

Albatross Retraced

A stubborn idea

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Discovery Southeast*



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Cover: Western Fisheries Cannery at Lanastaak, inside the nose ring (Dundas Bay). Taken during year-3 of *Albatross* expeditions through Southeast Alaska in 1901.

Albatross Retraced: a stubborn idea

Preface 2019: I've been talking about *Albatross* for almost 10 years. Being more of a talker than a fundraiser, the idea of retracing this historical voyage has remained just that—a pleasant daydream. But *Albatross Retraced* is stubborn. A decade ago, it was rare to meet anyone who'd even heard about *Albatross*, v.1, 1898-1901. Now, friends & acquaintances often bring it up with no prompting. People keep asking about v.2. *When's launch time, already?!*

Albatross was a 234-foot fisheries research steamer who surveyed Lingit Aaní. Under Commander Jefferson Moser, she visited canneries and Tlingit fish camps, mapping and exploring our major salmon watersheds. Emphasis was on **sockeye** that dominated the canned pack, known in those days as **redfish**. Moser's hardy crew amassed a huge collection of stream and estuary photos, sketch-maps, and reports from interviews and ground-truthing.

What lessons emerge from the subsequent century of competitive resource extraction, community destabilization, conservation activism, Tlingit renaissance, and ecological healing? How have we changed since *Albatross*?

I Introduction

About 120 years ago the steamer *Albatross* conducted watershed surveys, interviews and salmon distribution studies throughout Southeast Alaska, primarily aimed at 'redfish.'

Research questions included fisheries harvest trends, declining runs, untapped opportunities, protection, sustainability, and cultural issues. Between 1898 and 1901, the *Albatross* crew visited almost all of the region's existing and abandoned canneries, salteries and hatcheries, collecting a rich dataset on salmon numbers, their habitat and their use by European and Native people. The project totalled more than 6 months in the field over the course of 3 separate summers, penetrating more than 100 watersheds, often to the limit of salmon spawning.

I want to follow in the wake of *Albatross*—to resurvey salmon watersheds,

It's time, obviously, to retrace a strategic subset of Moser's surveys. **Part I, Introduction**, has some background on *Albatross*, and components of an *Albatross Retraced* strategy. **Part II, *Albatross 2019***, is an idea for how it might look in summer, 2019. **Part III** has **Appendices**.

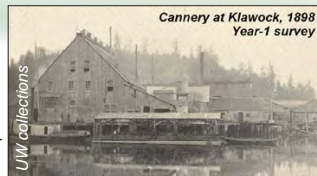
Preface 2023: Well, that last proposal, just pre-covid, of course never fruited. But moving into spring, 2023, some of the stars are aligning, toward at least the tiniest baby-steps in a pilot outing. Clay Good's REAP /SSP group (Renewable Energy Alaska Project/ Sustainable Southeast Partnership) is teaming with SHI (Sealaska Heritage Institute) for a late-March visit to Angoon. I'm adding a few new resources for an updated report to *JuneauNature*:

- High-res historical aerials from Jacob Hoffman scans.
- USS plats of the early stream-mouth preemptions. Almost all cannery & saltery sites were taken from primary Tlingit summer fish camps.

Place names convention

In all my writing since publication of *Haa L'éelk'w Hás Aani Saax'ú: Our grandparents' names on the land* (Thornton & Martin, eds. 2012), I've used Tlingit place names whenever available, followed by their translation in *italic*, and colonial name in parentheses. Euro-names, however regal or preemptive, were afterthoughts.

Example: Kadigooni X'áat', *island with spring water* (Spuhn Island). Where no place name is listed in Thornton & Martin (henceforth T&M12, I default to colonial name.



to characterize more than a century of change, both positive and negative.¹ An *Albatross Retraced* expedition could help to reshape the way Tongass residents and outsiders think about landscape ecology, biogeography, ecological and cultural resilience, and the role of open (non-agenda-driven) *question-asking* in conservation.

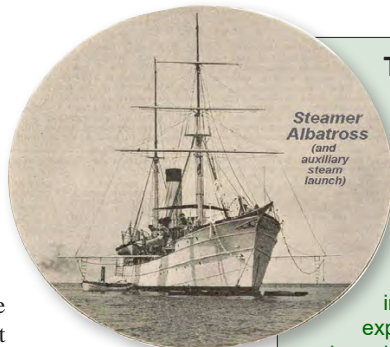
We're still in the early, conceptual stages of the *Albatross Retraced* project, and are eagerly fielding comments and ideas on the scope and potential of the expedition and 'deliverables.' **Part I** of this document has concept-&-background info, pre-field data acquisition, research questions, potential field methods, and thoughts on camps & travel, project objectives, and core mission. **Part II** details possible itinerary for a proposed pilot in July, 2019.

Pre-field preparation

- Assemble all historical documents and images from the *Albatross* project and other early research voyages of the period, such as the Harriman expedition and work by succeeding crews of the US Fish Commission (*eg*: Chamberlain, 1907; Jones, 1914, Cobb, 1915). Fairly low-res scans of glass-plate photographs, apparently taken mostly by Chamberlain and Fasset (Roppel,

¹ John Hudson recently pointed out that the 120-year span of this before-&-after story presents an interesting see-saw of impacts. In the day of *Albatross*, the land was in almost pristine condition, barring a few felled beachside trees and barricaded estuaries. Already, however, rapacious, essentially unregulated industrial-scale fishing had exhausted many salmon runs (Mackovjak, 2013). Today, we have comparatively enlightened fisheries management, but watersheds reeling from a century of logging, mining, stream diversions, invasive species and habitat fragmentation.

As for the selection of *Albatross* as our 'Rosetta stone,' we needn't limit ourselves to data from the Moser expeditions. Other early voyages and photo-missions present opportunities to capture vignettes of change-over-time. *Albatross* will simply be the centerpiece of a substantial collection of early historical documents, photos, maps and aerial imagery that we can access on-site wherever we travel.



The Ground-truthing Project

In 2005, after a decade of documenting Southeast Alaska's finest remaining large-tree forest patches (Landmark Trees Project¹), Bob Christensen and I shifted gears. In the course of Tongass travels, and in conversation with experts and advocates, it became clear to us that eco-economic consequences of past and proposed logging were poorly understood. Biologists most knowledgeable about fish and wildlife impacts—staffs of state and federal regulatory agencies—were retiring and laid off in droves. Conservation professionals lacked time, funding and expertise to visit forests in recovery or at risk. An extensive, field-based investigation of Tongass timberlands was needed.

The result was the Ground-truthing Project, administered and assisted in the first 5 years by Sitka Conservation Society's Kenyon Fields and Scott Harris.² From the beginning, we considered ourselves "*the eyes and ears in the woods for the Southeast conservation community.*" Over time, we added philosophical dimensions to the basic task of scouting the Southeast timberlands. Our driving question: **What are the sensible ways for humans to inhabit the North Pacific rainforest archipelago? What are the trees, fish and soils telling us?**

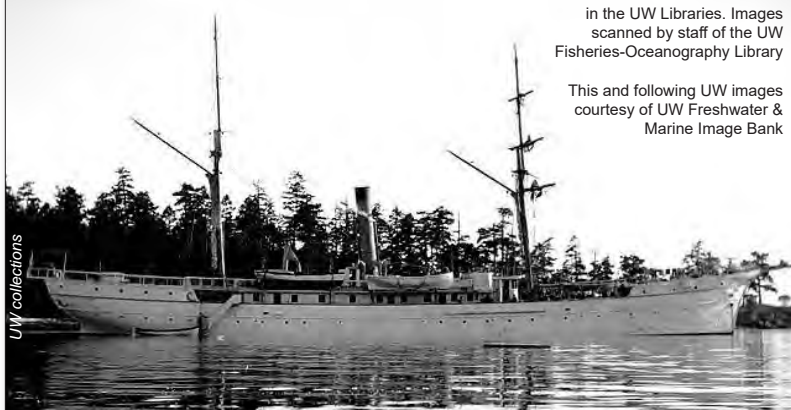
It's easy for an experienced Southeast naturalist—in consultation with biological specialists—to describe bad forestry or fisheries, or to spotlight weaknesses of ill-conceived proposals. More difficult, yet also more interesting, is the flip-side of criticism—to say: okay, so in light of all we've learned about dumb ways to use the Tongass, what are the **smarter** alternatives?

The history of Tongass "resource management" looks in hindsight like 6 generations of capitulation to personal enrichment at public expense. We might better ask how to **manage ourselves**: our needs, our appetites, and our loyalties. Which of our cherished values and behaviors threaten our

¹ <http://www.juneanature.org/tools/landmark-trees/>

² <http://www.juneanature.org/tools/ground-truthing/>

Albatross at anchor in Alaska, John Cobb, nd.



Most materials are located in the UW Libraries. Images scanned by staff of the UW Fisheries-Oceanography Library

This and following UW images courtesy of UW Freshwater & Marine Image Bank

2004, p26) can be viewed and downloaded from the UW digital archives.² Originals are also held by the National Archives, Still Picture Branch, Record Group (RG) 22.1.³ Obviously, although *Albatross* serves as a unifying historical theme for our expedition, we'll also be aware, through organized spatial databases, of all potential repeat photography, stream survey comparisons, etc, in every watershed we visit.

• Conduct GIS prioritization of survey watersheds, including quality of historical information, educational value of comparisons, current ecological importance, and value to nearby communities. Selection should include a

² <http://digitalcollections.lib.washington.edu/cdm/search/searchterm/steamer%20albatross/field/all/mode/all/conn/and/cosuppress/>

³ <https://www.archives.gov/research/guides/still-pictures-guide.html#22> As of 2018, these don't appear to be available digitally. The UW digital downloads are adequate for field orientation, but once we've narrowed down our field site selections, high-res scans should be acquired for publication.

homes and futures? And at the other end, which of our values and practices could guide us comfortably into the 22nd and 23rd centuries?

In that spirit, Bob's recent ground-truthing has been directed toward community resilience, smart jobs, habitat restoration, and a more ecologically literate citizenry, in collaboration with tribal governments, small business, environmental agencies and conservation groups.

Since 2010, my own ground-truthing has been more Áak'w-centric, enlivened by opportunistic and fairly 'random' consulting jobs throughout the Tongass.³ But in summer, 2017, I joined members of the **Last Stands Project** on Tàan, *sea lion*, (Prince of Wales Island). Project leaders Elsa Sebastian and Natalie Dawson **are** the ground-truthers of a new generation (<https://www.laststands.org>).

I thought a lot about *Albatross* during my week at X'aa Séedak'w, *little pass by the point* (Pt Baker) *Hmmmm . . .* Moser's hardy streamwalkers, 120 years ago, could lay claim to being Southeast's first legitimate groundtruthers. There's gotta be a story here. . .

³ 'Random' in the sense that my destinations were not selected for their urgency to conservation. Fortuitously, 2 of them took me to far southern Tàan (POW), my first experiences in forests so dominated by red- and yellow-cedar that spruce & hemlock were minor components.



Map 1

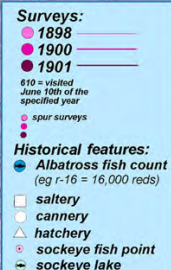
range of heavily impacted and pristine watersheds, as well as those targeted for restoration.

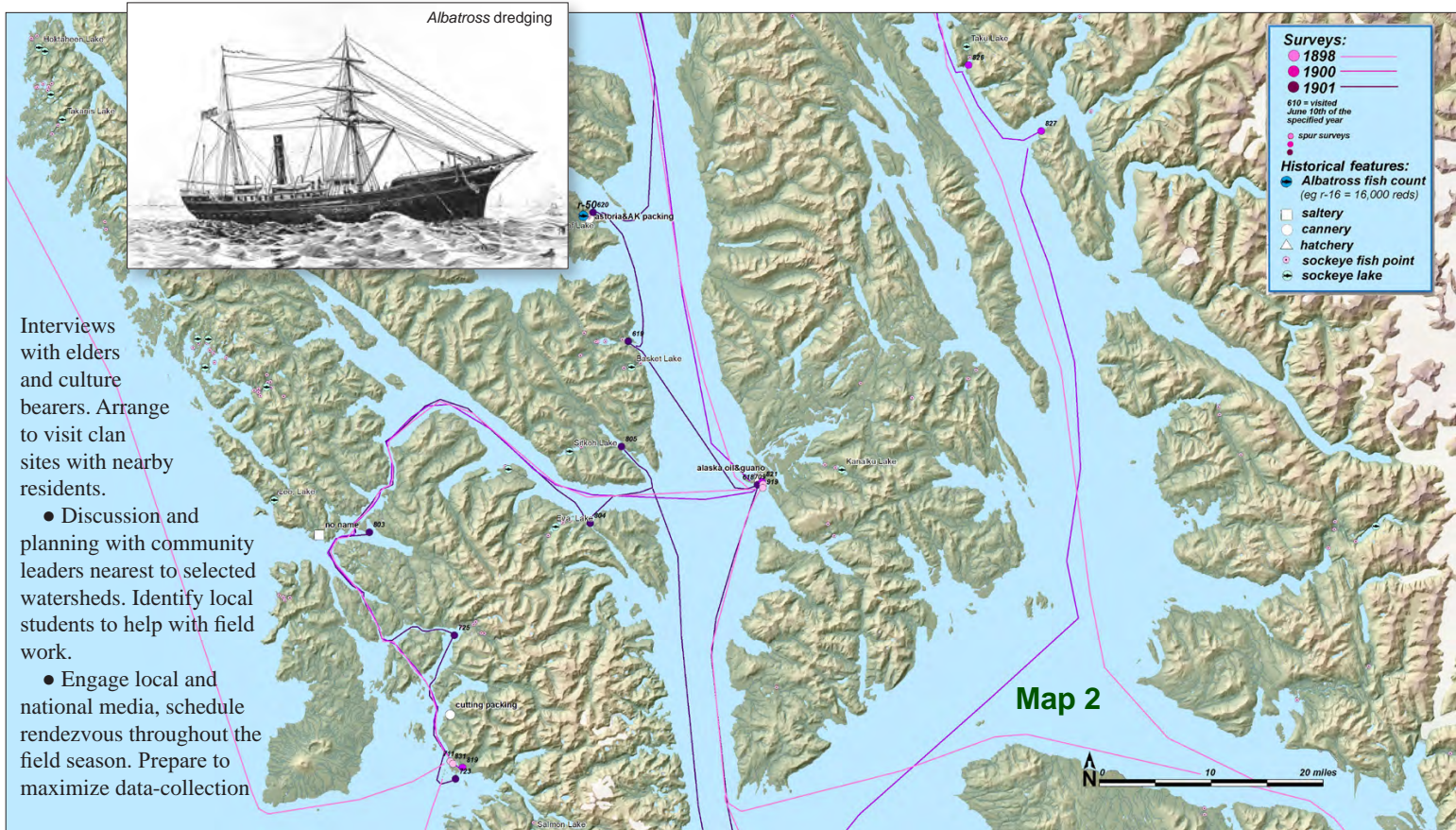
- Create historical overlay sequences and stereopairs for each selected watershed including 1929, 1948 and 1970s (USFS 'resource') aerial photography. Prioritize areas where LiDAR is (or will soon be) available, such as northern and central Tàan (POW; Maps 3 & 4). Prepare to retake Shorezone oblique aerials by drone.⁴

- Research into historical and current distribution of Tlingit *k̄wáans*, clans and houses in priority watersheds. Determine local relationships to *gaat*, *red salmon* and *x̄'áakw*, *freshwater form*, *sockeye* & *coho*, and other fish and game.

