PROTECTING A SITUK RIVER FISH CAMP WAY OF LIFE THROUGH VISITOR EDUCATION: A COMMUNITY-BASED APPROACH

Ву

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Abstract

Many sport fishermen who visit Yakutat understand little about the Situk-Ahrnklin Inlet set net fisheries. In Yakutat, these fisheries integrate commercial fishing with a subsistence fish camp way of life. This community participatory evaluation seeks to determine the usefulness of an interpretive sign and handout project aimed at alleviating a persistent visitor misconception that set net fishing is harming their ability to catch Situk River fish. It also explores what additional effort people in Yakutat think is needed to educate visitors about the set net fisheries. A combination of methods was used, including resident interviews, a community records search and a review of published research on the efficacy of visitor education tools. Interviews found widespread support for continuing visitor education efforts, including leaving the existing signs in place and reproducing additional copies of the handout. It was generally agreed that future materials should integrate information about the subsistence fishery. The importance of set netting for food, culture and income was emphasized. More interaction is needed to shift visitor outlooks closer to the community's shared connection to the river according to the participants. Interviews began the process of re-engaging people in a community effort to dispel visitor misconceptions. A multimedia approach, based on agreed messages using local strengths and assets, was preferred. It is hoped that this volunteer, community-based process will serve as another reason for reconvening Situk River partner agencies. A revived cooperative management framework is needed to implement a more sustained education effort, minimize user conflicts, ensure stewardship and rebuild trust between community members and government agencies.

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Set Net Skiff Under Mount Saint Elias

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Protecting a Situk River Fish Camp Way of Life
Through Visitor Education: A Community-Based Approach

While Yakutat is remote it is not isolated from the political, economic and geologic forces changing our modern world. Visitors fly in to fish the Situk River from all corners of the globe, including a Google executive who arrived on his private jet one spring to spend a few days sport fishing. Surrounded by glaciers that are melting due to global warming, the land around Yakutat and the Situk River is rebounding or rising, even as a surging glacier occasionally threatens to inundate it. This isostatic uplift is changing fish habitat that, while stable today, has the potential over time to result in fewer fish and more conflict between outsiders and local subsistence and commercial fishermen who fish for Situk River salmon. In the meantime, powerful sport fish lobbies are seeking to ban and restrict the use of gill nets, part of a national movement that has recently reached Alaska.

"The world is changing around us, and changing Yakutat too, whether we like it or not. We can't stand still. It will take action to keep Yakutat the kind of place where we want to live", an unidentified resident quote, *Yakutat Sustainable Outdoor Plan* (2012, p. 6).

Even as Yakutat changes, the Situk River remains closely tied to Yakutat's economic and cultural wellbeing providing food, spiritual sustenance and modest income. At the same time, increasing numbers of sport fishermen visiting Yakutat often have little understanding of the local set net fisheries lending some to believe that the nets are harming their ability to catch fish.² A persistent misconception held by many has been that the "gill nets are blocking the river,"

¹ Commercial and subsistence fishing occurs in the Situk-Arhnklin estuary. Sport fishing takes place inside the Situk River, not in the estuary.

² Set nets are gillnets with both ends anchored. One end is anchored on the shore and the other anchored in the water offshore perpendicular to the beach. In the Situk-Arhnklin Inlet nets are 120 feet long and approximately 18 feet deep. They are fished by hand out of a skiff. See Appendices C and K.

which was sometimes expressed in racial terms i.e. "Restrict Indian netting. Has a very negative impact on fishing," as one visitor wrote in a Situk River recreation visitor survey (Christensen, Watson and Whittaker, 2004, p. 20). Frequently, this misconception is combined with ignorance of all aspects of the set net skiff fisheries and their management. These misconceptions potentially threaten the balance of shared use within the Situk-Ahrnklin watershed. Yakutat's relationship to the river is based on mutual respect and shared values despite differing uses and attachments (p. 26). There is a desire by residents for visiting sport fishermen to adopt this same attitude.

Ten years ago a group of citizens initiated a modest cooperative use education effort to promote better understanding of commercial set net fishery, convey its importance for Yakutat and foster a shared-use ethic. It sought to provide easy-to-understand, fact-based information, tailored specifically to visitors fishing the Situk River with the installation of three signs and an illustrated handout. Partners included the City and Borough of Yakutat, the Yakutat Tlingit Tribe, the U.S. Forest Service and the Alaska Department of Fish and Game.

But did it make any difference in dispelling visitor misconceptions? To find out, a community-based evaluation was conducted to assess the usefulness and content of the signs and handout, and to explore what potential next steps people in Yakutat think are needed to educate visitors about the Situk-Ahrnklin Inlet set net fisheries. Funding to implement findings was made available by the Yakutat Regional Advisory Committee (RAC).³

Since the project was a volunteer participatory advocacy research project, a results and process approach was used, including interviews, a community records search and a review of

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³ A citizen committee representing a broad array of interests formed to help improve collaborative relationships and provide advice to the Forest Service in funding projects for monies made available through the Secure Rural Schools Act and Rural Self-Determination Act.

published literature on the efficacy of visitor education efforts to minimize conflict. Interviews were conducted with community members who share, despite varying perspectives, a common desire to improve visitor understand and attitudes about the set net fisheries. Non-local sport fishermen were not interviewed, with one exception. Instead, information targeting visitors was gained through interviews with guides, lodge operators, biologists and others who regularly interact with them. Additional information on the attitudes, characteristics and local resource use of visiting sport fishermen was obtained from *The Situk River 2003 Recreation Study*, a 342-page research project which provided a window into where Yakutat visitors come from, who they are and what they think (Christensen, Watson and Whittaker, 2004). Interviews with community members, including tribal and clan leaders, began the process of bringing people back together around the common purpose of dispelling visitor-held misconceptions about the set net fisheries, developing an agreed upon narrative and laying the groundwork for future collaboration.

Interview findings are presented and discussed in conjunction with reviewed research on the effectiveness of various messaging and delivery methods. Several recommendations are made for moving forward in developing a communications strategy using local strengths and assets. Final determination to continue the project will be carried out collaboratively.

People and Place

Yakutat is an isolated coastal community of 650 people on the Gulf of Alaska. Even as Yakutat's population diversifies, its Tlingit and Eyak heritage continues to define its essential character. The boundaries of the Yakutat City and Borough, encompassing 9,360 square miles between Mt. Fairweather and Cape Suckling, intentionally include the traditional homeland of the Yakutat Tlingit and Eyak people and their five clans. With one of the few safe harbors in the Gulf of Alaska, Yakutat saw the arrival of European explorers and traders, including Captain

James Cook, in the 18th and 19th centuries. The Russians built a fort in the area but were eventually driven out by the local people for transgressing hunting and fishing privileges. A salmon processor established a cannery in 1903 and built ten miles of railroad line from the Situk River to town, where the local fish processing plant still operates today. In addition to Norwegians and Filipinos who came to fish and work in the cannery, other outsiders to arrive included gold miners, missionaries, World War II military personnel, loggers, Coast Guard families and other federal government workers. Many left but some stayed, establishing families and contributing to Yakutat's diverse cultural mix.

In Yakutat today, Alaska Natives make up close to half of the population. Besides Euro-American, ethnicities include Asian, Hispanic and Pacific Islander according to the 2010 United States census. Yakutat's distinctive ethnic mix is one of the elements that contribute to a social atmosphere in which financial wealth is not a primary source of social status. There is a strong tradition in Yakutat of people respecting and helping one another, despite differences in standard of living or cultural background. While misunderstandings and conflicts do occur, there is a sense of social cohesion and common purpose in addressing outside threats and opportunities.

Situk River: Heart of Yakutat's Wellbeing

Yakutat is a fishing town. Residents fish for food, modest income and spiritual wellbeing. Especially important is the harvest of salmon returning home from the ocean each year to the Situk River, just outside of town. A relatively small but highly productive river, the Situk flows some twenty miles from the base of a mountain lake before reaching saltwater in the Situk-Ahrnklin estuary and continuing another five miles out to the sea (Appendix L). Linked to Yakutat by a fifteen-mile road, the river sustains all five species of Pacific salmon, as well as hooligan and one of the largest steelhead runs in the state. The Situk is situated in traditional

Tlingit Teikweidi or Brown Bear clan territory, flowing through Forest Service-managed land and several Native allotments. It is at the very center of Yakutat's salmon fisheries – and the heart of its cultural and economic wellbeing.

The Situk-Ahrnklin Inlet supplies 74% of all the salmon harvested for subsistence including sockeyes, most of which are Situk River fish according to a subsistence harvest assessment coordinated by Judy Ramos for the Yakutat Tlingit Tribe (unpublished, 2001). Subsistence is an integral part of living in Yakutat where over 90% of households use and exchange subsistence resources including 16,000 salmon, almost all of which are caught with set nets (2001, n.p.). Nearly 30% of households interviewed reported removing salmon from their commercial catches for subsistence use. These were most often sockeye (Oncorhynchus nerka) taken with set nets (2001, n.p.). In addition the Situk-Ahrnklin Inlet provides 60% of Yakutat's commercial set net fishing income, estimated to be over one million dollars a year (Woods and Zeiser, 2014, p. 7). Between 45 and 60 permits holders, almost all residents, and their families commercially fish and live at the river during a recent salmon season (G. Woods personal communication, October 29, 2015 and personal observation). In short, Yakutat's life ways and cultural practices are closely tied to the Situk and the salmon set net skiff fishery.

It is also one of the top freshwater sport fishing areas in the world, hosting 2200 sport fishermen accounting for nearly 30% of all freshwater fishing in the Tongass National Forest (B. Marston, personal communication, November 10, 2015; Yakutat District Ranger District website). There are nine businesses, including four lodges, permitted by the Forest Service to provide services on the river to visitors who spend an average of five nights in Yakutat (Christensen et al., 2003, pp. 2, 31). While commercial fishing and seafood processing drive the private sector economy, sport fishing related tourism is the third most important employer

(Sheinberg, 2012, p. 12). It provides employment for both local and seasonal workers who, in addition to guiding, process sport-caught fish, tend bar, wait tables, clean rooms and rent cars. In addition some residents operate bed and breakfast accommodations, rent vacation homes and lease out skiffs for fishing in Yakutat Bay.

Situk-Ahrnklin Fisheries Management

The fisheries are managed by the Alaska Department of Fish and Game. Both subsistence and commercial fishing occur in the estuary. Subsistence fishing occurs on the weekends, Friday and Saturday, unless extended. Any Alaska resident may subsistence set net fish. The sport fishery takes place inside the river, not in the estuary. It is open seven days a week. The lower Situk River is reserved for senior citizens, effectively separating the sport and set net fisheries to minimize conflict between the two groups. Sport fishermen may keep three sockeyes a day and two silvers (a.k.a. cohos) unless the limit is increased. In recent years conservation concerns have prevented the taking of king salmon in all three fisheries. Commercial periods vary but usually begin Sunday and end Tuesday or Wednesday unless extended. The commercial season begins with sockeye salmon the third week of June and finishes with coho salmon sometime during the first two weeks in October. Any United States citizen who owns a state limited entry permit may participate. Permits are bought and sold on the open market. While permit holders may fish anywhere in the Yakutat District, most Situk-Ahrnklin Inlet fishermen are currently Yakutat residents. Fish runs are managed to allow enough fish to pass upriver to ensure future, healthy runs. The department operates a fish counting weir in the lower river during king and sockeye seasons to monitor escapement. Information about traditional Tlingit care and conservation and former cooperative management agreements can be found in Appendix I.

Situk-Ahrnklin Set Net Fisheries: Why They Matter⁴

Integrating livelihoods and subsistence. In Yakutat, set net fishing provides the means to mix a modest, but vital, income with a fish camp/subsistence way of life. In this way, traditions, skills and cultural knowledge are transferred from one generation to the next and connections to the natural world are maintained. It is as much an identity as a job. People often fish when they need income, commonly in conjunction with other employment, if the price is right and if there are enough fish to make it worthwhile to fish an opening. Some even stop when, as one top Situk River fisherman once told me: "I've caught enough." While people fish hard they also take time for family, subsistence and community obligations. I have observed Tlingit family friends miss several tides of good fishing during peak season in order to ready their camp for a family gathering focused on berry picking and other subsistence activities.

This mingling of subsistence and livelihood, long obvious to many rural residents, is gaining recognition among academics and policymakers. It ensures cultural continuity and fosters a sense of place and identity, while providing a substantial portion of food and income for the community, according to Holon (2014, pp. 403-413). His recent work shows that "households with fishing permits are often the same households that are the high producers of subsistence foods" (p. 412). This is true in Yakutat where some of the community's highest salmon subsistence harvesters also set net commercially. They have the boats, nets and skills.

Strengthening culture and community. During the twenty years of fishing on the Situk River, I have observed how people still fish in family groups, often along Tlingit clan lines.

Native foods are shared, indigenous and local knowledge transferred and modest income earned.

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⁴ See Appendix L for fishing area maps and photographs.

For some, especially young people who learn the dangerous art of fishing in the surf, there is also a "self actualizing component that includes adventure and challenge," according to Pollnac and Poggie as cited by Holon (2014, p. 411). People are proud of their fishing heritage, but not in isolation. It is seen as a part – a crucial part - of a traditional and customary way of life. Permits in many families are considered part of that heritage, and the permit holder simply the caretaker. Situk fishermen, Native and non-Native alike, are part of a close-knit community that relies on each other for safety and support. The community values the set net fishery for the role it plays in sustaining the people of Yakutat economically, spiritually and culturally. If it can retain access to its Situk-Ahrnklin salmon fisheries, Yakutat has an opportunity to maintain its cultural heritage and social cohesion and ensure a level of economic wellbeing for its people.

Misunderstanding and Potential Conflict

Over the years, as the number of non-local sport fishermen to the Situk River has grown so has the potential for conflict. Most sport fishing visitors have little understand of the river's cultural and economic importance to the community. In addition, many of them bring prejudices and hostility toward commercial fishing and gill netting derived from conflicts in the Pacific Northwest. Differences in cultural values, income and perceptions exacerbate the situation as well as a belief by some visitors that they have an inherent right of access, resource use and behavior on "public" lands. Local set net fishermen, meanwhile, feel their traditional lifestyle is being encroached upon. Additionally, Tlingit leaders and other local residents express concern that sport fishermen are disturbing king and sockeye salmon spawning areas and disregarding culturally important sites. Visitors frequently trespass on Native allotments. The result is misunderstanding and potential conflict.

Community Efforts Attempt To Foster Cooperative Use

Over the years Yakutat's leaders have tried to offset potential hostilities between the two groups through a variety of measures, including separating the fishing areas from one another, a management technique often used in reducing user conflicts. As a result, sport fishermen younger than 60 years old have been restricted by regulation to fishing upriver, away from the commercial fishery, which takes place downriver in the estuary. While the regulation has been successful in minimizing adversarial encounters, it has not measurably improved visitor understanding of the set net fishery.

In 1999 the "Situk Partners", including the Yakutat Tlingit Tribe, U.S. Forest Service, Alaska Department of Fish and Game and the City and Borough of Yakutat, developed a set of principles indentifying consensus actions within an agreement entitled the *Situk River Cooperative Management Strategy*. One primary principle promotes using "visitor education tools and incentives involving the community and to emphasize respectful etiquette and lifestyle understanding between commercial, subsistence and recreational user groups." They collaborated on a two-part study to assess visitor and resident views and use of the river. In addition, they developed an information and education plan, and produced a brochure to educate visitors about the river. The brochure aimed to educate sport fishermen about the historic use of the Situk River, the one hundred year old set net fishery, fish camps, subsistence, conservation, Native allotments, bear avoidance and proper sport fishing etiquette on the river. Quotes from local lodge owners, agency managers, tribal leaders were included. While highly informative, the brochure did not address one of the main sources of conflict on the river: a belief by visiting sport fishermen that the set nets were blocking the river and harming their ability to catch fish.

The Situk River sign project. In the meantime, residents who interacted with visitors repeatedly explained how the set net fishery actually worked, who fished it, how it was managed

and its importance to the well being of Yakutat. One charter boat operator and former set net permit holder described the response he gave: "When they're catching, you will too." Then he would go on to explain that even when the fishery was opened the set net could only fish a portion of the tide, allowing fish to pass upriver. He said he often resorted to drawing pictures to represent the one-half mile wide estuary and 120 foot net. Mostly he found it frustrating. It was from these discussions that the idea of the Situk sign project was born.

History. Working together, a small group of volunteers (including the above mentioned charter boat operator) proposed three clear, concise, strategically placed signs accompanied by a simple but more in-depth brochure explaining the commercial set net skiff fishery and its management. The signs also attempted to explain the community's cultural connections to the river (See Appendix L). The content was developed collaboratively with community members and Situk partner agencies using material drawn from the previous brochure. It was sponsored by the Yakutat Salmon Board, a program of the Yakutat City and Borough, and funded by the Yakutat Regional Advisory Committee (RAC) coordinated by the Forest Service through a \$13,000 grant under the "Secure Rural School and Community Self-determination Act." The project was included in the Situk Partners' annual action plan.

The project sought to promote positive use ethics and explain that Situk River resources are managed by both the Alaska Department of Fish and Game and the Forest Service to protect habitat and ensure healthy salmon runs. An aerial photograph was included, depicting the mouth of the Situk-Ahrnklin River and clearly illustrating that the nets could not possibly block the river. In addition to the Yakutat Salmon Board, the Yakutat Tlingit Tribe, the Alaska Department of Fish and Game, the City and Borough of Yakutat and the U.S. Forest Service participated as partners in the project. The message, map, layout, photo and the other content

included on the sign were developed through extensive collaboration and consensus with project partners and other community members, including clan leaders, guides, commercial fishermen among others.

In 2007 two signs were installed at the river and one in the Alaska Airlines lobby at the airport. One sign was located upriver at the Nine Mile Bridge where sport fishermen begin drift boat fishing. The other was located downriver on the Situk Harry Native allotment next to the boat launch where most visitors access the river. As the project progressed, participants also decided to produce a simple laminated handout with the aerial photograph and net illustration instead of the more complicated brochure to test the effectiveness of the message and utility of the information. The handouts were distributed to charter boat operators, agency personnel, lodge owners and others who interacted with the fishery. Leftover grant monies were rolled over to help fund a video about Yakutat and salmon, another project of the Yakutat Salmon Board.

A prompt to revisit. Almost ten years have passed since the project was implemented. The Situk-Ahrnklin estuary has changed dramatically, prompting volunteers to revisit the project. In the meantime, the signs are still in place and some agencies and guides are still using the handout. In one sense it has been a self-sustaining project. But to what end? Is it still useful? Volunteers decided it was time to evaluate. In addition to interviews, existing studies and data were reviewed to help inform collaborative decision-making. They are summarized below in the literature review. Interviews are presented separately.

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⁵ The ocean entrance of the Situk-Ahrnklin Estuary is moving further and further west, away from the mouth of the Situk River where sport fishing occurs. In the past ten years, the estuary has lengthened several miles taking down a large section of forest, filling the estuary with floating logs and changing where and how fishing occurs.



