three hundred yards of gravel deposition and it continues to do that every year, you get that flow that pushes all this gravel and rock and everything out and as it hits saltwater it loses it's momentum and everything drops out, so right on the edge of that shelf, that's how those things are built, you know, that's why their so steep on the front face that's just where it hits

that saltwater the momentum stops and everything drops out. I don't think there's anything you can do at that point you know, if you could get a CAT up into here and put barriers or heavy material in the river that would slow that water down that might help, but that is an enormous drainage. It has a tremendous snow pack and your big problems are your spring floods. You need to go in there in March, April, May after a heavy rain and just watch what that creek does and then think what you can do with heavy equipment. It might, might have an impact, I don't see anything.

[I know Jack was saying that he said that they had done a study about making pools in a big creek] Mmhmm [He said that the only thing they really found that they could do was a big log jam]
Mmhmm

[and I know over in Nakwasina they got the one pool about a fifteen or twenty minute hike up the creek, and it's because of the log jam]
Mmhmm. Lisa creek was the same way. That was the only thing that slowed it down. That's the drainage this side of Nakwasina, the one that runs back up toward, behind Slaughter Ridge back in there.

RIVER STABILIZAITON

[You know if you were going to take logs from down here at this logging operation, because it sounds like that's what their going to do, you know?]
Mmhmm.

[It doesn't sound like the type of thing that they're going to change their mind on. Now if they were going to log and if you wanted to put a log jam in this creek where would you put it?]
You can't, you can't there's not enough material left in that whole canyon to stabilize anything at any particular point.

[What about throwing big ol' stumps in there?]
You gotta see it in, in April or May to really appreciate what that thing is, it'll roll dump trucks down that sucker just end over end.

[What, does it totally flood out Mike Sutton's camp there, does the water get that high?]
I'm not sure.

[Right in the main corner, I think it's right here. Right, you know where that last pool is?]
Yea.

[That big pool?]
Okay, that'd be like, Sutton's would be down in this, in this bend right here. [Yea, there's a white propane tank there] *Yea, that's right there. That creek used to jam over on this side, now it's cut that whole corner off coming across there* [and all of those trees have been from erosion and] *Yea, just the last, the last two years* [yea, one by one] *Yea, that's just the last two years.*

[So I figure pretty soon that whole peninsula will be gone.]
That whole corner's gonna be gone and that's, you know, that's one of three patches of timber left in that whole bottom.

[Straight into the waters?]
Yup.

[And it doesn't look to me like falling those trees is made any kind of pool system?]
None, none at all. You see, everyone of em they'll be swung down the river, you know, with the tops pulling down stream, the root wads are heavy, and that, it acts just like a feather it's going to swing down. If you could lay something across it, it'd slow water down for a little while, but it'd build up behind it and blow it out and down she goes again and those trees just continue to walk their way down out of the creek.

[Well what about if they were to build a rock wall out of the place…]
No, naw, well they used to in California do what they called debris dams, and it's like you're talking about it's not essentially a rock wall, but the Japanese have had some successful over in volcanic areas where they've had huge pyroclastic or mud flows. It's a barrier with a notch, so that you're typical stream flow comes through the notch, and then when you have a massive flow, these stem walls will take the brunt and, and accumulate the deposition instead of allowing it to go on down, that's primarily to protect structures downstream. In this case where you want it to, to stop the material to build the streambed back up ah, I'm not sure anything like that would really be functional. The material is gonna move regardless of what you do, a debris dam is gonna fill up and then it's gonna wash over the top, or around the ends or, so a permanent structure of some sort is eventually just going to be buried or disappear.

DREDGING

[How 'bout dredging?]
Oh, I'm not familiar enough with that to know what good it would possibly do.

[Well, here's what I learned about dredging. I had to do a project on Indian River, and study Indian River because the Navy had a dredge at the mouth of the creek, there was already a study done, and all I had to do was research it. What I found out, was when you dredge out the mouth of a creek]
Like here?

[Yea, they took a million cubic yards out of Indian River and because of that, the State of Alaska classified Indian River as being the most impacted creek in Alaska. What happens when you have a big hole at the mouth of a creek whether it's a high tide or low tide it increases the gradient]
and tends to block back up…

[and scours all the good spawning gravel from way up here down to there you know, and we have all this sediment here. You'd think if we dredged out the mouth and scour a lot of that lose sand out of there and bring it back to better spawning habitat. If was that easy, and all you had to do was that, then you can get rid of all of that sand in here and turn it back into big boulders, and you've have a head start in another twenty or twenty-five years, and you get to sell the gravel.]
Yea.

[You say this has moved out?]

Oh, yea.

HOT SPRINGS

[I got an interesting question for you, when you're going in right here, when you tie up the boat and take your four-wheeler up here]
Yea

[right down there at the corner have you ever noticed that sulfur smelling seaweed down there?]
Mm hmm. Yea, there's warm water there.

[There is?]
Yup, you go down there at low tide and right on that corner underneath that rock, there's a rock outcropping with a geodetic survey marker on it, just down from that there's a warm water seep, there's another one in Fish Bay too. There's a hotsprings there [Fish Bay].

[You think there's a possibility of having that…]
Of developing that? Ah, hard to say.

[Have you ever heard of any kind of a development of a hotspring from a little warm seep into a…]
Sure.

[Wonder how they go about doing that just drilling a hole or what?] […in my, my research I've found that there are companies that actually make the tough……?…?…for warm water]
Mm hmm. But to develop the geothermal potential in there, to what end, as a recreational resource [Yea] *as a commercial enterprise, I'm not sure what sort of volume is there, I do know there is, and there's another one up in north arm Hoonah Sound, but ah, comes out of the Chichagof side over there against the beach, course you've got Goddard and White Sulfur and Baranof. You know there all, if there was anything with commercial potential, you would think it would be already developed, that a proven resource with a limited capital investment to, to ah market.*

[Cause I was thinking, if its just plugged a little bit, pull the cork out and see what happens, you know. But I've gone in there at low tide and never found anything warm, and when you said warm, I thought 'Whoa, that would be nice.' Right there on the point, under the rock you say?]
Mm hmm.

[Right about the beginning of the evidence of the..]
Yea, there's algal deposits, a kind of yellowish colored algae and

[smelly…]
mucky black sulfur

[we'll have to look into that one]
absolutely

[the original reason they bought that land, or selected that land is because they were gonna build a resort there]

Sure, and I think that would have a been a far better use than whatever they'll recover in a logging sale, that's nuts. The prettiest spot that I have seen is where you cross the river right here and this little ridge that's, it's actually on this side of the creek, if you could develop some sort of a bear viewing site in combination with a resort, right at that point you got beautiful scenery in all directions, you got perfect bear habitat, it'd only take bears a few years to habituate to a resort being there, I think it would be phenomenal wildlife experience in a pristine setting.

[I did notice a ridge down there]
Yea, it's on this side of the creek, right here, it's just a steep bank right along the edge of the river, right up through here.

RESORT

[Oh, you're talking about the?]
Right here, right up here.

[That ridge you were talking about?]
Yea.

[Between the first crossing and the second crossing?]
Mm hmm. If you go in there you can step from one bear bed on that ridge to the next in the fall, bears love that spot.

[Well now, if you were gonna put that lodge right on that ridge, and they move, would you plan the lodge…]
The bears are there because the creek's there. The bear's beds are there because it's available, there's plenty of bear bedding areas, plenty of bear staging zones in there that a low impact resort structure, well you know, that's, of the places that I have seen where the potential for that sort of endeavor exists. I think that would be one of the better ones, but you know, obviously you're going to impact it by creating something there a structure of any sort, and the bigger you make it the more you're going to impact it.

GUIDING

[Well you know, I was thinking, it'd be nice to have a couple Indian spike camps right here to have Indian guiding for hunting. Of course my reason for that was if it's being exploited it might as well be exploited by Indians.]
Well, yea, it's hard to say though how much resource is there, if the Forest Service all around you is allowing permits to pound the same resource, you don't have a herd that's going to sustain a viably economic resource, you know. You'd be, looking for something in the millions of dollars and we're talking nickels and dimes here. A non-consumptive use of that bear resource I think would, you could build a big lodge down here at the mouth and just have walking trails and boardwalks and bear observations points. [Yea, probably be better to...] *Sure, you wouldn't need to develop anything on the site, and the gains for something like that would be justifiable.*

BEAVERS

[Okay, covered the fish, covered the goats and deer, okay we still don't have an idea, us, how…?]

I'd push for throwing some beaver in there myself, just to see in ten years what the little rascals could do. I know what - I've seen what they've done on Kuiu and Kuprenof and different areas. They can have a tremendous impact on something as unstable as that.

[Did they introduce beavers in there for a, in order to try…]
Not so much that they were introduced, it's that they were available and moved into those areas. Beavers will travel a long way to establish territory and find resources in a productive zone – and the only reason that they haven't moved over a lot of this island is the extremely rough conditions and the fact that every time they try to re-establish, some local kids go out and pound em. Just say for a minimal cost, they're trapping beaver in Petersburg to get em out of town, I'm sure that Fish and Game would be tickled to death to give you twenty beavers over the course of a year. Their low maintenance, you don't have to do anything, you just turn em loose. If they survive they're a helluva benefit to the resource if they don't, you haven't lost a thing.

LOGGING

[Can you think of any other..???… that Shee-Atika could - any other type of logging plan that Shee-Atika could do where they would benefit better? You know what I was thinking, you could use it for a local hire lumber mill - local use]
Mmhmm

[and slow it down, and help the economy better, the town would benefit from the firewood and lumber]
Selective cut as opposed to clear cutting.

[High price like that one outfit is doing in Minnesota, they yard these logs up from underneath the water and they're so valuable from being old growth diamond bird's eye]
Right, yea.

[you know maybe the]
little black maple

[yea]
there's some extraordinary stuff tiger, tiger stripe, tiger eye maple, bird's eye.

[You know, it seems to me like it'd be so much better, you'd have, you'd have hire from the town, you'd have use in the town, you'd have lumber instead of newspaper. Seems to me like instead of approaching it from a viewpoint of opposing Shee-Atika logging maybe we could suggest a…]
I don't oppose it, I mean there's no reason for me to oppose it, because it's not going to impact anything that I do, in fact it'll take some of the pressure off that upper end. If you guys open up roads and access in that bottom end you'll have a lot more hunters staging out of there and working and hunting down low and that suits me just fine because they won't be up there screwing around in the goat herds that I like to play with. Essentially nothing that you do from here down is going to impact what already has occurred from there up. So from my stand point, if you clear cut it, paved it, made a parking lot, put stripes up and down it, put in an espresso stand down at the bottom and sold tickets for people to run

motorbikes all over it, it wouldn't bother me in the least, cause I'm gonna go right on through and up into the brush and have a good time. The bears are gonna move around for a year or two after you log it, you open it up a little bit you'll get better berry production which the bears are gonna benefit from, the first couple years you'll get some regrowth that will be beneficial to the local deer, but you're also lose gonna lose whatever habitat left in there as far as critical winter habitat for the deer. They've already lost it in the upper end, they lost, I'd say 75% of the deer that were in there at one time, just from my own observations, not from any sort of a study or accurate survey, it's just personal observation, I know that there were a lot more deer visible fifteen years ago in there than there are today. I know that if you have the same sorts of problems in there that occurred in the upper end that your gonna lose the vast majority of that prime fish habitat. I don't know, I suspect.

FISH

[Have you seen um, a decrease in the Coho runs during the time that, from 78' til now?]

Yea, oh yea. Like I say you used to see fifty or sixty fish in each one of those big deep pools for a stretch of three miles above native lands, and this year walking down through there I saw six fish and they were all in one pool. I've got video tape I can show you what we were seeing up Fish Bay creek. Fortunately, most of that area was logged – below the critical habitat they didn't get far enough up…[playing video].

Account of Erin Kitka

"Once you get there you know you're going to get something. You go get your deer, get your goat get your fish and leave and not have to go at it more than once or twice."

My name is Erin Kitka. I'm 39 years old. I was born and raised in Sitka.

I hunt and fish, (it's) what I do for fun.

First time I was there: 1989, 90. First time I actually went out of the bay and into the valley.

Goats, deer and coho - dollies occasionally. Pretty much right at the coho holes. And down around the ocean hike up there quite a ways or ATV your way. There are some goat cliffs there on the left.

[Regarding whether he goes with his whole family]
Oh Yea. My wife and kids. It's close to town, easier to get to.

[Why value outdoor lifestyle?]
Better than TV - I'm not one to sit on my butt too much.

[Kids raised same way?]
Yes sir, I was raised outside good portion.

[Geese? Ducks?]
No, I'm not much of a bird hunter.

Occasional berries.

I don't go there just to ride my ATV. I just use my ATV to get around.

HUNTING

I've never fished up in that area, just the main river. I've only hunted South Katlian. South fork.

I took a lot of deer this year and it'll all be gone and it'll all be gone by May. Eleven deer and a goat - still not enough meat.

I went South Fork once this year and Cold Storage [Lake] once. I just went, shot my goat above those cliffs.

I hunt a lot of the area that Leo opened up.

Shot a buck I think half away up. Basically right in the middle of native land. Right there going towards South Fork. I called it up with a deer call on the river there and shot it with a pistol. That was my favorite deer last year. And they say deer don't like that alder habitat. Well he was in there. I called up 2 bucks that day. I couldn't get close enough to the second one.