⁴ I have the entire Alaska Shorezone collection on portable drive (Examples follow in proposal for 2019 cruise). The retake process involves uploading their flightline and photopoints, to auto-trigger from UAV. I also have the complete collections of verticals for 1929 & 1948.

First of 5 maps exported from my Arc project for *Albatross*, moving from N to S. Color coding distinguishes 3 years of travels and anchorages. Dates expressed in 3 digits. For example, the number 626 below at Bartlett Cove indicates an anchorage on June 26th. Darkest dot/line indicates the last, 1901 field season. Smaller dots are streams visited by steam launches sent out from the mother ship.

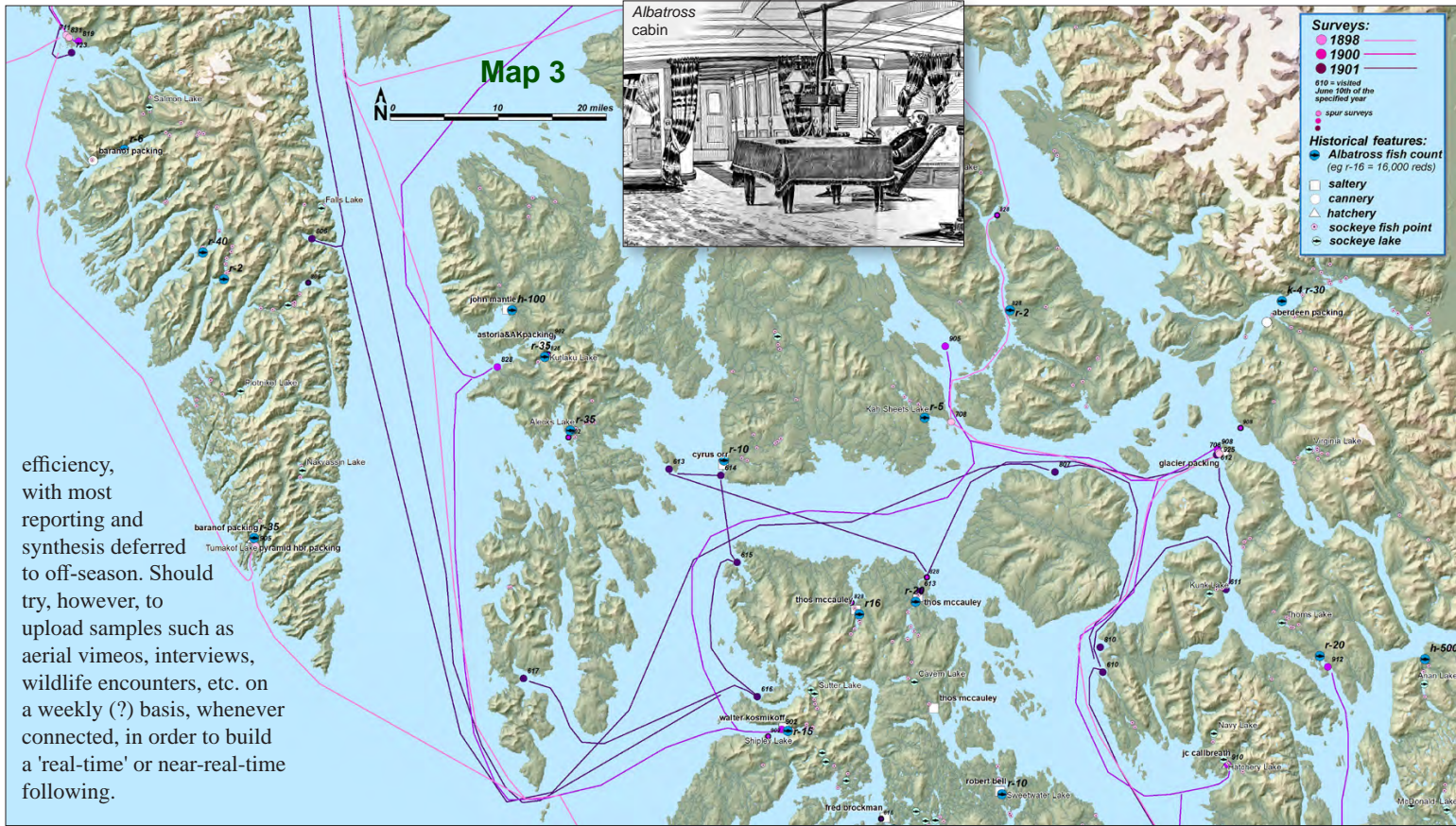




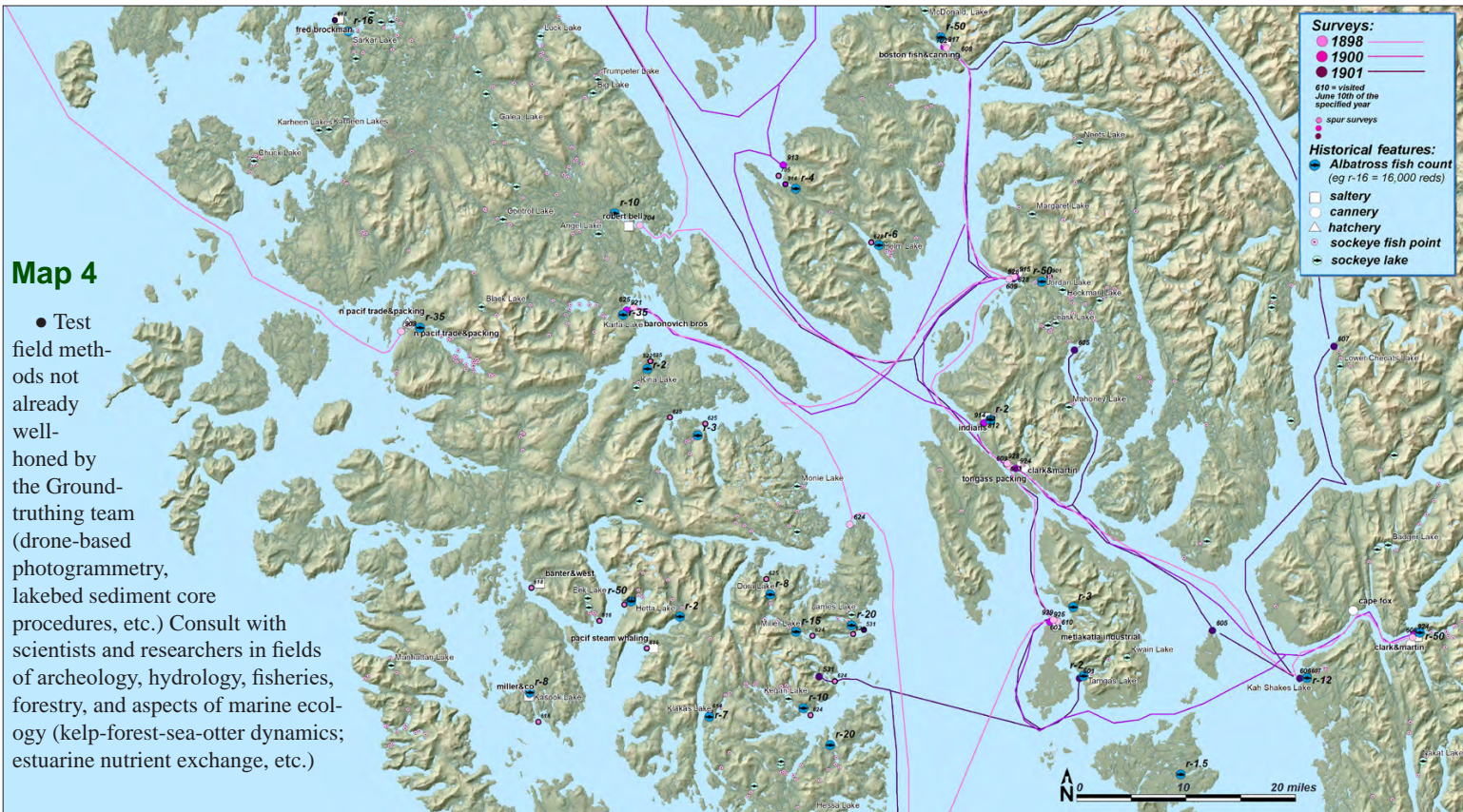
Interviews with elders and culture bearers. Arrange to visit clan sites with nearby residents.

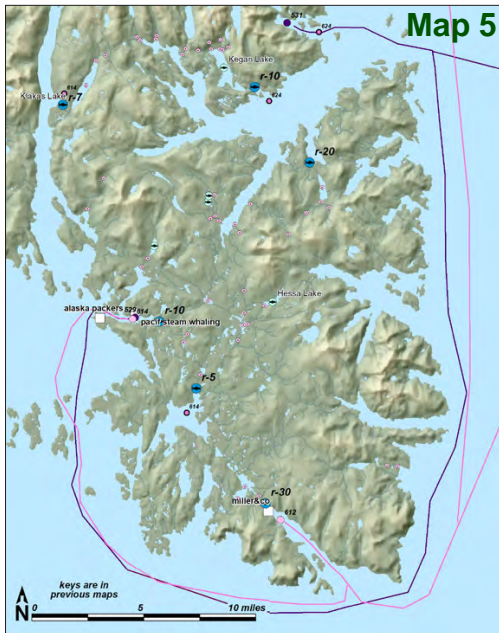
- Discussion and planning with community leaders nearest to selected watersheds. Identify local students to help with field work.

- Engage local and national media, schedule rendezvous throughout the field season. Prepare to maximize data-collection



efficiency, with most reporting and synthesis deferred to off-season. Should try, however, to upload samples such as aerial vimeos, interviews, wildlife encounters, etc. on a weekly (?) basis, whenever connected, in order to build a 'real-time' or near-real-time following.

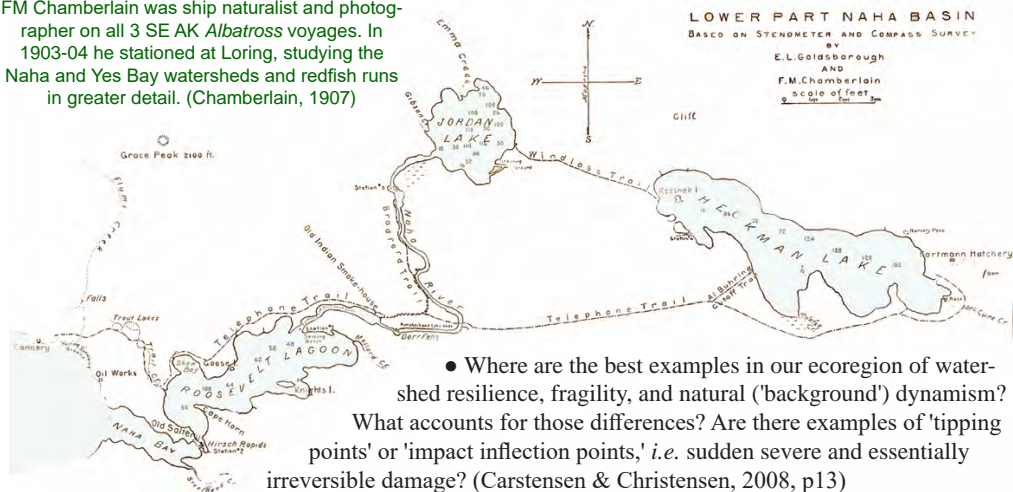




Research questions

- How were selected watersheds used by pre-contact clans, early loggers, fish-packers, homesteaders, etc. How do they serve nearby communities today? What are the legacies of raids, extractions, and inhabitations? Does damage upstream show up in the estuary?

FM Chamberlain was ship naturalist and photographer on all 3 SE AK *Albatross* voyages. In 1903-04 he stationed at Loring, studying the Naha and Yes Bay watersheds and redfish runs in greater detail. (Chamberlain, 1907)



- Where are the best examples in our ecoregion of watershed resilience, fragility, and natural ('background') dynamism? What accounts for those differences? Are there examples of 'tipping points' or 'impact inflection points,' *i.e.* sudden severe and essentially irreversible damage? (Carstensen & Christensen, 2008, p13)
- How has salmon production (all species) changed in response to natural and human influences? Can we carry that story back into deep time? (lakebed coring?) Is fish-access always 'good?'—eg, blasting of barriers to sockeye above Kátlyx, *inside the pot* (Kanalku Bay)? Or might it undermine millennia of selection for genetic 'personalities' that made each population a treasured neighbor, on whom clans and houses founded their crests and identities? And who lived in reaches above those barriers, isolated since the early Holocene?
 - How do watersheds respond to disturbance according to bedrock geology? The distinct mosaic of alluvial and colluvial landforms? Biogeographic (floral-faunal) variations?
 - Which Tongass species are most and least appropriate for long-term human use? How old are the cedars, alders, clams, currants, halibut? How swiftly and reliably do they recover from disturbance? Can we learn the craft of beneficial disturbance?
 - How do communities choose to fail or succeed? (Diamond, 2005) Where are the best and (sorry)

worst examples of community resilience on the Tongass?