Photo: Mike Harry

Fish Camps, "Out Situk"

Literature Review

Local Views on Sport Fishing: Reports and Opinion Surveys

Local views about tourism tend to lean against the continued growth of sport fishing in Yakutat. In a 2006 community vision statement articulated in the *Yakutat Community Action*Plan and reaffirmed in the 2012 Yakutat Sustainable Outdoor Recreational Action Plan,
coordinated by the Forest Service, residents explicitly expressed their preference for nonconsumptive tourism and providing more services to the existing level of visitors (Agnew-Beck,
2012). In a 2005 opinion survey conducted by the City and Borough of Yakutat, 43% opposed
more independent anglers coming to town, while 83% supported more non-consumptive tourism
opportunities (Sheinberg, 2010, p. 15).

Situk River Visitor and Resident Studies

In 2002, the Situk partner agencies⁶ recommended that the Forest Service conduct two large studies to clarify Situk River management issues. The Aldo Leopold Wilderness Institute was contracted to carry out both studies. The first one, the *Situk River 2003 Recreation Study*, primarily focused on carrying capacity issues related to recreational use, including litter, outboard motor use and overcrowding (Christensen, Walker and Whittaker, 2004). That 342-page study used a combination of interviews and mail-in questionnaires. Social conflict-related issues between visiting sport fishermen and resident-based subsistence and commercial set net fishing were not addressed directly or meaningfully. Its companion 165-page study, *The Situk River Resident Study: A Report on Relationship to Place*, completed in 2006, examined resident relationships to the Situk River and their preferred management options (Christensen and

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⁶ Locally based Situk partner agencies include the U.S. Forest Service, the Alaska Department of Fish and Game, the Yakutat Tlingit Tribe, the City and Borough of Yakutat. They are also sometimes referred to as the Situk Partners.

Watson). The resident study used a combination of eight interviews and a community survey. Summaries of these two studies are presented below.

Situk River 2003 Visitors Study.

Who were they? In 2003, almost all (90%) of the recreational fishermen to the Situk River were from out of state with the majority of them coming from Washington (23%), Oregon (16%) and California (12%) (Christiansen, Walker and Whittaker, 2004, p. 31). Their average age was 51.7 years (p. 284). Although 41% were first time visitors, 31% had visited 6 or more times and 28% had visited 2 to 5 times (p. 31). Visitors spent an average of 5.3 nights (p. 31). A majority of those surveyed lived in small or medium cities, although 18% grew up on a farm or ranch. Most of the visitors were college educated or higher (76%), including 20% holding graduate degrees. A majority had household incomes before taxes of over \$80,000 with 45% having incomes over \$100,000 (p. 299).

The mail-in questionnaires included an opportunity for written responses in order to provide a more in-depth understanding of issues and attitudes. Samples of representational openended comments submitted are below.

What did they think? Respondents rated their overall trip quality as very good or excellent and perceived the Situk to have a healthy fishery (Christensen, Watson and Whittaker, pp. 204, 65). Nearly all (92%) said they would return in the next five years (p. 28). Even though the study found that respondents were generally pleased with their ability to catch targeted fish, open-ended comments indicate that many visitors held negative attitudes toward subsistence and commercial fishing. The one survey question related to this issue asked visitors if commercial fishing or subsistence users had interfered with their experience along with other issues such as litter, human waste, visitor groups and motorboat noise. Most did not respond, probably because

they did not see any, according to the authors. Those that did respond said they had not been "influenced negatively or positively" by the number of subsistence and commercial users" (p. 19). In the end, the study recommended that management focus on motorized use, litter and crowding issues. Visitor responses indicated that other uses, such as commercial and subsistence fishing and aircraft over flights, did not significantly detract from their recreation experience (p. 63). However, their open-ended comments suggest strongly held views that set netting was negatively affecting their ability to catch fish.

Steelhead season

- I think commercial take should be reduced to improve quantity of in-river for sport and to increase biomass of fish in the river.
- Get rid of the nets.

King/sockeye season

- Remove nets at mouth of river at least two day a week.
- Reduce amount of subsistence and commercial fishing.

Coho season

- Restrict Indian netting. Has a very negative impact on fishing.
- Stopping the commercial net fishing would improve silver fishing.
- Disallow fishing nets at mouth of river.
- I think the nets should go in and out every other day, which would give the netters and us both a chance.

Situk River Resident Study

The Situk River Resident Study: A Report on Local Relationships to Place was conducted in 2004 and 2005. It examined Yakutat perspectives on use, conflict and management and found that 42% of residents "felt that their relationships with the Situk River had been compromised by the behaviors of non-local sport anglers" (Christiansen and Watson, 2006, p. iii). This was by far the greatest source of use conflict, according to the authors. It was even higher, over 50%, among longer term and Tlingit residents in two community segments defined by the researchers

(p. 46). The study was based on eight interviews and 226 responses to a community wide survey. It also found strong support for continued subsistence and commercial fishing, among both newer and longer-term residents as well as both Tlingit and non-Tlingit residents. Most residents indicated they preferred more use and strongly opposed any decrease in use for either fishery (p. 51). At the same time the study found community wide support for catch-and-release fishing with only a small percentage strongly opposing it, even among Tlingit residents (p. 59).

Regarding other management issues, most residents felt that (a) existing sport fishing regulations were not enforced, (b) there was not enough effort to education visitors on appropriate behavior, and (c) managers did not make enough effort to consult with local residents (Christiansen and Watson, 2006, p. iii). The study concluded that there is greater solidarity across the community, despite differences, than between residents and visitors (p. 54). In addition, residents were found to have a shared relationship to the river and were bound together by shared values and mutual respect (p. 26). Residents were more tolerant of fellow community members and set net fishing than they were of visitors, regardless of ethnicity or whether they themselves set net (pp. 25-26). One of the authors further suggested there is "considerable overlap in perspectives and assimilation between short-term and long-term residents and between non-Tlingit and Tlingit cultures," regarding their relationship and interaction with the Situk River (Christiansen, 2008, p. 81).

What did they think?

- I am real concerned about the way the river is being abused, you know, not respected.
- Too many sport fishermen.
- Lack of information...there has been a lot of rude behavior toward commercial fishermen...
- Sports fishermen littering, not treating fish properly.
- Over sport fishing bag limits.

• People that come here fail to realize that there is more to the river than catching fish. (They fly in here to see) how many fish they (can) kill instead of taking the spirit of the river inside themselves and feeling nature. Most of these people would not be here if they could not kill something. They also have no respect for the people who are here year in and year out, for the people who depend on the area for their life and to maintain the families.

Efficacy Of Visitor Education Efforts: A Review

Much has been studied and written about the efficacy of visitor education programs, mostly aimed at reducing visitor impacts in outdoor recreation areas. Findings from this research may be useful in determining how best to assess and influence sport fishermen attitudes toward the resident set net fisheries on the Situk River. A brief review of published research is included below. A synthesized, simplified summary is also presented in the discussion section for comparison with interview findings.

It is generally agreed that interpretation can be used to change attitudes and is based upon theory in cognition and social psychology (Jensen, 2006, p. 3). Attitudes are related to emotions, experience and past behavior, and the knowledge, beliefs and facts a person holds, according to Taylor, Peplau and Sears in *Social Psychology* (as cited by Jenson, p. 3). In a park setting, interpretive programs have been shown to be effective in "increasing knowledge, favorable attitudes and positive behavioral intentions about rules (such as litter collection)... and resource protection" according to Roggenbuck (as cited by Chandool, 1992, p. 11). While most research supports the use of education in changing attitudes, not all researchers agree on the extent to which it can make a lasting difference (Ham, 2007, p. 42). Knowledge must impact belief, according to Ham (p. 42). Compelling arguments of "strongly relevant themes" or points stand the best chance (p. 48). In the case of perceived conflict where groups may not have direct contact and do not share similar norms or values, user information and education are the best strategies, according to several authors (Tynon and Gomez, 2012 citing Graefe and Thapa, 2004;

Vaske et al., 2007, p. 5). For communication to be successful at impacting beliefs, which in turn can change attitudes, it must be enjoyable, relevant to what the visitor already knows, organized and compelling (2007, p. 46).

Three Conceptual Approaches

At least three theories have been advanced to understand how visitor education can alter attitudes and behavior: persuasion, moral development and planned behavior (Marion and Reid, 2007, pp. 10-12).

Persuasion. This theory includes two approaches: the central and peripheral routes to persuasion. It is likely the most useful in helping change visitor misconceptions on the Situk. The central route targets a specific audience and delivers a highly tailored message based on rationales that will likely be well received (MacLennan, 2000, p. 7). Messages should be tailored to include the audience's interests and knowledge level, and should be delivered through media that allow the audience to process them at their own pace. Central persuasion relies on visitor attention, consideration and, importantly, internalization of the message (Marion and Reid, 2007, p. 11). The peripheral route of persuasion relies on the source of the message rather than on the message itself. In many cases the person delivering the simple message is the main persuasive influence (2000, p. 8). In the case of sport fishermen on the Situk, for example, this person could be a charter boat operator, the Forest Service ranger or the Fish and Game sport fish biologist.

In both approaches the credibility of the source is important. Communicators who are experts and appear trustworthy to visitors are more persuasive than those who are not according to Ajzen in "Persuasive Communication Theory in Social Psychology: A Historical Perspective" (as cited by Chandool, 1997, p. 56). In formulating a communications strategy, how a source of

information (not just a communicator) is perceived in terms of credibility is also important, along with prior knowledge and personal involvement of the visitor according to Bright, et al. in the *Journal of Leisure Research* (as cited by Chandool, 1997, p. 25). In general, persuasive messages are more effective in improving knowledge and attitudes of persons with less knowledge or experience (Chandool citing Roggenbuck, p. 11; Marion and Reid, p. 21). The Situk sign project attempted to use both methods. The signs were more direct, while the handouts depended on the source delivering the message.

Phases of moral development. This theory has been applied to educating public land visitors as Marion and Reid write in the *Journal of Sustainable Tourism* (2007, p. 10). It suggests that people pass through three phases of moral development including pre-conventional (fear and punishment), conventional (influenced by significant others and societal norms), and post-conventional (fairness, justice and respect), according to Kohlberg, its formulator (as cited by Marion and Reid, 2007, p. 10). Using this theory, interpretive messages are more effective if they target visitors at their respective levels, which in the case of Yakutat are likely to be conventional and post-conventional. Given the persistence of the misconception by visitors to Yakutat, many are likely at the conventional level and need to be convinced that their peers (lodge owners, guides, etc.), sport fish managers and others accept the set net fisheries. Some visitors, of course, are at the post-conventional level and may respond to a sense of what is good for the community at large.

Theory of planned behavior. This theory holds that increasing knowledge can modify behavior (Marion and Reid, 2007, p. 10). It suggests that behavioral beliefs lead to attitudes that people hold about different stimuli in their environment (Jensen, 2006, p. 3). Behavioral beliefs are those a person holds to be true based on what is learned from direct experience and education

(p. 3). Importantly, in order for knowledge to contribute to behavior beliefs, "facts and information must be processed and committed to memory" (Ajzen & Fishbein as cited by Jensen, p. 3). While the Situk River education effort seeks only to change beliefs and attitudes but not behavior, this theory suggests they can be modified by increasing knowledge through interpretation. Results, however, have been mixed. "Learning does not lead to liking" (Ham, 2007, p. 42). The effectiveness depends on the message including the manner in which it is delivered and who conveys it in addition to knowing which beliefs need to be targeted (p. 42). Interpretive efforts that focus on presenting visitors with ideas they had not considered are key to shifting attitudes (p. 42).

Message Tailoring and Delivery: Which Methods Are Most Effective?

Which methods are most effective in conveying information and changing attitudes of visitors: signs, brochures, posters, personal contact or online? The answer is still unclear according to Marion and Reid (2007). In general the use of multiple media is more effective than a single medium. Some of the early studies by Fazio (1974, 1979) testing the effectiveness of education methods in improving visitor knowledge of low impact camping are still widely cited in the interpretive field according to Marion and Reid (p. 12). Fazio evaluated the effectiveness of brochures, trailhead signs, slide shows, television programs and newspaper coverage, finding that personal contact with agency employees was most effective. He also found trailhead signs and a visitor-activated slide show effective. On the other hand, Widner and Roggenbuck (as cited by Marion and Reid) found that a well-designed trailhead sign was as effective as a uniformed person in preventing theft (p. 20). A "Leave No Trace" study found that trailhead signs could not convey complex information, according to Stubbs as cited by Marion and Reid (p. 20).

Some studies show brochures as being highly successful while others show them to be ineffective. The same goes for personal contacts. Online contact is still being tested as a potential avenue for reaching visitors. Since a large number of people must be exposed to a message for it to be most effective, the Internet is a promising avenue according to Marion and Reid (2007, p. 20). In general, messages should be widespread, consistent and repeated to maximize effectiveness (2007 citing Hockett, p. 20).

In applying all the different approaches to an interpretive effort, five key variables have been identified by Roggenbuck and Manfredo (as cited by MacLennan, 2000, pp. 8-9): timing, content, visitor characteristics, message source characteristics and communication channels. Timing is especially important when messages are peripherally conveyed or when determining the location of a sign for it to be most effective in capturing visitor attention. Importantly, message content needs to "provoke strong arguments and generate a positive response" according to Petty et al. in "The elaboration likelihood model: Applications in tourism and recreation" (as cited by MacLennan, p. 7). It should be simple, novel, relevant and strong and it should end with a question to encourage people to think about the message. Visitors need to think they are part of the problem in order to be more receptive to messages. Again, messages from sources viewed by visitors as trustworthy and credible are more effective. Finally, a range of communication channels should be pursued with only one or two key messages (MacLennan, 2000, p. 9).

One important element in effective visitor education especially relevant to Situk River visitors is the need to understand their knowledge level and perspective so as to better tailor a message they will be receptive to, regardless of the medium. Messages should "provide convincing rationales and try to logically refute common misconceptions" (Marion and Reid,

2007, p. 21). They should be delivered in a way that motivates the targeted audience to focus and think about it in order to change or create new beliefs (Ham, 2007, p. 46). Unfortunately, several studies have shown that in some cases visitors with higher levels of experience were also less likely to be persuaded (2007, p. 21). The fact that many visitors to the Situk return year after year suggests the need for honest, fact-based messages delivered convincingly by sources and people they trust and respect. This strategy, along with several inventive ideas suggested by Yakutat guides and business owners aimed at changing visitor beliefs through new experiences, are explored in the discussion section.

Signs. Research is mixed on the effectiveness of signs, although with proper design and deployment they can contribute to greater understanding in an area or community (Davis and Thompson, 2011). One study published in the *Journal of Park and Recreation Administration* documented changes in attitudes as a result of exposure to interpretive message, but did not provide information concerning changes in attitudes or intensity (Cable, Knudson, Udd and Stewart as cited by Chandool, 1997, p. 6). Another study documented signboard based messages in the Selway-Bitteroot Wilderness as significantly increasing visitor knowledge about low impact practices. It also discovered that when a map was included people were attracted to it and not to the messages on the signboard (Chandool, 1997, p. 14).

Not surprisingly, the amount of time spent reading a sign is positively related to the amount of learning and interest that occurs (Davis and Thompson, 2011). Larger type, concise labels and "chunking of information" into short paragraphs of 25-75 words increased reading. Signs that include questions also seem to encourage learning. Several studies have found that first-time visitors read the signs more often than repeat visitors. As the message content increases, the ability of people to devote attention to a message and retain its content declines,

according to Cole, Hammond and McCool (as cited by Chandool, 1997, p. 58). The sign must be distinctive with an interesting label. Artistic design is important to "effectively communicate messages to visitors without words" (Jensen, 2006, p. 10). In fact the artistic design was the most important learning factor in an experiment on an environmental education brochure according to a study by Young and Witter (as cited by Jensen, p. 10).

One early work that continues to be widely cited is an unpublished dissertation by Fazio (1974) suggesting that exposure to a sign or brochure may be ineffective in isolation, but when combined with a slide show the result is a significant knowledge increase (as cited by Chandool, p. 10). However, a study in the Petrified Forest National Park, using the theory of moral reasoning, indicates that a good interpretive sign with moral approaches can be as effective as an on-site uniformed volunteer in reducing theft (Marion and Reid, 2007, p. 11). Roggenbuck and Berrier, as cited by Marion and Reid, confirms the source used to communicate a persuasive message is important in shaping the effectiveness of message (p. 15).

Brochures. Brochures can be widely distributed and can help influence visitor expectations, activity and behavior. They are often used in response to a problem (MacLennan, 2000, p. 13). Studies indicate that brochures can influence visitors to go to less visited areas (Marion and Reid, 2007, p. 16). People can take brochures with them and even keep them as souvenirs, although they can easily become litter as well. Brochures are relatively inexpensive to produce compared with signs. The message and text should be straightforward and simple. The tendency to include too much information is a common mistake, reducing the impact of targeted messages (MacLennan, p. 14). Visitors can sometimes doubt the accuracy of a brochure. In one study, for example, hikers in the Selway Bitterroot Wilderness sometimes doubted the accuracy of the information about trail use (Lucas as cited by Chandool, 1997, p. 17). Additionally, many

visitors will not read them or will ignore their advice. Finally they must be revised, updated and reprinted.

The Situk sign project originally proposed simplifying a previously produced brochure to complement the sign efforts. As the project progressed, organizers decided to test the effectiveness of the message first with laminated handouts distributed to key community members who interact with visitors. The decision to produce a brochure was deferred. Reliable, fast-speed Internet is not available in Yakutat, so message delivery by brochures may still be useful.

Maps. Visitors like maps and tend to keep them. For outdoor recreation education purposes they are often foldable and waterproof and include messages. In many ways they can be similar to a brochure in that messages contained in a map can be read before, during or after trips. Dowell and McCool found that 90% of visitors felt maps were a desirable information source (as cited by MacLennan, 2000, p. 14). They are most effective in dealing with overcrowding and user conflicts and have been used to help disperse use more widely. They are less effective in conveying messages, as visitors tend to focus on the map, which is usually on the front, and ignore the messages on the back (2000, p. 15).

Personal contact. Research shows personal contact with trusted, authoritative and credible sources is one of the most effective ways to influence visitor attitudes and behavior. Backcountry personnel are considered to be most effective along with interpreters (MacLennon, 2000, p. 31-32). They may be viewed as role models and able to communicate meaningful information to receptive visitors. The drawback of backcountry personnel is that contact may be infrequent and the amount of time they spend on education variable, whereas interpreters are

often based in agency offices or campgrounds and may have limited on-site experience (2000, pp. 31-33).

Visitors are often receptive to campground hosts and personnel at trailheads as they can advise people what to expect and hand out materials, according to MacLennon (2000, pp. 28-29). Personnel at trailheads are costly but they can make time for questions and discussions as well as target different messages to different users. Trailhead contact can be late in the education process to change attitudes and behavior (Davis and Thompson, 2011). Finally, personnel at agency offices can help educate visitors by providing information along with permits.