FISH

No I've never fished in there. I've noticed the dogs and humpies through there in the fall. By time those fish are showing up in the creek, it's hunting season. You're not really looking at the fish. You're looking towards the hill.

The cohos seem to be heaviest right here where they're getting ready to log. Where the fish lie back in the corner.

Spinning gear, fly-fishing gear. Quite a few every year. Where I get all my cohos. You don't see a lot of natives in there fishing. I think the Littlefield's are the only other boys I see in there.

Start showing up? Well they don't leave there 'till…I saw one in February. I guess you might find one end of July. Good time to start looking usually you'll find some in there. Fishing in wintertime your looking at November, October. It gets pretty thick in there. They come in there steady. It's a strange run you don't really find- As far as brights, it fades out towards the end as far as what are good keepers obviously in November.

There are some big dollies up in there.

I like my cohos for a barbecue. Cohos and sockeye. Vacuum seal 'em in fillets. I put up a lot of cohos. Chunks I save for bait shrimping and crabbing. In Hoonah Sound.

STREAM DYNAMICS

[Go dry?]
No dry up in wintertime - frozen solid where it trickles out.

Well it's a big glacier runoff.

[High flood?]
I've seen it pretty high I've seen it wash out the logging roads parts of it. But not where it's not passable. Raging.

Right, this is the really broad river that zigzags through the muskeg.

Pretty neat…it's as just as big a river here as it is over here when you start running around these little creeks that feed in to larger. Really branches out in this area.

When it rains you don't want to go back in there. [Boulder Creek] it's hard to walk…beside it too, brushy.

USE

[Many Indian families?]
No, not really. I don't think there many natives that get out and investigate these things.

You can even go into Katlian and not run into people, it's so big. You can see four, five boats anchored in there, right on the beach, and still not run into anybody.

Well pretty much most natives would say subsistence, but when it comes right down to it, its sport fishing. You're only allowed six a day. The Littlefeilds were playing around with the legality of subsistence. The hunting and fishing doing in there last year. Where their fish camp they did subsistence hunting and fishing.

I think the Littlefield's are the only other boys I see in there besides myself. Probably why most of the corporation is all for the logging cause they don't get out and play outside. They sit home on there butts. It's pretty sad.

I've noticed those white strings and flags around the area this year. People measuring creek beds and doing there surveys I guess.

I walk down, its a big adventure for an eight year old. Those Cohos. Walking through the devils club and Indian celery up over his head. You give him a stick and he thinks he's going through the jungle. He loves it.

My grandpa used to go up here a lot. Like 10 guys. Before they logged they carried an inflatable raft all the way up the back and they go up this area… Hogan. They'd hunt their goats and they'd get their goats and they'd lug there meat out to the raft and float it all the way out. They'd stay up there for a considerable amount of time; 10 days or so. Back to the basics.

Occasionally I throw a dungy pot over here on the right side. Not too often, you get so much traffic people steal out of it all the time.

LOGGING

Imagine if they log, the bottom in there is going to be messed up for the crab. All that stuff, all that bark. And they say they try to control it keep all that bark all that sediment from washing down that river.

I don't like logging at all. But I understand you have to get paper and wood products from somewhere, but why so close to town?

I understand that they are selling it after they log it.

My grandpa was saying he'd like to see em put a lodge in there. How you going to put a lodge I there if its been raped? Just a bunch of mud.

What I understood was going to happen to that property - probably just rumors.

Cube Cove sold their property back right? Cube Cove native allotment, logged recently. They went ahead and milled the place and sold it back to the Forest Service. They can turn it back into Forest Service property. Not have a native allotment in the middles of nowhere. At a real cheap price after it was logged. Since it was worthless basically.

Now I assumed that they were going to do the same with this area. What good is it after logging? A lodge?

I mean they are logging this place for a loss. Net loss.

Why was that written in the paper? Why didn't he correct that? Write back to the paper. And said that is not correct. I don't think that many people would have been up in arms. That was one key thing. Logging it for a loss.

It's pretty traumatic going in and logging it. Going to soften up the edges. Nothing to stabilize it.

Things are going to move around a little bit.

I understand that you got [Shee Atiká] to do the 100 foot buffer, but that river moves couple hundred foot a year all by itself with out being logged around it. Imagine how much more it is going to move.

I think it's going to get hit hard by the community. Road system kids out there riding their bikes. Yea, which is fine. It's close to town.

Depends on what Shee Atiká does after they log it. If they decide they're going to fence it in and not let anyone in.

I'm kind of cynical I...[unclear]...

Since I heard that they were going to log it I've been looking into other places to become my favorite place.

They're taking all the big timber from a round the goat cliffs. Goat are not going to want to come around. I'm not sure, I've heard a lot of different things. I was under the impression that you couldn't go in and log an area where goats were living. But obviously they can do it cause they're doing it.

Yea, I know what size timber they're taking...but they're definitely going to be logging goat habitat area. There's no question about it. From the looks of this map.[Shee Atiká proposed logging area]

HOT SPRING

No I haven't I've seen it marked on a map. I've never found it or seen it. I've only seen it on a map. It's just past the cabin if I remember right. There's an old abandoned cabin marked over here. No right here - cabin ruins. McGraw's lived there.

I don't know.

POPULATION

[Goat?]
There were quite a few taken out this year. They might be down a little bit now. It seems like you can always get a goat out of there if you want. I don't know I understand that the goat population is pretty high. I think the reason they show it.

[Bear?]
There's a lot of bear in there. It's such a big area. Such a long river they don't need to come all the way down to the ocean the bigger ones stay up there.

I went through there once five years ago on our ATVs.

At the main camp there at the main river there was a group of people there from ravens way. Couple of girls getting up getting dressed. I was on my ATV with my buddy. There was a girl bent over facing the other way putting rain pants on, he crashed into this stump. Forgot where he was, what he was doing. The whole campsite knew what happened…why he accidentally crashed.

Account of Herman Kitka

"So, in my lifetime, all the different families in the village would come there to fish, and when they brought it in, they distributed it through the village. That was the only use I saw in my lifetime."

They come down here middle of November, December. That's where…to get cohos.

Fish and Game biologists claim that the cohos would die when they spawn. Only the big ones die out and the little ones came...8-10 pounders at least...this is what the Indians claim.

So, in my lifetime, all the different families in the village would come there to fish, and when they brought it in, they distributed it through the village. That was the only use I saw in my lifetime.

And along there berry pickin' the way the river currents go along that river.

And that opened at goat season.

That's where we had the camp and we took the dogs and a life raft on the way up the river. That's where we had the camp and the goats....

We would take the life raft I had…and put all our stuff in there and we'd just walk up with it. And coming back down we put our leads and gear and then we'd really ride...

And then when it's big all the time...

And then it's gonna get to shallow. We'd hop out.

The family that lives there, the last ones that I know of, could tell you, is the Hollywood family... And they called it Hoow.i Tliakw.

I guess that's the wives to the…that's all that I know about that.

And that coastline lake, that the fisherman that used to go up there to that fountain was Pete Hogan. He owns the marine supply store [in Port Alexander]. He called it Hogan Lake. Later he talked the airplane pilot into landing there…on that lake.

We kept going up there until the Pulp Mill opened up. The loggers moved in and they destroyed my camp. So we quit going there.

The Hollywood family had a cabin up there and they leased it at one time to…a man that started a dairy farm.

I don't know if any of that Hollywood family is alive…just one young lady at the pioneer home.

I don't know if they ever applied for us - Alaskan…

'Cause that Hollywood had a nice home there along side the smoke house.

One of the daughters that's livin,' Louise Elliot in the pioneer home…she's the one with no more…family.

I don't know if she would do without her roots she is older then I am.

Kiks.ádi, Kiks.ádi family…

The way it works at the time, the family, even though they're Kiks.ádi, when the father gets old the children take over, so it becomes Eagle's property, and then the Eagles land into the Raven, and then to the children and then the fathers get old it switches back and forth...

It wasn't strictly owned by Kiks.ádi..

All the river systems were halfway in Southeast Alaska.

We meet a hundred years ago, each family…had their own rivers.

We'll never get to spear up in there, but good hunting is in Cedar Cove...

I always hunted the Katlian Bay. That's where all the people hunt deer. Along the bay area there and along the rivers.

There was fishing, goat hunting and berry picking.

Oh, sometimes go for three days…four days. We stayed until everybody gets a goat.

I don't know if anybody would have a license that fished around this time of the year.

I just know that it was a good treat for the people in the village, and all the young fellas would get the fish.

When they would clean the fish, the eggs we saw um out of the inside and then you migrate them out of it.

That's the lake long that comes in there almost at the end of October, coho.

Logging roads there, when you spent time in there…No. After they put the logging roads in there we never went there any more.

They were logging there when we went there... went there hunting, said it was too dangerous - the loggers shooting in every direction up there. Didn't want them to target practice on us walking around up there.

I wasn't a guide but I owned the equipment to go up there. When people would go up there with me. Every man hunt on their own.

The river that comes in that side into the main river...lot of silt, just like a mainland river from the glacier water.

[Why was this area chosen by Shee Atiká?]

It was logged, but it was selected to go along with our hotel. That's what we selected it for. At one time, the Board of Directors, I was on the Board of Directors at the time we selected. We planned to put in a fishing resource. So we can get people to come to our hotel and we could take them to the fishing resource. The road was there. They could follow the rivers too if they wanted. Today, I don't know what the Board of Directors is doing. They discarded everything we planned and we also selected Charcoal and Alice Island at the same time.

We went to Seattle and spoke to all the marine hardware store owners. "Put up that building and we'll lease from you." All the big marine stores in Seattle. We knew the boat harbor was going to go in there too. That was discarded by the new Board of Directors also.

Some of the valley, it's clear way back in there. Would have made a good ski resource. That was part of our plans for Katlian Bay.

And today the Board of Directors has a…just wants to sit and do nothing. Have the money to work for them only.

I don't know why they are afraid to venture into all those things. And when I spoke to them on it at one time I attended this board meeting: "There's no road there."

"Yea, but Bob Allen has boats. He can take the people that want to fish the river up there."

His fast boats could take them out there and be there in 15 minutes...a lot of potential for our corporation. And they didn't do anything about it.

When I got sick from cancer in my intestines, I resigned from the Board of Directors and a new group took my place.

People don't understand: logging don't hurt places where there's a glacier-fed river.

Account of John Littlefield

"Biggest set we ever made was in Katlian: 3000 fish in 1 set. Humpies."

Name is John Littlefield. I was born Oct. 10, 1946 – Sitka.

Lived here virtually all my life. Took other trips out. Lived other places in Alaska. Army. But basically this has been my home since I was born here.

Right now, I'm the Subsistence Representative for NSRAA and I have been a past president.

If the Tribe or ANB (Alaska Native Brotherhood) or anybody [that] thinks NSRAA is a threat, hindrance, or help to subsistence, they can let me know and I'll bring it up at the board meeting. So far it's been pretty good. There hasn't been perceived conflict. As a matter of fact most people that I've talked to: Elders, Mark Herman, others, considered NSRAA a net good effect. There was a member of the Tribe that felt that it was a heavy perdition on the herring and we addressed that.

But there have been concerns, very, very minor. Most people would view NSRAA as providing fish the local people catch too.

Katlian Watershed

Not work but we've gone up there in conjunction with Dog Point Fish Camp to fish.

Pre-logging, logging - hunted and fished there, during the logging and after, we continue.

The other side of Katlian remains good - the Cedar Cove area has pretty good hunting.

Been over most of that area, but have not goat hunted up there. Been up all those ridges - basically all the Shee Atiká land hunting. Not in a long time have I been up in those, Cold Storage Lake.

Years ago when the road was in there we drove all those roads here and Nakwasina. But right now, I know the kids do. I don't go up there. But quite a bit of traffic now-a-days.

Beach seining, gill netting, gaffing, and sport fishing - but it wasn't sport fishing. It was rod and reel. We were taking fish for subsistence. Had halibut fishing in there too. Crab? We, I haven't set one in there in 4-5 years, but we used to set crab pots. Now you can't set 'em without staying right there.

[Are there good numbers of fish?]
Used to. It was all down low in here. [Katlian River.]

[Did you work the smaller rivers?]
Yep, this one over here. Actually we've been on all three of these rivers [Coxe, Sukka Héen, Katlian]. This was pretty small but we fished over here too.

[When was Fish Camp fishing?]

July and August fish camp.

Biggest set we ever made was in Katlian: 3000 fish in 1 set. Humpies. We can't handle 3000 fish at Dog Point. We ended up giving those away. We took to everything we needed from camp. Buck Ellen got his truck. We brought it down [and] filled it up with fish. Started at that end of the village: "You guys want 50 fish?" come get whatever you want. We didn't have anymore when we got down here. They were all fresh fish.

Like my uncle said, "we got 20." Tlingit's can't count past 20, you know that? They don't. Their number for 20 is one man. "Tle caw" that's one man. For others it's a lot.

"Hun deed" is English from hundred. And "towsen" that's also contact, but before that it was a lot, one man or a lot.