Field methods

• Map and document channel habitat, estuaries, riparian and upland forest (reference conditions, impacts from logging, restoration projects). Most of these methods have been developed over many years of stream and timber cruising by the Ground-truthing Project.⁵

• Level-2 stream surveys and rapid-assessment of forests and wetlands; train interns, prospective ground-truthers and community members to conduct these assessments in benchmark salmon watersheds.

• Drone ortho- & stereo photography. Especially for estuaries, to fill in the gaps in linear shorezone mapping. Low-level flights up sockeye streams for stills and video.

• Repeat photography to assess changes to channel habitat, estuaries and riparian forest. Drone retakes for 1929 oblique aerials.

• Sediment cores in sockeye lakes and perhaps estuaries (?) to detect long-term 'natural' change in salmon productivity, and short-term change in relation to logging history and fishing impacts. This will entail training or collaboration with specialists.

Camps & travel

The day of billionaire-funded motherships and even—for now at least—government-subsidized research platforms,

⁵ Ground-truthing reports and narrated slide shows can be downloaded from www.sitkawild.org and www.seawead.org

Albatross & Harriman compared

While only a few Alaskan historians and fisheries biologists have heard of the *Albatross* expeditions, many Americans are familiar with the simultaneous Harriman Expedition of 1899, and its centennial re-enactment, the Harriman Retraced, which followed to great fanfare in the year 2000. In order to judge the potential merits of an *Albatross Retraced* proposal, a few comparisons with the Harriman are in order.

Both the original Harriman Expedition, and its celebrated sequel were staffed by all-star casts of science dignitaries and are probably best characterized as scientific tourism. The original and the sequel each hopped port-to-port over the Archipelago, and neither spent much time ashore except in towns. According to the Harriman Retraced website — www.pbs.org/harriman/1899/1899.html :

“The Harriman Expedition differed from other surveys and expeditions to Alaska in that the scientists and artists on board did not stay very long at any one spot, and there was little chance for in-depth scientific exploration.”

What the Harriman and its sequel lacked

On right is the itinerary for *Albatross*'s first summer in Southeast, represented on previous maps 1 through 5 as the palest pink line & dots. In season-1 alone they logged almost 8 times more days (115) than Harriman, almost all in strenuous exploration of remote Tongass salmon watersheds.

Harriman itinerary, 1899

June 4 - Metlakatla; Duncan's Tsimshian mission
June 5 - Wrangell; boom-town in decline
June 6 - Treadwell Mine, then Skagway
June 7 - White Pass Railroad; gold-rush tourism
June 8-14 - Glacier Bay; ice tourism
June 15-18 - Sitka; Russian history, Tlingit culture
June 19 - Yakutat; bear hunting

Total, 15 days. Except for Glacier Bay, spent mostly at anchor in larger communities. Minimal exploration of Tongass wild lands.

Albatross itinerary, 1898 (year-one)

Mary Island, southeast Alaska	June 6
Boca de Quadra	June 7-8
Ketchikan, Tongass Narrows	June 9-10
Port Chester, Annette Island	June 10-12
Nichols Bay, Prince of Wales Island	June 12-14
Hunter Bay, Prince of Wales Island	June 14-22
NiBLACK Anchorage, Prince of Wales Island	June 22-24
Chasina Anchorage, Prince of Wales Island	June 24-25
Karta Bay, Prince of Wales Island	June 25-28
Kasaan Bay, Prince of Wales Island	June 28
Loring, Naha Bay	June 28-July 2
Yes or McDonald Bay, Cleveland Peninsula ...	July 2-3
Helm Bay, Cleveland Peninsula	July 3
Thorne Bay, Prince of Wales Island	July 3-6
Point Highfield, Wrangell Island	July 6-8
Duncan Canal, southern end	July 8-9
Killisnoo, Kenasnow Island	July 9-11
Sitka, Baranof Island	July 11-15
Yakutat, Yakutat Bay	Aug. 27-30
Sitka, Baranof Island	Aug. 31-Sept. 5
Redfish Bay, Baranof Island	Sept. 5-8
Klawak Inlet, Prince of Wales Island	Sept. 9-18
Killisnoo, Kenasnow Island	Sept. 19-21
Chilkat Village	Sept. 22-25
Point Highfield, Wrangell Island	Sept. 25
Loring, Naha Bay	Sept. 26-28
Ketchikan, Tongass Narrows	Sept. 28
Metlakatla, Annette Island	Sept. 29

is over. Beloved agency vessels are getting mothballed. So what are the leaner-meaner options for today's ground-truthers? Progressing from spartan to pampered:

- **Elsa-style** cross-country trekking, frequently off-trail (<https://www.laststands.org/>). Going so fast and light that even point-&-shoots are replaced by cellphone camera. Different camp every night. Pencil journaling. Boat or truck rendezvous every week or so. For athletes only.

- **Mountain bikes.** Greater range but road-bound. Hard to carry a comfortable camp, so best for ranging daily from a mothership or multi-night shore camp. Potential solution for heavily roaded islands 'unconnected' to ferry-service communities, eg: N. Kuiu; Kosiusko. Easier to carry bikes than ORVs on small support boats.

- **Kayaks.** Can carry more comfortable camps than previous 2 options, but inefficient for a funded ground-truthing effort. Awesome for informal, semi-recreational volunteer expeditions. Kayakers are a key population to target for ground-truther training workshops.

- **4WD vehicle or 4-wheeler.** At this stage you can bring a generator to charge laptops and field devices, and set up wall tents with roomy workspaces. Trucks are expensive to barge to unconnected timber islands like N. Kuiu, so that's where a fleet of 4-wheelers becomes interesting. We've used them there, in Peril Strait and at Kalgáxwk'u Aani, *floating pumice village* (Shelikof Bay, Kruzof Island). Most nearby communities Kake-size or larger will rent 4-wheelers and drop them on the beach for you. Four-wheelers can tow trailers holding almost truck-sized quantities of gear, suitable to month-long

in first-hand observation of nature, they made up for in public outreach—something that was obviously low-priority for *Albatross* ventures that soon slid into obscurity. In contrast, the original Harriman was front-page news throughout the world, and the re-enactment in July, 2000 was avidly followed on a day-to-day basis, thanks to evolving internet technologies.

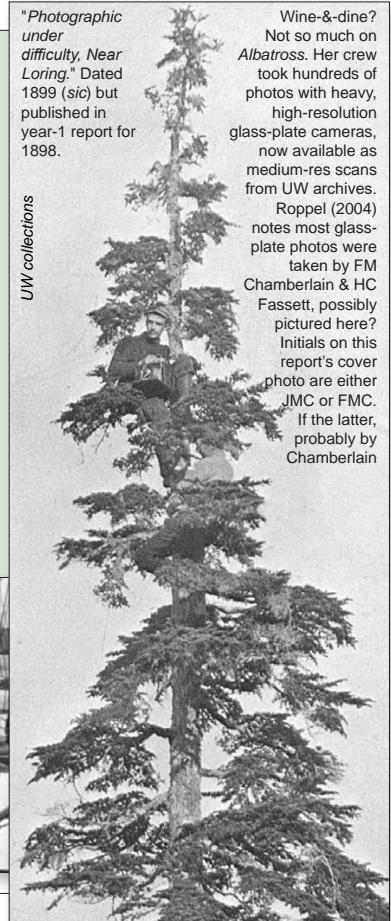
Scientific accomplishments of the original Harriman trip should not be underestimated. While greybeards lectured and pontificated, younger scientists ranged eagerly whenever unleashed, as did the young bird artist Fuertes and photographer Curtis. The Harriman was most notable for major specimen collections—8000 insects alone—still valued for genetic analysis.

In terms of disciplinary scope, Harriman's team was broader than that of the *Albatross* fisheries expedition. But geo-glacio-anthro-botanical expertise is of little avail if experts rarely leave the ship. And a scan of the voluminous *Albatross* journals quickly reveals the holistic approach of Moser and his colleagues. In days before scientific specialization, and



Dutch Harbor. Harriman's celebrities & crew in port, as usual.

UW collections



"Photographic under difficulty, Near Loring." Dated 1899 (sic) but published in year-1 report for 1898.

Wine-&-dine? Not so much on *Albatross*. Her crew took hundreds of photos with heavy, high-resolution glass-plate cameras, now available as medium-res scans from UW archives. Roppel (2004) notes most glass-plate photos were taken by FM Chamberlain & HC Fassett, possibly pictured here? Initials on this report's cover photo are either JMC or FMC. If the latter, probably by Chamberlain

base camps or—less practical—frequently moved camps.

● **Pearl-sized support boat.** For much of the Ground-truthing Project, Bob Christensen and I traveled on his enclosed skiff. *Pearl* is a racehorse—perfect for surveying a dozen timber sites from Teinaageey, *hindward-side bay* (Tenakee Inlet) to southern Tään in only 30 days, as in GT year-one. (Carstensen & Christensen, 2005) Bob has mastered the logistics of high-tech, electrified, storm-proof shore camps. For small, fit parties of 2 to 5 surveyors, this is a low-overhead, easily fundable option. But not the best for hosting media, or connecting with elders. As I move into my own late-60s, I start to admire the next, more pampered option:

● **Mothership, *Albatross-II*.** A multi-berthed sleep-aboard with computer lab and drone-launching deck is a big step up in convenience, burn-out prevention, journalist-appeal, **and price.** Sam Skaggs and I have been dreaming about this since the beginning of Landmark Trees in the mid-1990s, when his 50-foot Robert's ketch *Arcturus* hosted Earthwatch style ecotourism ventures. As we transitioned to support missions for the community of Southeast conservation groups, it became apparent that the region needs a well-funded "Archipelago Keeper" vessel. Boat purchase and maintenance

The bed of the stream is rocky, interspersed with boulders and coarse and fine gravel. The banks are rocky and precipitous and covered with heavy undergrowth. Mountains impinge close on the banks. From the Indian village the general course of the stream is to the southwest, and, with its meanderings, it is about 4 miles to the lake, the distance in a straight line being about 3 miles. It varies from 100 to 300 feet in width. About one-fourth of a mile from the mouth is an Indian shack in ruins, and stored inside were a number of Indian traps and large gratings, which, in some places, are used for barricading streams. Here the river is about 100 feet wide, and the runway in which the traps are used is located at this point. The traps and runway, which are of similar construction to those described under Kegan, appear not to have been used for some time. For 2 miles below the lake outlet the stream runs over solid rock, in falls and rapids a few feet high, with pools below. The highest rapids are at the lake outlet, where the stream drops 12 feet in 150 feet.



Old barrier fences & fish traps, Karta Bay.



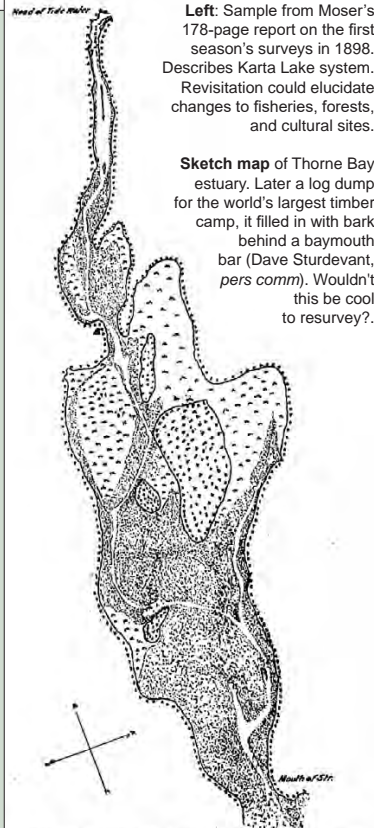
Sketch of Karta Bay Stream.



especially in challenging backcountry, field hands were jacks-of-all-trades. The Moser investigations were far more than fish-tech exercises. From the perspective of what could be learned about Southeast Alaska from comparison with

early **field surveys**, there's no question that *Albatross* holds vastly more promise than Harriman.

While Harriman's well-named vessel the *Elder* wined and dined its way through the Archipelago in 2 mostly-urban



Sketch of stream at head of Thorne Bay, taken at low water. From mouth to head tide water. High-water mark in heavy lines.

Left: Sample from Moser's 178-page report on the first season's surveys in 1898. Describes Karta Lake system. Revisitation could elucidate changes to fisheries, forests, and cultural sites.

Sketch map of Thorne Bay estuary. Later a log dump for the world's largest timber camp, it filled in with bark behind a baymouth bar (Dave Sturdevant, *pers comm*). Wouldn't this be cool to resurvey?.

is a commitment no current Southeast NGO could undertake, so a Keeper vessel would be owned (or seasonally rented?) by some new non-profit or individual dedicated specifically to support of other groups and endeavors. For research it could be a six-pack. For education, larger would be better.

Until we have a Southeast Keeper, projects such as *Albatross Retraced* will grow in baby steps, probably scaling back to one of the first 5 pre-mothership options in year-one, testing the waters for more ambitious surveys to follow.

Objectives

- Explore, document and understand the patterns of natural and anthropogenic change in key Tongass watersheds.
- Identify high priority locations for habitat protection, restoration and research/monitoring.
- Education & outreach (frequently updated website follows *Albatross Retraced*).
- Inform and support existing

weeks, Steamer *Albatross* spent 24 weeks (spread over 3 summers) criss-crossing the maze of waterways. Their range and efficiency were extraordinary. At each listed stop on their itinerary, steam launches branched out to nearby watersheds (smaller dots on preceding maps). Intrepid field hands bushwacked up streams to sock-eye lakes, making detailed sketch maps noting weirs and barrier rapids, climbing trees for photographs, interviewing fish-camp occupants and cannery owners. Wherever possible, they estimated escapement for all species of salmon; not just sockeye.