Information needs to be current and consistent with information available elsewhere. Managers have indicated that this is an important technique in reducing user conflicts and overcrowding. However most visitors do not visit agency offices, which can be out of the way as is the case with the Fish and Game office in Yakutat. Additionally, it is important that front desk personnel be trained so they can be viewed as credible when providing accurate information (MacLennan, 2000, p. 27).

The interpretive sign and handout project use a modified approach to the personnel contact method by distributing an informational laminated handout to guides, lodges and others who have contact with visitors in Yakutat. Handouts are still in use at the front desk in the Fish and Game and Forest Service offices. Similarly, government employees, an educator and a business owner all report using the sign at the lower landing to explain how the set net fishery is conducted. This is further examined in the discussion section.

Other methods And digital technology. Other approaches for future consideration include posters, newspaper articles, visitor publications, news stories, targeted newsletters, slide shows and videos. Although digital technology may be found to influence visitor attitudes and

behavior, no studies could be found on its effectiveness in minimizing social value-related conflicts involving resource management. It has been shown to be useful in redistributing visitors and reducing crowding by influencing people to visit less popular sites (Marion and Reid, 2007, p. 17). One relatively dated study by Huffman and Williams in 1987 showed it was even more effective than a brochure (as cited by Marion and Reid, 2007, p. 17). Research suggests that in order for messages to be effective, a good portion of visitors must see them. The Internet is a potential method to accomplish this efficiently (2007, p. 20).

Although as yet it is unclear whether message-directed digital interpretations changes visitor attitudes, they are increasingly being used for outdoor education and tourism. "Digital technology has revolutionized cultural heritage," according to Davis (2014, p. 15). For years, heritage projects have placed oral histories, images, documents and recordings online, enabling access to information and knowledge through destination websites and other digital technologies. Today, social media (Facebook, Twitter, YouTube, Instagram) and interactive smartphone apps are increasingly used to engage visitors and other knowledge seekers. Examples include trailside interpretation and crowd sourcing of wildlife sightings.

Digital interpretation should engage people before they visit (website), during their visit (online interpretation) and after they leave (website), according to a concept known as the "Visitor Lifecycle" (Davis citing Pletinckx and Helson, 2005, p. 14). But any communication strategy should consider that digital use is changing rapidly. In 2013 smartphones and tablets overtook the use of desktop computers and laptops (Davis citing O'Toole; Columbus, p. 10). In 2020, 75% of the world's mobile traffic will be video, according to a Cisco white paper (2016, p.

3). For most Americans, mobile devices are part of daily life. On the Situk River relatively outdated wireless 2G cell phone coverage remains intermittent and unreliable, if it is available at all – a major challenge. Most on-site mobile digital technologies used for interpretive purposes, including smartphone apps, require reliable Interact access, WiFi and/or 3G or 4G wireless services, none of which exist in Yakutat.

Summary and Way Forward

After reading many studies on user conflicts, it is clear that any future effort to influence visitor attitudes will benefit from realistic expectations, a strong direct message, and efforts to help visitors adjust their fishing strategies - for example, to try other areas during fish openings. In addition, studies show that message receptivity by target audiences increases if visitors know they are part of the situation. Considering the large body of often contradictory research on outdoor interpretive education, a concentrated effort will be required to find the best approaches for community use in Yakutat. A combined approach using several channels of communication based on two or three messages likely will be most effective. These approaches will be explored more in-depth in conjunction with interview findings.

⁷ In 2014, over 90% of Americans owned a mobile phone and 64% owned a smartphone according to the Pew Research Center. (Retrieved on March 4, 2016 from: http://www.pewinternet.org/data-trend/mobile/cell-phone-andsmartphone-ownership-demographics/



Going Berry Picking "Up Ahrnklin"

Research Project Design

Many sport fishermen who come to Yakutat understand little about the commercial and subsistence set net fisheries, leading some to that believe the Situk-Ahrnklin Inlet fishery is harming their ability to catch fish. A persistent misconception has been that the "gillnets are blocking the river," which was sometimes expressed in racial terms, i.e. "Indian gillnets are blocking the river." For Yakutat residents the skiff set net⁸ fishery is both a job and a way of life while non-local sport fishing has become increasingly established. This research project evaluates three volunteer produced signs and a handout that aimed to dispel visitor misconceptions and to promote shared use of the river. Its purpose is to assess the usefulness and content of the signs and handout and explore what potential next steps people in Yakutat think are needed to educate visitors about the Situk-Ahrnklin River set net fishery. Funding to implement findings was made available by the Yakutat Regional Advisory Committee (RAC).9 This early display of support from a committee representing diverse community interests and perspectives indicates widespread agreement for continuing Situk River visitor education efforts.

Methods

Since this project is at its heart a volunteer participatory advocacy research project, a results and process approach was used employing qualitative data including interviews, a survey of documents and a review of published literature. Specifically, the methods chosen includes:

⁸ Set nets are gillnets with both ends anchored. One end is anchored on the shore and the other anchored in the water offshore perpendicular to the beach. In the Situk-Arhnklin Inlet nets are 120 feet long and approximately 18 feet deep. They are fished by hand out of a skiff. See Appendix C.

⁹ RAC, a citizen committee representing a broad array of interests formed to help improve collaborative relationships and provide advice to the Forest Service in funding projects for monies made available through the Secure Rural Schools Act and Rural Self-Determination Act.

- (a) An examination of existing background information about Yakutat and the Situk River, including visitor and resident surveys, reports, public documents, oral histories and scoping discussions with key informants.
- (b) A review of published research on the effectiveness of various approaches to minimize user conflicts.
- (c) Informal, semi-structured interviews with community residents who share a common desire to improve visitor understanding and attitudes about the set net fishery despite differing experiences and perspectives. Interviews were conducted with a volunteer project co-lead, a former set net fisherman, who currently owns a charter boat business.

In addition to finding answers to learning whether residents find the signs useful and relevant, and whether the signs should be replaced or updated, the interviews began the process of bringing people together around the common purpose of dispelling visitor-held misconceptions about the set net fishery, developing an agreed upon narrative and laying the groundwork for future action and collaboration.

Regarding my own interest in this research action project, as a longtime salmon fisherman in Yakutat on the Situk River and former community advocate, I am interested in reengaging in fishery policy and doing something useful as a way of giving back to my adopted community of Yakutat. After twenty years of set net fishing on the Situk, I have come to deeply appreciate what is at stake if residents lose access to their fisheries to outside visitors. The Situk-Ahrnklin River skiff set net fishery integrates a subsistence fish camp way of life with a means for earning a modest income. It enables the sharing of food, tradition, skills and cultural knowledge from one generation to the next. Extended families in town identify and participate in the fish camp way of life even if they are not direct permit holders. At the same time, I

recognize that sport fishing in Yakutat is here to stay. It too, in its own way, has become part of the community. I believe pathways should be created so visitors can be given opportunities to shed their misconceptions and misplaced hostilities, learn more about Yakutat and its people and follow the community's lead of being relatively tolerant of one another despite differences. Along the way residents may benefit from unexpectedly, positive encounters with sport fishermen as I did when a Yamaha dealer at the lower landing boat launch helped me fix my outboard motor last year.

Background Review: Reports, Oral Histories, Public Documents and Scoping

Research began with a background review of existing surveys, reports and oral histories by clan elders, public documents and archival information. This review was especially valuable in informing and broadening my understanding of issues, use, management and care of the Situk-Ahrnklin River, including Yakutat's longstanding involvement. For instance, the 2006 Yakutat Action Plan, by the City and Borough of Yakutat, expresses the community's vision for encouraging non-consumptive tourism while providing more services to existing levels of visitors. It also recognizes the community's rich Native culture and high quality environment, and its desire to safeguard priority access to borough residents for traditional subsistence and commercial uses.

Meeting notes, agendas and other documents, housed at the Forest Service's district ranger's office, provided important background information on local, state and agency cooperative efforts, including the *Situk River Cooperative Management Agreement* and previous education action plans by the Situk partner agencies¹⁰. Oral history and traditional knowledge interviews with Yakutat elders about the Situk-Ahrnklin River were retrieved from the

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¹⁰ Locally based Situk partner agencies include the U.S. Forest Service, the Alaska Department of Fish and Game, the Yakutat Tlingit Tribe, the City and Borough of Yakutat. All four groups are partners in the ad-hoc interpretive sign and handout project, which was also included in their educational action plan.

University of Alaska Fairbanks' Project Jukebox. A report by Judy Ramos and Rachel Mason, *Traditional Ecological Knowledge of Tlingit People Concerning the Sockeye Salmon Fishery of The Dry Bay Area* (2004) provided important insight on indigenous knowledge about the Situk River. This report references Frederica De Laguna's work, "Under Mount Saint Elias," which remains one of the preeminent sources of written ethnographic work about the Yakutat area, the Situk River and its people. Robert Price's book, *The Great Father in Alaska: The Case Of The Tlingit And Haida Salmon Fishery* (1990) contains essential political, economic history for understanding Yakutat's set net fisheries.

Early surveys by federal fisheries agent Jefferson Moser on the F/V Albatross in 1899 and 1901 provided a historical window on Situk-Ahrnklin salmon and Tlingit use before the rush to commercialize salmon began. Information on the first 20 years of commercial fishing beginning in 1904 including harvest amounts, gear use and emerging regulations was found in the 1933 Bureau of Fisheries report commonly known as the "Rich and Ball report." Other early annual reports on the amount of fish harvested in Yakutat and who processed them were reviewed in the Pacific Fisherman magazine, accessed both online at the Washington Digital Library and in hard copies at the University of Alaska Anchorage library. Other socio-economic and biological reports that provided important background and context included: Yakutat's 2010 Comprehensive Plan and the Forest Service's 2012 Yakutat Sustainable Outdoor Recreation Action Plan, the annual Alaska Department of Fish and Game reports and the Yakutat Comprehensive Salmon Plan, Phase II. Fish and Game reports provided both historical and current data for all the fisheries, including the expansion of sport fishing use and catch on the Situk River.

The Situk River 2003 Recreation Visitor Study, a 342-page study conducted by the Leopold Institute on behalf of the Forest Service and Situk partner agencies, provided extensive, qualitative and quantitative information on the characteristics, use and attitudes of visiting sport fishermen. Even though it is somewhat dated, the results provide a window into which visitors come to Yakutat, where they come from and what they think. This information combined with local knowledge about visitor attitudes and characters identified through the interview process will inform efforts to develop effective messaging strategies. A companion study, The Situk River Resident Study: Report on Local Relationships to Place, completed in 2006 complemented this research. A 2008 follow-up doctoral thesis entitled Human Bonds in Public Spaces by Neal Christensen, one of the authors of these two studies, used Yakutat as a case study for promoting a research framework that identifies shared values and goals among like-minded communities and using it to "improve management of public lands." The grouping of residents according to their relationship to the river provided useful background in understanding the views held by Yakutat as a whole as well as helping structure my own interview analysis.

This background information was useful in understanding the economic, cultural, historical and spiritual ties Yakutat people have to the Situk-Ahrnklin River, and it will be helpful in organizing efforts to develop a community-based communications strategy. Review of the Situk River 2003 visitor study led to the inclusion of an interview question directed at local guides, managers and other residents who engage visitors. Depending on whether they were aware of the study, participants were either asked if they thought visitor demographics or attitudes had changed since the study or if they thought they had changed in the last ten years.

Early consultations and pre-research scoping discussions conducted with community leaders, managers, guides, visitor business owners and the director of the project's original

sponsor, the Yakutat Salmon Board (a program of the City and Borough of Yakutat), indicated continuing interest in the project, including reports that several of the signs and handouts were still in use. These preliminary discussions contributed to the design of the interview questions and provided the basis for a successful grant application to implement selected interview findings, depending on community feedback. In addition lodge owners and visitor businesses expressed a willingness to be interviewed and indicated an openness to the goal of reducing conflict among user groups.

Background Limitations

People in Yakutat have been observed, studied and documented since the beginning of their contact with outsiders. This has resulted in a long historical record compiled by outside explorers such as James Cook and Comte de La Perouse in the 1700s to the present day. Yet Yakutat has had little opportunity to design, direct or carry out its own research to tell its own story. Two studies commissioned in the mid 2000s to assess resident and visitor opinions about their experiences and relationship to the Situk River were a partial reversal of this trend. As a project of the Situk Partners, a partnership of local, state and federal agencies, the research questions, were developed in collaboration with the Yakutat Tlingit Tribe and the Yakutat City and Borough. Results from these two these studies, where applicable, were examined in conjunction with our interview findings to identify similarities, differences and whether conditions or opinions have changed over time.

Situk River visitor study. Local guide concerns drove the initial goals of the Situk Partners studies, particularly their frustration with the lack of coordination between the Forest Service and Fish and Game. As a result, questions in the visitor study focused on angler related

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¹¹ One exception has been the collaborative traditional ecological knowledge work Judy Ramos led on behalf of the Yakutat Tlingit Tribe.

conflict issues such as crowding, noise, waste, motor use and access. Visitor views about the local set net fisheries were treated tangentially, primarily through open-ended comments. In hindsight, it appears an opportunity was missed to garner more in-depth information about visitor perceptions, and in this case, misperceptions.

At the time of the study, visitor attitudes were especially negative, which in turn gave rise to the volunteer sign and handout project. The Situk Partners supported the project and included it in their cooperative education plan. In formulating the sign message, it would have been helpful to know more specifically what visitors actually thought about how the nets were impacting their experience. Interestingly, the subsequent companion resident study explored local views of sport fishing in some detail. One possible reason, in addition to narrowing the scope of the study, may have been a desire to avoid potential community discord given the visitor study was a guide driven and agency effort focused on identifying management measures to reduce conflict within the sport fishing sector not between locals and visitors. The study provided potentially useful information on visitor characteristics, however, which unfortunately was never summarized in a practical format practical for community use.

Situk River resident study. The resident study, while extremely informative, aimed to compile "whole" community views primarily related to sport fishing use and its management on the Situk River, using eight semi-structured interviews and a survey of 226 residents. It did not evaluate whether residents thought visitors should be educated about the set net fisheries, only whether they thought visitors should be educated about "appropriate behavior." The interviews averaged 30 minutes and took place over a four-day period. Three of the interviews were selected by the outside researcher to represent "typical residents with a diversity of perspectives, likely somewhat different from those of the key informants." It is unclear from the study how

these three key participants were chosen. As one of the study's authors, Neil Christianson, points out in his thesis dissertation, the research methods used in the Yakutat resident study were aimed at informing the top-down expert based planning process and that this approach does not supplant "local, grassroots participation…" or the political process (2008, pp. 180, 183). It is exactly for this reason that we chose a participatory action approach, rather than a conventional one, to assess and engage community opinion and support for educating visitors about the set net fisheries.

The lack of conflict between subsistence and commercial fishing activities was used as an example by the authors to demonstrate the tolerance local people have for one another, "regardless of their ethnicity or fishing orientation" (Christensen and Watson, 2006, p. 82). They suggested it "would seem logical for conflict to exist... as they compete more directly for the same resource than they do with sport fishing in the upper river" p. 82). While they correctly deducted there is more "solidarity across the community than between community members and visitors," they may not have fully grasped the intertwined nature of the commercial and subsistence fisheries.

Fisheries data gaps. Future researchers should know that while salmon escapement and harvest records exist from when commercial fishing began on the Situk in 1904, gaps do exist including several years when the fish weir was not in operation in the 1970s under state management, and three missing reports during federal oversight according to local fish manager, Gordie Woods (personal communication). He added that the switch from analog to digital is never smooth and that there are always gaps in the databases. Leon Shaul, another longtime state biologist interested in Alaska's "legacy" sockeye stocks including those of the Situk River,

pointed out that the federal government left "a black hole in the archival record" from 1933 to when they turned management over to the state in 1960 (personal communication).

Review of Published Research on Minimizing Visitor Conflict: What Works

A review and synthesis of existing research examined the effectiveness of various interpretive tools and techniques such as the use of signs, for example, to reduce outdoor user group conflict. This information, it was felt, would be useful in formulating a community-based education strategy based on interview findings. Both theory and applied research related to message tailoring and delivery were examined. Although many studies were reviewed, the most readable source for applied purposes was: *Visitor information as a management tool: A review* by Paul MacLennan published for the New Zealand Department of Conservation (2000). Research focused on social values conflict was found to be most relevant to this project as opposed to studies involving interpersonal conflict. In Yakutat the set net and sport fishing areas have been separated. Sport fishermen rarely encounter or even see set net fishermen at the river. Information from this review was examined together with interview findings to compare proposed ideas using local strengths and assets with what current research says is most effective.

Research Limitations: Guidance But No Clear Path.

There is an extensive body of research on the effectiveness of outdoor interpretive education in increasing knowledge of recreational users and influencing their attitudes and behaviors. Much of it is contradictory though, and, there is little data on the use or effectiveness of online media. For example, while most studies agree brochures are not effective, others disagree. Additionally there is a sense that the discussion is limited to a small arena.

Yakutat Resident Interviews: Who and How

Semi-structured, open-ended interviews assessed community sentiment regarding the usefulness of the signs and handouts. They also sought to determine whether residents thought visitor misconceptions about the set net fishery are still a problem worth addressing, and if so, what should be done. Informants were chosen from among Yakutat year-round or seasonal residents. They were selected on the basis of their knowledge, leadership, and connection to the set net fishery or sport fishing sector, their potential for continued participation and collaboration in this project and/or their decision-making and policy influence. Interviews were structured to for obtaining a wide range of local perspectives while at the same time sharing information, establishing trust, and laying the groundwork for future collaboration. Face-to-face interviews allowed flexibility in probing for specific answers, follow-up questions and adaptability in deciding on which questions to ask.

After a few interviews, it quickly became clear that community opinion favored leaving the existing signs in place and also pursuing a continued education effort. Interviews were recentered on identifying and refining messages and deciding on how they might be best delivered. For example, we began asking guides and lodge owners what they tell their clients and what additional tools they might find useful. An open-ended question asked for other thoughts and suggestions to explore related concerns and emergent topics.

Interviews were carried out either jointly or separately with my community partner and volunteer project co-lead Kris Widdows. Kris and her husband own a charter boat fishing business. She is a former set netter, a 40-year resident of Yakutat and an adopted member of the Kwaaskikwaan clan from the Owl House. She is also University of Alaska Professor Judy Ramos's aunt in the Tlingit tradition. The Situk sign project sprang from her husband's

frustration in trying to address misconceptions about the set net fishery held by his sport fishing customers on his saltwater charter boat. Kris is well respected and trusted in the community. Her presence and contributions were especially valuable in interviews with guides, visitor related businesses owners, community leaders and potential project collaborators. So as not to place an undue burden on her, key interviews were arranged around her schedule, including, for example, interviews with the tribal president, guides and lodge owners, the chamber of commerce board members, and biologists. As a co-interviewer, Kris was also required to undergo research ethics training and certification. She and I arranged for this to be done at the city planning offices where we had a desk and there was reliable, but not high speed, Internet.