Well if you think about "tle caw Dana" means 100 dollars - everybody knows that. But "Hun deed" means a hundred like "shu ga." sugar

Humpies, dogs. Years a go when we fished at Dog Point for a family. We would fish Coho's up there in Katlian. And that was all illegal at the time. I don't know how long my uncle has been doing it, but we used to sneak up there and get fish for the Camp. And later on as you - to keep that so you don't get arrested - that's were the spin casting would go on. That's where you can go up and spin cast catch them under the sport fish license. But they still got smelts and there was a lot of natives that did that up in Nakwasina and Katlian - that I know of and are still around.

Herman Advise. Jeff Neilson. [?] Williams.

No, he's not around anymore but his brother is. Earl Williams. Those guys used to do a lot of that stuff. Ray Neilson.

So we used all the deer. We hunted lots up there for deer. My brother worked up there but I never worked up there.

There used to be some hatchery fish up in there at one time. Probably didn't know that, did you? There used to be fish in Starrigavan. There were rearing pins on these islands here. Those guys used to go in and feed 'em. They got diseased so they let the run die out. But they used to have kings and Cohoes running into Starrigavan - for quite a while. They finally died out. You used to be able to catch any of them that came in. There was no restriction. Late 60s, early 70's. Early 70s.

There was quite a few Cohos that go into there. I used to use my commercial boat - I have a hand troll permit. We'd get off work at 4:30. I'd have my boat out at the cove and we'd run out and start fishing as soon as we got there. Deer Point [mouth of Katlian Bay] we'd troll in there. Pick up 10-30 coho in a night. And those would be smoke house fish.

[What about later in the year, September?]
The seasons I think end September twentieth. So we troll there, then after that you could still sport fish, but you couldn't troll anymore. But those fish were subsisted. They were... just like the sport fishing stuff. That's what's wrong with a lot of

this stuff, is we used sport fishing methods and trolling and commercial methods but the fish were still going home. But that's how we would catch them. Legally without getting in trouble 'cause you couldn't set beach seine on 'em or you couldn't gill net 'em.

[When was your first time in Katlian?]
I don't know. It would be in the 50's. We used to routinely, from 60, 59-60, 61-62… spent every weekend. I was in high school. In the wintertime we spent all the time in Katlian. Have parties and stuff and it was a place to get away to. We went up in all these bays. My uncles took me in there in the late 50's. I remember going in there in the late 50s, taking fish out of there, and certainly in the early 60s when they were logging it. We'd go up, you know, drive up there. It was pretty good hunting when they had the roads in there. When they first logged it, you could pretty much see everything.

[What about hot springs?]
Nope. I never found one. I heard people tell me there were some up there but I don't know where they are. I heard stories, but I don't know where. I have no personal knowledge. If somebody knew, they probably wouldn't tell you.

They used to have a homestead up there. They have it pretty well documented. Look at DeArmond. Go see DeArmond. He's got a pile of…there used to be a hay farm, or something. Just like when I was a kid, they had one where the pulp mill is. I heard about that, but I just know it was up in Katlian.

[What about a fox farm?]
Nope. I don't have any knowledge of that.

[Did you hunt any bears?]
Bear? No. We see 'em, but we don't hunt 'em. Looks like there is more now. I don't know, I was fishing one summer. I was halibut fishing out of the Camp at Dog Point and I remember seeing 23 bear in Nakwasina on the beach around Halleck Island. I think there's more bear but that's just my personal opinion.

[Did you notice any cottonwoods?]
No, very well could be, but I didn't notice. When we walked in this area when I was a kid, I remember that was kind of like a park. Just huge, big tress - wide open under growth. Stuff that no one alive will ever see again. Maybe 300 years from now they might but….

alders choke 'em out. For a while 'till eventually they get overtaken, but it takes a hell of along time to do that.

[Did you hunt Goats?]
Never hunted goats up there.

[Have you noticed any changes in Katlian River flows?]
Positive it has, but the reason it changes is streams change every year. Blame it all on the logging. It may have something to do with it but streams change every year. They just re-route themselves wherever they want to go. It's pretty hard to say. This stream has always been here. They just don't do that. I know there was some people that blamed all of it on the logging, but it's obvious that some of that

might have affected it. But high water, rain, heavy freezing up - all of that affects it. Its just going to go from up here to down there, whatever way it can go.

[What are your feelings on Katlian logging plans?]
To me it has very little effect to what I do as long as they're…. My understanding when I talked to them was basically [that] this was helicopter logging. Along this side here, this side here. Most of this area if you overlay it over what has been logged, a lot of it has been logged already. In the areas where there can be substantial damage to the creeks, they already logged…the damage has been done.

They obviously…what they' re going to do, they're not going to rehab it.

But the damage has been done, the trees are gone.

I suspect it will change some of the pool dynamics where the fish used to play. I'm positive all that has changed. I remember going up in those areas that hadn't [been logged] and seen big pools. You know up in these areas here. But I don't know…I'm sure that's all just different now.

Most of [our] fishing and hunting was on this side and up in this valley there. Used to have this dock here. During the day we would run over here to dock.

Tom Young - I don't know…I'm sure he hunted goats up in there. And maybe even Tom Jr., 'cause I think Tom Jr. might be doing that now. I know he did a lot of hunting up in here. Head, go up Starrigavan and go down through here.

It's a pretty easy place to get lost. Cedar Cove side.

You got Chester Jackson on there, 'cause he's got claim to Gaaja Héen- Old Sitka there. You can get Chester through Debbie Isanbis or something like that down at Betty Eliason's childcare center.

We used to hunt in Cedar Cove all the time. I got a spot in there that was pretty much guaranteed spot. I remember hunting on that mountain on the North side, we used to hunt it from the Nakwasina side...

We used to get fish in a lot of these places like this creek. [The] Dogs used to go in there - there's no more dogs.

Nothing comes to mind that it has changed, the front of [the Mouth of Katlian]. For them to say that logging has caused all the sediment. I mean the sediment has always been there. All caused by logging? I mean I don't like logging much, but some of their arguments are pretty much bogus.

[Are you familiar with the name "Hollywood?"]
_____ Hollywood - she was married to Ed. You might get some info out of Nick Goddard's aunt...is a Hollywood. Nick Goddard's mother is a Hollywood. Doris Goddard is a Hollywood, so Nick Goddard might have some information.

Account of James Parker

"So I think that the way things are going with recent years, I think some conservative effort should be put on there to preserve the smaller runs of coho in there."

...of course it doesn't show Katlian Creek.

That's the catch. Now that's inside Katlian Bay inside, but what does that escapement show for 1975?

50,000 - South Katlian…100,000….

But look over here. There's a catch of 233,000 and it doesn't show up in your escapement. You got to have catch and escapement together. It was just a mediocre year, but here was 233,000. If 200,000 of that catch could have gone up in escapement, you could of had a … year - massive difference.

When all those are balled up in Starrigavan out there, sometimes in recent years…50,000, 75,000. Couple seiners could go in there after midnight. It could be awful dark. There wouldn't be much left for escapement, and it would show up in your escapement charts and even without that over [a] 40 year period. Just by going by escapement you can come up with some pretty good assumptions in this Katlian. I would say just by looking at that, that the effect of logging has not been that much there, disregarding the commercial, catch still looks pretty good.

If you would think like some of these people say, that the effects of logging kills the salmon stream or ruins the salmon stream. You wouldn't expect to see any of this here. Or you would have seen it up here then go down. Don't you think so, Jack?

See, now this is a favorite trip of people that take statistics. You can get anything you want out of statistics; good, bad anything, if you just take what you want. If you take the whole picture, statistics will show you a very accurate picture. Statistics are one of politician's powerful tools. Say anything you want from statistics.

I think it was there, early '60s. They were logging in there and still good numbers.

When you're looking at catch in Katlian, your catch is probably in here but the bulk is probably out here.

Anyway, I don't even know what information you wanted.

We walked in every stream in the whole Sitka area. A lot of 'em where done with helicopters too. Boy, that is a first class way to do it. You can get right down on the gravel bars. You can check the counts against what you actually seen. If you walk the stream...it is a little bit higher 'cause then you don't have the actual comparison. With the helicopter you can take a bird's eye view and...

These guys would walk with me several times, so they could compare their numbers with mine.

Foot surveys: we did a lot of surveys. It was all foot surveys all summer long. And another reason we were out doing a lot of foot surveys is that we had a lot of tagging projects going and you had to do a lot of foot surveys to recover the disks. Peterson disks.

[Did you operate a fish weir in 1976?]
Yea. We had a weir. Oh, I can't even remember, but they didn't amount to much. They usually got washed out - stuff like that.

[Where was the weir?]
I think in South Katlian is where the weir was - not in Katlian. I believe it was right in here, and I think it was one that got washed out real quick.

Did you know they went in to Katlian to take out gravel? You know who it was? McDonald. McDonald store here. When he first came to Sitka, but he had barges. 2, 3 barges, and one day here, he was loading up a barge. I said "oh, no." I said "anymore and I'm going to have to arrest you."

I said the same thing to Keith Snowden. It's nice, hasn't really hurt anything in there. One year I seen herring in there. Low tide went way out and the herring stayed in there. At any rate, some of these things I don't think really do much damage.

And as I remember, Starrigavan and this is one right next to home. I walked that for the first few years before they logged it. There wasn't hardly anything in that thing, but during and after logging it just seemed to build up and come back. I didn't expect that. That was one of the worst logging shows I'd ever seen.

All these streams…if you put 'em all together, especially those that are good for chums and pinks - they don't have very good production for cohos, but they do have some production for coho and you can put them all together and it adds up to quite a bit. As far as you put all the ones in SS, think you would have quite a significant production of cohos, but if you take a creek like at the head of Silver Bay or Redoubt.

These little streams - they can support a few cohos, but not too many. They force them out if it becomes too crowded. They force each other out.

I know there's coho runs in a lot of these streams, extended over a long period of time, and it could be that if you just hit it like that then maybe it was the peak of the run. Then it could be that some of them could have already spawned.

And you can go out there. I know I've been out there in September, mid-September, and we were already seeing cohos on the flats. They could have already passed through there. In fact, I remember fishing several hundred Coho there in late September - sport fishing.

Anything on Coho? You guys, what would be nice…ok first you should have, to get a good idea on Coho. You should have a weir. That's the way it is, but you can't put a weir in every river with pinks and chum. So what you ought to do is find a representative stream and interpolate from what you do cover.

[We saw lots of fry in Su<u>k</u>ka Héen]

In a case like that, what might be happening is that because they are so crowded in the mainstream that they are backing out. That's what happens when you're dealing with smolts.

If you're dealing with very small runs of coho in these streams. Like I say, when these cohos are off in Katlian out there you can see 2,3 hundred at a time. Well you used to, but if a seiner went in there and gobbled them up, there goes your escapement - bulk of it.

[Referring to inside Katlian by the mouth]
For a pink and coho stream, that's inside there.

[Regarding a coho caught in there:]
You could just about assume they were headed up stream.

Once you get inside that line you take another 488. If this was in Silver Bay, 488 wouldn't hurt too much. Or near Redoubt, but when you [are] dealing with streams that are special suited for pinks and chums and don't get many cohos 488 is a lot for that type of stream.

Same thing could happen for Redfish Bay.

[What about the sport fish take?]
Sometimes I've been there. There's schools there that you could fish over the top of, and at that time we didn't have any sport fishery - zero. Didn't have any charter fishery - zero. The only place coho were intercepted was in the commercial troll fish and that was usually done off the Cape.

That charter fleet, murder out there. They're a lot more efficient that the commercial troller.

I think if it were possible to know all that they're catching, I think it would be astounding. It would knock your head off. If they could somehow account for all the catch that the charter boats do, it would be incredible - and there's just no way to check 'em.

When I was telling you I saw the only fishing that was ever done, there was maybe a skiff was in there - in salt water.

It depends on the timing. If they come in early September, they hesitate, fool around in salt water. If they come in late, they probably shoot right up in there

[Regarding a King seen in Katlian]
Hatchery King probably. Hatchery Kings wander. I've seen up far as Starrigavan. All brown, tastes like cardboard.

I know each one of these streams has their coho runs, but I don't think they ever amount to much. And with the charter fleet, sport fleet and commercial fleet all operating on one mouth those numbers are going to dwindle, which may or may not be bad. It might be, for example, that Katlian River can only support a hundred coho spawning coho. Otherwise, smolt start forcing themselves out too soon and it may be that they're consistently getting too many in there. But I would kind of doubt it now with the pressure that commercial and sport fish put on there.

So I think that the way things are going with recent years, I think some conservative effort should be put on there to preserve the smaller runs of coho in there. I think if you went up there in November, December, you'd find cohos too. I've seen 'em to the end of December.

I trapped this country for 20 years. Katlian, Nakwasina. Trapped the whole area for every year I was here, and up until 1990.

The thing is, except for casual observations, I was busy trapping, like most trappers are, and that's all you get is casual observations. The way comm. fish say I saw this. It's probably just casual observations. They're busy doing something else.

[Do you think that all this logging in the lower elevations is wiping out bear habitat?]
No, that's pretty strong.

[Do they spend the night there?]
They spend the night where there's food.

I don't think there's shortage of bear anyplace in this country. Get up into Peril Straight. They seem to be breeding more and more bear. An area like, as an example, like Cube Cove. You can see 12 bear out on the flats fighting like hell. You get too many bears, that's what happens.

The only place for years I could see bear is up here in this pass, 'cause its open – just a highway for bears.