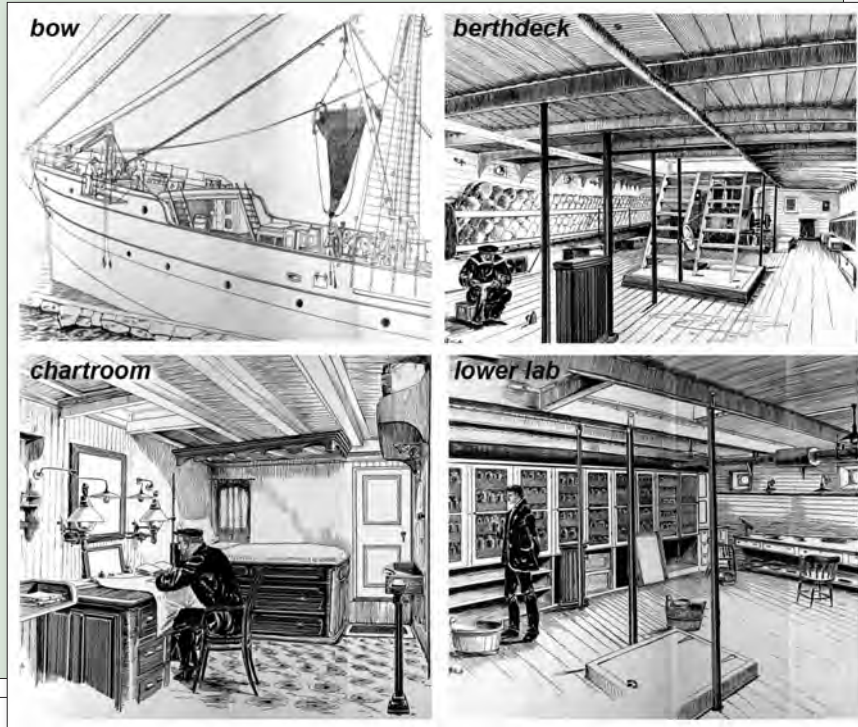
As with the original voyages, *Albatross Retraced* should prioritize wide-ranging, hyper-efficient boots-on-the-ground over fine dining and a celebrity passenger list. But that doesn't mean we're resigned to obscurity. Our definition of success involves the media and engagement with local communities.

Vessel specs

Notes on the ship, paraphrased from: <https://www.nefsc.noaa.gov/history/ships/albatross1/albatross1.html> :

"Albatross was the first vessel

Illustrations from Tanner, 1885. *Albatross* was slightly utilitarian compared to Harriman's *SS George W. Elder*. Refitted for his grizzly-hunting expedition by one of the world's richest 'dudes,' *Elder* boasted lecture rooms, library, a stable for animals, taxidermy studios, and luxury rooms for the team. But *Albatross* was no jalopy. It sure out-classed any ground-truthing mothership I ever hope to sail on.



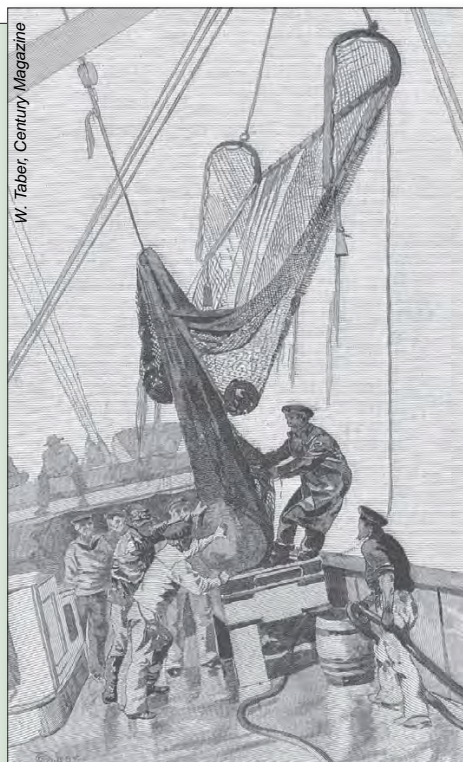


local community stewardship projects such as SAWC, (Southeast Alaska Watershed Coalition) ⁶ The Salmon Project ⁷ and other programs based in Southeast villages such as Kake, Hoonah and the many communities on T̄aan, *sea lion*

⁶ <http://www.alaskawatershedcoalition.org/>

⁷ salmonproject.org

built especially for marine research by any government, and the first outfitted throughout with electric lights. The dynamo generated 51 volts and current for 120 lamps—some used for underwater observation of marine organisms at night and for attracting nocturnal fish and inverts. The vessel was designed for dredging and collection of bottom samples. She had 2 large laboratories for preservation and study of organisms and chemical analyses of water samples. One had a darkroom.

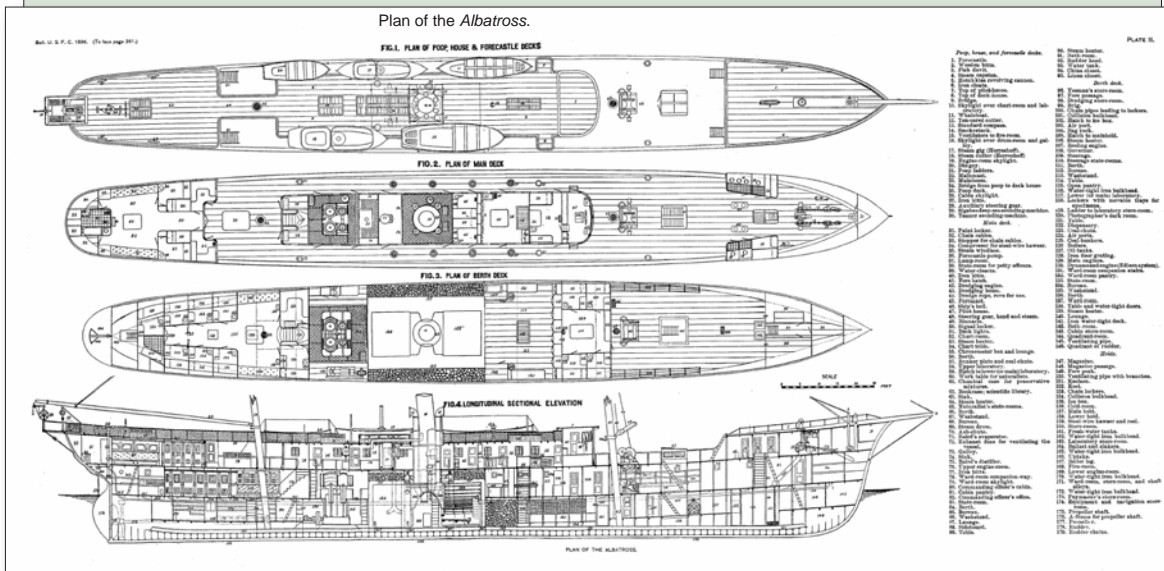


Above left: "Sounding the abyss with piano wire." Working in swells was routine. Meanwhile, seasick Harriman scientists nicknamed SS Elder the "SS Roller." • **Above** "Landing the beam-trawl on deck."

(Prince of Wales Island): KKCFP, HNFP, & TRAYLS. ⁸

● Promote recreation opportunities that alter existing expectations of vacation as escape to 'pristine wilderness.' Get folks out into the hammered gems. (Greenies on 4-wheelers!)

⁸ KKCFP: Keek' Kwaan Community Forest Partnership. <http://sustainablesealaska.net/community-forestry-and-fisheries/> ● HNFP: Hoonah Native Forest Partnership: <http://sustainablesealaska.net/hoonah-native-forest-partnership/> ● TRAYLS: Training Rural Alaskan Youth Students & Leaders: <http://sustainablesealaska.net/trayls-program-creates-job-experience-for-rural-southeast-alaska-youth/>



Albatross carried 5 boats: a Herreshoff Steam Cutter, a steam gig, a seine boat, a whale boat, and a dinghy. The 26-foot cutter seated 8, with 16-horse steam engine, and made 8 knots but also had sails and bunkers for 1000 lbs of coal. The steam gig was 25 feet long, powered with 7.5 horse engine, lighter than the cutter, running at 7 knots with 7 people. A propeller under the bottom at half length prevented racing in heavy seas and made her performance in a sea-way remarkable. The 38-foot mackerel seiner had 8 oars, schooner rigged. The 26-foot whale boat pulled 6 oars, and the dinghy was 18 feet long, pulling 3 pairs of sculls with a split lug sail."



Oh yeah, guess we need a picture of *The Bird*

richard.carstensen@gmail.com



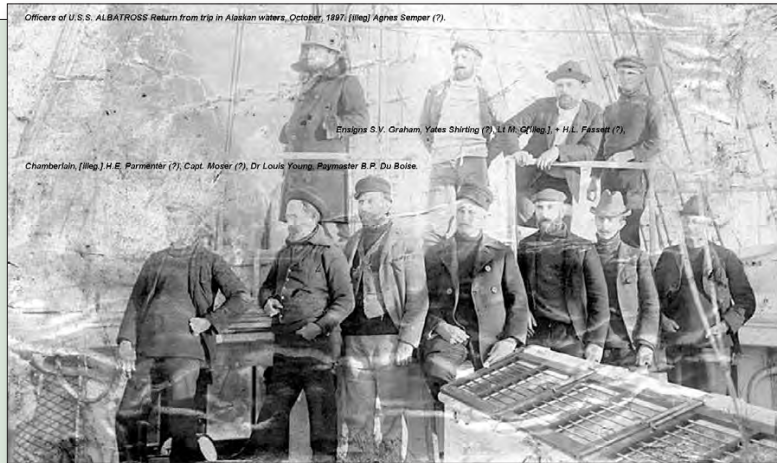
Important white guys

Aside from contrasting goals and accomplishments, another notable difference between steamships *Elder* and *Albatross* was in the personalities aboard. An appeal of the Harriman expedition today and at the time of voyage has been widespread name recognition of several of the passengers. It also doesn't hurt to have a clash of titanic egos, as occurred between John Muir and William Burroughs (Lord, 1999). In contrast, only a few fisheries historians, and perhaps Sitka boaters, would recognise Jefferson Moser. Granted, the *Albatross* commander did score an Important White Guy Name—displacing Katlaax, *covered with mold* (Moser Island)—as well as toponymic commemorations outside the Archipelago.

To promote *Albatross Retraced*, it might help to learn more

about the associated personalities and stories. So far, my reading of Moser's reports—and conversation with South-east historian Jim Mackovjak—indicates an empathy for Native inhabitants atypical of white explorers, homesteaders and entrepreneurs of the day. Considering that gaat, *redfish*, was Moser's research assignment, it's not surprising that many or most of *Albatross's* anchorages were in earshot of fish camps—and some were occupied. In these cases, Moser would receive visiting hit s'aatis, *house masters*, pleading justice for ill-treatment at the hands of Euro invaders:

"These streams . . . for centuries have belonged to certain families or clans settled in the vicinity, and their rights in these streams have never been infringed upon until the advent of the



Officers of U.S.S. ALBATROSS Return from trip in Alaskan waters, October, 1897. (Image) Agnes Semper (?).

Ensigns S.V. Graham, Yates Shirling (?), Lt M. C. Hoop, + H.L. Passett (?).

Chamberlain, (Image) M.E. Parménier (?), Capt. Moser (?), Dr Louie Young, Paymaster B.P. Du Boise.

Above left: Harriman expedition dignitaries at the supposedly abandoned village of Cape Fox, just before looting the Sanya totem poles. To his credit, John Muir refused to participate. But lest we pedestalize him in regard to enlightened cross-culturalism, it helps to read Julie Cruikshank's *Do glaciers listen?* Chapter 5: *Bringing icy regions home: John Muir in Alaska.* (Cruikshank, 2005) • **Above right:** Washed out, but the only photo I can find so far showing officers of the *Albatross*. 1897 voyage. Moser is apparently in center of bottom row, Chamberlain at bottom left. I like it that they're not in uniform.

whites. No Indians would fish in a stream not their own except by invitation, and they can not understand how those of a higher civilization should be—as they regard it—less honorable than their own savage kind. They claim the white man is crowding them from their homes, robbing them of their ancestral rights, taking away their fish by shiploads; that their streams must soon become exhausted; that the Indian will have no supply to maintain himself and family, and that starvation must follow . . . My own sympathy is with the Indian, and I would gladly recommend, if the way were clear, the establishment of ownership in streams; but it is impracticable, and I can only ask for him a consideration of his claim and, whatever law is framed, that a liberal balance be thrown in his favor.”

Meanwhile, the fisheries Moser documented and mostly admired were largely responsible for the problems of the Tlingit. MacKovjak sent me the following quote from Lewis F. Paul, President of the Grand Camp, Alaska Native Brotherhood:

“The manager of the Hoonah Packing Co., when he was remonstrated in that trap fishing would deplete the creeks and destroy his business, pointed to the cannery, said: ‘See that cannery; we have already paid in dividends from 3 to 4 times the value of the cannery.’ He was then asked ‘What will you do when the fish are gone?’ His answer was that they would take away what machinery they could, and they would allow the rest to go to the scrap heap. He was asked ‘What about the native population that must live here?’ and his answer was, ‘That is not any of my worry.’” Paul (1922).

Ultimately, Moser himself—by today’s rear-view-mirror standards anyway—‘went over to the dark side.’ Jim’s book *Alaska Salmon Traps*, (MacKovjak, 2013) tracing the long bitter fight to abolish run-killing fish traps on the road to statehood, details Moser’s ever-growing power as a lobbyist for the fish packers.

I’m not looking for heroes or heroines. The odds of finding one—in any of the beleaguered or beleaguering subcultures brewing in this turn-of-century colonial stewpot—are discouraging. We’ll follow *Albatross* wherever it takes us. In a backhanded way, I think it’s inspiring how so many of us keep hoping and working for the best, in spite of our unrelentingly embarrassing history. Even flawed humans make things of beauty and permanence. Imagine what we could do if we made a study of it.