Over fifty people representing a broad and diverse cross-section of the community were interviewed over a month long period during the fall of 2015. Interviews were both semi-structured and informal conversations. Formulated questions served mostly as discussion guides. Small group and individual interviews averaged 20 minutes but some were as long as 2 hours and others were as short as 10 minutes. Most were face-to-face, but a few were conducted by phone (four) or email (two). Meetings were held in homes, businesses, at the local café, out at the river and during walks or rides. Elders were interviewed with other elders or family members present. One meeting was posted and held at the senior center prior to a senior lunch.

Participants were invited, either directly by letter or responded to a public flier posted around town welcoming anyone interested to participate. Some people suggested others we should interview, and some approached us independently. The process relied heavily on the experience of residents with sport fishing clients and customers to identify the most effective messages and means of dispelling misconceptions about the set net fishery. Locally based

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¹² Collaborative Institutional Training Initiative (CITI)

government employees who frequently encounter and explain the set net fishery to sport fishing visitors were interviewed for similar reasons.

We specifically sought out interviews with Tlingit leaders (formal and informal) including the Tekweidi (Brown Bear) clan matriarch for the Situk River, two prominent culture bearers, the president of the Yakutat Tlingit Tribe and several other tribal leaders. Their perspectives, knowledge and suggestions, including their informal approval in moving forward, were critical for the validity and success of both this process and future action. Storytelling and building a community narrative are powerful tools protecting both place and practice. In Yakutat, Tlingit cultural considerations require respecting how that story is told and who has the right to tell it. Protocol outlined by the Alaska Federation of Natives Guidelines for Research was used to inform our community-wide approach.

Interviews were conducted with other key informants as well, both Tlingit and non-Tlingit, the Yakutat RAC board (our funder group), several set netters both with and without ties to other interests, a city council member, four Native allotment owners with land in the Situk and Lost River areas, the City and Borough of Yakutat planner (our sponsor), Yakutat-Kwaan board members, the Yakutat Chamber of Commerce representatives and the founders of a new group called the Yakutat Tourism Committee¹³. The interviews gathered views on what residents want visitors to know about the Situk-Ahrnklin River, their relationship to it and its importance to Yakutat. One pilot interview was held with a sport-fishing client by volunteer co-lead Kris Widdows. She plans to interview other sport-fishing clients this summer independent of this process.

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¹³ During the middle of the interview process, the tribe, city and village corporation held a two-day community strategy meeting which I was able to attend. It was useful in obtaining a better understanding of Yakutat's local decision-making dynamics, politics and priorities all of which provide important context for this project

Questions were developed for five groupings of residents, as suggested in the Institutional Review Board (IRB) process. These groupings included (1) residents associated with the visitor industry, (2) government employees and elected leaders, (3) clan and tribal members and others not associated with other groups, (4) set netters and (5) sport fishermen. Consent was obtained verbally and recorded using the approved consent format. Anonymity was assured. Over half of the interviews were fully recorded. Key informant interviews were transcribed. Transcriptions with two clan leaders were shared with them; one asked for a copy of the recorded interview. Handwritten notes were typed. Names have been coded and kept separately from interview notes or transcripts. One person preferred not to be recorded. Another person gave permission for note taking purposes but asked that our conversation be deleted when finished. No one refused to be interviewed although three people were unavailable. The president of the tribe shared our letter with the council and invited all council members to join us at our meeting with her at the local cafe.

The Yakutat District ranger arranged for us to meet the Situk River ranger at the beginning of the season so we could provide her with the type of questions and observations that might be helpful in assessing visitor feedback to the signs, including their demographic and their views of the set net fishery. She and her assistant met with us at the end of the season for a debriefing session. They discussed their observations, described their engagement with visitors, and provided written answers to the questionnaire. In addition, the Fish and Game technician who conducted harvest interviews with sport fishermen at the river adjacent to one of the signs offered especially insightful observations regarding visitor knowledge levels about the set net fishery how often they viewed the sign.

Overall people took time out of their busy schedules. The interviews took place during "moose and meeting season." The process also served our outreach effort, helping to build support and exchange information as well as identify and bridge a few communication gaps within the community. Thank you letters were sent to participants along with requests for follow-up information. Draft findings, in the form of representational comments and quotes, were quickly summarized following the completion of interviews on November 24, 2015 and presented to the Yakutat RAC board as part of a project update at their meeting December 10th. ¹⁴ A final copy will be made available for participants, decision makers and other interested community groups.

Interview Limitations

This was not a conventional research study. Whole community views were not sought, although participation was far reaching across community segments. Participants were purposely-selected local or seasonal residents with cultural, economic or decision-making ties to the river. We did not interview newer, primarily non-Tlingit arrivals who use the river solely for recreation, although several government employees we interviewed might also fit this description. Additionally, most of our interviewees were over 25 years old. Non-local sport fishermen were not interviewed, with one exception, although several interviews are still planned outside this process. Instead, information targeting visitors was gained through interviews with guides, lodge operators, car rental agents, bartenders, waitresses, biologists and others who regularly engage with them at the river, in Yakutat and online. With the exception of the biologists, many of those interviewed also set net or have family members who do. For our small project purposes, it was felt that these residents hold valuable insights on whether visitor

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¹⁴ The RAC board meets irregularly for grant making purposes. Their congressional funding sources are not guaranteed and vary from year to year.

characteristics, beliefs and attitude are changing and if the message content is factually accurate or effective.

Perhaps the greatest challenge was our question guide. The IRB process required we develop a list of questions for each identified group. This proved tricky since in Yakutat there are multiple, complex, overlapping identities. It was often difficult to sort people into groups. For example, one person was on the city council, a former tribal council member and a current tribal employee who had family living and commercial fishing at the river, was chair of the Yakutat Chamber of Commerce, runs a vacation rental, is married to the local fish processor, was past manager and co-owner of one of the largest lodges in town and had been the local magistrate who oversaw fishing violations including both sport fishing and set net.

One unexpected issue arose when my co-researcher suggested we not bring attention to the issue of gillnet bans in conversations unless others brought it up first. This was good advice. Her concern was that we not "stir the pot." A fact sheet I had prepared thinking it would be a popular topic given past threats on another local river and a statewide initiative was filed away. As it happened, the issue only came up during two interviews. Another challenge we overcame was a difference in interview styles. She preferred a more structured approach while I favored a more open-ended one. I viewed each cluster of questions as a group and she preferred to ask each sub-question. This was resolved early on by adopting a hybrid method whereby we loosely followed the question form and she followed up with a recap at the end to make sure we had explored all the relevant question areas. As a result, this helped note-taking while at the same time allowing important perspectives and ideas to emerge that might not have under rigid questioning.

Our combined method improved over time resulting in fewer leading questions and more time and patience while waiting for answers. As the interview process evolved, we began to ask guides and other participants more directly what they told their clients and customers, what messages and methods they thought worked best, if visitor education was still important and what they thought the next steps should be. This resulted in some of the more successful interviews, generating strategic feedback as well as comments and quotes by visitor-trusted sources for future use (potentially linked with names if permission is later received). A more simplified question guide fewer sub questions may have helped simplified analysis.

Challenges and Community Support

Perhaps the greatest challenge for me personally was time and distance. I only live parttime in Yakutat and spend much of that time out at the river, living in a tent. It was necessary to
spend at least six weeks in Yakutat after fishing was over to ensure there was enough time to
spend with people. Communicating long distance from Istanbul, Turkey, where I live when not
in Yakutat, is a continuing challenge and finding ways to maintain relationships while out of
town has been important. In this case it has been helpful to have a respected, engaged
community collaborator who lives in town year-around. Finally, joining Facebook despite a long
reluctance has been beneficial in keeping touch with what is happening in Yakutat. Internet
access in Yakutat remains a hurdle for everyone. Only limited, expensive bandwidth via satellite
is available. The City and Borough of Yakutat and the U.S. Forest Service have faster, more
reliable service, which they made available to us when needed.

The research cycle for this project closely tracked with one described by Stoecker in Research Methods for Community Change: A Project-Based Approach (2005). Stoecker discusses the perpetual process of diagnosing, prescribing, implementing, and evaluating. At one point, I wondered briefly about the need for an extensive interview process. The Yakutat Regional Advisory Council (RAC) board had already funded an education project, yet to be defined, with some committee members indicating a preference for handouts. In the end, I am glad we stayed the course as the process has resulted in many new, promising ideas and has attracted more people to the issue.

Pre-research including conversations with RAC board members, business owners including a major lodge owner, the city planner, the district ranger, the sport fish biologist, the fish manager and others conducted for the project ensured early support and resources for conducting community interviews. It resulted in both funding through the Yakutat RAC board and sponsorship by the city and borough, despite our ad hoc working group status. The City and Borough of Yakutat (CBY) planning department agreed to function as our grantee for a \$13,000 RAC grant. They also provided workspace, financial accounting and Internet access during the course of the interviews. The city planner, a former Fish and Game administrative assistant, was familiar with the signs and handouts. She was personally supportive and made available office space, printing and copying services. The original sign graphics and other documents remain on file in her office.

The district ranger was also extremely supportive. Last June he held a pre-season meeting with his river ranger staff to discuss the project and enlist their assistance. We provided a copy of our interview questionnaire and asked them to be on the look out for visitor behavior regarding the signs as well as visitor attitudes toward set net fishing in preparation for a post-season interview. He also supported the project's inclusion on the RAC board agenda in December. Last season he made available office space and the agency copy machine for researching historical Situk partner group files, reports and cooperative management plans. Fish

and Game has cooperated as well. Both commercial and sport fish biologists have been helpful in providing insights along with visitor and catch data when requested. Finally, the local senior center coordinator arranged for us to hold a meeting at the center prior to lunch. The meeting was posted around town and at the center.

Interview Analysis

Interview transcripts, notes (both mine and my co-researcher's) and my journal notes were read several times to gain a deeper understanding of what was being communicated and to look for themes. Participants were assigned a number. Responses were grouped into seven categories, according to both questions and emergent themes, including those that were predetermined and those that surfaced during the process. They were further grouped in subcategories where necessary. Some comments and quotes were occasionally included under multiple categories for both analysis purposes and future project implementation. This categorization was narrowed down significantly for the community findings report. Participants were assigned letters according to their relationship to the river: i.e. set netter, guide, and elected official. An Excel file was created to assist in analysis and to maintain the anonymity of the participants. Interpreting meaning from the transcripts and notes is subjective. It is important to acknowledge in interviews that there is always the risk of someone telling you what they think you want to hear. An overview of how to analyze in-depth interviews for applied projects in RD 650, community research methods, including suggested reading materials, would have been useful.

Summary and Lessons Learned

It is hoped this participatory research action project, using a combined methods approach, will lead to a community-backed education strategy based on local knowledge and assets

identified through the interview process, supported by biological, historical and economic information discovered through the background search and informed by the latest research in minimizing user, value-based conflicts. Interviews began the process of identifying consensus-based community messages and delivery methods while simultaneously enlisting the help of supportive community members to strategically inform visitors and decision makers about the Situk River set net fisheries and their importance to the people of Yakutat.

As someone who has worked in legislative arenas and as an outside organizer working with people in their communities, this project has been a good reminder of how working locally can be incredibly challenging as well as rewarding. I have found myself holding back and not engaging in other important but controversial local issues in order not to alienate people from this project. This experience has renewed my deep admiration for the people who spend their lives working in their communities, navigating personal and power relationships while at the same time standing up for what they believe. They are among the most skilled diplomats, politicians and leaders I know.



"Smoked Strips and Dry Fish"

Interview Findings

The most notable finding from the interviews was the remarkable degree of consensus on the need to continue Situk River visitor education about the commercial and subsistence set net fisheries and their importance to Yakutat. This was more significant given the diverse perspectives and interests of those interviewed. Participants, who were purposefully selected to reflect a wide-range of community views, generally feel that dispelling visitor misconceptions about the set net fisheries is a priority. They also hope visitors can learn to appreciate how vital the river is the community's well being, and its central role in sustaining Yakutat's cultural heritage. They believe this knowledge is crucial to is to building mutual respect and improving relations between visitors and local residents.

Interviews demonstrated support for leaving the existing signs in place and reproducing additional copies of the handout, both of which were felt to be helpful with first time visitors. The handout was perceived to be "super effective," in the words of one participant, in showing the nets do not block the river because of the size of the river compared with the width of the nets. The handout also shows how far the sport fishing area is from the commercial fishing area. The message conveyed in the picture, most felt, was still effective even though the river has changed. Most did not think it necessary to spend money to update either the sign or the handout, although it was generally agreed that subsistence should be included in future materials. Rather than produce a new sign and handout, people suggested efforts be directed towards trying to develop more tools and pathways to convey agreed on messages. A multimedia approach was preferred, using local strengths and assets to combine personal contact from trusted sources with print and online engagement. Interviewees said new visitors should be the primary focus of any educational effort.

The messages people wish to relay are generally consistent with the ones in the existing signs. One potential difference would be a change in emphasis from explaining that the "nets are not blocking the river" to "they don't significantly affect your catch, especially during sockeye season." Perhaps the strongest agreed on message, one consistently employed by the long time guides, car rental agents, lodge workers and charter boat operators interviewed in this project, is that set net fishing on the Situk-Ahrnklin Inlet is the way people in town "get their food and make their living," as one guide succinctly put it, adding "... and they don't make that much."

Most people thought that there needs to be more information on subsistence, especially since nets can be seen in the water after commercial fishing closes. Opinions differed on how best to convey this without making it too complicated. "You will be writing a 400 page book, if you aren't careful," one supportive longtime guide with Tlingit family ties warned us. Several participants pointed out the distinction between the two fisheries is blurred, because as one person put it: "same people, same boats." One biologist suggested it is "the nets" that many sport fishermen are concerned about, not which fishery they are used in. Others, including clan leaders and elders, stressed the need to convey the importance of subsistence for food and culture. The river and the fish it provides, one tribal leader said, is the "spiritual, cultural part of who we are... our culture is sharing." Several emphasized that subsistence preceded commercial and sport fishing. They rank the fisheries in that order of importance.

A few participants, including one agency worker with defacto interpretive duties, suggested that more information on fishing rules and regulations would be useful since, frequently, many visitors are uninformed. Opinions diverged on catch and release fishing, a topic infrequently raised during interviews likely in deference to differing, strongly held beliefs and values within the community, even inside families and across ethnic lines. Overall,

interviewees of all ethnic backgrounds and experience reflected a community perspective that is

tolerant of one another and united around the common purpose of offsetting negative, sometimes

racially tinged misconceptions about the set net fisheries.

Findings were grouped into seven categories based on questions asked and emergent

topics. Interviewees familiar with the sign and/or handout were asked if they thought they were

useful, if the content was accurate or relevant and if they should be modified or discontinued.

The following categories serve as an outline for the interview findings summarized below.

1. Visitors: Who are they? What do they think?

2. Visitor education: Is it important?

3. Signs

4. Handout

5. Messages

a. Currently conveyed messages

b. Subsistence

c. Livelihood

d. Management

e. Proper behavior and respectful etiquette

6. Suggested communication strategies

7. Other topics of concern

Visitors: Who Are They Today And What Do They Think?

Who Are They?

Most participants familiar with Yakutat's sport fishing visitors perceive the population to

be ageing, especially coho fishermen. They do not see a younger generation coming in any big

numbers. Most longtime guides and business owners interviewed said many of their older,

repeat clients and guests are no longer returning. "My clients have gotten older and are passing

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on," one guide told us. "There are many repeat visitors...older guys who have been coming 25 - 30 years; and, "...only one new coho (fisherman) in groups of seven, "according to an agency river employee. Although Yakutat is not seeing "a flood of new visitors," one sport fishing business owner told us, "There will always be new visitors." Two participants with longtime clientele say they have at least three generations coming to fish. The steelhead fishery is the only Situk River sport fishery that sees a noticeable influx of young people and new faces, several participants said, but that fishery does not significantly overlap with the set net fishing. Several participants, including one person on the planning commission, suggested there is an increase in non-local sport fishermen buying homes for seasonal use in Yakutat.

Selected comments on visitor demographics:

- Forty year-olds call to book with dad, only time I get them.
- Sockeye fishery has more new to Yakutat. Younger, more first-timers.
- A few bring grandkids but mostly an ageing group of men. Yakutat is not seeing any younger folks.
- As people mature and reach the point where they can't come any more that's the end of the group.
- Long time sport fishermen most of them come here all the time. (It) feels like there is a certain segment of long timers that don't like gill netters.

What Do They Think?

Visitors remain appreciably worried set net fishing negatively affects their catch according to participants. "They always ask us: 'Are the nets in the water?" said one lodge owner. People want to know "when the nets are in and when they are coming out," an agency worker said. This question accounts for 95% of visitor questions according to a biologist. They want to know when the commercial fishery is occurring and even inquire about it when booking their trips according to several lodge operators and guides. One lodge manager new to the job said it took her a while to realize that guests were trying to book their days when fishing wasn't open.

In addition, sport fishermen continue to perceive the set net fishery as a "Native fishery." "I do get a lot of complaints about Native nets," one business owner said. They want to know "when are the Natives gonna be putting their nets in the water?" another said. Despite continuing misperceptions and misinformation, a significant portion of those interviewed felt that there has been an attitude shift: that the level of hostility and what several termed as "negativity" has decreased in recent years. This was variously attributed to repeat visitors becoming better educated to the attrition of elder visitors adverse to gillnet and tribal fisheries due to Judge Boldt's decision on the Columbia River, and to better fishing in recent years in the Pacific Northwest. One agency employee, however, speculated that the negative comments about set net fisheries might be more prevalent when visitors talk among themselves. At least two longtime guides said it was their personal opinion that sport fishermen sometimes use the set net fisheries as an excuse for what the guides termed "bad fishing" or "under performance."

Selected comments on visitor attitudes:

- Sport fishermen are convinced they aren't catching fish on days when the set nets are in. Belief is when nets go in, the number of salmon goes down.
- The subject comes up every day out on a charter. This conversation comes up with almost every group.
- Sport fishermen like to know when to go fishing i.e. when the nets are out. (They) don't like to fish when we are gillnetting.
- Sport fishermen perceive set netting as a Native fishery. (I) spend time explaining not all nets are Native/Indian nets. Only really get negative complaints when fishing is bad.
- Every day 9 out of 10 people ask how many fish pass through the weir and how many were caught in nets.
- If there is a real bad year or there is a slump in the run...people automatically blame set net fishermen.
- When there are more fish, people are less resentful... There are lots of nice people though.
- People plan their trip around avoiding "when the nets are in."
- A question we got a lot was: "when are the nets coming out?" and if they were still in, visiting anglers almost always said "no wonder there's not much fish" or "well fishing

¹⁵ *U.S. v. Washington*, 384 F. Supp. 312, 1974. The Boldt decision reaffirmed tribal fishing rights allocating Washington treaty tribes half the annual salmon catch. Commercial and sport fishing groups filed Friend of the Court briefs opposing fishing treaty rights.