My name is James Parker and I've been in there area since 1960. Commercial Fisheries Management Biologist from 1960 to 1980. And I've trapped there are almost every year from early 60s to about 1990. And I've commercial fished. And I've commercial fished dungeness crab for 11 years. Most of it in Perils Strait. I've halibut fished all the way up and down Peril Strait and outside coast for 15 years. And I still do some commercial trolling. 15 years, 20 years of that.

During the years I worked with [the Alaska Department of Fish and Game]. I walked nearly all the streams in this area several times. And as a trapper, [you] generally see what's happening in the lower areas. Probably from Whale Bay outside Chichagof go trapping.

For example, we've looked at a late bunch of cohos in December and go up stream see what's going to on. Find quite a few of them. That was way late in December.

Silver Bay, I've seen really late cohos going into there.

The success of the herring spawn or the success of pink chum salmon run I think depends heavily on what is happening in the intertidal brackish water due to zooplankton, phytoplankton. It makes health, so they can stand the rigors of sea.

[What about bark accumulation?]
Well, the big thing in early years, they were very afraid of all these log rafts that were accumulating. Log rafts had logs sink bark build-up. Thought that would

kill off the Dungeness crab. I don't think it had that much impact. Most of it is hemlock.

[Do you know of any hot springs?]
I knew there's one in fish bay.

At any rate, there was deer then and there is deer now. They say that a clear cut comes up so thick that there's practically no browsing until it does grow up. There's good browsing and it produce deer for several years, but if you take unlogged area, there's nothing there either, so what's worse - coming up heavy where there's no browsing or uncut where there's none there.

People got there own ideas about what is most detrimental. Clearcut where nothing to eat or old growth where there's nothing to eat, and you know the answer to that is; go in with a good idea. A good thinning process right from the start and thin it to where you'll always have browsing for deer and it'll produce trees to grow even faster, but the trouble is it adds to the expense of logging.

It would be nice in Katlian if they thinned right from the start.

[If you were to run a Coho survey, how would you do it?]
I don't think you have to go every day. Concentrating a lot of your work, time, effort, expenses. Should find a representative stream, when you come up with a representative stream.

[Count high, then low, then middle?]
If it were me, I'd look at the intertidal zone, and then see how they move out. But you got to keep looking at the intertidal cause that's were they spend a lot of their time, visible time.

[How long are they in the stream?]
Sometimes they move out pretty fast and others are constantly replacing them. See with a weir, you could tag 'em. You can always interpolate from tagging. If they tag 50% of them and they got 50 tags back then they know there was a 100 of them.

SSWAP

Well, if I were to do it right off hand, I would go back to these representative streams - if you're talking about the whole area. I would find an old time logging stream. Take a representative stream that is an almost exact duplicate of this stream. That one stream would duplicate all these streams. What goes on in here you could assume goes on in here.

Katlian's real good for duck hunting.

I don't think anything changed much since it was logged as far as fish animal life. Still a lot of deer around there. The point to remember now - the logging they did back in the '60s was a lot different 'cause they got a lot of restrictions along stream buffer zones. We caught a lot of loggers driving bulldozers upstream, which during a certain time of year doesn't make much difference. But do that today they'd go to jail.

Things have changed. Restrictions on logging are more precise.

[Did you bust them much?]
Occasionally. Well you catch 'em, say next time your going to court - no bullshit. And they usually comply. Usually.

[Was that your responsibility?]
Well, that was the only authority with no buffer strips. The thing now, we got the regulation and the Fish and Game can enforce it.

Katlian, Nakwasina you can see real good from the air.

I think logging in some streams actually helped it. That's why I think logging methods now... And the frosting on the cake is when they come and clean up.

First place I seen 'em dug into the mud [dungenous] intertidal.

I don't think I've helped you guys much except for waste a lot of your time. I've always enjoyed the job.

Account of Ron Welsh

"*There is some comparison between logging and mining. The difference is, of course the big difference is the trees grow back in again and mining minerals are extracted, then they're gone from that area.*"

I guess I probably had my rifle with me. We always carried a rifle. I have a .338. I still have it. .38-mag standard issue was .375 magnum. They're designed as a safety measure with bears. Brown bears, which *aren't exactly Pekinese dogs*.

We never, I never had to shoot any. I know a couple guys did when confronted, but its part of the job. Part of the territory.

Well, that's was why we went up there. At the time there was. Kenny Kimball probably already told you. You talked to him already....

It was in the early 60's. In fact, I came up here to Wrangell in…October 1960. I worked up there. I came in 13th of May from the Olympic National Forest in Washington State. Transferred up here. I worked down there for the ranger, Jack Swisher. The scaler was Okla H. Duffle. I was a forester. We were administering the Pacific Northern timber sale. They had a mill there and originally it was planned as a pulp mill: Pacific Northern Timber. Had a lot of work to do at Sitka, both in Nakwasina and Katlian.

People would load up in their small crew boats from Starrigavan and go out to Katlian. J and H Logging Co. was there operating up in Nakwasina. 'Course Barton and Rynvan were operating in Katlian and A.L.P. had some operators up on Halleck Island. And there was still some A frame logging up in Katlian Bay too. I don't know if you're familiar with that. They're like two big logs on a float, like an A shaped frame, with cross bars and they logged quite a ways up the hill, with skyline system.

Kenny in fact, was the man that operated the log dump up at Katlian Bay called the 'Log Transfer Station.' They did some very good work up there, I thought.

My job was actually as a logging engineer, and that is a forester that specializes in logging. Lay out logging, locating roads, locating road mains, planning out where the roads will be built. Up through a particular spot. It's pretty simple, generally stated. But the objective when you're going to have a logging operation is to find out exactly where the logs are, the trees that you want to get, and then you have to figure out where a road system has to be logically built. It has to reach that timber.

'Course at that time we had that whole area outlined. The contract dictated the terms of the what type of timber we needed to get and then basically once you left the beach you had what you call a 'Truck Show.' The term 'Show' is simple - a general term. Means what kind of operation you have. You can have a 'Cat Show' or 'Truck Show.' Then these logs have to be pulled from the woods mechanically, because they are pretty heavy. So they are either pulled in with Cats or tractors or cables. Once you left the roads, you used cables and high-lead. Reach was 800 feet with some long corners to 1,200 feet.

Bundled, because spruce will float and hemlock will sink in salt water - some will. Because they're so heavy, so wet and moist, so by bundling spruce and hemlock together, the spruce would float the bundles in the raft. If they were going to bring them through Rodman Bay, they made section rafts of ½ million board feet. So that's quite a bit - 500,000 board feet.

I was involved with laying out roads and where the cutting boundary lines would be. At that time we worked closely with the logging companies' engineers. The Alaska Lumber and Pulp Co: 'ALP.' They had foresters. The forester they had was a man named Richard Herring. He and the logging engineer for the company, Herb Eliason, had the responsibility to go out and make 5-year plans. They would go out into their sale area, which was quite a large sale area, because they had a lot of logs to get. So there was a lot of activity out here.

The thing is, we had so much mapping and aerial photos and everyone keeps busy all the time planning this stuff up. Like the guy says, you got to know the territory. Just the nature of the beast.

They were worried about the situation around their log dump. So there was concern about that. They put in logs or some kind of berm so this silt wouldn't go in and plug up the area. In other words, if you're dumping logs into an area, you have to make sure they float away. If it gets all silted into a big sand bar, then you got to get a dredge or something.

I think it's just the nature of the river. What this is called is a loaded bed. What it means is you got a load, a bedload of alluvial material. In other words gravel and sand that washed off the hillside and comes down. Geological erosion happens. Basically water is the transporting agent. Water and gravity, so thus alluvium or alluvial fan. Best road location is right where it flattens out from steep ground to benches or where the slope flattens out.

I worked on the Olympic forest before I came here. Little more rain in there (katlian).

[What about salmon runs?]
Did you talk to Jim Parker? Because he was the guy that we worked with from the State Fish and Game Department. He was the State Fish Biologist here and he still lives here. If we figured we needed a bridge across the river, then we'd draw it up and where the abutments would be. Sort of like the foundation of a log cabin, called a log crib and filled with big rocks. The only difference is they come out at 45 degrees angles.

He would approve bridge sites and recommend whether we should move up or down the stream a bit to avoid washouts - the river would try to get around and it would cause a situation which was bad for the fish. Anytime we got trees in the creek, they had to be removed within so many hours or so many days. I can't remember the specifics. We worked with Jim on all these projects.

I transferred out in '63 over to Juneau to the Supervisor's Office. I think they were still operating here in the Katlian drainage.

You know Starrigavan; those trees are getting pretty big in there.

I don t really know…I couldn't testify one way or the other if there weren't as many animals and fish now as there were before it was logged. Of course, I'm biased because I'm a forester, and a forester believes trees can be harvested. To make trees for pencils, paper like this. All the other myriad of things. These building, they all come from wood - the trees. Thing is, it isn't like oil. Pump all the oil out and that's it.

They finished the planned logging. Logging in this area was planned and when they got it out, so they completed the plan. See, there's one thing you got to remember about logging. Sort of like… there is some comparison between logging and mining. The difference is, of course, the big difference is the trees grow back in again and mining minerals are extracted, then they're gone from that area and don't grow back.

But the similarities are the economics of it. I've heard people cry about how we got the biggest logs. But you'll find if you go back in there, there are still quite a few trees in there. Now, when you make an appraisal for a timber sale, you are interested in the value. You have to consider the value. In other words, how much does this log cost - all these logs cost to carry, get over all these roads. Then you have to put in the cost of the roads, cost of the yarding, different methods. The value of the timber. The timber value is the value of the timber. What kind of logs you got, grades so forth. Then you come up with the value of those logs. Then there's the towing cost, and all these costs are arranged in what you call an appraisal. Just like if you're going to buy a house. You know there's so much to build a house. Property costs. All these things. It's the same thing with a timber sale contract. The value of timber changes with the years, just like the value of gold changes. The cost of getting the logs from the stump to the mill are subtracted from the value of the logs as scaled at the mill, which are valued by grading (best grades have more value than lowest grades). Thus, the more value in the timber to be cut, the more money can be used to pay for extracting (logging) the timber considered.

Now we can do a lot of things with helicopters. Because timber prices have gone up, the value of logs have gone up in dollars. That was the extent of cost effective logging. The contract required that they try to put this thing to bed, as it were. The contract required the reestablishment of the natural drainage of the land that was logged.

Did you know Bill Peters? He ran the pilot boat out to Katlian and later the pilot boat out to bring big ships into the Sitka Harbor.

We kept pretty busy. As time went on, things got more elaborate. We used aerial photos a lot. About 800 foot to the inch. That's a pretty-large scale photograph. These were black and white. All of those photos are still in the records of the Forest Service, along with the newest color air photos.

Appendix B: Katlian River Watershed Study by Bob Smith

Katlian River Watershed Study

By Robert C. Smith

Introduction:

The Katlian River watershed is about ten miles north of the road system near Sitka, Alaska. The watershed is approximately 56 square miles in size and consists of the Katlian River and four large tributaries. The main streams in this valley are largely unstable and have a tendency to shift and change course over the years. These streams also have high flow fluctuations, which causes some of this instability.

The main valley was heavily logged in the early 1960's by the newly established Alaska Lumber and Pulp Company. This logging was completed about 1964. A road system was built in the valley to transport the logs to saltwater. Most of the yarding was done by the highlead system.

In 2000 the Forest Service, along with the cooperation of the Shee Atiká Corporation, started a study to look at the hydrologic history of the valley. One of the purposes of this study was to see if fish habitat could be enhanced.

The photo interpretation part of this study was done in December of 2000 and January of 2001. This was done by using three sets of photos taken in different years to see what changes have taken place in tree cover and stream courses. The earliest set of aerial photos was taken from an open cockpit Navy biplane about 1928. This set of aerial photos showed the valley before major logging was done. There may have been some limited logging of high grade spruce near saltwater in the valley before 1928. The second set of aerial photos was taken in 1956 by the Alaska Lumber and Pulp Company. There appears to have been no logging in the valley between 1928 and 1956. The 1928 and 1956 photos give a "pre-logging" view of the valley. The third set of photos are the orthophotos. An orthophoto are photos joined in a mosaic and corrected for elevation change, distance from photo center, tip, and tilt. An orthophoto is like a map. These are from 1998 and represent a post logging view-of the valley.

Methodology

The first step in the photo interpretation portion of this study was to timber type the 1956 photos following the standard R-10 TIMTYPE "rules". A quick summary of these parameters are as follows:

A. Lands less than 10% tree cover are considered non-forest. A condition class was given for each stand or polygon in this non-forest category.

B. Forested lands of less than 8M per acre are considered non-commercial forest. The type of non-commercial forest is also listed for each stand or polygon.

C. The forested stands were delineated according to the dominant tree species, stand size class, and volume class. An explanation of these are as follows:

1. H or hemlock stands have a plurality of hemlock in them by basal area. If the spruce in such a stand has a basal area of 30 to 50% it becomes a hemlock-spruce stand, which is represented by an X. If the spruce basal area exceeds 50% then the stand becomes a spruce stand. Alder stands have over 50% alder by basal area. Sitka alder is not considered a tree and areas with Sitka alder are considered non-forest. No significant areas of cedar were typed on the photos.

2. Stand size class is broken down into four categories. These are as follows:

a. Seedlings or saplings (#l). These are trees under 5“dbh.
b. Poletimber (#2). These are trees between 5 and 9 inches dbh.
c. Young growth sawtimber (#3). These trees have a dbh of over nine inches but are less than 150 years old.
d. Old growth sawtimber (#4). These trees have a dbh of over nine inches and are over 150 years old.