Albatross and its many sequels and predecessors collectively demonstrate

that Southeast Alaska is not a wilderness. It’s a haunted home. Reading these reports and stories, flipping through the maps and photos, helps us befriend those ghosts, who’d probably want us—if we say the names right—to stay and make something better of this place.



Albatross
upper lab
from
Tanner (1885)



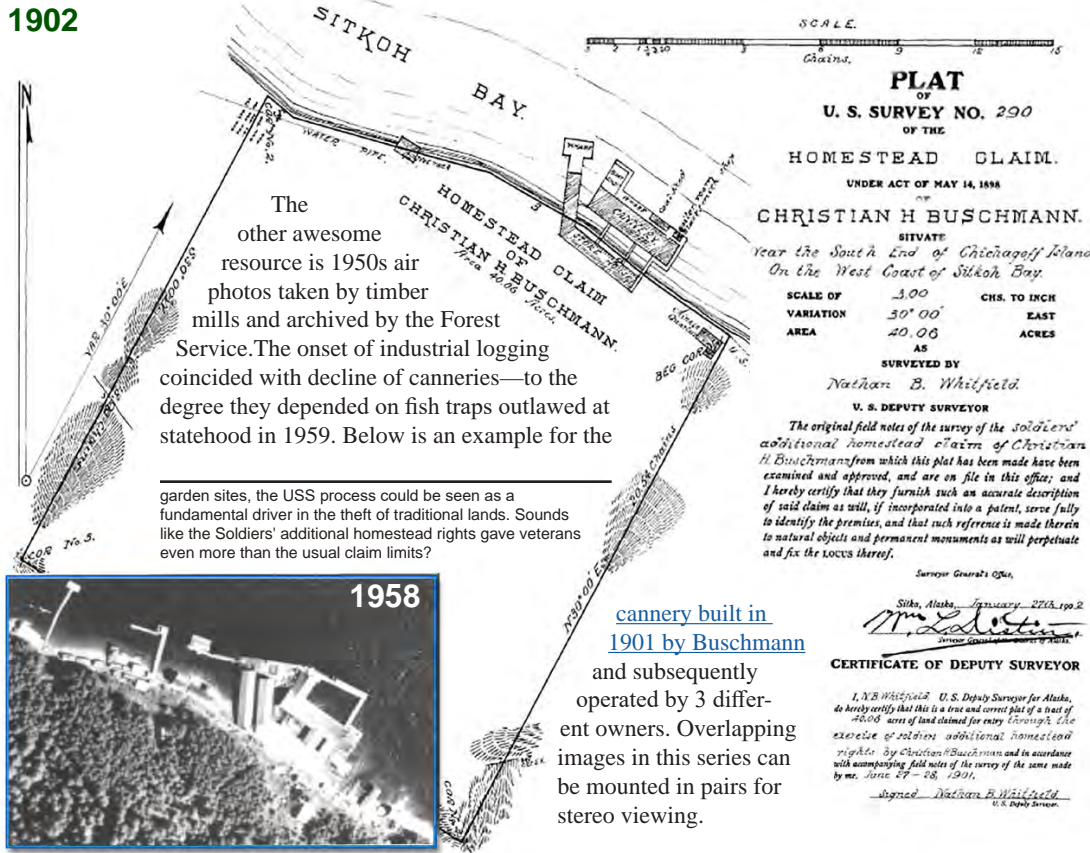
Centerpoints for 3 years of high-res, low elevation unrectified B&W aeriels, flown by ALP (AK Logging & Pulp in earliest days of industrial scale clearcutting. Scanned by Jacob Hoffman, USFS.

USS & the FS aeriels

2023: Updating this paper, I've added some resources for cannery history. United States Survey (USS) plats give cartographic minutiae and associated survey notes detailing geobotanical context. ¹

¹ Text associated with the USS maps is notably lacking in reference to prior Native occupation, and in fact takes pains to officially deny it. Considering that earliest claims like canneries almost invariably displaced Tlingit fish camps and prime

1902



1958

cannery built in 1901 by Buschmann and subsequently operated by 3 different owners. Overlapping images in this series can be mounted in pairs for stereo viewing.

II Albatross 2019: a proposal

20181127 · Today, Steve Merli and I met with Kate Jensen to brainstorm Discovery 're-cert' offerings for teachers on summer break, including an 'experiential' 3-credit course. Matt Potter (Blatchley Middle School principle) has requested something with his Sitka teachers. He's particularly interested in lakes. *Hmmmmmm!*

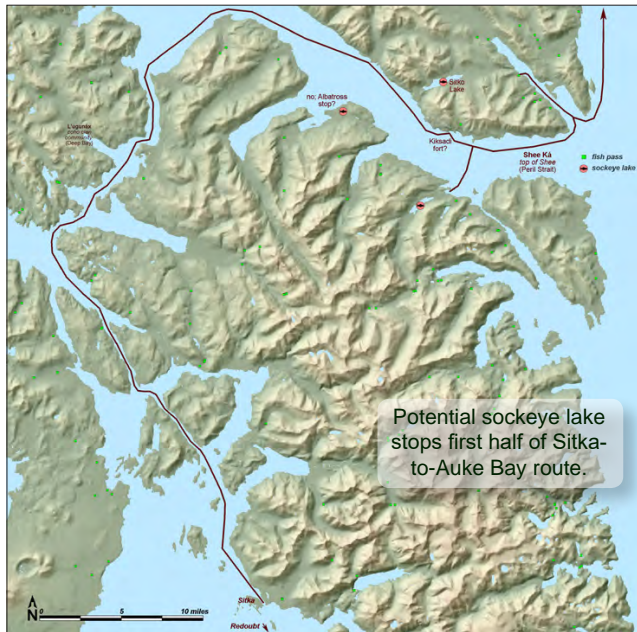
So . . . How about we pilot *Albatross Retraced* with teachers!

Traveling either on a sleep-aboard, *Princeton Hall*-style, or on a pair of fast boats such as Dave Lubin's *Esther G* plus Bob Christensen's *Pearl*, and tenting out each night, we begin in Sheet'ká, *ocean side of Shee* (Sitka) and end at Áak'w, *little lake* (Auke Bay). On the Sitka end we'd connect to the

¹ **2023:** This idea never came to fruition. In summer 2019 our teacher outings focused instead on local Áak'w watersheds. But I'm keeping the Part II trip idea as a great model for future expeditions. As of March, 2023, focus is settling around Angoon, for a number of reasons (SHI middleschool teachers, REAP trainings for students involved in the hydro project scoping, etc. And this of course might incorporate elements of the second half of this proposed Sitka-to-Auke Bay expedition.



Possible first stop: Kunaa Shak.áayi, lake at head of sending-into-cave bay (Redoubt). **Pros:** Sitka's most important sockeye lake; one of Sealaska's 12 focal "cultural landscapes." **Con:** Detour from our Sitka-Auke-Bay route.



Science Center, and experts on local lakes and sockeye. At the Áak’w end, we’d finish on campus, involving biologists from Áak’w hatchery, custodians of a half-century record of sockeye escapement and related environmental parameters. At both ends, we’d invite elders and culture bearers to participate, asking *Why do we live here*, and *How does the land feed us?*

Albatross Retraced for educators would blend science (GIS, forest & estuarine succession, fisheries) TEK (use of these

watersheds by in-habitary vs absentee managers), and media-outreach (drone flights, daily blogs so folks back home can follow the expedition real-time.) Our most-wanted participant would be someone with expertise in taking lake-sediment cores for reconstruction of salmon-timelines. ²

Ḳunaa Shak.áayi (Redoubt)

At the Sitka end, an optional first stop is at Ḳunaa Shak.áayi, slightly off-course but the most important sockeye system for local use, and selected for Sealaska's list of 12 "cultural landscapes" interpreted on their touch table in the Soboleff Center. ³

In his report for the 1898 season, Moser wrote:

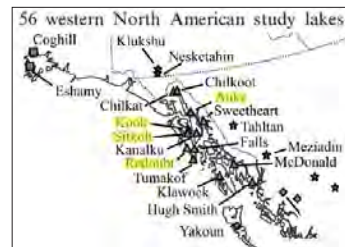
"Baranof Packing Company built a cannery at the Redoubt, about 12 miles below Sitka, in 1889, and operated it that year and in 1890. . . . The Redoubt has a short outlet to a large lake and was a favorite place of the Russians and the principal source of salmon supply for the Sitka colony. It was dammed solidly for years, and from a stream out of which many thousand salmon were formerly taken each year, the catch has dwindled down to about 6,000 . . . [after Redoubt] Baranof Packing Company was then moved to its present location on Redfish Bay, about 58 miles south of Sitka, making the first pack there in 1891."

Moser's summary of the marginal and nomadic strategy of this cannery is revealing of the impact of even smaller fish-packers on Tlingit survival:

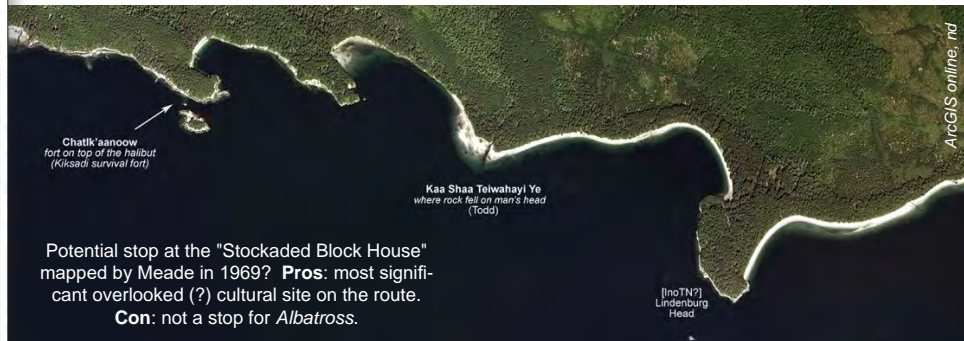
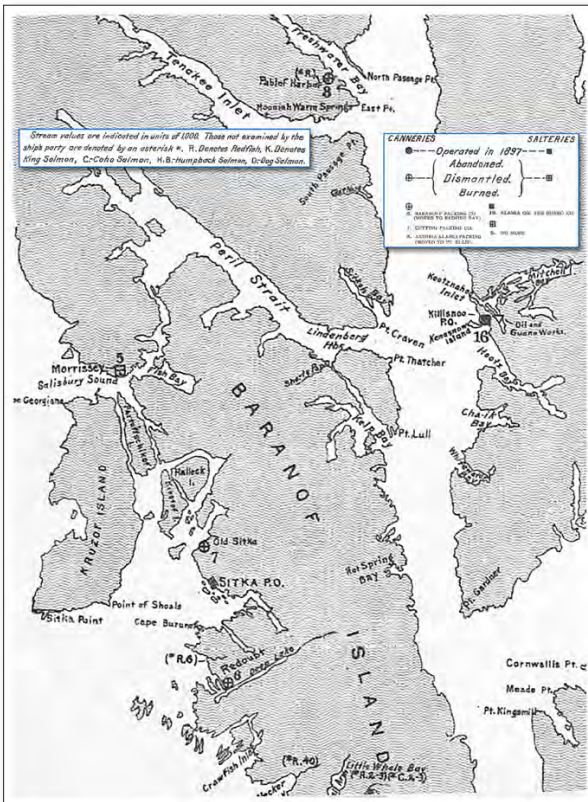
² **Caveat:** Selbie *et al* (2009—map, above right) concluded that in comparison to drier, less heavily forested regions, lakes in SEAK and coastal BC had "[limited potential to yield interpretable paleolimnological salmon reconstructions . . . [because they have] sedimentary $\delta^{15}N$ values indistinguishable from background . . . & sedimentary C:N values indicative of substantial terrestrial OM loading . . . [thereby] diluting salmon-derived nitrogen contributions.

³ I'm in discussion with Chuck Smythe at Sealaska about building their interpretive collection for that display. Retakes of historic images, interviews with local elders, and a drone orbit over the outlet would be useful contributions.

⁴ Cobb (1915, p41), said the Russians took 2,000 barrels smoked in 1868. Since 2003, ADFG's escapement goal for Redoubt has been 7 to 25K spawners. (Geiger *et al*, 2017)



Selbie *et al* meta-analysis includes sediment samples from 4 lakes along our proposed route.



Potential stop at the "Stockaded Block House" mapped by Meade in 1969? **Pros:** most significant overlooked (?) cultural site on the route.
Con: not a stop for Albatross.

Left: By 1898, only one fish processor remained in this portion of the Albatross survey region: the herring saltery at Killisnoo. As for salmon, the other canneries and salteries had burned or shut down, partly due to exhaustion of nearby

[BPC's] "streams are scattered over a territory fished by no other cannery, and range on the outer coast from Cape Omaney to Cross Sound on on both sides of Chatham Strait from Icy Straits to Omaney. It is one of the hardest fishing routes in Alaska. The streams all lie in unsurveyed districts, and as a rule are small and uncertain. A stream that yields 4,000 to 5,000 redfish one year **may not have enough the next to feed a native family.** A stream in Chatham Strait, fished by this cannery, was prospected secretly and independently one year with great success by different parties. The following year they met at the mouth of the stream with big outfits, neither previously knowing the other's intentions, and where there had been thousands of fish the year before, there were not enough to salt a dozen barrels."

L'ugunax̄ (Deep Bay)

Along the Sitka-Juneau route, it'd be hard to pass by L'ugunax̄, *coho clan community*. It's not a sockeye system but was beautifully documented by the Kitka-Thornton collaboration, and gives its name to the L'uknaḡ'ádi clan, now more northern-Tongass in distribution, including many friends in Juneau.

runs. Moser's quote, right, demonstrates that it only took one season for even these relatively small, hit-&-run processors to wipe out a run, or at least ruin its prospects for residential clans and houses.