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should pick up when they are out." Never heard anglers say degrading things about commercial fishing or say they shouldn't be working out there - just seemed to always correlate slow fishing and not seeing many fish in the river with the nets being in.

Visitor Education: Is It Worthwhile?

Visitor education remains essential to dispelling long-standing misconceptions and reducing conflict was the prevailing opinion of more than 50 people interviewed. None of the participants suggested it was not worthwhile. Complaints about the set net fishery may have decreased, according to some longtime guides, agency personnel and lodge workers, but misperceptions persist. Education efforts should focus on visitors who may be more receptive, more than a few participants advised. "Some sport fishermen are never going to be happy. They want the river to themselves (including other sport fishermen) and will complain about anybody and anything," one visitor-related business owner said.

A representative for the local tourism committee said, "We want them to feel they are getting their money's worth but we also (want their) understanding. What you think is happening isn't (the case)..." Education and engagement must be employed locally to address visitor dislike of commercial fishing one Tlingit clan leader and life-long set netter suggested because, he said, sport fishermen are organized and have more political power. Notably, at least one longtime guide and several other participants report that, over time, education has changed the attitudes of their repeat clients and customers. At the same time, a number of participants suggested there is also a need for two-way education. "They don't know what we do and we don't know what they do," one set net fisherman said. One river agency worker said that some sport fishermen are interested in Yakutat's Tlingit heritage and want to know more about the Situk fish camp lifestyle.

Resident Comments in Favor of Visitor Education

- People are here because they want to be, they want to talk, we need to help them to understand.
- More understanding on the part of those willing to learn. Can't do anything about the hard-core curmudgeons who came with an ingrained attitude
- Perhaps there could be a way to post weir numbers...education should continue.
- If they don't hear our story, they don't have any feeling for us or understanding because we aren't telling them.
- People want to know when nets are in and coming out...how far away they are...people love exact numbers.
- Continuing education is always important to reach the new people.
- The signs were good but more needs doing.
- Heartburn between the two groups comes from: They don't know what they don't know.

Signs

Most participants had seen the signs, felt they are useful and said they should not be replaced unless they became damaged. For some it had been a while since they had read them. The prevailing feeling was that even though the river had changed, the message was still the same and the signs continue to serve their purpose. Nearly all participants who had actively viewed the sign feel the aerial photo in it is one of the quickest, most helpful methods to dispel the misconception that the nets block the river. The photograph, they said, illustrates the relative smallness of the nets compared to the inlet and shows how the fishing areas for sport and set net fishing are separated by regulation. One person reported using the net and skiff illustration with his customers to explain how set netting works. Forest Service river rangers and Fish and Game fisheries technicians at the river reported observing visitors looking at the lower landing sign or that they directed visitor attention to it.

Overall, people think the signs are attractive, concise and big enough to draw people in, although several said it would be better if the information had been conveyed more visually with

bulleted messages in bigger fonts. Many people felt, some strongly, that the sign should have included subsistence, but suggested it be integrated into future materials rather than new signs. Even though it was generally agreed that repeat visitors may no longer read the signs, people interviewed still think they are useful for newer visitors. Regarding the persistent misconception that the commercial fishery is a Native only fishery, one longtime guide said he thought it was very important to emphasize that the fishery was open to anyone with a permit. He suggested it might have been helpful to write the language in a bigger font or underlined: "These permits are bought and sold on the open market." Another interviewee suggested the sign could have read: "Do you have questions about the net fishery?" rather than "Do you have questions about the commercial fishery." Two people suggested that if the signs are replaced, they should have a different design so repeat visitors will look at them again. A number of people said the signs contained too much narrative information. Several people suggested moving the Nine Mile bridge sign to another location such as Tawah Creek or the boat harbor. One Tlingit sportfishing guide not so jokingly said: "If (you) update with a new photo, don't make it too pretty – (we) don't want sport fishermen staying around too long!"

Signs: Selected Resident Comments

- Signs are still useful. Don't take signs down. Message is the same. Don't need pictures to match river. Don't need to spend money where it isn't needed.
- Leave same unless weatherworn. If need to replace could update photo but unnecessary. The message is the same even though the river has changed.
- Attractive, good information, nice graphics, nice quality-good design, wouldn't criticize, can have a good impact.
- Important to keep it stops negativity.
- Keep project going for new visitor. Need to reach the next generation coming. There
 will always be new visitors. New people will check it out even if long-term visitors
 won't.
- It is very useful for interpretive workers to have something to show. Where they (visitors) are relative to where the nets are. People definitely use sign. In last three hours, three people had read sign. Wish more people would.
- First thing visitors see at lower landing. Lower landing is where perceived conflict is.

Signs: Selected Resident Recommendations

- The signs are useful. Add subsistence information. It is very important to the community. They need to understand why subsistence nets are in the water outside of commercial time. Don't change signs but add to subsequent printing and new material.
- Remove the word "commercial" and replace with 'set net" to get at the heart of what sport fishermen fear. If this is done, more may continue reading further down the sign.
- Things need to happen in layers. Sign tries to put it all in one. Too much information. Picture is fine. Get rid of the verbiage.
- If signs updated, could add more nets. Size of net shows they are not blocking river good for instructional purpose.
- Leave signs at airport and Situk River lower landing. Consider relocating the sign at Nine Mile bridge.
- I really thought it was good except for subsistence. Add another one (sign alongside the one at the airport) that speaks to subsistence and the people from our understanding.

Handout

The handout of the aerial photograph contained in the sign continues to be one of the most effective tools to help educate visitors, interviews suggest. Those who use the handout continue to find it useful, including Fish and Game and Forest Service personnel, and a few lodge and charter boat operators. Others, who had not seen it before being interviewed, wanted copies for next season, including several lodge operators who expressed an interest in placing it in their guest rooms as well as posting it on their bulletin boards. One person suggested making printable copies. Forest Service and Fish and Game employees who work at the river also wanted copies for their interpretive work next season. If the handout is updated, the amount of nets in the graphic overlay should be increased two participants suggested. In the meantime, however, they supported its continued use. The comments below are from guides, agency personnel, and business owners who use or would like to use the handout.

Handouts: Selected Resident Comments and Recommendations

- Visuals really helped quite a bit. Like illustration of nets...aerial photo.
- Like the handout! (As a guide and lodge operator) would use to show that the river itself is a closed zone Whole river is off limits to commercial fishing.
- Hand out is the best visual description that shows nets aren't blocking the river...shows context, size of net, river how far sport fishing is from commercial.
- Size is good. Lodges could use bigger ones as placemats.
- Put in more nets. Don't want to lose credibility...
- Put up every place possible trails, etc.
- Lodges are a good place for this. Put up on kiosks.
- Really helpful. Love net length. If re-done suggest side-by-side layout instead or two pictures.

Message Content

"The nets do not significantly affect your catch; this is how people in Yakutat make their living and get their food," is the basic message many guides and businesses convey to visiting sport fishermen. They, along with biologists, further explain that the fishery is managed sustainably and clarify that both Native and non-Natives set net for food and income. One charter boat operator said that the livelihood message really hits home. When asked what they wanted visitors to know about the Situk River, Tlingit clan elders emphasized respect, including respect for grave and village sites, and the value of sharing. One Tlingit leader suggested asking visitors: "Please have respect for the river and the resource. We are asking you to abide by the same rules of respect and stewardship we do for the future health of the river. If you take more than you legally should, you are harming the resource for your children and your grand-children." Another tribal member recommended telling visitors "only harvest what you need to sustain yourselves." The river and the fish it provides, several elders said is a "spiritual, cultural part of who we are."

To move forward, "develop community-based talking points so we can talk and state our points of agreement without animosity," a prominent Teikweidi clan leader suggested. To begin

this process and start laying the groundwork for an agreed upon community narrative, the following interview comments have been selected for further working group analysis and review. A more complete list can be found in Appendix E. Some topics, such as catch and release fishing, are notable by their absence. Included are representational messages that guides, businesses and biologists currently use with visiting sport fishermen, along with suggested messages and selected comments on the following emergent topic areas: livelihood, subsistence, management and respectful behavior. Other issues of concern were raised in interviews, including deep concerns and differences over management and enforcement, habitat protection and lack of communication and trust between community members and the Alaska Department of Fish and Game. These are summarized separately.

Messages Currently Conveyed To Non-Local Sport Fishermen By Residents

Guides and charter boat operators. In addition to telling clients that nets don't make much of a difference in their catch unless there is a slump in the run or a bad year, guides and charter boat owners interviewed say that they explain that commercial fishermen have good days and bad days, just as sport fishermen do. Some explain that the fish do not run every tide. One charter boat operator tells his customers, "commercial fishing is how people make a living in Yakutat and that they don't catch or make that much." Another points out that commercial fishing has been going on for over one hundred years, and it, and subsistence fishing are essential in sustaining the people of Yakutat. He and others say that sport fishing, on the other hand, is relatively recent in Yakutat, and that visitors can fish seven days a week while set net fishermen can only fish three days a week unless the run is strong. Most explain that both Natives and non-Natives fish the river and that the commercial fishery is open to anyone who buys a Yakutat set net permit.

- Commercial fishing is not efficient you can have good days but you can have a lot of bad ones. Same like sport fishery. Management of river ensures a balance among all.
- They aren't catching sometimes for at least five days a week.
- Commercial fishing is how people survive.
- (I explain) subsistence because it is important here.
- You can take a lot more fish home if you buy them.
- Commercial fishing has been occurring here for a hundred years before sport fishing took off, and (it) is how many people in Yakutat make their living.

Business owners, lodge operators, bartenders, waitresses, and rental car employees.

One business owner explains that the nets catch a fraction of the fish, less than half of the sockeyes coming in and shows them weir counts that demonstrate little or no impact from the nets being in the water. Another visitor-related business owner points out that there is an ebb and flow to salmon runs. He says that during a seven-day period, fish may only make a push upriver during three of them and that commercial fishermen also don't know which days or tides fish are going to make a push either. He tells them to look at the number of totes on the back of the fish truck. "If you see 20 totes, that means there is good fishing. If there are only 5 totes, fishing is slow." In addition, he says that commercial fishermen are not fishing all the time, even when the fishery is open due to tides. One community leader, who has a visitor-related job, explains to sport fishermen that people only have four months to make a living and that "the skiff is their office and set netting is their income and way of life." Others say that that the runs are sustainable, fish are being fairly allocated and that managers increase bag limits during a big run.

- Weir counts don't always go down after an opening. There were a couple of weeks (in 2015) where the nets had absolutely no impact. I show them the weir counts where there are 3000 4000 fish going through the weir during commercial openings.
- You can fish all the time. Commercial fishermen aren't fishing all the time even when open.
- As long as you don't abuse it and we don't abuse it, (the fish and river) for everybody for generations.

Biologists and government personnel. Biologists also tell visitors that "sometimes (the) weir counts are better than the commercial catch" and explain that the "not all nets are Native nets." They point out that the commercial fishery is open to everyone and that all Alaskans can subsistence set net fish in the Situk-Ahrnklin Inlet. One biologist explains that "for sockeye anyway, it appears you can't stop them with nets," although he adds they may affect coho catches during mediocre runs. Another biologist points out that it only takes one tide for fish to move from the estuary to the lower landing and fish can transit that distance in an hour depending on the tide and whether they mill around. Other government workers who engage visitors both on and off the river recommend including more information on regulations, fish numbers, management goals and when the nets are coming in and out.

- I always say commercial guys are supposed to catch fish probably half sometimes...but that doesn't mean there aren't already 10,000 fish in the river. (I spend) time explaining not all nets are Native nets.
- I only get negative complaints when fishing is bad.
- Subsistence open to all in Alaska. (It) is only two days a week and only 4,000-5,000 fish taken.
- Commercial (fishing) occurs early in the week, subsistence on weekend. All Alaskans can subsist.

Suggested Messages on Subsistence, Livelihood, Management and Respect

Subsistence. Most community members interviewed felt it was imperative to add subsistence because of its importance to the community and because visitors need to understand why nets are in the water when commercial fishing is closed. "Sport fishermen don't know about subsistence," one interviewee said. "It's the whole basis of our culture," one tribal leader emphasized. Several residents interviewed emphasized that the Situk is a major source of community food and that salmon from the river are shared at potlatches and other community

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¹⁶ More fish escape upriver and pass through the weir than are caught in a commercial opening.

events. One leader expressed the view of most participants when she said: "Subsistence and commercial fishing preceded sport fishing on the Situk River and they are important in that order."

- It's who we are. It's a spiritual, cultural part of who we are. You give and you share.
- There is only small window to harvest salmon for food at the river. It occurs the same time of year as sport fishing.
- The Situk is our grocery store. It is how we survive when you guys aren't here in February or March. We don't have a Costco.
- Add subsistence. Very important to community.

Livelihood. Residents interviewed want visitors to know that they live in Yakutat year around and that set netting is how they make their income and feed their families. Suggestions included pointing out the modest average incomes and cost of expenses. Several stressed letting visitors know that while fishing is their vacation, for residents it's their job. One person said, "We all have to live together and without commercial fishing, we wouldn't have a community here – it's what keeps this community alive." Another said, "Set netting is... who we are and what my people have done. It not only connects us to the land... and our surroundings, it helps instill common sense in our children."

- Commercial fish(ing) is not playing around it garners a living for families, it pays for colleges, it pays for dental work, it pays for mortgages, it pays for car payments.
- I'm a sport fish guide but in reality of how it is: (The) sporties are up and gone and local guy is still trying to make a living down there...

Sustainable management, shared use and respect. People interviewed want visitors to know that the Situk River is being sustainably managed, that "it is not being overfished" and that the resource is not being damaged." As one person suggested: "Emphasize the river is closely monitored, and if there is plenty going up river - there is plenty for all user groups." Several suggested including more information on the fishery and its management including that the

fishery is open Sunday through Tuesday. Finally, tribal leaders and members interviewed underscore the need to request visitors to respect old village sites, gravesites and Native allotments. As one tribal leader said: "We are still stewards even though we no long hold the deed." Several people emphasized the importance of "only harvest what you need."

- Explain the state is managing and controlling escapement to ensure enough fish pass up river to ensure good returns. The nets are only in a small portion of the year.
- Please respect private land.
- Please have respect for the river and the resource.
- We are glad you came, respect our land like your own. Provide history in a nutshell so they leave with a greater understanding and a piece of our history. Get them situated right away with land use and people. Will build a basis for mutual respect.

Combined, these selected messages and comments represent the general themes from which a community narrative can be built that convey Yakutat's dependence and attachments to the Situk River to visitors. Using these and other interview findings, the ad hoc working group can continue the process of identifying and refining a few key, consensus-based messages from which to develop a communications strategy.

One community leader offered the following useful advice:

(Signs or any other effort) "should tell a story-connecting past with present. Story of people, culture, preserving and protecting the land and resource. Use pictures and positive experience (follow-up). The story has to be brief - and makes them feel like they are a part of the story - not being told about people they don't care about.

Suggested Methods of Delivery

Whether it is on the fishing grounds, in the lodge or at the hardware store, interviews confirmed that people in Yakutat, from bartenders to biologists, commit personal time and energy to educating sport fishermen. They impart knowledge, provide facts, correct misperceptions and promote a sense of tolerance. What is needed, they say, in addition to

leaving the signs up and reproducing the handout, is a multimedia communication strategy based on agreed upon talking points. It should convey simple, strongly visual messages, from sources visitors trust. It should be informative and not negatively framed, one lodge owner advised.

Interviews resulted in many ideas, including lodge guest orientations, a linkable webpage, articles in the local paper, "ambassadors" among the fishing guides, providing or coordinating lodge reading material, a video/slide show at the airport, river guide orientation, YouTube interviews, rental car flyers, airport greeters, posting of weir counts, and informative maps, among other ideas. The top suggestion was to collaborate with a local writer, visitor business owner, former guide and longtime set netter (not at the Situk River) whose blog has 96,000 viewers. One of the more intriguing ideas proposed the use of smartphones to produce YouTube interviews enabling people to speak in their own voices along consistent message lines. Another creative suggestion currently used by one business owner would encourage sport fishermen to recognize if fish are running at the river by the number of totes they see on the back of the fish truck during commercial openings. The idea is: if commercial fishermen are catching, you will also. Several guides and business owners also suggested exploring more avenues for local fishing families and visitors to interact, since they fish in separate areas and rarely encounter one another except in passing. A more complete listing of suggested ideas can be found in Appendix F.

Selected Method Delivery Suggestions

- Need a marketing strategy. A layering approach of a narrative. People research online before they get here. Internet is key.
- Images are huge. Just need to add a few (informational) bullets.
- The more detailed the message gets, the more people filter it out.
- (Buying fish directly from commercial fishermen) creates a relationship right there. One on one with them used to be enemies next thing you know they are friends.
- Invite sporties to come see (fishing) operation help them see how it works.

- People need interaction. Will trump all visuals and documentation. One on one. Do it consistently so businesses that interact with sport fishermen take it upon themselves to make the extra effort. Engage at river.
- If you are going to have (video) at airport there need to be some voices. You need people speaking from the heart – for (some people it needs to be auditory) – it would mean something to them.

These suggestions all build upon the tools and techniques local residents are currently using to dispel visitor misconceptions about the set net fishery. In addition to potential assistance from agency partners, interviews also identified numerous local assets, including the possible contributions of businesses and organizations willing to work on visitor education efforts. Residents also possess many needed skills: graphic design, artistic expertise, website development, writing (including blogging), professional photography and videography, and marketing. Residents also have connections to potential partners outside of Yakutat, including, for example, Patagonia, the Southeast Sustainable Partnership¹⁷ and others. Interviews began the process of exchanging ideas and getting residents involved in formulating a locally based strategy.

Other Topics Raised During Interviews

In addition to dispelling visitor misconceptions about the set net fisheries, participants raised other management and conservation issues, including a deeply held, widespread concern that visitors were taking more fish home than their families need or possibly can eat. People worry the Situk River fish and other locally caught fish may be going to waste. They also identified unenforced catch limits, trespassing, debris removal, and lack of communication or trust between community members and local agencies as other top concerns. These concerns are briefly summarized below and will be conveyed to community decision makers.

Amount of Sport Caught Fish Leaving Yakutat

¹⁷ A collaborative between Haa Aani, LCC, a Sealaska group dedicated, in part to maintaining fishing access in rural communities, and the Nature Conservancy.

One issue that repeatedly came up in interviews was a perception that visitors are taking more than their families need or could possibly eat. People worry this fish catch may be going to waste. Several people recalled speaking with sport fishermen at the airport and realizing they were taking more fish out of town than they, as a local, subsistence dependent family, use and share all winter. Responsible use education, enforcement and policy measures were suggested as remedies. Interviews indicate this is a priority issue of deep, widespread community concern.

Situk River Daily Catch Limits Unenforced

Non-guided visitors exceeding their catch limits remain a problem, according to most interviewees who work in Yakutat's sport fishing sector. One person reported regularly seeing guests come in with fish and going back out to the river again for more. Several people suggested road spot checks as an effective remedy. One person proposed road checks be combined with a punch card system.