All commercial forest stands that were typed in the Katlian Valley are either age class #2 (alder) or #4 (H, X, or S).

3. Volume class consists of five classes. These are as follows:

#3 0 to 8 MBF/acre

#4 8 to 20 MBFI/acre

#5 20 to 30 MBF/acre

#6 30 to 50 MBF/acre

#7 over 50 MBF/acre

D. The minimum stand or polygon size was 5 acres.

E. Large streams are separate polygons. There are no definite rules to determine how wide a stream is before it is shown as separate from the nearby forest. My rule of thumb was that if it was wider than twice the marking pen width, it is separate from the adjoining stand. If the pen marked sides of the streams joined, the stream disappeared and became part of the adjoining stand.

F. In addition to the standard TIMTYPE delineation I also analyzed the 1956 pre-logging photos by dividing the commercial forest stands into texture classes. This is a breakdown of these stands into crown sizes and crown closure. A description of the process is enclosed with this report.

Results

The results are just now being analyzed. In general, it appears that for Katlian River the non-forest gravel riverbed total area has stayed about the same size over the years. Portions of the riverbed have shifted position but the total size is about the same. The side tributaries have remained more stable. The amount of alder adjacent to Katlian River has remained fairly constant over the years but the amount of alder away from the stream and on the upper floodplain and terrace locations has increased since logging. The hillside snowslides appear to be filling in slowly with conifers when comparing the 1928 photos with the late 1990’s orthophotos.

Comments:

A. Cottonwood is also found in this valley. It is very difficult to separate this species from alder on the photographs so I have lumped them both as alder.

B. It is difficult, in some cases, to separate the alder from the conifers on the 1956 photos. I may have underestimated the amount of alder/cottonwood in these 1956 photos. The contrast between the conifers and the alder/cottonwoods is more pronounced in the 1928 photos.

C. Many of the hillside snowslide paths contain Sitka alder. Sitka alder is not considered a tree and therefore these areas are non-forest.

D. Some of the stands have a mixture of alder/cottonwood and conifers. Whichever type had the majority of the crown area determined the timber type.

E. The 1928 photos were only analyzed for stream course location and valley bottom alder. The quality of

the photos was such that typing in conifers would be inaccurate.

F. The 1928 photos that I did the typing on were oblique. This causes distortion and makes it more difficult to match locations on these photos with the same location on the orthophoto.

/s/ Robert C. Smith 1/17/01
Robert C, Smith

Timber Texture Typing

September 9, 1999

The timber texture-typing project has been completed on Douglas Island, Mitkof Island and a portion of Chichagof Island near the head of Port Fredrick. The typing in these areas amounts to about 530 photos. The following is a short summary of how the typing was done and some comments about the project.

A Short History of Recent Timber Typing on the Tongass

The earliest timber typing I am familiar with was developed in the 1950's. The Tongass was mapped on quarter quads and the timber was delineated as to non-forest, scrub and species types. The old timber atlases used these quarter quads. In 1966 the Region started exploring J new method of timber typing that would show more detail and include the types of non-commercial forest and volume classes in the commercial forests. Jim Brewer and Bob Mattson of the Regional Office were instrumental in getting the program started. I also worked on the project. In the early 1970's,the Region decided to type the whole forest using this species and volume method. The forest was typed by contract and Richard Baker was the COR on the North end of the Tongass. The maps made from this typing were used in timber program planning and were known as TYMTYPE. Environmental groups in the 1990's took the use of these maps for planning to court saying that they were not very accurate and the judge agreed with them. The present texture typing project is designed to develop a method of timber mapping the Tongass using a crown texture analysis that is not necessarily related to timber volume.

Methodology

A detailed narrative of the methodology was sent in a memo to Greg

Nowacki on March 22, 1999, under the 2470 file code. The following will be a condensed version that will give the final process. There was some evolution of process as the project went along and this report speaks of the final method. The earlier work is not useless because the changes reflected refinement and would not invalidate the initial typing. The typing was done in the order of Douglas Island, Mitkof Island and the portion of North Chichagof Island.

The typing was done to delineate forest tree crown texture and has nine categories. This was done by using a matrix. One axis has tree crown size (small, medium, large) and the second axis has interstitial spacing (open, intermediate, and closed). This second axis translates into forests with widely spaced crowns, those with intermediate spaced crowns and those where the trees are close together. An example of this matrix is enclosed in the report. The break-off points in the interstitial spacing are as follows:

<10% tree cover (crown closure) is non-forest

10% to 35% crown closure is open forest

36% to70% crown closure is intermediate forest

>70% crown closure is closed forest

An example of the crown closure determinations aide is enclosed in this report.

The crown size axis at first was mentally interpreted by comparing tree crown sizes. As the project went on I saw a need for absolute numbers. After researching the potential crown diameters found in SE Alaska. I settled on the following:

Small crowns - diameter of less than 25 feet

Medium crown – diameter of 26 to 35 feet

Large crown - diameter of 36 or more feet

To determine crown size, a photo aid was developed by the GIS people that actually showed an example of crown size at two different scales. An example of this aid is enclosed in this report.

These delineations, both for interstitial spacing (crown closure.) and crown size seem to work well. When I finally developed the numeric crown size breakdowns, I went back and used these figures on the earlier work and saw that no changes had to be made.

At first we used a 3rd dimension breakdown to the texture typing and that to delineate the stands as uniform or complex. After doing Douglas Island this way, we decided that this breakdown didn't give us much additional information and its use was dropped on Mitkof and North Chichagof.

Comments

The numerical parameters and photo aids make this timber texture typing, at first glance, look simple and straightforward. It is anything but simple, and is much, an art as a science. For one thing, the scale changes on the photo with elevation change. This affects crown diameter. As the distance from the center of the photo increases, the trees appear to slant away and the observer is looking increasingly at the side of the crowns and less at the top. This affects crown diameter. The percent of crown closure rarely stays the same over much of the photos and the photo interpreter has to decide an "average" crown closure percent if there is such a thing. The boundaries between texture types are often not distinct, but form a continuum. All in all, I think that timber texture typing is more reliable than the old TYNTYPE typing. A single interpreter will be more consistent in the "calls". Multiple interpreters will be more consistent in making similar calls.

Other observation and comments of this exercise are as follows:

1. There are nine possible categories in the matrix. In the process of typing, I only found eight categories in this matrix on these photos. There are no stands with a large crowned closed canopy. This is logical because by the time the stand is old enough to have large crowns, the stand is beginning to open up from mortality, which lessens the crown closure percent.

2. The most common texture type was the small crowned, intermediate spacing (crown closures). Most of the time this represented lower site stands and these are the most common forest sites in SE Alaska.

2. The closed canopy stands (stands with a high percent of crown closure) usually indicated an even-aged condition and usually was found after blowdown.

4. Clearcuts were labeled as non-forest unless I thought that the average diameter was at least 9".

Possible Uses of Texture Typing

Texture typing is not a direct estimate of timber volume present, but it can be an indication. MC and LO stands are often high volume. Texture typing also can give clues to blowdown. SC stands are often windthrown stands. Texture typing may also give clues to suitability of stands for wildlife uses.

SC: Small – Closed

MC: Medium – Closed

LO: Large – Open

/s/ Robert C. Smith
Robert C. Smith

Appendix C: Forest Service Region 10 Fish Habitat Management Objectives (RFHMO)

Regional fish habitat management objectives (RFHMO's) developed for the Anadromous Fish Habitat Assessment (USDA 1995) were intended to concisely measure and describe physical and biological conditions for fish habitat in Southeast Alaska. These easily measured habitat attributes are useful indices for determining relative fish habitat condition in a watershed. Value ranges for these objectives, reflecting natural variability in stream channel morphology and habitat conditions, are summarized in Table C1. Pool frequency and large wood density objectives are explained in more detail below.

Table C-1. Interpreting values for fish habitat management objectives for large wood and pool data.

Pool and Large Wood Percentile Values	Interpretations	Recommendations
< 25th	Indicates poor habitat	Initiate detailed cause/ effect analysis.
> 25th and < 50th	Below average habitat	Evaluate with other management objectives to determine degree of concern.
> 50th and < 75th	Above average, good habitat	Analysis needs to consider past surveys and other analyses to evaluate trend and potential effects from natural disturbance.
> 75th	Excellent habitat	Consider past surveys and evaluate trend.

Table C-2. Interpreting Width-to-Depth Ratio Values for Fish Habitat Management Objectives for the Most Sensitive Channel Types (FP and MM process groups).

Width/Depth percentile values	Interpretations	Recommendations
>75th	Indicates poor habitat	Initiate detailed cause/ effect analysis.
> 50th and < 75^{th,} or < 25th	Below average habitat	Evaluate with other management objectives to determine degree of concern.
> 25th and < 50th	Above average, good habitat	Analysis needs to consider past surveys and other analyses to evaluate trend and potential effects from natural disturbance.

Stream Habitat

Approximately 8.4 miles of the Katlian watershed streams were assessed in July 2000, using the Forest Service Handbook, FSH 2090 – Aquatic Ecosystem Management Handbook Chapter 20 - Fish and Aquatic stream habitat survey Draft 1999 Region 10 Amendment 2090-98-1 Tier II protocol. The Tier II survey was designed to provide consistent, quantitative estimates of habitat parameters necessary to evaluate the condition of a stream relative to basic Regional Fish Habitat Management Objectives (RFHMO's). Metrics include macro pool frequency, total count of large wood, and width-to-depth ratios (from channel type verifications). Habitat units are defined, and discrete categories established to minimize observer bias, reduce measurement error, and enable replication and comparison of data across time and space. Time and personnel constraints did not allow for a more detailed and complete survey of all of the Class I and Class II stream habitat. It has been determined that as little as 20% of a watershed can be measured to detect differences between watersheds (Overton et al, 1993). Representative channel type segments of Class I or II to be sampled were determined using a selective random selection process to eliminate the skewing of data toward one end of the basin and it's particular features.

The procedure for this 20% sampling method is as follows:

1. Total lengths for each channel type within the basin were calculated.
2. Total number of stream segments within the basin were also calculated.
3. Stream segments per channel type were randomly chosen.

Table C-3. Main Katlian River Number of Pools/mile for Surveyed Segments (excluding side channel habitat) Compared to R10 Averages.

Channel Types	R10 Percentiles			Main Katlian River
	25%	50%	75%	
AF1	---	---	---	50
PA1	---	---	---	45
FP3	31	---	96	49
FP4	23	---	44	97
FP5	20	---	28	7
MM2	11	---	41	29

Table C-4. Main Katlian River Pieces of Large Wood/mile Compared to R10 Averages in Main Channel Only (does not include associated side channels).

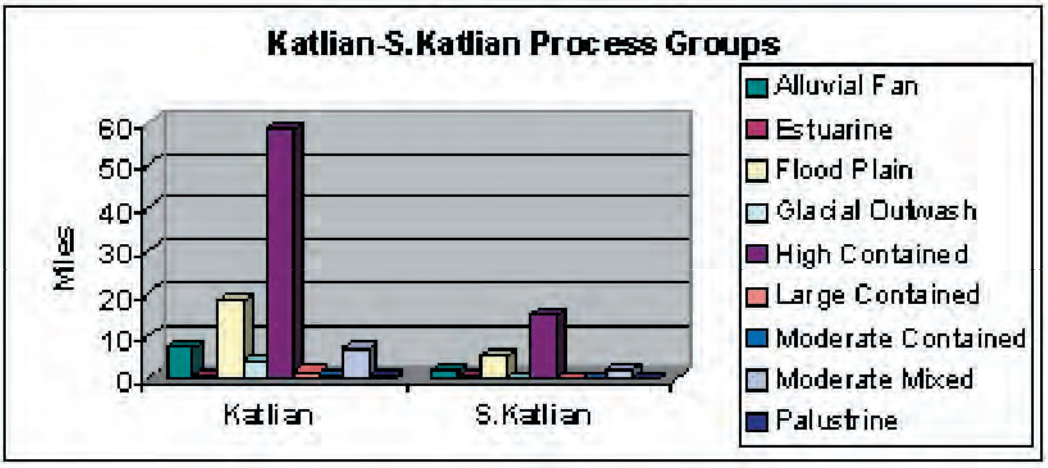
Channel Types	R10 Percentiles			Main Katlian River
	25%	50%	75%	
AF1	---	---	---	811.3
PA1	---	---	---	273.8
FP3	83	---	551	776.6
FP4	158	---	533	1263.3
FP5	104	---	145	904.0
MM2	184	---	304	597.2

Appendix D: Channel Process Groups

Table D-1. Katlian Watershed Mileage as a Factor of Specific Process Grouping.

Process Group	Katlian	S.Katlian	Total Miles
Alluvial Fan	7.3	1.8	9.1
Estuarine	1.0	0.3	1.3
Flood Plain	18.1	5.7	23.8
Glacial Outwash	4.3	0.0	4.3
High Contained	58.4	14.9	73.3
Large Contained	1.6	0.0	1.6
Moderate	1.0	0.0	1.0
Moderate Mixed	7.1	2.4	9.6
Palustrine	0.7	0.0	0.7
Total Miles	99.5	25.1	124.6

Figure D-1. Katlian Stream Mileage as a Factor of Specific Process Grouping.