Mouth of Shee Ká (Peril Strait)

Shee Ká, *top of Shee*, opposite Angoon, is today one of the more difficult places in the Archipelago for a resident to visit. Lots of tourists do stop there on mid-sized cruiseships, especially to see bears at Lake Eva. But it's a long, potentially dangerous run in an open skiff from the closest communities of Tenakee, Angoon or Sitka. Perhaps this isolation is also why the whereabouts of our most legendary "lost fort" remain unresolved. (In my opinion anyway, proposed locations are unconvincing.).

Chatlk'anoow, fort atop halibut

This famous but mysterious Kiks.ádi fort was constructed after their cross-island survival march in 1804. Herbert Hope's chapter in Hope & Thornton (2000) describes his re-enactment of the march, culminating in re-discovery of the fort site, presumably at Point Craven. Although all of the prominent points at the entry to Shee Ká probably served as forts

Detail from RW Meade's maps at mouth of Shee Ká, about 20 years prior to Moser's passage on *Albatross*. Cartography built exponentially in sophistication and accuracy over the interval from 1867 to 1898, and there are amusing inaccuracies, in this uninstrumented sketch map from the deck of *Saginaw*. The grossly exaggerated Uchgu Séet (Shee-to-Catherine portage), for example, is obviously drawn from hearsay. Probably Meade's people never went ashore at Chatlk'anoow, shown **northwest** of Lindenberg. But RW was likely the only vessel commander who mapped it. The fort was inactive for ~60 years before he saw it. Did vegetation subsequently grow up to obscure it from sight of passing ships?

Right Only cliff this side of Shee Ká (Peril Strait) close to 100 ft tall as described by Von Langsdorff, right where Meade mapped the "Block House."



episodically over the centuries and millennia—thus will have cultural artifacts—Craven doesn't match Von Langsdorff's description from a visit in 1805.

In 2014, I transcribed and annotated the journals and maps of Richard Meade, noting that he appears to have **mapped the fort!** My evidence for Meade's "*Stockaded Block House*" being Chatlk'anoow is presented as a sidebar on pages 25 & 26 of the Meade journals, so I won't elaborate here. ^s Note, however, that Point Craven was proclaimed the location of this fort in Hope & Thornton (2000). In the *Cultural Atlas* (T&M12), 2 maps (pages 87 & 113) identify Pt Craven as Chatlk'anoow.

In contrast, the *Atlas's* sidebar *Sit'ku/Sitkoh Bay* on page 111 gives the name Keishfish X'aak'ú, *beach-alder little point*, to Point Craven and shows yet another location for Chatlk'anoow, about 2 miles east of Lindenberg Head, marked on my hillshade, next page:

⁵ The fort has been variably placed at Lindenberg Head, Pt Craven and Pt Hayes, but neither Emmons nor DeLaguna claimed to know definitively where it was. My [compilation from Meade's journals](#) gets us closer.

"The area between Todd and Sitkoh Bay also provided temporary refuge for the Kiks.adi upon their withdrawal from Sitka after battling the Russians there in 1804, and the fort site they built there has recently been identified and commemorated."

It's not clear from this comment which of the 2 alternatives was 'identified and commemorated.' Examining both with high-resolution shorezone obliques, neither has cliffs 100 feet high as described by Von Langsdorff.

The air photo on previous page shows where Meade mapped the "Stockaded Block House," Chatk'aanow, and the Kiks.adi's earlier Shis'gi Noow, green

The cannery at Todd [didn't open until 1918](#), so was not a stop on Albatross itineraries.

tree fort, at Sitka, from which they were expelled, were probably the two sturdiest defensive sites ever constructed by the Tlingit. At Chatk'aanow they prepared for the sort of cannon fire that had driven them from Kaasdahéen, *man's stream* (Indian River). From Von Langsdorff:

"... double palisade of large trunks of trees close together, 12 to 15 feet long and 3 to 4 feet thick. A high natural wall of earth beyond the palisading, on the side towards the sea."

When finally relocated, there will likely be little remaining doubt about Chatk'aanow.

Tinaa Gooní (Sitkoh village)

The old village of Tinaa Gooní, *copper shield spring* is my number-one priority for *Albatross Retraced*. It checks all the boxes: ● *Albatross* stop, ● deep connections for both Angoon and Sitka, ● sacred to the Teik̄weidí, Kiks.ádi, Gaanax.ádi, and Deisheetaan, ● owned by Sealaska (white outline above), one of their 12 "cultural landscapes," on the Soboleff touchtable, for which they seek more documentation and historical material, ● one of only a handful of good sockeye producers near Angoon, ● and well-studied (Thornton *et al* 1990, Burrill 2005, Bednarski 2012).

There are choices in access points for



Sit'kú. A public dock at False Island is where Sitkans put 4-wheelers ashore, accessing the vast Sitkoh road system. I joined USFS and SCS here on several occasions for timber surveys during the Ground Truthing Project. ¹ The northern shore of Shee Ká is referred to as Ocean Boulevard, stripped down to the beach in the 1960s and 70s. Fortunately, that deforestation did *not* include my prospective

¹ [Download report from JeanuNature](#). The False Island side would be our access point, for example, should we attempt to take lake-bottom sediment samples for reconstruction of salmon deep-history.

The Atlas's Sitkoh sidebar

The *Cultural Atlas* devotes page 111 to Sitkoh placenames, dating to collaborations of ADF&G Subversal folks with Lydia George (Thornton, Schroeder & Bosworth, 1990), with support from several agencies and NGOs. Sit'kú has some of the densest recorded toponyms in Lingit Aaní.

One speculation in the sidebar involves the Deisheetaan' name Sit'kú, *glacier area* (Sitkoh Bay), an area not glaciated for millennia. Both Great and Little Ice Ages (LIA) are invoked to explain the name, but in both cases evidence points elsewhere. Drifted LIA bergs from Sit' Eetí Geyí (Glacier Bay) purportedly clogged both Sit'kú and Tsaagwáa, *seal ice flows* (Hood Bay). Glacial historians consider this unlikely; berg drift was westward. Even older Deisheetaan stories reference aan galakú, *great flood*, which some have connected to higher sea levels in the late Wisconsin, >10K BP. This assumes continuity of oral history for 400 to 500 human generations.

1 The Deisheetaan themselves split from mother-clan Gaanaxádi, who ceded them Sit'kú. Their name—*end of trail house people*—references the beaver story & founding of Aangoon in its latest iteration, by multiple lines of evidence (gunboat logs plus oral histories) dating to the end of the Civil War.

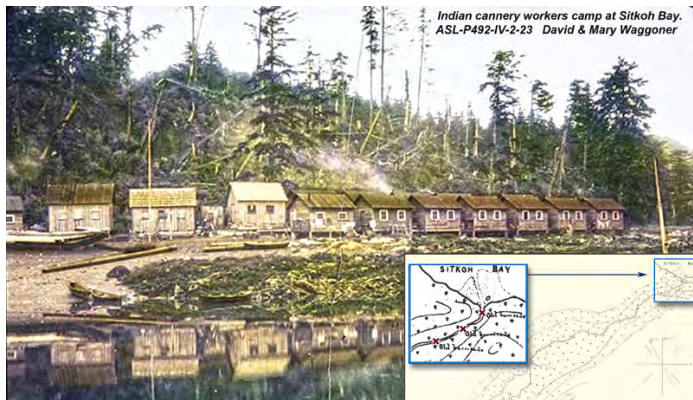
Moser journal: Sitkoh

From the 1901 report, p 379: **Sitkoh Bay, Stream & Lake**

"At the eastern entrance to Peril Straits, on the northern side, between Points Craven and Hayes, a deep indentation makes to the NW, known as Sitkoh Bay. Within the bay, and 4.5 miles from Pt Craven, on the S side, is a stream carrying redfish, which was examined on August 5 by a party in charge of Ensign Miller. This stream is a lake outlet, is about 4 miles long with a width at the mouth of about 30 feet and a depth of 6 inches; temperature of water 57° F. It flows with a strong current, in a general NE direction, through a wide valley, over a rocky bed having at intervals areas of sand and gravel. There are no strong rapids or falls, and tide water ascends about 700 yards within the mouth. There are 2 small tributaries entering from the SE, one near the lake, 50° F, and the other about midway of its length, 55° F. The remains of 3 barricades were seen, located respectively 100 yds, 500 yds and 1,000 yds within the mouth, none of which, however, had any indication of recent use.

The lake lies in a general NE-SW direction, is about 2 miles long, and from a quarter to half mile wide. It has an elevation of 190 ft, temp at time of visit 55° F. The surrounding country is heavily wooded and near the upper part of the stream the borders are level with large flats at different points around the lake. The beaches are usually of sand and gravel. The only records of this stream available are from the books of the old Baranof Packing Company, as follows:

Year	Species	Date	Number
1890...	Redfish ...	July 13-Aug. 4 ..	4, 902
1890...	do	July 10-Aug. 8 ..	4, 260
1890...	do	July 19-Aug. 11 ..	15, 794
1897...	do	July 25	666
1890...	Cohoes	Sept. 2-Sept. 17..	2, 354
1895...	do	Sept. 5	1, 252



Indian cannery workers camp at Sitkoh Bay. ASL-P492-IV-2-23 David & Mary Waggoner



Geo. T. Myers & Co. Sitkoh Bay ASL-P39-0682 Case and Draper

From Moser (1901)

Chatlk'aanow location—a 1.5-mile bushwack from FS road 136010292, or an easy scramble from an *Albatross Retraced* dropoff.

A trip report on Sitka Conservation's website ([Appendix 1](#) in this pdf) describes a newbie team's sockeye gill-netting adventure at Tinaa Gooní. It gives a first-hand sense of the experience, and of Sitkoh's importance to Sitka—all the more impressive considering it lies at the



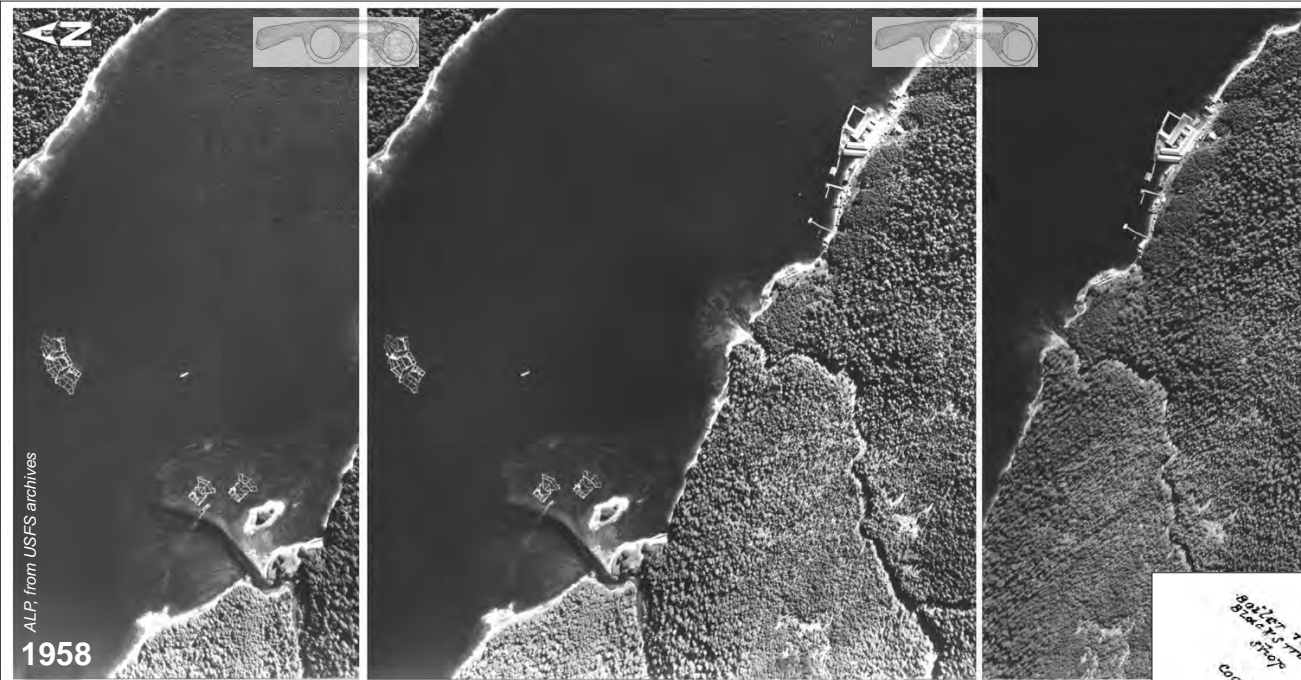
Alaska Shorezone # 6052, 20080802

West over delta at Tinaa Gooní. Young growth not mapped in USFS 'activities polygon.' Brush-covered point at stream outlet no doubt underlain by centuries of midden, now experiencing 'meadow capture.' • **Inset:** L.awdagaan, *no sunshine*, was Deisheetaan name for the cannery site, now private property.

2008



6042



ALP, from USFS archives

1958

Gaathéeni Shak.'áa, lake at head of sockeye cr (Sitkoh Lake). Fish traps, still legal, were stored on the delta and anchored in center of the inlet

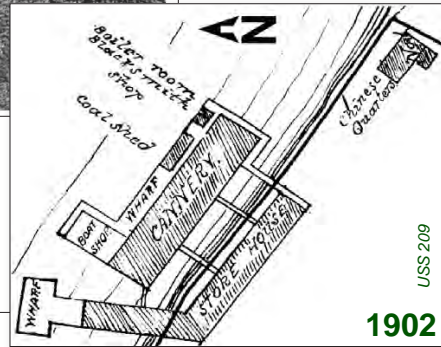
Rightside pair gives 3D of the cannery. Enclosing second growth was still quite apparent. The cannery name L.awdagaan, *no sunshine*, perhaps tells us what the Ganaax.adi thought of this gloomy northeast-facing location

outer limits of the Sitka Use Area.

Deisheetaan stream-stewards were gradually elbowed aside by canneries and fish traps (Thornton *et al* 1990). The Moser report is a snapshot from the first years of this displacement.

Above: Stereo views of the New England Fish Company, first claimed by Buschmann in 1902 and passed through several owners. North is rotated left, and on the USS plat enlargement on right. Two different 3D views can be obtained by shifting your stereoscope over the left pair, then right pair.