Situk River Stewardship

Elders, clan leaders and tribal members interviewed expressed concerned that the river under the Forest Service's management, is no longer being properly cared for. In the past, they said Teikweidi (Brown Bear) clan leaders Situk Harry and Situk Jim would ensure that the river and lake areas were cleared of brush to improve spawning conditions and fish passage. The fish-rearing habitat was always protected, they said. In a rare convergence of agreement on river use, sport-fishing interests are also concerned with blow down obstructing the river passage, according to several participants. It was the top concern of the sport fishing visitor interviewed for this project. He has been coming to fish the Situk River for 35 years. "Teikweidi elder Oscar Frank would always talk about how they had a crew who would clear the river but leave areas for

the salmon to rest," according one Tlingit elder. Tribal leaders also reiterated their longstanding concern that regulations allowing sport fishing upriver and in the lake were disturbing salmon in their spawning areas.

Selected Stewardship Comments and Observations from Tlingit Leaders

- There was hardly any brush. They would go up and down and clean the river.
- The Forest Service has a policy that Mother Nature does whatever Mother Nature does and we don't do anything. If you are stewards of the land, you do something. Stewards of the land make sure that the river will be a life-giving river for generations to come. You allow ... (for shade)...but you don't allow the river to be clogged so it won't flow. They (USFS) aren't doing stewardship.
- We are absolutely against the state and Forest Service allowing people to go up into lakes. We are absolutely against that. Spawning beds are sacred areas there have to be places where the animals have safety. You don't go into those areas because you want to have fish for the future.
- We never fished past the old train trestle because they are already starting to pair up at Nine Mile (bridge) they are paired up. Then they are being disturbed.

These longstanding concerns by Tlingit leaders deserve attention. Encouraging the Forest Service to reconvene Situk partner agencies and renew the Situk co-management agreement would help incorporate tribal perspectives and proposals in overseeing Situk river use and care. It would also go a long way toward establishing trust and enabling the sharing of useful information.

Trespass

Visitors frequently intrude on Native allotments, as well as on culturally important old villages and gravesites, greatly distressing elders, private landowners and tribal leaders interviewed. "That land we have out there, sport fishermen walk right through it. They don't care; they go ahead and do it. Our people never bothered somebody else's land like that, not like these people do," one elder said. Suggested remedies included agency flyers with maps depicting private property placed at car rental locations as well as being widely posted, better

signage and barriers. One participant pointed out that Forest Service rangers have a memorandum of understanding with the owners of a least one Native allotment, granting them access to control trespass and encourage respectful visitor fish handling and etiquette; that arrangement, he said, could potentially extend to other allotment owners. Interviewers raised the idea of reviving the tribe's proposal to place a tribal river ranger on the river to serve as a cultural and community interpretive presence. The response was mixed among the tribal members and Native allotment owners who were asked. While some thought it was a good idea, in concept, others felt it might contribute to exacerbating perceived differences rather than increasing understanding and cooperative use.

Communication and Mistrust

Interviews indicated a lack of communication between the Alaska Department of Fish and Game and the community. There is a strong sense of mistrust. Several interviewees suggested the office could provide more current, written information about sport fish data that are being collected, including the number of people fishing and the amount of fish being taken. "It would be useful if locals could understand what's happening with sport fish management," said one lifelong resident with connections to both the set net and sport fisheries. There is a feeling by some, including community and clan leaders, that sport fishing use, research and management are given priority over other uses due to a power and funding imbalance. Use should be managed, several said, to give priority to subsistence, commercial and recreational fishing in that order. Lack of confidence in weir-based data collection, a longstanding concern by set net fishermen, was also mentioned. Some commercial fishing interests interviewed would like to see more presence by fish managers at the river in the future during the commercial fishing season.

Trails and Other Issues of Concern

The need for more coordination on trail sites was raised in several interviews. One trail, it was suggested by a Native allotment owner, unintentionally directs users onto his family's land raising concerns about trespass. Another trail increases accessibility to sensitive upriver Situk River spawning areas, according to an agency employee. Other issues of concern raised during interviews included steelhead spawning bed damage by campers and drift boats (and need for responsible use signs), poor fish handling, the use of barbed hooks, steelhead impact on Chinook populations, motorized boats, visitor crowding and the need for more information about Tlingit cultural heritage.

Cooperative Management Effort Needs Revitalizing

Back in 2002, the Situk Partners agreed to a *Cooperative Management Framework* for the Situk River watershed. The framework called for an annual action plan to prioritize management and research. Unfortunately, the partners have not met in quite a few years. In the meantime Yakutat's concern about sport fishing has not gone away. A reconvened Situk partners group, would go a long way toward coordinating efforts to address many of the issues identified in interviews, including trail coordination and trespass on adjacent Native allotments. A renewed cooperative management agreement could also include a research action plan that might target long-standing items of concern reflected in interviews; including upriver and lake spawning ground disturbance and maintenance. Importantly, a reactivated Situk partners group could revive their education plan and, as they did previously, integrate community volunteer efforts such as this one.



Eli Hanlon III

Discussion of Selected Findings

Visitors continue to hold misconceptions about the Situk-Ahrnklin commercial and subsistence set net fisheries. This participatory research project seeks community-based answers to the following questions: Have the signs and handouts been useful, should they be updated or replaced? Are the messages about the set net fishery still relevant? Is visitor education still worthwhile? If so, what are the core messages and how should they be delivered? Interviews suggested that local residents find both the signs and handout useful and support retaining the signs and re-distributing the handouts. They also indicated support for additional visitor education efforts, with a multimedia approach that includes subsistence fishing. Interviews identified several other issues of concern for community review and decision making.

For potential messaging purposes, interviewees who regularly interact with visitors were asked whether they think visitor characteristics or opinions about set net fishing have changed since 2003, the year a major study was completed. These findings are discussed. In addition messages and delivery methods identified in interviews are compared with published research on the effectiveness of various interpretive strategies. Potential challenges indentified in interviews and unexpected findings are presented first.

A Few Challenges and Unexpected Findings

Subsistence. Agreeing on an approach for educating visitors about subsistence will be challenging. Legal definitions aside, ¹⁸ the concept and practice of subsistence appear to mean different things to different segments of Yakutat's increasingly diverse community. For some non-Tlingit residents, subsistence fishing with friends and family provides fish for personal use.

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¹⁸ Under state law any Alaskan resident may subsistence fish in Yakutat 6:00 am Friday through 6:00 pm Saturday. There is no provision for personal use or tribal fisheries.

For others, both Tlingit and non-Tlingit, Situk-Ahrnklin caught salmon is a critical food source relied on throughout the year. For the Tlingit community, subsistence provides a crucial cultural foundation. It is who they are, spiritually and culturally, according to elders and leaders interviewed. Therefore, a practical message focused on subsistence nets being used for food and income, or explaining that commercial fishing occurs at the beginning of the week and subsistence fishing on weekends, may not satisfy tribal partners who emphasize the need to convey the cultural aspect of subsistence. Given these different perspectives, it will take trust and patient collaboration to arrive at mutually agreed talking points to use in any visitor educational materials. Fortunately, a multi-platform approach will provide an opportunity for partners to speak in their own voices, delivering a primary message yet to be agreed on. As one tribal leader said, "If you are going to talk about subsistence – you need people speaking from the heart – the words can be written for people who like to read but for other people – auditory – it would mean something to them."

Perception shift. Another challenge is that visitors are more likely to be concerned that the nets are reducing their catch, than believe they actually block the river (although some guides, river rangers and others still encounter sport fishermen who think this is the case). This may indicate a shift in perception requiring a new primary message. Until embarking on this project, I also assumed commercial openings affected the sport fish catch for a least two days a week. Surprisingly, this is not the case in recent years, at least for sockeye. During a poor coho run, however, nets may have some effect, although two long-time Situk River guides said it was not considerable. Explaining opening and closing days, sharing Fish and Game escapement numbers, promoting realistic catch expectations and stressing the importance of the fisheries for

local food and income are promising message approaches that need to be refined and prioritized at the working group and community partner level.

Permit ownership. As someone who has long been concerned about the sale and migration of permits out of small, mostly Native, coastal Alaskan communities (as well as being a supporter of a subsistence priority for Alaska Natives), I feel it is especially important that this project's messages address the misconception that Situk-Ahrnklin net fisheries are Native-only fisheries. Numerous participants suggested clarifying that commercial permits are available to Natives and non-Natives on the open market, and that any Alaska resident can subsistence fish. Importantly, however, for many community members, salmon permits are more than just assets to be bought and sold. They are also cultural possessions that help maintain access to traditional fisheries and enable the transfer of indigenous knowledge. Therefore, it is important that any approach dispelling the misconception gains consensus among community partners, include the tribe with the guidance of clan leaders. Fortunately, there may be less reason for concern about permits migrating out of Yakutat. In recent years an increasing number of younger tribal members, as well as non-Tlingit residents, are obtaining permits through family transfers and purchase. So far, the majority of Situk River fishermen, Native and non-Native, are Yakutat residents and part of a cohesive community who fish together, look out for one another and share a fish camp way of life. Visual images may be one effective method to inform visitors about who fishes the set net fisheries.

The evolving make up of Situk-Ahrnklin set net fisheries may partially reflect Yakutat's changing relationship to the Situk River, as described in the 2006 resident study. That study suggested an "overlap in perspectives and assimilation between ... Tlingit and non-Tlingit culture," possibly representing "an adaption of the cultural core of the community." Non-Tlingit

residents may be absorbing Tlingit resident values, and Tlingit community members may be incorporating western values of their non-Tlingit neighbors, according to study authors. Christiansen and Watson. This, they suggest, is creating its own set of "ecological norms for interacting with the environment," one that is unique to Yakutat (2006, pp. 81, 27-28). Reviewing this study, analyzing interviews and comparing both with personal observations and experience suggests that while the face of the commercial set net fishery is changing, it continues to retain and maintain its long standing and vital cultural and economic role in the community. This is a message visitors need to hear.

Gill net bans. Surprisingly, the movement to ban gill nets was barely discussed during interviews even though a statewide initiative by sport fishing interests to ban set nets in Cook Inlet and other urban defined areas was before the state Supreme Court at the time. At the advice of my co-researcher, we did not raise the topic ourselves. There could be several reasons the issue did not come up, including a desire to avoid unnecessary tension in a small, increasingly diverse community. This reflects a similar finding in the 2006 study, which determined that residents were tolerant of differences and reluctant to speak of conflict between community members (Christensen and Watson, pp. 24-25). There may also be a feeling that set net restrictions are not a direct threat to Yakutat at this time and the community will cross that bridge if and when it needs to.¹⁹

Catch-and-release fishing. Another potentially divisive topic rarely raised in interviews was catch-and-release fishing. While some recommend it as a way to reduce fish harvest, others,

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¹⁹ In 2012 and 2013, Yakutat successfully defeated several proposals before the Alaska Board of Fisheries, advanced by non-local sport fishing interests, to restrict set netting on the Tsiu River, a remote coho salmon producing river in the borough. See 2012 KCAW story: http://www.kcaw.org/2012/03/07/fish-board-rejects-tsiu-river-allocation-plan/ and 2013 Alaska Board of Fisheries Actions: file:///Users/username/Desktop/statewide-soa-final.pdf

mainly older traditional Tlingit leaders, find catch-and-release fishing deeply offensive and harmful to the fish. Interestingly, several younger tribal leaders interviewed support the practice, although no one suggested it should be a key message in a community-driven communications strategy. This is likely in deference to Tlingit elders and leaders who remain highly opposed to it. One longtime guide mentioned the topic is off limits in his home. Upon closer review, the 2006 resident study also found strong community agreement involving both Tlingit and non-Tlingit residents for catch-and-release fishing as a management tool.

There are at least two younger Tlingit tribal members who serve as assistant guides on the river. One said he requires his clients to keep any "tired" fish. These fish are counted against their daily catch limit, he told us in a brief, but strongly expressed interview. He also requires his clients to use single barbed hooks. He says he cuts off the extra barbs if clients try to use them and recommends multi-barbed hooks not be sold locally. Independent of this project, community partners may wish to pursue his suggestions.

Consumptive use. While this project's priority is to address visitor misconceptions about the set net fisheries, interviews indicate community residents are quite concerned about the quantity of fish sport fishermen are taking out of Yakutat (including halibut and salt water caught fish). Airline agents, assembly members, lodge owners, tribal council members and others interviewed think the amount is excessive. They are concerned that some of it may be going to waste. Quick calculations made by several interviewees suggest that some visitors may be taking out more fish from one trip than their own family depends on all year. This, they implied, is not a conservation issue but one of ethics and respect. At least two participants said it represents greed. Several stated that sport fishermen get caught up in a "catch mode" and harvest more than they really need.

A longtime Situk River guide pointed out that one of the more effective measures curbing this impulse occurred when Fish and Game cut the harvest limit to three fish from six. He said that it quickly resulted in more civility, less tension and a sense of satisfaction that goals had been met. Fishermen were less likely to stay on the river after they had caught their limit, he said. Other suggestions conveyed in interviews included instituting a fish box tax at the airport and encouraging visitors to engage in other activities during their trip in addition to fishing.

These comments reflect the vision and continued desire for more non-consumptive visitor related activities, as identified ten years ago in Yakutat's *Community Action Plan*. The fact that interviewees raised the issue of excessive sport fishing harvests repeatedly and without prompting suggests it is a priority community concern requiring the attention of decision makers. The working group may wish to incorporate an educational component related to this issue in its communication strategy or disburse some of its grant funding to an interested community partner.

Visitors: Who Are They? What Do They Think?

Interviews suggest that visiting salmon sport fishermen are an aging population of repeat visitors, likely much older than the 51.7 average age found in the *Situk 2003 River Recreation Visitor Study* (Christensen, Watson and Whittaker, p. 284). That research showed that while 31% of the visiting sport fishermen had visited six or more times and 28% two to five times, 41% were first time visitors, 92% of whom expected to make a return visit within the next five years (pp. 25, 27). The study predicted strong growth for future recreational use. This did not materialize, according to the interviewees. The 2008 economic recession significantly reduced the number of sport fishermen coming to Yakutat. While both biologists and business people interviewed report that visitor numbers have returned to pre-downturn levels, there is a general

consensus that there is no significant growth in new or younger visitors. Notably, in 2003 over half of the visitors came from the Pacific Northwest where there is a long history of conflicts between sport fishermen and gill net fishermen, tribal and non-tribal. Interviews did not indicate that visitor origins had changed.

At the time the study was conducted, visitors expressed strongly held views in response to open-ended questions that subsistence and commercial set netting were negatively impacting their ability to catch fish, even though most were "generally pleased with their ability to catch targeted fish." Interviews suggest visitor attitudes may have improved since 2003 with a notable number of participants reporting a decrease in visitor negativity and hostility toward set net fishing. If true, this may be due to several factors, including a decline in older Pacific Northwest visitors with anti-net and tribal fishing attitudes derived from the 1974 Boldt decision. It may also be attributable to both natural and management factors separating the two fishing areas along with improved fishing in Washington and Oregon where tribal and gill net fishing also occurs, as one fishing guide suggested. Another possibility is that visitors may be withholding anti-net comments from conversations with local residents. But it is hoped that the persistent, successful efforts by local guides, lodge owners, and other residents to educate their clients and guests are having an effect. This ongoing effort by trusted sources over time may be helping at least some repeat visitors adopt some of Yakutat's social norms, including the relative tolerance residents hold for one another despite differing views.

One particularly successful local ambassador is a set netter and tribal member whose family owns several sport fishing cabins on the Situk River. He encourages his guests to drive down to the commercial fishing area to see if the fish are running and if the set netters are catching. Sometimes he accompanies them and explains, "If they are catching, you will too."

He also uses the lower landing sign and aerial photograph handout to describe the fishery and set netting. Together, he says, this approach has worked to change the attitude of his customers from hostility to one of engagement. While interviews suggest education efforts should focus on new visitors with less hardened attitudes, the movement to ban gill nets and commercial fishing remains strong in Washington and Oregon. It is not going away and likely will continue to influence the way sport fishermen think about set netting when they come to Yakutat. As a result, innovative efforts like the one described above, targeting visitor beliefs by creating new experiences and impressions directly related to the set net fishery in Yakutat, should be part of any communications strategy.

There are two management issues on which visitors and set netters agree (according to recent interviews and the 2003 visitor study): increased enforcement of sport fishing regulations and the selective removal of logjams. These are both issues where Situk partner agency cooperative management would be useful to reduce Situk River conflict and address conservation and access concerns.

Signs and Handouts

One basic question was, "Are the signs being viewed by visitors?" Interviews suggest they are, at least at the lower landing and at the airport. Significantly, the lower landing sign is being used as an interpretive tool by river rangers, Fish and Game and a visitor related business owner to explain both the Situk-Ahrnklin fishery and set netting in general. In addition, surprisingly, a local teacher and tourism committee member said she uses the lower landing sign at the river to teach Yakutat summer school students about the river and the fisheries. In addition, a local Alaska Airlines agent reported that the airport sign sometimes serves as a

positive interaction point for locals and visitors. These interpretive uses of the signs were unanticipated.

Finally, with the exception of the first year at the upper river site, both outdoor signs have never been defaced in the almost ten years they have been up, largely unattended. This too was unexpected, in a town where almost every road sign has bullet holes. It is one possible measure of their perceived usefulness.

Both interviews and a review of published research indicate that the signs likely have too much narrative and include too many messages. In addition, it is now apparent that the attempt to simplify the message by focusing solely on commercial set net fishing failed to capture the intertwined nature of the set net fisheries and the fact that subsistence nets are seen in use when commercial fishing is closed. In addition, the question sign asks, "Do you have questions about the commercial fishing?" Without an eye-catching reference to the word "nets", visitors may not continue reading according to at least one participant interviewed. Still, participants say they are useful and recommend leaving them up while pursuing additional education strategies.

Fish and Game and the Forest Service are still using copies of the handouts and both biologists and front desk personnel attest to their usefulness. The Forest Service front desk assistant reported a decrease in negative comments over time, which she says is partially attributable to increased education, using the handouts, with repeat visitors to the agency. It may suggest that repeat visitors may be becoming more aware that the set net fisheries are widely backed by the community, and are either becoming more tolerant themselves or holding their opinions and concerns in reserve. In any case, interviewees recommend leaving the signs up and reproducing more handouts for newer visitors who may be more open to community messages.

Visitor Education

Notes from one of the last meetings of the Situk Partners in 2006 show the group discussed the importance of education in addressing misperceptions by both visitors and residents following a review of the visitor and resident studies. An examination of public records, including Situk partner group files, along with interviews with several former partner agency representatives indicates study recommendations were never collaboratively addressed by partnership agencies after their meetings were discontinued.

Even though the Situk Partners' education plan was never fully implemented, visitor education by residents continues. In addition, several visitor sector interviewees who had not distributed education material to guests and clients in the past offered to do so in the future. In addition to reproducing the handouts, the working group will be reaching out to interested participants and others to refine messages and produce local tools that people can use to inform visitors. Quotes from participants, used with permission, will contribute to interpretive materials, perhaps in the form of a webpage or an automatic slide show or video. Informing visitors about the conditions they are likely to experience in order to help them manage their expectations and possibly adjust their fishing plans was a recommended management strategy for minimizing conflict in the 2003 visitors study. The working group may wish to consider this approach in developing its communications plan.