Stream Process Groups

Alluvial fan (AF1, AF2 and AF8 Channels).

Alluvial fan channels flow directly over the alluvial fan landform. These dynamic, multi-branched channels periodically change course within the landform. Stream gradient ranges from 1 to 3 percent on the lower half of the alluvial fan and increases toward the fan apex. The alluvial fan channel is associated with high gradient contained channels; therefore, stream flow is dependent on mountain slope runoff. Groundwater discharge is also significant. Surface flow may be intermittent above a substrate of sand to cobble size material. During low flow periods, stream flow may run subsurface in the middle section of the alluvial fan and emerge on the lower section. Aggradation of material is the dominant process on the alluvial fan and fine sediment may be deposited in the low gradient section. The active channels on alluvial fans often include multiple high flow channels and unvegetated gravel or cobble outwash lobes with ill-defined channel banks. Alluvial fans typically support large spruce with diameters (DBH) greater than 30 inches, and have average site-potential tree heights of 140 feet. Downed wood serves as nurse logs for regeneration.

Estuarine (ES1, ES2, ES3, and ES4, Channel Types).

Estuarine channels occur at the mouths of watersheds, along inlets and deltas at the heads of bays. Water level fluctuations, channel morphology, sediment transport, and water chemistry are influenced to some degree by saltwater inundation in these channel types. Riparian areas consist of saltwater marshes, meadows, mudflats, and gravel deltas that are depositional environments. Estuarine channels are usually single to multiple thread channels, shallowly entrenched, and poorly constrained. Currents and wave action easily erode stream substrates of fine textured alluvium. Much of the sediment produced from any given watershed is ultimately deposited in or along the estuarine channel types; consequently, these channels are highly sensitive to upstream disturbances. Sedge and grass communities dominate the riparian vegetation. The amount of stream migration and channel braiding vary with bank and bed materials and upstream erosion and sediment transport regimes. Riparian areas are normally greater than 100 feet wide and may reach widths of several hundred feet on large river deltas.

Flood plain (FP1, FP2, FP3, FP4, and FP5 Channel Types).

Flood plain channels are associated with the valley bottom flood plain landform. This process group contains low gradient sinuous singular or anabranched channels. Mountain slope runoff and groundwater discharge control stream flow in the flood plain process group, and peak flows occur in the spring and fall. Sediment deposition is the dominant process. Substrate material ranges from sand to cobble size material.

Flood plains commonly support standing old-growth spruce with heights of up to 130 feet. Downed wood provides nurse logs for regeneration, sediment retention, and infiltration. Flood plain widths may exceed 200 feet on FP4 and FP5 channels, but are generally less than 200 feet on FP3 channels. These areas are typically highly productive for fish. Large wood and off channel rearing areas are of particular significance as habitat features.

Glacial Outwash (GO1, GO2, GO3, GO4, and GO5 Channels).

Glacial outwash channels are associated with the valley bottom flood plain landform. This process group contains low gradient sinuous singular or anabranches channels. Braided channels are prevalent in the glacial outwash process group, and stream flow is controlled by glacial melt. Peak flows occur in the summer. Large wood and off channel rearing areas are of particular significance as habitat features. Sediment deposition is the dominant process, and substrate material ranges from sand to cobble size material. Early successional forest species, such as black cottonwood, are common.

High Gradient Contained (HC1, HC2, HC3, HC4, HC5, HC6, HC8 and HC9 Channels).

High gradient contained channels are located on mountain slopes. These are singular straight incised channels with steep slopes and channel gradients greater than 6 percent. Stream flow is dependent upon mountain slope runoff and may be intermittent. Sediment is readily transported through these channels. Substrate material ranges from cobble to bedrock. Riparian Management Areas include incised channel side-slopes. The western hemlock series dominates vegetation although spruce is also common. Typical site-potential tree height is 120 feet. Some streams have intermittent flows. Steep gradients (greater than 6 percent) limit fish capability.

Large Contained (LC1 and LC2 Channels).

Large contained channels are associated with canyons or sloping lowlands. These are low gradient (less than 3 percent), singular, straight and entrenched channels with gravel to bedrock substrate. Sediment regime balances input with output. Stream flow is dependent upon mountain slope or lowland runoff. Habitat is often limited by a scarcity of stable large wood structure. Riparian vegetation communities are varied. Riparian width, including flood plain and side-slope breaks, reaches 150 feet (LC1) to 190 feet (LC2). Site index for potential tree growth is 100 feet.

Moderate Gradient Contained (MC1, MC2 and MC3 Channels).

Moderate gradient contained channels are associated with sloping or rolling lowlands. Stream gradient ranges from 2 to 6 percent for these singular, straight, and entrenched channels. Stream flow is dependent upon mountain slope runoff. Sediment is transported through these channels. Substrate is dominated by cobble,

boulder and bedrock material. Habitat is often limited by availability of stable large wood structures. Riparian vegetation communities are varied. Riparian width, including flood plain and side-slope breaks, reaches 60 to 70 feet. Site index of potential tree growth is 100 feet.

Moderate Gradient/Mixed Control (MM1, MM2, and GO4 Channels).

These channels are commonly found in transition zones between high gradient contained streams and flood plain channels. They are located in narrow valleys, footslopes or sloping and rolling lowlands. Stream channel gradients range from 2 to 6 percent. Channel containment is variable, as structural control may be intermittent or only along one bank. Overall channel pattern is straight. Stream flow is dependent upon mountain slope runoff and the sediment regime is balanced (input equals output). Channel substrate ranges from coarse gravel to boulder size material. Typical site index tree is 120 feet.

Palustrine (PA1, PA2, PA3, PA4 and PA5 Channels).

Palustrine channels are associated with lowland landforms and wetlands. Channel gradients are less than 1 percent. Palustrine channels are singular and sinuous. Stream flow is dependent on peat lands and lowland runoff. Sediment storage is the dominant process. Substrate material ranges from fine organic material to coarse gravel. Riparian vegetation includes mixed conifer, shore pine, and nonforest. Site index is generally less than 85 feet.

Lakes and Ponds.

Lakes and ponds can be located throughout a watershed from near sea level to the alpine. Very high elevation lakes (greater than 1,000 feet) are often frozen much of the year. Low elevation lakes are often high quality fish rearing habitat providing for many species of wildlife (especially beaver, loons, eagles, swans, and other water birds). Lakes and ponds function to mitigate downstream flooding during large precipitation events, and are important for surface-groundwater exchange and moderating water temperatures. Low elevation and fish-abundant lakes are commonly used for customary and traditional subsistence harvests, sport fishing, and recreational camping. Small ponds, particularly beaver ponds, can be highly productive. Riparian and near-lake vegetation can often be a mixed mosaic including old-growth forest, hardwoods (for example: alder or cottonwood), shore pine, and nonforest. Wetlands often occur as a component of lake and pond riparian and are important for the natural function of the lake and pond ecosystem.

Appendix E: Year 2000 Salmon Observations by STA

During the fall of 2000, Tribal staff members walked the Katlian watershed in order to get a good feeling for the characteristics of the watershed. Tribal staff spent a total of 20 days were spent in the watershed that fall. During the visits, staff members walked all of the major stream systems, conducted anadromous fish counts, both from shore and with dry suit gear, and spoke with sportfish users of the watershed.

Salmon counts in the Katlian Watershed by STA in the year 2000 were influenced by many factors. Rainfall prohibited field trips when the river became too deep and turbid to get accurate counts. The method of counting was above surface only (no dive gear) from August 16 to October 14. Below surface (using dive gear) counts were taken intermittently with above surface counts from October 20 to December 9.

It was difficult to distinguish between species during the chum and pink salmon run with an above-surface count only. (Dive surveys had not yet been instituted.) For this reason, observations of sport fishing and interviews with fishermen were made to estimate coho salmon harvest.

The immense size of the Katlian Bay Watershed made it impossible to visit more than one or two stream segments per trip. A daily visit to the same stream would provide more comprehensive and conclusive data for that stream, but the project assessment encompasses the entire watershed.

Data collection sites were not chosen randomly. Four main streams were visited on a rotation, although not on a strict schedule. These streams included two in the Katlian watershed and two in the South Katlian watershed. Other factors that influenced the stream segments to be sampled include the following:

- Run timing; an extra effort was made to visit the watershed during the beginning and peak of the salmon runs.
- Daylight hours left upon arrival at Katlian Bay
- Sport (Coho) fishing effort was mostly within 800 yards of the estuary.
- Tributaries were visited late in the year following big rainfall events because the flood-stage of the main streams signal possible coho migration to spawning habitat in tributaries.

> **Yuk ay ee yuh ah yuh. Ah shuk uk too see ah.**
> *"This is a good place that we should anchor."*
>
> **David Davis II – Tlingit Elder**

In frequent trips to the watershed during weekdays, STA watershed field crews did not observe significant sport fishing traffic (skiffs at anchor) during working hours from 8 am to 5 pm. It should be mentioned, however, that the STA field crew usually anchored near Coxe River, out of sight of the favorite Katlian River skiff anchorage used by local sport fishermen. In addition, no STA observations were made of the watershed in the early morning hours before 8 am (the best time to fish).

Watershed visits were not always possible when they were desirable. The beginning of the pink and chum salmon runs were not monitored 100% because Sitka Tribe's watershed science intern had not yet been hired and solo visits to the watershed were not allowed. An effort was made to recruit other personnel for site visits during this interim period, but that was not always possible. After the personnel issue was resolved, there were days when office responsibilities simply took precedence over salmon escapement monitoring at Katlian Bay.

Sitka Tribe of Alaska's year 2000 salmon escapement monitoring program for the Katlian Bay Watershed was an historic event. Since the acquisition of the lower reaches of the watershed by Shee Atiká Corporation in 1971, the Sitka Tribe's escapement study was the area's most sustained, non-aerial salmon escapement survey. Prior to this study, the Alaska Department of Fish and Game (ADF&G) primarily focused on aerial counts of the Katlian Watershed's 2 main streams.

The ADF&G has, however, walked *Tl'ayáak Héen* (Katlian River) 5 times since 1960 with the goal of attaining salmon escapement counts for pink, chum or coho. In that same 40-year period, the ADF&G walked *Xaaw Xaach Héeni* (South Katlian River) 14 times to attain salmon escapement counts. The immense size of the Tl'ayáak Héen watershed, coupled with the vastness of the Sitka District of the Alaska Department of Fish and Game, has made foot surveys of the rivers within the Katlian watershed impractical. It is much easier to fly these big streams.

The Sitka Tribe of Alaska does not have access to an airplane, so we walked the 4 main streams of the Katlian Bay watershed a total of 20 times to acquire counts in the year 2000. Six (6) of these walking counts were below surface (dive) counts for cohos. These stream segments had more accurate escapement counts because diving gives a better view of the fish in pools.

Table E-1. Sitka Tribal Escapement Data from Fall 2000.

2000 Katlian Bay Watershed Salmon Escapement Data	Day	Pinks	Chums	Cohos	Total
South Katlian River	**7-Aug**	0	50	0	50
	16-Aug	379	1246	0	1625
	20-Oct			12	12
Katlian River	**18-Aug**	2335	757	0	3092
	29-Aug	3349	1116	0	4465
	27-Dec			2	2
Upper Katlian River	**1-Nov**			16	16
Mid Katlian River	**23-Oct**			410	410
	13-Nov			86	86
Tributary 232	**13-Nov**			7	7
Tributary 181	**13-Nov**			5	5
	6-Dec			12	12
	8-Dec			6	6
Tributary 190	**6-Dec**			2	2
Lower Katlian River	**23-Sep**	2070	230	50	2350
	14-Oct		24		24
	13-Nov				
	21-Nov			103	103
	15-Dec			6	6
	23-Dec			2	2
Coxe River	**29-Aug**	1220	0	0	1220
	26-Oct			27	27
Sukka Héen	**26-Oct**			10	10

Appendix F: ADF&G Escapement Data

Table F-1. ADF&G Historical Coho Salmon Catch Annual Totals.

Year	Silver Bay	Sitka Sound	Nakwasina Pass	Nakwasina Sound	Katlian Bay	Grand Total
1960		129				129
1961		347				347
1962		21				21
1965		1,132	316	13		1,461
1966		119				119
1967			-	2	23	25
1970		1,921				1,921
1971				87		87
1973		14		271	2	287
1974		2,368	42	31	1	2,442
1975		45		138	166	349
1976		187				187
1977		828	7	4	243	1,082
1978		17				17
1979		994	32	130	488	1,644
1980				80		80
1981		1,122		179	238	1,539
1982		1				1
1983		162				162
1984		336		253		589
1985		923	3	75	87	1,088
1986	1	147				148
1987		453		41		494
1988		162		18	14	194
1992				-		-
1994		603				603
1995				190		190
1996	-	1,537	2	30	260	1,829
1997	9	927		69	2	1,007
1998	-	1,563	124	135	23	1,845
1999	40	819		53	414	1,326
2000		693	-	71	166	930

Data Courtesy of Alaska Department of Fish and Game, 2001.

Table F-2. ADF&G Historical Chum Catch Numbers.