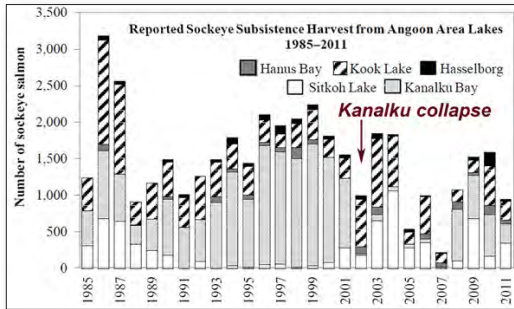
On left is Gaathéeni, *sockeye stream*, draining 3-mile-long Sit'kú



USS 209

1902

Annual sockeye salmon take for 5 lakes near Angoon, from Bednarski *et al* (2012). Kanalku has a smaller run than Sitkoh and Kook but is more accessible from Angoon. Only when it collapsed early in the millennium did use of more distant lakes increase. In addition to subsistence use shown here there are many factors in salmon abundance fluctuations, difficult to tease apart: marine prey availability, ocean interception, and unregulated cannery/fishtrap take up until statehood, whereupon much of the watershed was logged. Although many feel that logging-induced sedimentation to lake-shore spawning beds had major impacts, this was never measured or documented. A sediment-core timeline might at least shed further light on trends and their causes.



Gáchgu Héen (Hanus-Eva)

I visited this cove in 1999 with the Landmark Trees Project. ² On the chart above, Hanus ranks low as a subsistence system for Angoon. Is this partly due to competition from the party-like atmosphere of tours and sport fishing?

Lake Eva sockeyes spawn in deltaic sediments at the inlet stream (Bednarski *et al* 2012). Eva is unique on northern Shee (Baranof) as its only sizeable unlogged watershed, which enhances its value

² Our goal was to identify a large-tree forest that we could 'package' for the busy tourist scene here, which is driven mostly by bear-viewing. We wondered if big-tree tours could piggyback on that industry. We found moderately large spruce at the lake mouth, but the giants were on the lake-head delta, too far for tour-groups to reach.

Moser journal: Hanus-Eva

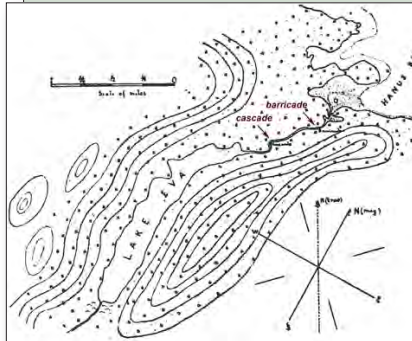
From the 1901 report, p 378: **Hanus Bay, Stream & Lake**

"In the eastern part of Peril Straits, opposite Lindenburg Head, on the Baranof shore, is a wide bight known as Hanus Bay, which receives, in its shallow SW arm, the waters of a stream, a lake outlet, carrying a few redfish. This system was examined by a party in charge of Lt Rodman, on August 5.

From the lake to tidewater the stream is ~3/4-mile long, and at a point measured was 45 feet wide, 12 inches deep, flowing NE, with strong current. In the upper reaches the stream bed is solid rock, and in the lower portion is of rock, sand and gravel. The stream proper empties into a small tidal basin, about 350 by 100 yards, which leads by a narrow passage to Hanus Bay. Spring tides ascend to the rapids about 200 yards above the tidal basin. At this point are the remains of a barricade; the framework is standing, but the slats have been removed. About 1/3 mile above the barricade is a series of rapids, or cascades, having a drop of about 10 feet, which however offer no serious obstruction to the ascent of salmon. Above this the stream makes a double bend and 1/4 mile beyond emerges from the lake. Between the rapids the stream varies from 50 to 150 feet in width, from 4 inches to 3 ft in depth, and flows with a slack current over a sandy bottom. The water is clear, rather lighter in color than most lake outlets, 53° F.

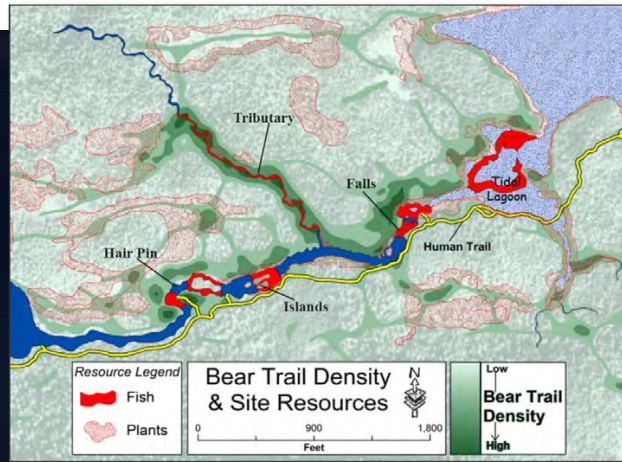
Between the barricade and cascade the banks of the stream are low and marshy; in other places they are high. The vegetation is very dense. Back from the stream on both sides are high hills; those on the E side are closer and continue to the lake head. The lake is about 15 feet above high water, slightly crescent-shaped, extending NE- SW for ~1.75 miles, never >1.4 mile wide. It's apparently deep except near the outlet, and the water is clear. The main feeder is at the head and carries a large body of water, probably melting snows of the surrounding mountains. A good hatchery site might be obtained on this feeder.

The run of redfish was evidently over, humpbacks were very abundant, and there were many Dolly Varden and cut-throat trout, with a few of the rainbow species. It is stated that on July 4, 1895, redfish were running in the stream, that many were seen on that date in the lake, and that the Indians were using their funnel-shaped traps in the stream below the barricade. There is no available record of this stream, but it may be said to have a value of 10,000 redfish during the season.



Potential stop at Eva outlet stream. **Pros:** interpretive products could enhance tourists' experience here. **Con:** not as important to 'subsistence' as Sitkoh.

Habitat mapping by Bob Christensen, May-Sept, 2002. See also Van Dyke, 2003. Preponderance of deep glide reaches (dark blue) limits fish accessibility to bears compared to systems such as neighboring Saook Bay.



to tourism. Most of the other streams entering Shee Ká (Peril Strait) from both sides were logged to their banks in the 1960s (Carstensen & Christensen, 2007), leaving tourists and Sitka boaters surrounded elsewhere by a sea of second growth.

Placename points in T&M12 are difficult to interpret, but it appears the "Hanus River" dot, placed on Eva's outlet stream, was known as Gáchgu Héen. Gáchgu, now Dead Tree Island, translates *hurting words*. That island served as base camp for observers and naturalists studying bear habitat and bear-human interactions



West over entry lagoon at Gáchgu Héen. • **Inset:** Platform for human-bear observations during the 2002 tourist season. Van Dyke (2003)

from May to September, 2002 (Christensen, 2002; Van Dyke, 2003).

Tourism is certainly a driver in the Southeast economy, and in the late 1990s I had hopes of leveraging it to develop broader constituencies for the giant alluvial

	Kanalku	Kook	Sitkoh	Eva
1962				13,847
1963				2,925
1964				1,428
1982			7,228	
1994		1,812		
1995		5,817		7,605
1996			16,336	
1997			5,979	
1998			6,649	
1999			10,499	
2000			17,040	
2001	250	380	15,200	
2002	1,600	3,600	11,900	
2003	280		8,500	
2004	1,250		3,700	
2005	1,100	1,994	13,400	
2006	1,300	10,165	14,800	
2007	630	2,985		
2008	1,200			
2009	2,664			
2010	2,970	6,565	15,324	
2011	728	2,701	3,347	
2012	1,123	7,630	10,441	
50% by	2-Aug	28-Jul	11-Aug	
ave	1,258	4,365	10,680	6,450

Human-bear interactions at Lake Eva, from Cheryl Van-Dyke's study in 2002. Tourist locations (red) are scaled to duration; larger red dots are primary observation points along the stream. X marks location of tree platform, shown on previous page. From Van Dyke (2003).

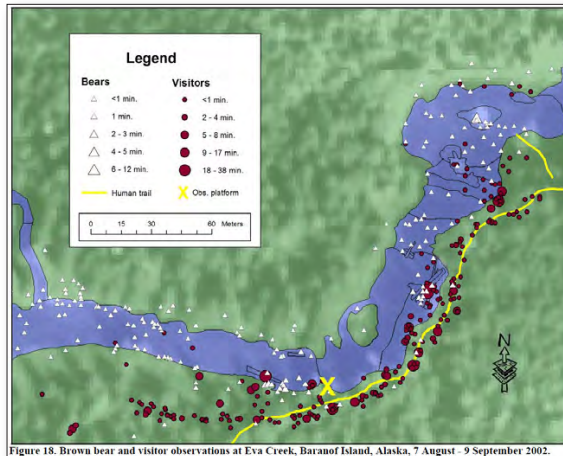


Figure 18. Brown bear and visitor observations at Eva Creek, Baranof Island, Alaska, 7 August - 9 September 2002.

spruce forest. But the timber-war front has shifted to cedar, reducing the strategic value of big-tree tourism. Gáchgú Héén (Eva) is not really *where we live*, today, or even *what feeds us*, as 21st-Century residents. So I'm inclined to bypass Gáchgú Héén on *Albatross Retraced*.

Escapements from a combination of weir counts, mark-recapture studies, and "expanded mark-recapture" estimates. From Bednarsky *et al* (2012). Orange row is averaged date by which 50% of spawners have entered the lakes. Bottom row is a crude average from these limited data.

Homeward half of *Albatross Retraced*, with potential stops at sockeye lakes.

If teachers from Angoon enroll, that might change priorities and lead us to consider a stop at their village. However, their nearest sockeye lake, Kanalku was not an *Albatross* visit, and is hard to get to.

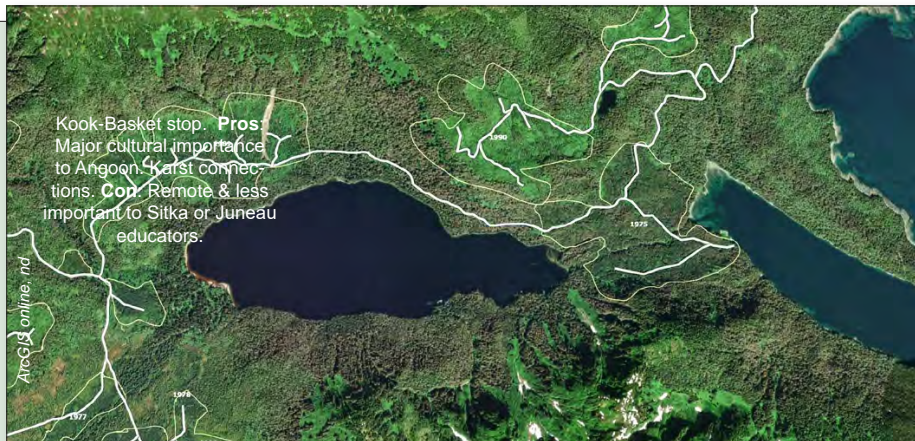
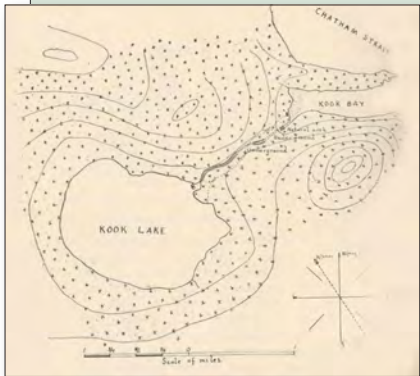


Moser journal: Basket-Kook

From the 1901 report, p 371-2: **Kook (Basket) Bay, Stream and Lake**

"Kook, or Basket Bay is a narrow 1-mile indentation or inlet on the eastern side of Chichagof Island ~11 miles N of Pt Hayes. At its head is the mouth of a stream, the outlet to a lake, which carries a few redfish. It was examined by Ensign Miller on June 19. This stream flows from the lake ENE through heavily wooded country for ~1 mile, ~30 ft wide & 1 ft deep at the head, with very strong current. Commencing at the lake, from which the stream is screened by a small wooded islet, it flows over a boulder bed through a deep ravine for 1.2 mile, when the water disappears in the face of a rock mass ~60 ft high, which appears to be thrown across the gulch. 300 yds beyond the water reappears & flows through a chasm for an equal distance, after which it is again lost in a subterranean channel for another 300 yards. At the point where it again emerges, the channel is choked by massive boulders, and on the adjoining bank were found a number of the slat frames commonly used for barricading. From here the stream flows with sluggish current for 100 yards through a deep cut having nearly perpendicular rock walls, and then for 50 yards under a fine arch rock, the top of which is about 4 feet above the highest tides; 50 yards beyond it enters the bay. Temp June 19, 47°F.

The lake is 35 feet above tide water. It is round in shape, about 1.5 miles long by 1 mile wide, and lying in a heavily wooded basin, having at the W end a wide depression through which the main feeder probably flows. Around the flats at the mouth of the stream the Indians had planted some heavy wooden posts, though for what purpose could not be learned. As they were removed upon approach of the boat, it is possible a trap was in course of construction. The only record available for this stream is from the books of the Baranof Packing Company, namely: In 1896, 21,175 redfish were taken July 12 to July 27.



Ƙák'w-Kóoƙ (Basket-Kook)

I've only once stopped here briefly, on a circum-Xutsnoowú voyage in 2000. I'd love an opportunity to learn more, especially during salmon time.