Local Education

Community education is also important, interviews suggest, although few concrete recommendations were made. Interviews indicate that local set net fishermen might not be aware how relatively few sockeyes sport fishermen catch. Further exploration by the local

working group, together with community partners, will be needed to determine whether making this type of information more easily available would be useful in dispelling local misconceptions about the sport fishery. In addition, for some culturally oriented traditional Tlingit fishermen and other community members, the practice of catch-and-release fishing is tiring fish out on their spawning grounds, resulting in sub-lethal effects. While studies show that education and information can help bridge differences, different values stemming from differing perspectives and experiences can make both visitor and local education efforts challenging (Vaske, 2007, p. 283).

Comparing What Works²⁰ With Interview Identified Messages and Delivery Strategies

To briefly synthesize what is currently known about effective interpretative strategies, research shows that one or two clear, concise and compelling messages should be strategically timed, widespread and repetitious. To be most effective they should end with a question and be framed to actively engage visitors, encouraging them to think they are part of the situation. Statements are not effective. Messages must provide strong arguments and convincing rationales. Visitors will need time to absorb the information. Studies also show that visitor attitudes can be changed to minimize conflict either directly via signs, brochures, videos, and maps, for example, or indirectly by learning from someone they trust, perhaps a fishing guide or a biologist. Several combined methods are more effective than one. Artistic design makes a difference in visitor receptiveness to interpretive materials. People respond to messages based on their experiences and awareness. Some are influenced by significant others and social norms, others with more awareness respond to what they feel is fair and just. Visitors with more hardened attitudes are difficult to reach. When conflict is a difference in values, education and

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 $^{^{20}\!\}mathrm{A}$ review of published research, including citations, can be found on pages 16 - 26.

information may work. Presented with more information, visitors may shift their definition of the experience to cope with perceived impacts or may even modify their actions. For example, sport fishermen might reduce their catch expectations or fish elsewhere during openings. A combined approach is needed, studies say, to speak to visitors at differing levels of experience and understanding in order to reach them effectively (see Chandool, 1997; Marion and Reid, 2007; MacLennan 2000; Vaske et al., 2007).

Interviews reveal that Yakutat, with or without a communication strategy, is on the right track with messaging and methods to influence visitor attitudes toward more tolerance and less potential conflict. Local guides, business owners and others deliver relatively simple, strong, consistent messages to visitors that the nets do not significantly affect their catch and the set net fisheries are how local people make their living and get their food. At least one business owner currently posts fish and game weir counts on line coupled with commercial set net openings showing that the fishery is not affecting sockeye sport fish catches during commercial openings. Studies show that this is the type of approach that works, especially with more experienced visitors. Messages should provide a "convincing rationale and should try to logically refute common misconceptions" (Marion and Reid, 2007, p. 21). It is most effective if delivered by a trusted source. Exploring additional opportunities delivering this type of information in a timely fashion by trusted sources will be key to its effectiveness.

Situk River Visitor Communication's Strategy: Possible Approaches

Possibilities might include enlisting lodges to post Fish and Game weir counts and providing online links to useful data as was suggested in interviews. Most participants suggested focusing on new visitors whose attitudes and beliefs are not as ingrained as the more experienced

visitors. New people may be more open to the livelihood message which one charter boat says resonates with his new clients. Several guides and business owners, however, say their clients have been "pretty much educated," so it may be worth tailoring messages that speak to their knowledge, i.e. the weir counts.

Drawing on both studies and interviews, a communications strategy for educating Situk River sport fishermen might include a few of the following elements: maintaining the existing signs but moving the upper sign to a lower location closer to the area of perceived conflict; producing a companion subsistence-based sign; reproducing and widely distributing copies of the handouts to guides, lodges and others including Fish and Game technicians and Forest Service river rangers to use on the river; collaborating with agency partners to produce more easily available information, including opening and closure times and catch data, possibly via a widely linked local webpage; working with the lodges to post handouts and discuss the above fact-based information, including weir counts, in guest orientations; installing an existing Patagonia video about the set net fishery on the airport video screen; and producing an audio slide show incorporating subsistence and other messages explained by local people in their own voices for use at the airport, in lodges and online. In addition, information and quotes from trusted sources could be used in other ways, including in an article or opinion piece in the local newspaper, a sign on letter showing the diversity of support for sharing the river, or resolutions and other materials that could be posted on line. Locally produced YouTube interviews could include this information.

The overall goal would be to expose visitors to information and arguments repeatedly and consistently from trusted sources before they come to Yakutat (YouTube, linked websites), as well as the airport (sign and video/slide loop), at the lodge (guest orientation, posted handouts),

in their rental car (maps, handouts), at the river (signs, river rangers, biologists, guides and Fish and Game technicians) and on the road passing the fish-buying truck or at the buying station, where they could judge if the fish were running by the amount commercial fishermen were catching. These are ideas only, based on interview suggestions. Any strategy must be collaboratively devised.

Studies suggest not only should messages end with a question in order to be effective, they should also serve to initiate action and engagement. New experiences can help change beliefs and attitudes. Interviews reveal several creative possibilities. The most intriguing one is the fish tote recognition activity (described previously) that one business owner has initiated with his customers. To answer the question of how fishing is at the river, he urges visitors to look for the fish-buying truck to see how many totes are on the flat bed. He says his customers enjoy doing this and it has helped them better understand that commercial fishermen have good and bad tides too. He tells them that if the commercial fishermen are catching, they will too. He also encourages them to go down to the estuary and sees how the fishery operates and whether "the commercial guys" are catching. This type of engagement is similar to a suggestion by a charter boat operator who thinks there needs to be more interaction between the two groups to facilitate understanding, and for sport fishermen to see for themselves that the nets are not blocking the river. He recommended, however, that visitors be encouraged to go while people were subsistence fishing when they may be more relaxed and less bothered by being approached. Another suggestion is to involve using the state's one-week commercial fishing license to take interested visitors out fishing. Depending on the arrangement with the permit holder, this could provide both interaction and financial opportunities.

These types of well-intentioned proposals must be thoroughly thought out. A great deal of community effort has been expended in keeping the two groups apart in order to reduce interpersonal conflict at the river. Increasing personal engagement, if approached incorrectly, has the potential to erode this success, given the differing social values between the two groups. This is especially true for the idea of taking visitors out commercial fishing. In addition, by commodifying both community and culture, this potentially intrusive activity could disrupt one of the things Yakutat values most: its Situk fish camp way of life.

An alternative approach might be to encourage visitors to buy fish directly from fishermen with catcher-seller permits. One long-time guide says it "creates a relationship right there." This has the potential to increase positive, mutually beneficial interactions, enabling visitors to see how set netting works without disrupting the social cohesiveness of the Situk fish camp community. These and other ideas will need to be fully explored and agreed upon before proceeding to actively engage visitors as part of any communications strategy.

Finally, interviews suggest tribal leaders and members are interested in more educational efforts that facilitate deeper visitor understanding of Yakutat's heritage and cultural values. A primary concern here is that visitors should conduct themselves ethically and respectfully when fishing on the Situk River. However, studies show that efforts to educate visitors about cultural heritage should be formulated with care (Carr, 2004, pp. 454-455). Forcing cultural interpretation on unreceptive audiences could potentially trivialize the "importance of cultural values" message that is being conveyed, several studies have found (Carr citing Brown and Pfister, 2004, p. 454). Ultimately, the Yakutat Tlingit Tribe is the appropriate body to carry out this work in order to ensure that cultural heritage is communicated properly and authentically. During interviews, project volunteers raised the possibility of transferring a portion of their grant

funding to the tribe for visitor education purposes, especially in regard to subsistence.

Regardless how the project moves forward collaboratively, it is important to ensure that Tlingit informal and formal leaders shape the message content incorporating cultural heritage and values. It must also be used with permission and, where possible, delivered via media platforms that enable voices to be heard directly.

Conclusion

There are many ways to protect places and practices important to a community, including legislation, regulation and education. The art of storytelling, however, is perhaps the most powerful underlying tool for any chosen pathway. How that story or narrative is shaped and who relates it are equally important, including cultural considerations regarding who has the right to tell it. Following the guidance of a Teikweidi clan leader to "develop community-based talking points so we can talk and state our points of agreement without animosity," community interviews initiated the process of reengaging people in the common purpose of dispelling sport fishermen misconceptions about the set net fishery and moving their sometime hostile mindsets closer to Yakutat's more tolerant and inclusive way of thinking and being. In addition to learning that residents still find the signs and handouts useful, interviews began laying the groundwork for future action and collaboration. An ad hoc working group, in collaboration community partners, will use interview findings, the research review and relevant surveys and documents to formulate a communications strategy around a few agreed on messages. A multimedia approach using local strengths and assets will allow flexibility for community partners to speak in their own voice.

It is hoped that this process will also serve as a catalyst for reactivating the Situk partner group in order to facilitate a more integrated, sustained and institutionalized education plan. This could include a follow-up survey to assess visitor attitudes in order to fine-tune the messages and methods employed by this volunteer project. It is important that any future assessments include seasonal sport fishing residents who, interviews indicate, are becoming an increasingly established new segment of the community. Even though interviews did not directly address the movement to ban gill nets, recent sport fish lobby proposals to restrict set nets in another Yakutat river and elsewhere in Alaska and the Pacific Northwest, suggest an ongoing need to address visitor misconceptions to avoid potential future conflicts on the Situk River. Research reviewed for this project shows that targeted, fact-based information, delivered with compelling rationale by trusted sources, can make a difference in changing attitudes. Creating pathways for visitors to directly engage with the information, such as fish tote observations, could have a positive impact.

One area that that needs more investigation is the relatively new field of "digital heritage technology," involving collaboration among communities, scholars and technologists. While little is known about the effectiveness of digital technology in changing visitor attitudes to minimize value-based resource conflict, it is being used more and more at the community level to inform and engage visitors about cultural heritage. Indigenous communities, for example, are increasingly using smart phones and other digital technologies to perpetuate and share their culture on their own terms. Because some applications and content can be downloaded prior to visiting remote locations, fast Internet and cell phone data service is not always required. This is an important consideration and possible opportunity for Yakutat.

Finally, interviews suggested that a number of use and conservation issues the Situk partner group historically grappled with have not gone away since they last met. In some cases problems have worsened, including unenforced catch limits, trespassing on cultural sites and Native allotments, and habitat degradation. Reconvening the partner agencies and reviving a cooperative management agreement would go a long way toward reducing conflict, protecting the river and rebuilding trust among community members and government agencies. By providing a forum for information sharing and participatory problem solving, it could also help reduce local disagreements and reinforce shared community values. It is my hope that the more visitors become aware of Yakutat residents' respect for one another and their shared relationship with the river, the more tolerant they may also become.



Situk-Ahrnklin Set Net and Skiff
Under Mt. Saint Elias

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Situk Sign: Alaska Airlines Terminal

Appendix A

Interview Questions Guide²¹

Charter boat operators/guides/lodge owners/private campground owners/local businesses that interact with visitors

- 1. Who are the visitors today? Are they different than in 2003? Where do they come from? What is the average age? What are their specific concerns and/or misconceptions?
- 2. Have you seen the informational signs at Nine-Mile Bridge, the lower landing or at the airport?
- 3. Have you received any feedback from sport fishing visitors? Do they view the signs? If so which site is most viewed? Least viewed? Are there better locations? What features of the signs do you think visitors find helpful or favorable, if any?
- 4. Is the content of the sign accurate and/or relevant? What changes would you make?
- 5. Are you familiar with the handout? If so did/do you use it and is it helpful? Did it have any effect in helping visitors understand the fishery? Did it make a difference in their attitudes? Would you use an updated version? If so what changes would you make?
- 6. Should the project be continued? Do you think educating the sport-fishing visitor about the Situk River is important? If so what changes would you make? Are there other interpretive/message delivery methods you think might be more effective?
- 7. What are your other thoughts and suggestions?

Governance Personnel: Alaska Department of Fish & Game, U.S. Forest Service, Yakutat Tlingit Tribe and City and Borough of Yakutat (project partners)

- 1. Do you think sport-fisher demographics, attitudes or use have changed in the last 10 years since the Forest Service conducted the last comprehensive visitor use study?
- 2. Have you received any feedback from sport fishers regarding the Situk River interpretive signs? If so which site is most viewed? Least viewed? Is there a better location? If not viewed, why not?
- 3. Do you think signs are useful? Do they have any effect in helping visitors understand the fishery? What about photographic handouts? Did you or do you still use them?

²¹Most interviewees fall into more than question category. (For example a person interviewed could have been a tribal member, on the borough assembly, a set netter and someone who rented cabins to sport fishing visitors).

- 4. Is the sign and/or handout content accurate or still relevant? Which features are the most useful or favorable in addressing visitor concerns and improving their understanding? Least useful/favorable?
- 5. Should the project be continued? Do you think educating the sport-fishing visitor about the Situk River set net fishery is important? If so, what changes would you make?
- 6. Are there other interpretive/message delivery methods that may be more effective or creative?
- 7. What are your other thoughts and suggestions?

Set net fishermen - Many of who are also tribal members and clan leaders

- 1. How many years have you fished the Situk River? Has your fishing changed in the last 10 years? Are you fishing differently?
- 2. Have you seen the signs on the Situk and at the airport explaining to visitors the commercial set net fishery and its importance to the community? What about the handouts?
- 3. Is the content accurate? What changes would you make?
- 4. Do you think educating the sport-fishing visitor about the Situk River set net fishery is important? Should the project be continued? If so, what changes would you make?
- 5. If so, are there other message delivery methods and approaches you think might be more effective?
- 6. Do you interact much with the sport-fishing visitor?
- 7. What are your other thoughts and suggestions?

Interested community members including clan leaders and allotment owners not already interviewed under other categories

- 1. How has fishing on the Situk changed over the years?
- 2. Have you seen the signs on the Situk upper and lower landings or at the airport terminal explaining the set net fishery to visitors and its importance to the community? What do you think about them?
- 3. Is the content accurate or relevant? What changes would you make?
- 4. Do you think educating the sport-fishing visitor about the Situk River set net fishery is important?
- 5. Should the signs be replaced as they become outdated? If so what changes would you make?

- 6. Are there other ways to communicate the importance of the set net fishery to Yakutat's way-of-life to visitors who come to fish in Yakutat? Is it even something you think is worth doing?
- 7. What are your other thoughts and suggestions regarding visitors and the set net fishery?

Questions for Sport Fishing Visitors

- 1. When you come to Yakutat, do you fish the Situk River?
- 2. How many seasons have you been coming?
- 3. Have you seen the informational signs at Nine-Mile Bridge, the lower landing or at the airport? Have you seen the handout?
- 4. Was the information on the signs or handout helpful in explaining the fishery to you? Which features, if any, were most useful?
- 5. What are your concerns and thoughts about fishing the Situk River and in the Yakutat area in general?
- 6. What is the best method for you to learn more about the Situk River and its fisheries? What type of information would you like to see and how should it be made available?
- 7. When you are here do you fish other rivers in the area?

Appendix B

Informed Consent Statement

The Situk River Sign Education Project: *Is it Helping? Should it be Continued? If So By What Means?*

IRB# 590365-1

Date Approved November 19, 2014

Description of the Study:

You are being asked for your opinion on whether the blue Situk River set net fishery signs and/or handout help visitors understand the commercial fishery. Visitors frequently state that the "the gillnets are blocking the river." The goal of the signs and handout was to explain the fishery.

The purpose of this discussion is to learn whether the signs and handout should be updated or removed, or if some other effort should be made. You are being asked because of your knowledge about the Situk River and its importance to Yakutat. If you decide to take part in this evaluation there are 7 questions taking about 15 minutes. You don't have to answer every question and you can stop at any time.

Voluntary Nature, Confidentiality, and Risks and Benefits of Being in the Study:

Your decision to take part is voluntary. Your name will not be used in reports, presentations or future publications unless you give your written consent. The risk to you is minimal. There is no direct benefit to you.

However, your opinion is very important. Taking part could help determine if this is an issue the community should continue to address. The Yakutat Salmon Board sponsored the original sign project. The Yakutat Regional Advisory Committee (RAC) funded it.

Contacts and Questions:

If you have questions please feel free to ask now. If you have questions later you may contact Nevette Bowen at 907-518-0989 or nbowen1@alaska.edu.

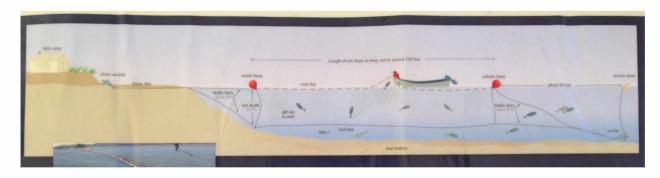
Appendix C Aerial Photograph and Set Net Illustration



http://home.gci.net/~lucasdesign/yakutat/FRONT.JPG

7/5/2007

Situk Sign and Handout Aerial Photograph



Situk-Ahrnklin Inlet Set Net

Appendix D

Photographs of Lower Landing Sign and Handout



Situk Lower Landing



Back Side of Handout

Appendix E

Selected Interview Comments and Suggestions Fall 2015

Representational Messages Currently Conveyed to Sport Fishermen

Guides and charter boat operators

- Nets don't make a difference in your catch. Not every day is a bonus day. The only time it makes a difference is when there is a slump in the run or a bad year.
- Commercial fishing is not efficient you can have good days but you can have a lot of bad ones. Same like sport fishery. Management of river ensures a balance among all
- Commercial fishing is how people survive.
- You can fish 7 days, set net fishermen only fish 3 days a week, unless the run is strong and they get bonus days. They aren't catching for at least 5 days a week.
- Commercial fishing is how people make a living here. It's challenging, they work hard and they have been doing it a long time. They don't catch or make that much.
- One hundred years before sport fishing came along...people (were) commercial fishing down there making a living.
- You can take a lot more fish home if you buy them.
- There are Natives and non-Natives who fish the river. Commercial fishery is open to anyone who buys a Yakutat set net permit.
- Sport fishermen are the third people to show up —they are the third user group. (I explain) importance of subsistence and that they are the latecomers.
- (I explain) subsistence because it is important here. (Tells clients)...if I want fish to eat, I catch them with a net.

Lodge operators, rental car managers, bartenders, waitresses and business owners

- The nets catch a fraction of the fish less than half of fish coming in. This year, same situation, huge weir count but commercial fishing take was terrible. Weir counts show little or no impact from nets being in the water during commercial opening.
- Weir counts don't always go down after opening. There were a couple of weeks (in 2015) where the nets had absolutely no impact. I show them the weir counts where there are 3000-4000 fish going through the weir during commercial openings.
- There is an ebb and flow to a salmon push. During a seven-day period, fish may only make a push during three of them. Commercial fishermen don't know when fish are going to make a push either.
- Look at the number of totes on the back of the fish truck. If you see 20 totes that means there is good fishing. If there are only 5 totes, fishing is poor.
- The Situk is our grocery store. It's how we survive when you guys aren't here in February or March. We don't have a Costco.