CHUM	Silver Bay	Sitka Sound	Nakwasina Pass	Nakwasina Sound	Katlian Bay	
Year	35	41	42	43	44	Grand Total
1960		11,791				11,791
1961		13,966				13,966
1962		1,570				1,570
1965		12,003	4,524	708		17,235
1966		689				689
1967			19	146	140	305
1970		14,561				14,561
1971				2,232		2,232
1973		1,646		4,433	1,137	7,216
1974		17,240	1,068	3,043	1,104	22,455
1975		2,626		7,190	8,372	18,188
1976		1,593				1,593
1977		7,637	483	440	5,732	14,292
1978		261				261
1979		16,919	1,975	8,162	20,500	47,556
1980				3,990		3,990
1981		6,698		3,865	6,797	17,360
1982		54				54
1983		10,953				10,953
1984		19,794		43,333		63,127
1985		66,822	1,996	3,085	14,216	86,119
1986	16,308	70,665				86,973
1987		35,827		5,074		40,901
1988		12,234		2,891	5,398	20,523
1992				3,456		3,456
1994		147,758				147,758
1995				633		633
1996	81,572	777,507	288	5,880	6,604	871,851
1997	149,775	798,760		4,590	4,859	957,984
1998	58,082	1,016,122	3,841	9,975	9,511	1,097,531
1999	136,427	408,970		33,806	56,250	635,453
2000		339,544	2,325	52,313	43,754	437,936
	Shaded - Mostly Hatchery					

Data Courtesy of Alaska Department of Fish and Game, 2001.

Table F-3. Historical Foot and Weir Surveys of Katlian River.

ADF&G Historic Record of Non-Aerial Escapement Surveys Done In The Katlian Watershed								
Year	Stream	Observation Date	Species	Tidal	Mouth	Live	Total	Survey Type
1975	Katlian Bay S. Fork	27655	Chum	0	0	2700	2700	FOOT
1978	Katlian Bay S. Fork	28738	Chum	1500	0	1500	3000	FOOT
1978	Katlian River	28738	Chum	0	0	2500	2500	FOOT
1981	Katlian Bay S. Fork	29863	Chum	0	0	5	300	FOOT
1976	Katlian Bay S. Fork		Chum				3949	WEIR
1981	Katlian River	29870	Coho	0	0	181	181	FOOT
1985	Katlian Bay S. Fork	31347	Coho	0	0	40	40	FOOT
1962	Katlian Bay S. Fork	22907	Pink	0	3000	17000	20000	FOOT
1965	Katlian Bay S. Fork	23981	Pink	0	5000	3000	8000	FOOT
1965	Katlian Bay S. Fork	23994	Pink	0	0	9000	9000	FOOT
1967	Katlian Bay S. Fork	24693	Pink	0	0	200	200	FOOT
1967	Katlian River	24693	Pink	0	0	500	500	FOOT
1967	Katlian Bay S. Fork	24698	Pink	0	5000	500	5500	FOOT
1967	Katlian River	24698	Pink	0	0	2000	2000	FOOT
1973	Katlian Bay S. Fork	26897	Pink	0	0	1000	1000	FOOT
1973	Katlian River	26897	Pink	0	0	300	300	FOOT
1977	Katlian Bay S. Fork	28352	Pink	0	0	20000	20000	FOOT
1978	Katlian Bay S. Fork	28738	Pink	5000	0	2200	7200	FOOT
1978	Katlian River	28738	Pink	3000	0	500	3500	FOOT
1985	Katlian Bay S. Fork	31347	Pink	0	0	10000	10000	FOOT
1987	Katlian Bay S. Fork	32014	Pink	0	10000	2500	12500	FOOT
1976	Katlian Bay S. Fork		Pink				1408	WEIR
Data Courtesy of Alaska Department of Fish and Game, 2001.								

Appendix G: Local Rainfall Data, Fall 2000

Table G-1: Local Rainfall Data, Fall 2000

Month	2000	Historic Average (1842-1996)
January	8.74	8.78
February	3.60	7.17
March	7.40	6.96
April	5.83	5.89
May	4.56	4.68
June	4.11	3.71
July	5.47	4.69
August	5.92	7.46
September	13.41	11.28
October	12.03	14.51
November	9.68	11.13
December	5.37	9.74
TOTAL	**86.12**	**96.00**
Location: Sitka Airport. WBAN: 25333, Lat.: 57o 03' Long.: -1135o 22'		
Source: http://pajk.arh.noaa.gov/cli/webcli.htm.		

Appendix H: STA Rainfall Discussion

August 16th to September 23rd escapement summary for all species:

Seew dakw wustaani kunax. Seew dakw wusitaan.
"When it rains . . . It rains!"

David Davis II – Tlingit Elder

Only two escapement counts were taken during the pink and chum salmon runs. The field crew was finishing up the tree stand surveys when they observed the beginning of the chum run on Monday, August 7th. Nine days later, on Wednesday August 16th, the chum run was going strong and the pink run was just beginning. There had been a total of 0.88 inches of precipitation on August 14th and 15th. This rainfall prohibited observation of the growing pink and chum runs in the Katlian Watershed.

On August 16th there was another salmon escapement survey conducted on South Katlian River. During the next 2 weeks -beginning August 19th- it rained 4.64 inches for an average of 0.33 inches of rainfall per day. This heavy precipitation prevented salmon escapement surveys. The rivers were too deep and the strong flood currents made surveys impossible. Even if the field crew could have forded the rivers, the water was too murky to count fish.

The next break between heavy rainfall events was from Thursday August 31st until Saturday, September 2nd. The rivers take a couple of days to recede after such heavy rains. Before that could occur, the rain picked up again from Monday September 3rd until Wednesday September 19th. In that interval it rained 11.65 inches for an average of 0.73 inches of rain per day. This continuous rainfall prevented pink, chum and coho escapement surveys.

The next escapement survey was conducted on Saturday, September 23rd. At this time the pink salmon run was going strong, but the chum salmon run was tapering off. In summary: Heavy rains prevented estimates of the intermediate pink and chum salmon runs, but early and late estimates for both species were made. The early coho salmon run and its buildup to peak run strength, was not observed by STA field crews.

The next visit to the watershed was on September 23rd. The coho run appeared strong by then, and the sport fish take of Katlian River coho salmon was near or at its peak.

Appendix I: Recommendations for Future Data Collection

The Katlian Watershed is an extremely popular sport-fishing site for Silver Salmon. Katlian Bay is a commercial harvest area for pink, chum and coho salmon. Continued yearly collection of escapement data is recommended in order to adequately monitor, and protect the Katlian Bay salmon runs. Above surface walking surveys for pinks and chums would be sufficient.

Xaat, uh tai ee yay uh tee.
"*The fish are under the rocks or trees.*"

David Davis II – Tlingit Elder

Of the 29 aerial surveys conducted by ADF&G where no chum salmon were observed, 22 of those flights were conducted after August 15th, when chum salmon escapement should be peaking. A possible explanation for this high incidence of zero chum counts is the potential inaccuracy of high-speed aerial surveys. STA foot survey crews in the year 2000, observed large schools of chum salmon beneath spruce trees overhanging the creek bank near the estuary. This also occurred upstream beneath logjams and at intermittent pools with overhanging alder preventing aerial sightings of chums. These hidden schools of chum salmon would likely not have been seen by aerial survey crews. For this reason, STA recommends foot surveys instead of aerial surveys as a means of obtaining chum salmon escapement counts on the South Katlian River.

Dive surveys are necessary for obtaining coho escapement because the above surface visibility of the main stream pools is not adequate to see the cohos clearly. STA's field crew would do future surveys differently. The following suggestions would improve the quality of coho escapement data collection:

- Surveys should be conducted consistently (one to three times per week on the same stream segment) in order to map the upstream movement of the coho run.
- During the early part of the run, the surveys should focus on downstream segments. Late run cohos should be surveyed between mile one and three miles from the estuary up the Katlian River.
- Main channel pools should be numbered and cohos counted in each pool to map upstream movement of schools.
- Percent of bright, pink and red cohos per pool should be documented during each pool count.
- Tributaries of the main stream should be checked once per week for signs of coho spawning. Closer tributary monitoring is necessary during floods and after the first big flood.

Appendix J: South Katlian Road Survey and Habitat Impact Assessment

The location of each survey site is marked on an aerial photograph following the notes listed below: sites 1-6, 2584-50 (1989) [Figure J-1]; sites 7-15, 2584-53 (1989) [Figure J-2]). Site photographs were are located in the watershed files at the USFS Sitka Ranger District office.

The following is a listing of photographs and notes taken at each site. The site numbers (in bold) coordinate with numbers marked on aerial photos:

1) Coxe River crosses main road. Side channels north of main channel (MC) have obliterated most evidence of road. Old Log Stringer Bridge (LSB) sits in channel…nice LWD structure!

   2 – old LSB

   3 – side channel north of Coxe River

   4 – old LSB from Coxe MC downstream

   5 - LSB from Coxe MC downstream

2) Dry, braided channel crosses road. May be overflow channel from Katlian. Old pipe visible in Photo 7.

   6 – stream crossing

   7 – stream crossing

3) Main channel crosses road. Bank fairly stable.

   8 – south bank

   9 – north bank

   10 – Remnant Bridge, south bank

4) Stable channel. Road crossing does not impact stream. Structure removed.

   11

5) Unconnected pools in channel. No flow. No impact.

   12 – 18” CMP; ditch relief (DR) associated with above channel.

   13

   14

6) Intact LSB.

   15 – from upstream.

7) Flood channel (dry), erodes road.

   16

8) MC crosses road.

17

18

9) Collapsed LSB in dry channel. Active erosion. Sediment to MC?

19

20

21

10) MC crosses road. Stable. No erosion.

22

23

11) Flood channel crosses road. Little flow or dry. Follows road.

24 – looking down road

25 – bridge section

26 – road & channel

12) River crosses road. Heavily braided with channels.

27 – looking downstream

28 – looking upstream

Note: about 200m above Site 12, the river is a massively braided mess of downed alder and dry gravel channels. Fry stranded in pools as water goes underground.

29

13) East fork of S. Katlian crosses road as dry channel. Water flowed here intermittently last year.

30 – tree across road and channel

31 – channel

(Same as above)

32 – looking down road

14) LSB intact. Channel dry but Freeman remembers this one flowing last year when he was surveying streams and vegetation at Katlian.

33

34

15) LSB intact. Channel dry and has not passed water in a while.

35 – side view

36 – looking down road

End notes from 5/1/01.

Katlian Road Survey/Habitat Impact Assessment

On 5/3/01, a USFS field crew surveyed roads 75797 and 75790. An additional 26 sites were identified with significant road/stream interactions. Of these sites, only one (Site #19) obstructed fish passage. None of the sites showed any evidence that they were contributing significant sediment to downstream fish habitats.

Factors leading to low impacts are similar to those described above. Road 75797 traverses either flood plain bottom lands or runs near the slope break within these bottomlands. The road is traversed primarily by Alluvial fan channels (dry at this time) or low gradient class II streams. In the latter case either bridges are intact or the streams cross the road without obstruction to fish passage. The notable exception is site 19 at which the stream is diverted to the road and follows the road for about 25 meters. A precipitous drop from the roadbed to the current downstream channel location appears to impede fish passage. Though the location of the original stream channel is not apparent, there appears to be lower gradient routes to the valley bottom, which would allow for fish passage. This appears to be a class II stream although the extent of upstream habitat has not been surveyed.

Road 75790 differs from the other roads in that it traverses a steep side slope above the Coxe River. It is traversed almost exclusively by small class III steams, most of which currently have relatively stable beds. Site 38 is the only site in which a stream channel cuts deeply through the road. Though it obviously contributed significant sediment load to the Coxe River in the past, the channel is at present relatively stable.

The location of each survey site is marked on overlays of these aerial photos:

2584-50 (1989): (sites 16-23 and sites 33-42)[Figure J-1]

2484-137 (1989): (sites 23-32)[Figure J-3].

Site photographs are located in the watershed files at the USFS Sitka Ranger District office.

The following is a list of photographs and notes taken at each site. The site numbers (in bold) coordinate with numbers marked on aerial photos:

16 – Old Log Stringer Bridge (LSB) intact. Does not obstruct fish passage. Class II stream.

2, 3

17) Stream crosses road. Class III. Gradient >30% below road.

4

18) Ditch drains onto road.

5

19) Class II stream diverted to ditch. Stream follows road and braids before dropping off raised roadbed, creating barrier that possibly did not exist prior to road construction. Due to age of road it is difficult to determine location of original stream channel. Also, road erosion may be contributing sediment to (Class I or II) stream just below road.

6 – Upstream, #7 – Diverted to ditch and road, #8 – leaves road, #9 – erosion site viewed from below road

20) 18" CMP (ditch relief). Intact. Outlet crushed.

10, 11

21) Ditch on road.

22) Class IV stream crosses road. Pipe lying on road.

12

23) Dry alluvial fan channel over road.

13

14

24) Intact LSB – Segment 181.

15

25) Stream crosses road but appears to go underground shortly thereafter. Source is high gradient about 100 yds upstream.

16

26) 18" CMP (ditch relief). Intact.

17, 18

27) 18" CMP (ditch relief). Intact.

19, 20

28) Stream crosses road. (Class III)

21

29) Remnant LSB over stream. Banks stable. Segment 164.

22

30) Class I stream crosses road. No impact.

23

31) Large alluvial fan channel crosses road. Dry.

24

32) Ponded water crosses road.

25

33) Stream crosses road (Class III).

26

34) Stream crosses road (Class III).

27

35) Stream crosses road (Class III).

28

36) Stream crosses road (Class III).

29

37) Pulled pipe. Class II or III stream. In good shape.

30

38) Stream crosses road, deeply cut. Large cuts in old roadbed are sediment source; however, time has to some degree corrected problem.

31, 32, 33, 34

39) Two Class III streams cross or follow road.

35

40) Class II stream crosses road.

36

41) Class III stream crosses road.

37

42) Coxe River. No impact to road.

38

End notes from 5/3/01.

Figure J-1. Road Survey Sites 1-6, 16-23 and 33-42: Aerial Photo - 2584-50 (1989).

Figure J-2. Road Survey Sites 7-15: Aerial Photo 2584-53 (1989).

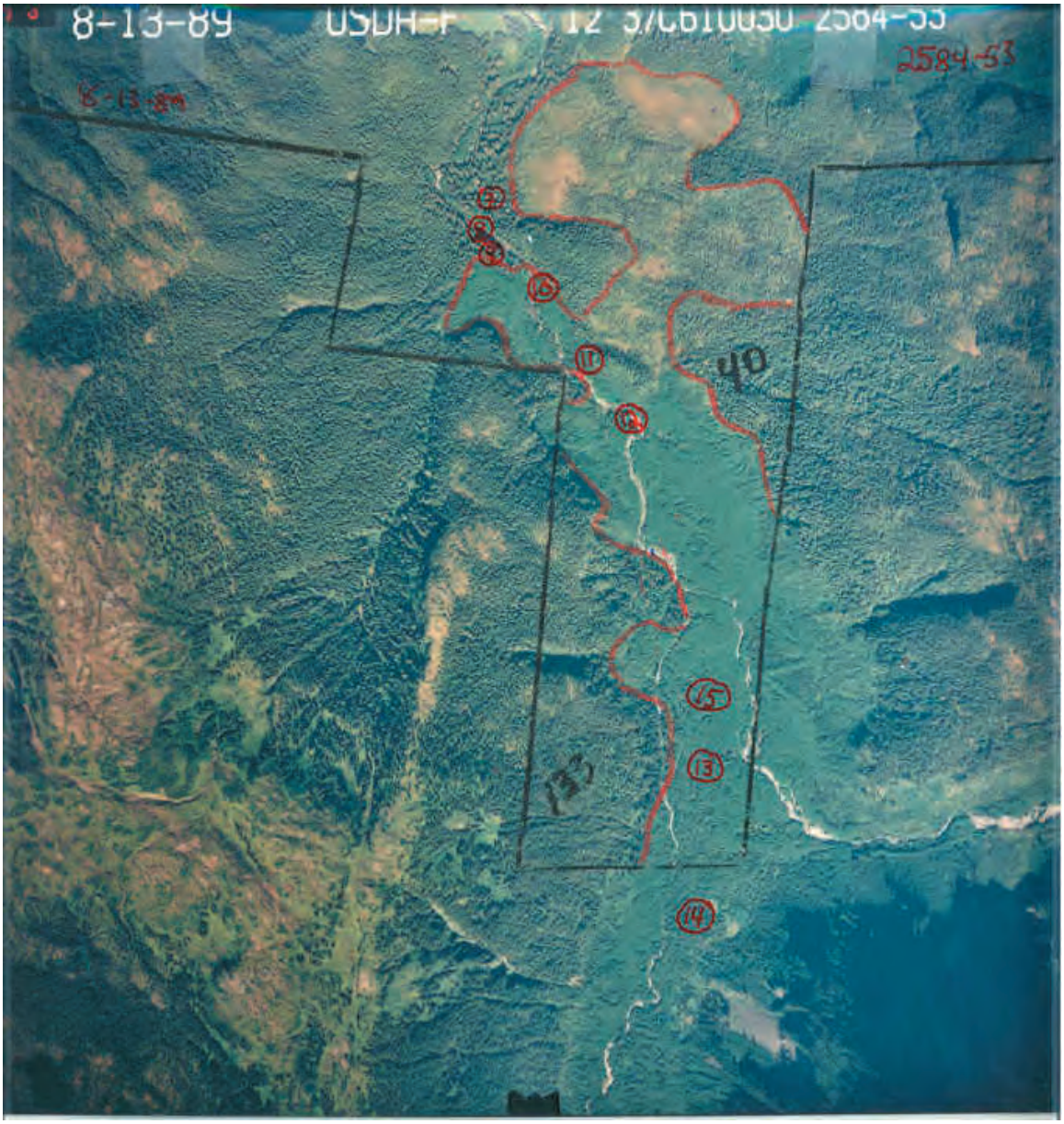
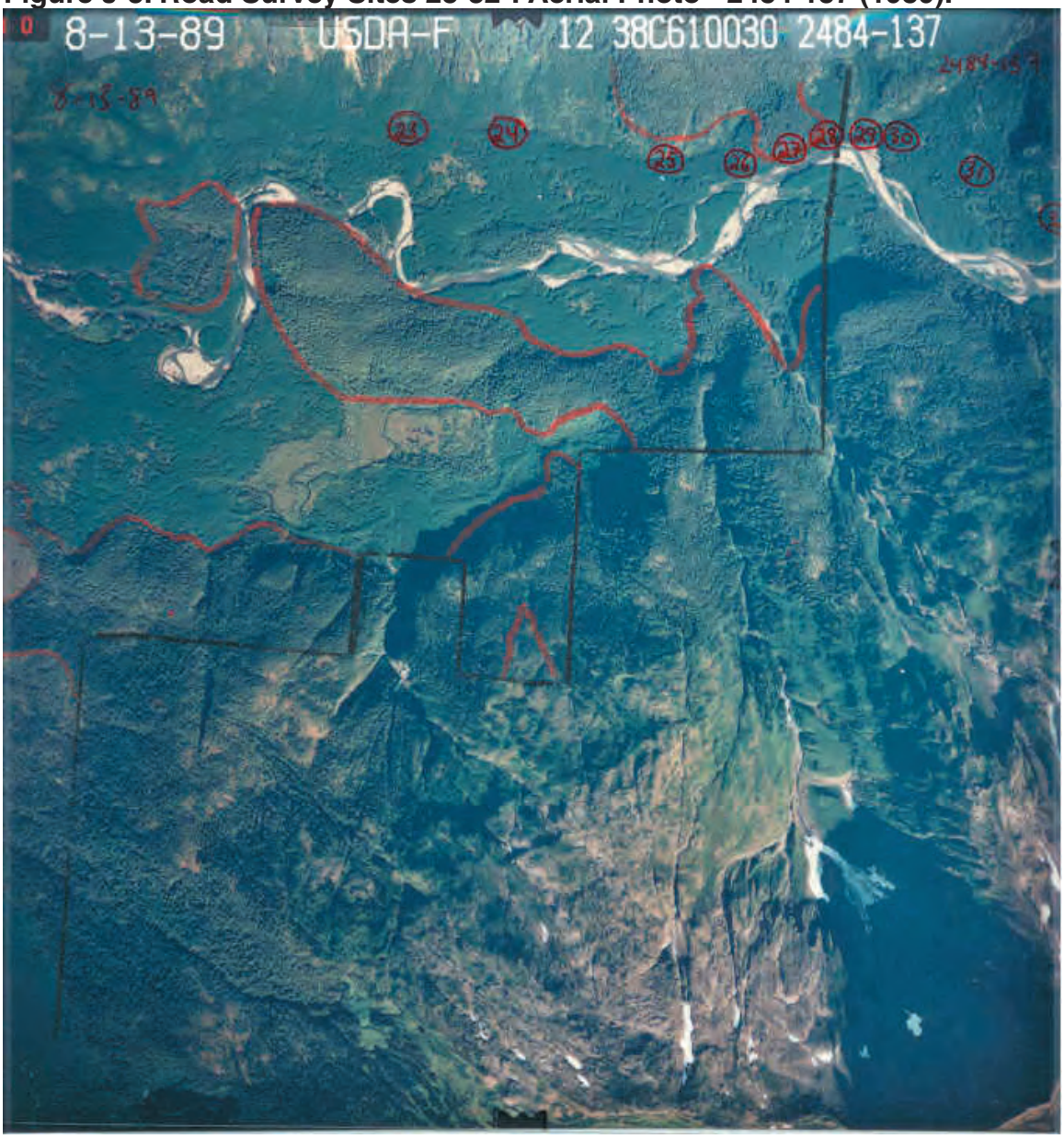


Figure J-3. Road Survey Sites 23-32-: Aerial Photo - 2484-137 (1989).



Appendix K: Glossary

Adfluvial
Life history strategy in which adult fish spawn and juveniles subsequently rear in streams buy migrate to lakes for feeding as subadults and adults. Compare *fluvial*.

Aggradation
Geologic process by which streambeds and floodplains are raised in elevation by the deposition of material eroded elsewhere.

Anadromous
Fish that leave freshwater and migrate to the ocean to mature then return to freshwater to spawn.

Bankfull (bankfull stage)
Corresponds to the discharge at which channel maintenance is the most effective, that is, the discharge at which moving sediment, forming or removing bars, forming or changing bends and meanders, and generally doing work that results in the average morphological characteristics of channels.

Braided Channel
Stream that forms an interlacing network of branching and recombining channels separated by branch islands or channel bars.

Channelization
Straightening the meanders of a river.

Confluence
Joining.

Daxéit
Nakwasina Sound.

Ecosystem
Biological community together with the chemical and physical environment with which it interacts.

Escapement
Number of migratory – usually anadromous – fish that reach suitable spawning areas in a given year, typically after passing through a fishery area.

Estuary
Part of a river mouth or lower course of a river in which the river's current meets the sea's tide.

Floodplain
Lowland areas that are periodically inundated by the lateral overflow of streams or rivers.

Fluvial
Pertaining to streams or rivers; also, organisms that migrate between main rivers and tributaries. Compare *adfluvial*.

Geomorphology
Study of the form and origins of surface features of the Earth.

Glides
Stream habitat having a slow, relatively shallow run of water with little or no surface turbulence.

Gradient (of a stream)
Rate of fall of a stream, typically expressed as so many feet of elevation change per mile.

Gunalchéesh
Thank you.

Hydrology
Study of the properties, distribution, and effects of water on the Earth's surface, subsurface, and atmosphere.

Intermittent Stream
Stream that has interrupted flow or does not flow continuously. Compare *perennial stream*.

Kiks.ádi Clan
The Tlingit Nation is comprised of many clans. Each clan is either a Raven or an Eagle clan and then possesses its own crests. The Kiks.ádi clan is a Raven clan and takes as its primary crest the frog. The Sitka Kiks.ádi clan is credited with founding the protected area of Baranof Island that today we call Sitka. The Kiks.ádi traditionally utilized Nakwasina Sound into which the Katlian River flows.

Kwáan
Tlingit People of a Place.

Macroinvertebrates
Invertebrates large enough to be seen with the naked eye (e.g., most aquatic insects, snails, and amphipods).

Nonpoint Source Pollution
Polluted runoff from sources that cannot be defined as discrete points, such as areas of timber harvesting, surface mining, road building, agriculture, and livestock grazing.

Parr
Young trout or salmon actively feeding in freshwater; usually refers to young anadromous salmonids before they migrated to the sea. See *smolt*.

Point Source Pollution
Pollution occurring at discrete points, such as sewage or factory effluent. Compare *nonpoint source pollution*.

Redds
Nests made in gravel (particularly by salmonids); consisting of a depression that is created and then covered.

Refugia
Geographic locations where a species or population has persisted during changed or adverse conditions such as flooding or glaciation.

Riffle
Stream habitat having a broken or choppy surface (white water), moderate or swift current, and shallow depth.

Riparian
Type of wetland transition zone between aquatic habitats and upland areas. Typically, lush vegetation along a stream or river.

Rootwad
Exposed root system of an uprooted or washed-out tree.

Salmonid
Fish of the family Salmonidae, including salmon, trout, chars, whitefish, ciscoes, and grayling.

Silviculture
Tending, harvesting, and replacing forests, resulting in tree stands of distinctive form.

Sinuosit
Degree to which a stream channel curves or meanders laterally across the land surface.

Shee Atiká Inc.
Sitka's local village corporation, established by the Alaska Native Claims Settlement Act of 1971.

Sheet'iká X'áat'I
Baranof Island. This name refers to the sheltered outside edge of a branch.

Sheet'ká Kwáan
The Tlingit people of Sitka as well as the lands over which they possess traditional stewardship responsibilities.

Smolt
Juvenile salmon migrating seaward; a young anadromous trout, salmon, or char undergoing physiological changes that will allow it to change from life in freshwater to life in the sea. The smolt stage follows the parr stage. See *parr*.

Stream Order
Classification system for streams based on the number of tributaries it has. The smallest unbranched tributary in a watershed is designated order 1. A stream formed by the confluence of 2 order 1 streams is designated as order 2. A stream formed by the confluence of 2 order 2 streams is designated order 3, and so on.

Stream Reach
Section of a stream between two points.

Substrate
Material (silt, sand, gravel, cobble, etc.) that forms a stream or lake bed.

Succession (of plants)
Sequence of plant communities that replace on another in a given area.

Thalweg
Portion of a stream or river with the deepest water and greatest flow.

Tl'ayáak Héen
Katlian River.

Tlingit
A Nation of indigenous people who have inhabited Southeastern Alaska for at least the last 10,000 years.