- You can fish all the time. Commercial fishermen aren't fishing all the time even when open. (They have a 3-hour window due each tide.)
- We have sustainable runs. It's not being overfished. The resource is not being damaged. It's not allocated inappropriately to one or the other. They increase the bag limits with a big run.
- As long as you don't abuse it and we don't abuse it, it will be there for everybody for generations.
- People only have 4 months to make a living.
- The skiff is their office. Set netting is their income and way of life.

Biologists

- Sometimes weir counts are better than commercial catch.
- Not all nets are Native nets. Commercial fishery is open to everyone.
- I always say commercial guys are supposed to catch fish probably half sometimes...but that doesn't mean there aren't already 10,000 fish in the river. (I spend) time explaining not all nets are Native nets.
- Subsistence open to all in Alaska. (It) is only 2 days a week and only 4-5000 fish are taken. I only get negative complaints when fishing is bad.
- Commercial fishing occurs early in the week, subsistence on the weekend. All Alaskans can subsist.

Subsistence: Suggested Messages and Selected Comments

- It's the whole basis of our culture.
- Add subsistence. Very important to community. Need to understand why nets in water outside of commercial time.
- Our culture is sharing "We absolutely detest that word subsistence. That's a western word. It doesn't even define what we do. It's who we are. It's a spiritual, cultural part of who we are. You give and you share.
- From a graphic standpoint, images are huge. Just need to add a few bullet points to include subsistence.
- Need to emphasize Situk as a source of food. There is only a small window to harvest salmon for food at the river. It occurs the same time of year as sport fishing.
- Information should talk about the percentage of community food that comes from the Situk and (explain) that it is also used for potlatches and other events that it is not just from the store.
- Hard to explain to visitors who see: Same people same boats. Many sport fishermen don't differentiate between the two. If visitors don't like nets, it is not because of one or the other. Anti-net attitude is difficult to change.
- Set nets (subsistence) could block 80% of the river but don't out of respect.
- Subsistence and commercial fishing preceded sport fishing on the Situk River and they are important in that order.

- Imperative to include subsistence. Signs relay info regarding the commercial fishery but we should add subsistence because...making a record. If you don't put it down, it didn't happen and it doesn't happen. So it's really important.
- Sport fishermen don't know about subsistence. Reality shows don't help. People don't understand there is a small window to harvest subsistence fish not year around.

Livelihood: Suggested Messages and Selected Comments

- We live here year around. This is how we make our money to survive and this is how we feed our families as well.
- Set netting is...who we are and what my people have done. It not only connects us to the land...and our surroundings. It helps instill common sense in our children.
- It's their vacation; it's our job.
- Stress buying fish from commercial fishermen.
- Explain about modest average incomes and cost of expenses.
- Add facts about livelihood, way of life.
- Visitors have to realize they are infringing on people who are trying to make a living.
- We all have to live together and without commercial fishing, we wouldn't have a community here it's what keeps this community alive.

Management – Suggested Messages and Selected Comments

- We have sustainable runs. It is not being overfished. The resource is not being damaged.
- Emphasize river is closely monitored and if there is plenty going up river, there are plenty for all user groups.
- Need to communicate rank of importance to Yakutat: subsistence, commercial and sport fishing.
- Explain the state is managing and controlling escapement to ensure enough fish pass up river to ensure good returns. The nets are only in during a small portion of the year.
- Could include more info on fishery and its management. (For example commercial fishery is) open Sunday through Tuesday. This hasn't changed for 30 years and there is an overabundance of escapement.

Government Employees: Suggestions and Selected Comments

- Add more information on regulations, limits and when the nets are in and coming out.
- Include information on fish numbers. Provide information on management goals.
- Situk isn't just a single system it's part of an intertidal fishery. For sockeye anyway it appears you can't stop them with the nets. The efficiency rate never got above 67%. Cohos are a different critter. This year (a mediocre run) nets probably did affect sport fishermen.

• It takes one tide for fish to move to the lower landing from the estuary. They could transit that in an hour depending on the tide and if they mill around.

•

Proper Behavior and Respectful Etiquette: Suggested Messages and Selected Comments

- Education needed about respecting old village sites and gravesites. This is tribal land; we are still stewards even though we no longer hold the deed.
- Respect private land.
- Please have respect for the river and the resource.
- We are glad you came, respect our land like your own. Provide history in a nutshell so they leave with a greater understanding and a piece of our history. Get them situated right away with land use and people. Will build a basis for mutual respect.
- Only harvest what you need.

Appendix F

Potential Message Delivery Strategies Identified in Interviews

(List does not reflect endorsement)

Patagonia video of Situk River set net fishery. Obtain permission to use and link to local Yakutat Chamber of Commerce and business and organization websites. Upload on video player currently in use at airport.

Bob's Blog. Continue to collaborate with Bob Miller at the Situk River Fly Shop on his highly trafficked weblog.

Webpage. Design a stand alone, self-sustaining site that can be linked to other organizations and businesses. Developed content could be used in other materials and venues.

Lodge guest orientation. Provide fact-based materials for employee and guest use. One lodge already conducts a 20-minute orientation for all its new and returning guests.

Situk River guide orientation. Explore interest and viability of conducting a pre-season orientation for new guides and managers.

Maps. Update existing maps with local partners and include agreed upon message.

Airport video player. Upload Patagonia Salmon Source video, possibly with subtitles and/or include a Situk River themed slide show.

Situk River slideshow. Use at airport and upload on web. Gather current and historical photos that highlight community use and cultural practices for Situk River salmon that can also be used for a webpage or other venues.

Social media including Facebook, Instagram, Twitter, WhatsApp and texting. Explore opportunities.

YouTube. Produce a series of smart phone interviews addressing the question: Are the nets in?" along with other topics including, for example, who fishes in the set net fishery, its importance to Yakutat, respecting private lands and traditional sites, and taking only what you need.

A fact sheet of frequently asked questions authored and/or endorsed by a visitor trusted source for use in lodges, the Yakutat Chamber of Commerce, local business and uploaded on partner websites.

Driftwood Dispatch. Include article or opinion piece written by a local guide or business owner that could run throughout the sport fishing season.

Yakutat Chamber of Commerce and Tourism Committee. Continue to collaborate with both groups to incorporate fact-based information and links to their website in their website and other to help visitors understand the Situk set net fishery and its importance to the people of Yakutat.

Weir counts. Link and post more widely during the season including at the river.

Fish truck totes. Educate and encourage visiting sport fishermen to recognize if the fish are running out at the river by the amount of totes they see on the back of the fish truck.

Flyer. Agency or tribe produced map depicting Native allotment and public land boundaries and requesting that visitors respect private land and traditional sites (not included on map). Distribute to local businesses including car rental companies.

Posters. Produce printable version of existing signs or laminated photograph to post in lodges and strategic locations.

Catcher-Seller list. Make available and encourage visitors to round out their catch from local set net fishermen. This potentially creates a positive interaction between residents and visitors and hopefully encourages greater understanding. Several long time local guides currently promote this practice.

Brochure. If produced, include map to enhance use, reduce litter and improve effectiveness. Both local feedback and studies show brochure effectiveness is mixed.

Lodging reading materials. Publish information that can be placed in rooms or common areas for guests to read about local history and culture, including the set net fishery. Information could include, in this case, a brochure, the handout, or a reproduced Driftwood Dispatch article. A small book was also suggested, but was recognized as being costly.

Forest Service river rangers and Alaska Department of Fish and Game technicians.

Provide laminated handout, land use maps and other relevant interpretative materials to agency personnel on the river to help inform visitors about the river and its uses.

Situk logo. Develop a logo for use on T-shirt that can be used – based on "respect the river."

Dude fishing. For interested visitors and willing set netters, state law allows tourists to experience commercial fishing with a one-week fishing license of \$30. This was suggested as one pathway toward increasing interaction and understanding between the two groups. Reality shows, according to several people interviewed, have had a huge impact on outside visitors increasing their interest in and/or experiencing an Alaska lifestyle. (It is uncertain if this suggestion would be considered an opportunity or an intrusion into the Situk fish camp way of life).

Situk River site visit. Encourage visitors to see for themselves how set netting actually works, who fishes it, how long the nets are, how wide the river is and whether fish are running or not.

Airport Welcome. Welcome person, greeter at airport to impart a "welcome, enjoy your stay and protect our land like your own" message to interested visitors. Information could be imparted to "help get them situated and seated right away with a greater understanding of land use and people helping build a basis for mutual respect." One participant suggested it be part of a youth project.

Appendix G

Interview Invite Poster

Have you Read the "Situk Sign"?



Explaining the Situk Set net Fishery to Visitors And its importance to the People of Yakutat

"The set nets are blocking the river" is something we often hear sport-fishing visitors say. User conflicts from the lower 48, including net bans, are making inroads here in Alaska. The purpose of the signs and handout is to:

- Provide, clear, fact-based information to the sport fishing visitor
- Encourage respect
- Foster better relations between visitors and residents.

But have the signs made a difference? Are they useful? Is the content accurate? Should they be replaced or removed as they become outdated? Is visitor education about the Situk River setnet fishery a worthwhile goal? If so, how is it best delivered?

We would like to know your opinion. We are conducting an evaluation to help decide what steps, if any, should be taken. A modest amount of funds are available from the Yakutat Regional Advisory Committee (RAC). The funds are to be used (or not) depending on community feedback. If you decide to take part we would like to interview you. There are seven questions taking about 15 minutes.

Please contact us: Nevette Bowen at 650-7468 [nbowen1@alaska.edu] or Kris Widdows at 784-3261 (kriswid@gmail.com).

Original project partners included: The Yakutat Salmon Board and Yakutat Parks & Recreation (City and Borough of Yakutat), Alaska Department of Fish & Game, Yakutat Tlingit Tribe and the U.S. Forest Service.

*This evaluation is part of Nevette's University of Alaska, Farbanks (UAF) graduate project in rural development. Please feel free to contact her graduate committee members Mike Koskey at 907-474-6992 (mskoskey@alaska.edu) or Judy Ramos at 907-474-1539 (jramos2@alaska.edu). If you have questions or concerns about your rights as a participant you can contact the UAF Office of Research Integrity at 1-866-876-7800 (toll-free outside of the Fairbanks area) or uaf-irb@alaska.edu.

Appendix H

Interview Invite Letter

August 26, 2015

Dear Friends and Neighbors,

A few years ago local residents spearheaded a project to provide fact-based information about the Situk setnet fishery and how important it is to the people of Yakutat. "The setnets are blocking the river" is something we often hear visitors say when they come to Yakutat. The purpose was to provide a simple explanation of the fishery. It answered the following questions: Who fishes it? How is it conducted? How is it managed? What is its role in the community?

Two signs were installed at the upper and lower landings on the Situk River and another at the airport terminal. A photographic handout was also made available to guides, lodges, the Forest Service, and Fish and Game to share with visitors. It was hoped that this information could help dispel myths and foster better relations between visitors and locals.

The message contained in the sign and handout built on earlier efforts. It was produced with the help of a wide cross section of local residents. (Those who helped included guides, clan leaders, business owners, setnet fishermen and agency biologists).

The Yakutat Salmon Board sponsored the project. The Yakutat Regional Advisory Committee (RAC) committee funded it. Other partners were the Alaska Department of Fish and Game, the U.S. Forest Service and the Yakutat Tlingit Tribe. Volunteer coordinators were Kris Widdows and Nevette Bowen.

Since the project was implemented, the river has changed dramatically. The aerial photo in the signs is becoming outdated. At the same the growing movement to ban or restrict setnets has made inroads into Alaska. It is time to decide whether to replace the signs and handout or take them down. Is Situk visitor education still a worthwhile goal? If so how should it be done? What is the core message and how should it be delivered?

We would like to hear your views and ideas. We are conducting a community-based evaluation. Your participation is completely voluntary. Your name will not be used in any reports or findings without your written consent and you can withdraw at any time. Findings will be presented at a community meeting to discuss what next steps, if any, should be taken. A modest amount of funds are available from the RAC board. The funds are to be used or returned depending on findings and community feedback.

The evaluation will be coordinated by Nevette Bowen as part of her Masters Degree program in rural development at the University of Alaska, Fairbanks (UAF). * Project co-leader, Kris Widdows will assist.

Sincerely.

Nevette Bowen 518-0989

nbowen l@alaska.edu

Kris Widdows

784-3261 kriswid@gmail.com

* If you have any questions or concerns about the evaluation you can contact Nevette's UAF Committee members Mike Koskey (907-474-6992 or mskoskey@alaska.edu or Judy Ramos (907-297-2703 or jramos2@alaska.edu). If you have any questions or concerns about your rights as a participant or the evaluation you can contact the University of Alaska Fairbanks Office of Research Integrity at 1-866-876-7800 or email jramos2@alaska.edu.

APPENDIX I

Conservation and Management

State Fisheries Management. The fisheries are managed by the Alaska Department of Fish and Game. Commercial periods vary but usually begin Sunday and end Tuesday or Wednesday unless extended. Anyone who owns a state limited entry permit may participate. Subsistence fishing occurs on the weekend, Friday and Saturday unless extended. Any Alaskan resident may subsistence fish. Both subsistence and commercial fishing occur in the estuary. The sport fishery takes place inside the river. It is open seven days a week. Sport fishermen may keep three sockeyes a day and two cohos unless the limit is increased. King salmon fishing is currently closed due to conservation concerns. The lower Situk River is reserved for senior citizens, effectively separating the sport and set net fisheries to minimize conflict between the two groups. Fish runs are managed to allow enough fish to pass upriver to spawn to ensure future, healthy returns. A fish counting weir is in the lower river during King and sockeye seasons.

Traditional Tlingit Clan Care. Traditionally, the Situk River area and its fish runs were monitored and cared for by the Tekweidi or Brown Bear clan. Conservation was a matter of taking care of distinct places and proscribing proper, respectful use from berry picking to hunting. When non-clan members were granted permission to hunt or fish in an area, for example they might be directed to where to go and how to harvest in ways that insured appropriate and sustainable use. When commercial fishing first began on the Situk River in 1904, over a century ago, Tekweidi clan leaders Situk Jim or Situk Harry, would restrict fishing if they thought there were not enough fish. Situk Harry, elders say, would open and close the river with a white flag. The goal was to allow enough fish to swim upstream to spawn to ensure their return in subsequent seasons. In addition, clan leaders also deployed crews to clear the river and Situk Lake of debris to sustainably improve spawning conditions according to elders interviewed. In the late 1920's, the federal government installed a weir in the river to estimate fish escapement introducing western management practices.

Multiple Agency Jurisdiction. Unlike in the past when the Teikweidi clan leader, together with clan councils, holistically ensured the monitoring and care for the Situk River and all its uses including how to properly interact with both the natural and spiritual world, today multiple agencies control and manage use. The Forest Service, for example, controls land use while Fish and Game primarily regulates fishing, splitting responsibilities between its commercial fisheries and sport fishing divisions. Fish and Game also manages subsistence fishing in the estuary under regulations set by the Board of Fisheries, whereas the Forest Service manages upriver subsistence fishing. At least seven different agencies have overlapping jurisdiction in the Situk Watershed.

Situk Partner Cooperative Management: This fragmented approach along with community concerns about the impact increased sport fishing was having on the river led to a formation of a partnership among local, state and federal agencies in 1999. Spearheaded by local people seeking more agency coordination between state and federal agencies, its goal was to reduce user conflicts and promote conservation. This group, known as the "Situk Partners" includes, among others, the Yakutat Tlingit Tribe, the City and Borough of Yakutat, the Alaska Department of Fish and Game and the U.S. Forest Service. This group has not met in recent years.

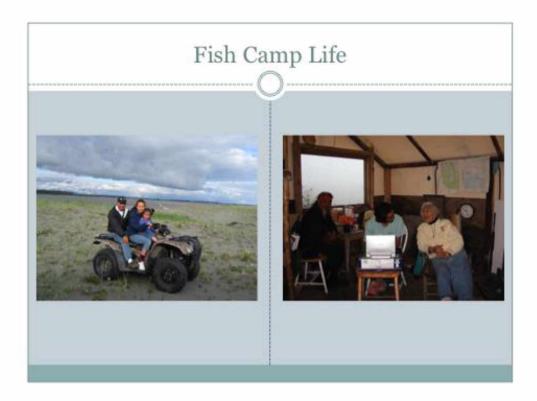
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²² Thornton, T. F. (2008. Pp. 117-177).

²³ Ramos, J. (2004, p. 46) and personal communication with elders.

Appendix J

Photographs of Fish Camp Life and Lower Situk River Sport Fish Area





Appendix K

Photographs of Situk-Ahrnklin Set Net Fishery



Set Net Fishing



Selling Fish

Appendix L

Situk Sign Narrative (2007)

Do You Have About The Questions The Situk Set Net Commercial Fishery?

The Yakutat set net commercial fishery is:

- Managed by the Alaska Department of Fish and Game.
- Open to anyone who possesses a permit.
- These permits are bought and sold on the open market.
- A commercial fishery has taken place on the Situk for over 100 years. Fishing techniques have not changed much. Just like a hook and line fisherman, set net fishermen only fish a portion of the tide.
- Prior to that the Yakutat people have relied on this river for their food year around.
- When the commercial fishery is open that means there are enough fish returning to ensure conservation enough spawning fish, or escapement, to support future runs.
- When commercial set net fishermen are catching that means sport fishermen will too.

Together fishing families and visitors share both the bounty of the Situk—and when necessary –the responsibility of conserving our wild Alaska salmon.

The Situk/Arhnklin/Lost River area is the traditional land of the Teikweidi people (Brown Bear Clan). Today the land is both publically and privately owned. For more information about public access and use contact the U.S. Forest Service.

Please respect private lands in the lower Situk area.

If you have more questions about commercial fishing, ask a commercial fisherman. You may also chose to round out your catch by purchasing fresh salmon from a local fisherman, many of whom have catcher seller permits.

Appendix M

Area Photographs and Maps



Photo Bob Miller

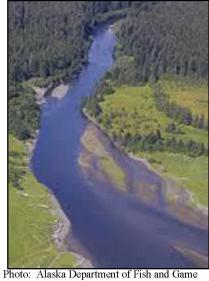
Situk-Ahrnklin Estuary – Set Net Fishing Area



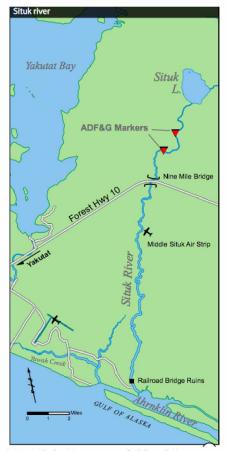
Map: Alaska Department of Fish and Game



Map: Alaska Department of Fish and Game



Situk River - Sport Fishing Area



Map: Alaska Department of Fish and Game