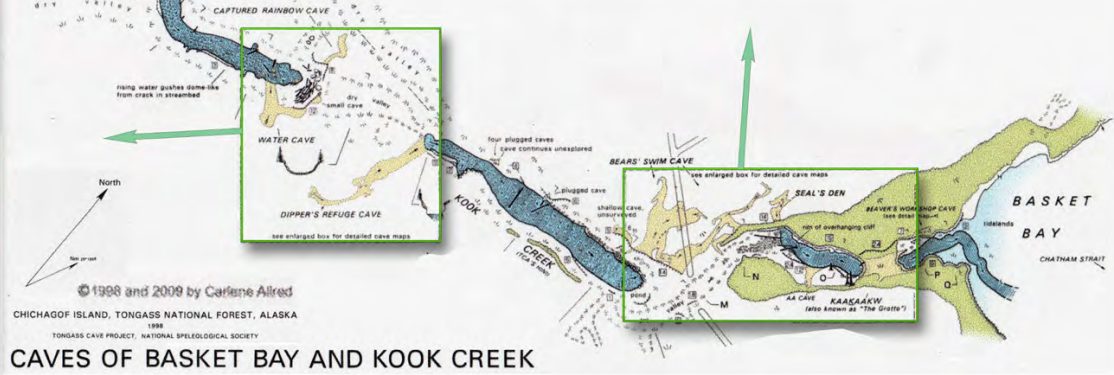
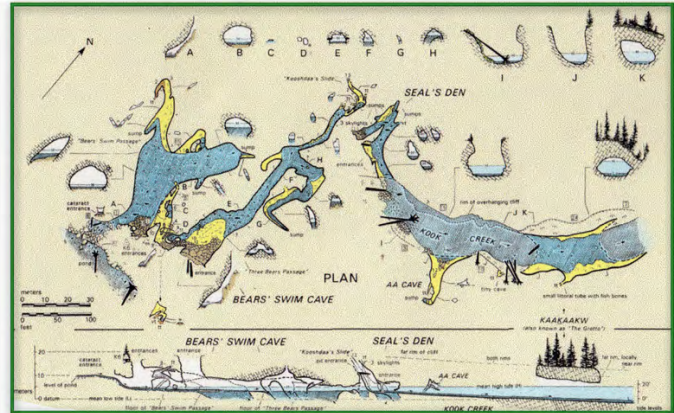
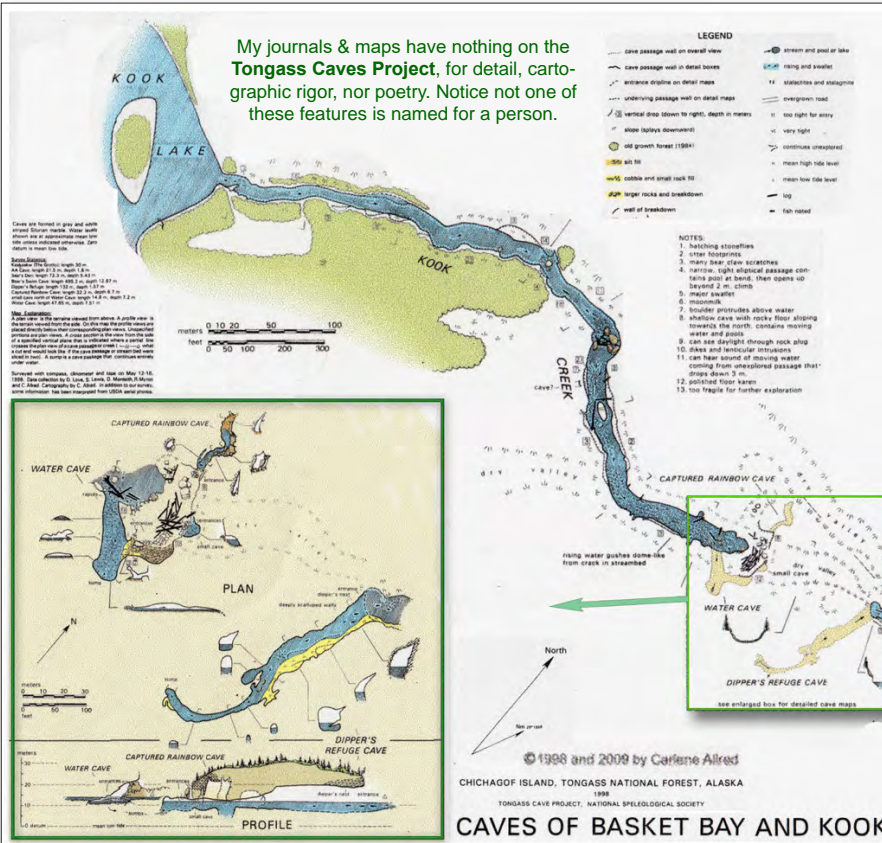
This bay and grotto gives its name to an Angoon Raven clan, the Ƙák'w.eidí. Shaadaax' (Robert Zuboff 1893-1974), told the story of this bay in *Haa Shuká, our ancestors* (sidebar, right). In the 1960s, when interviewed by Naisch and Story, no chainsaw had defiled the magnificent karst forests of Ƙák'w, *little basket* (Basket Bay) so fundamental to Robert's identity.

Basket Bay history: told by Robert Zuboff

From Dauenhauers ed (1987)

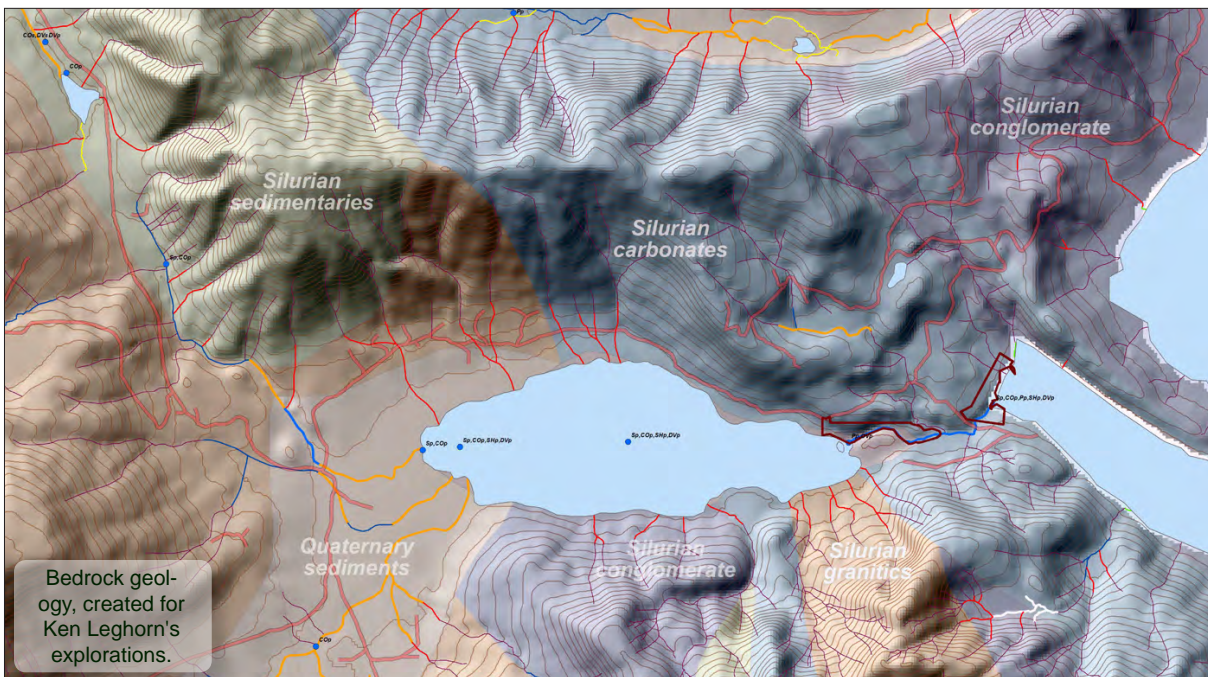
"That land of ours is called Ƙák'w; but in English Basket Bay. You know, they used to club **seals** at that place. That place is kind of strange. When the tide was almost out they would send one man as a guard. People would keep watch on the tide. They would go underneath the village in a grotto, by the light of sapwood, down the bay from Shark's Cave. To the head north of this they would cross over to go under the village. A ladder was adzed there, . . . what they came down on to go underneath the village. By the light of [sapwood torches] they clubbed seals, under the village. . . We are named for it, Ƙák'weidí."

My journals & maps have nothing on the **Tongass Caves Project**, for detail, cartographic rigor, nor poetry. Notice not one of these features is named for a person.



Robert's clan house was Kaakáakw Hít, named for the arch of Kák'w Áak'u, *basket little lake* (Basket Bay grotto). In addition to seal and sockeye, the animal most associated with Kák'w is **beaver**, who slapped its tail and up-ended the village there.

But in 1974, Shaadaax' surely heard about roads punching south to Kóok , *pít* (Kook Lake) from Corner Bay, and even beyond, out to the beach at Kák'w. In the year after his death, 1975, essentially every tree was trucked away, from the beach to the lake outlet, in a no-buffer clearcut engulfing nearly half a square mile. This is how federal managers treated sacred spaces 50 years ago (and yes, today still). Today, victims of corporate greed and administrative complicity lie farther south, in the land of laax, *redcedar*, and xáay, *yellow-cedar*.¹ To the degree that



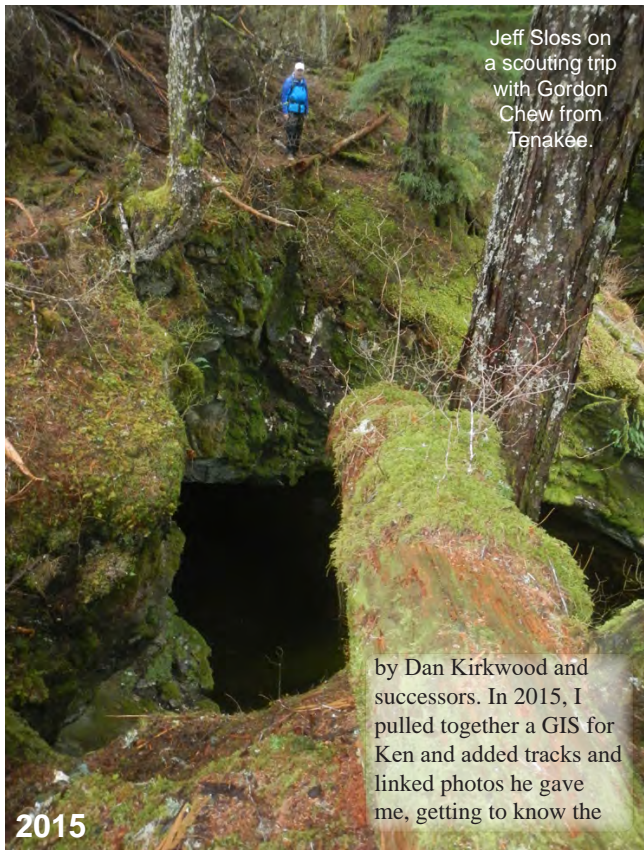
Albatross Retraced should ask probing, urgent questions about ongoing human relations to Lingít Aaní, this might redirect

of nearly all timber sales and even individual cutting units on Tàan, *sea lion* (POW Island) and its satellites. There's a little yellow-cedar in the neighborhood of Tlaaguwu Aan, *ancient village* (Tenakee), and I'll comment on logging below, when we get to that point on the route..

our priorities to Tàan. I confess, though, that I'm weary of witnessing triage, let alone critiquing to no apparent avail.

In his last years, Ken Leghorn explored Kák'w (Basket) watershed as a potential destination for his Angoon-based guiding business—Pack Creek Outfitters—now managed

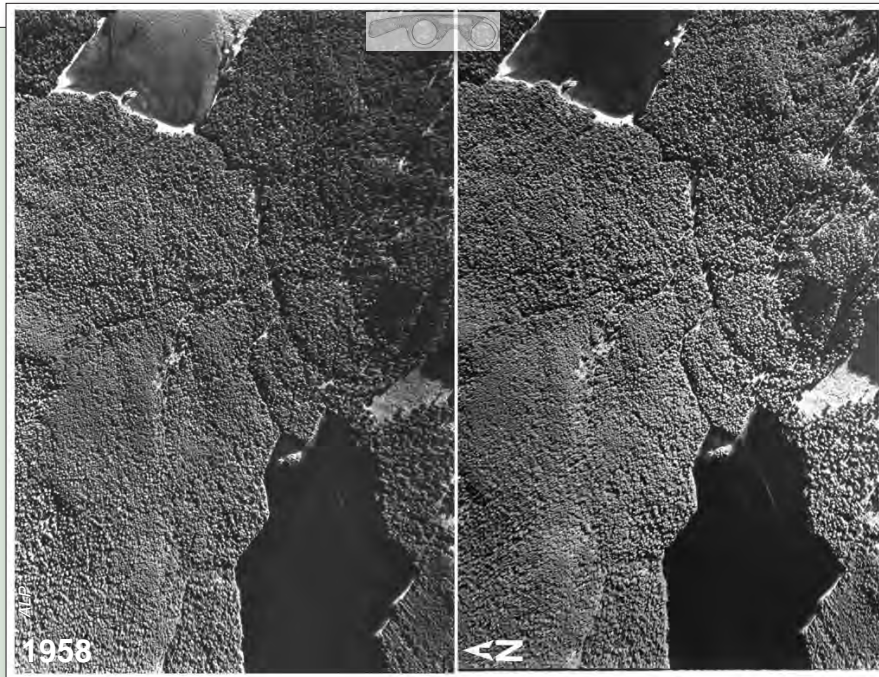
¹ These 2 cedar genera drive the layout



Jeff Sloss on a scouting trip with Gordon Chew from Tenakee.

by Dan Kirkwood and successors. In 2015, I pulled together a GIS for Ken and added tracks and linked photos he gave me, getting to know the

2015



Kák'w (Basket) watershed pre- and post logging On this and the following page are 3 stereograms showing the lake-to-sea portion of the watershed. North is rotated left on all three pairs. This first set is part of the huge collection I acquired from Jacob Hoffman, now Regional Cartographer for both Tongass and Chugach National Forests.

1958 Pre-logging stereo by Sitka's timber corp showed massive spruces throughout the lowland karst (Silurian carbonates, map previous page), explain why this patch



area vicariously, at least. This sidebar with historical stereopairs is from that collection. In the same year there was a lot of scouting by Ken's buddies, such as Jeff Sloss and Gordon Chew, TLC Logging, Tenakee.

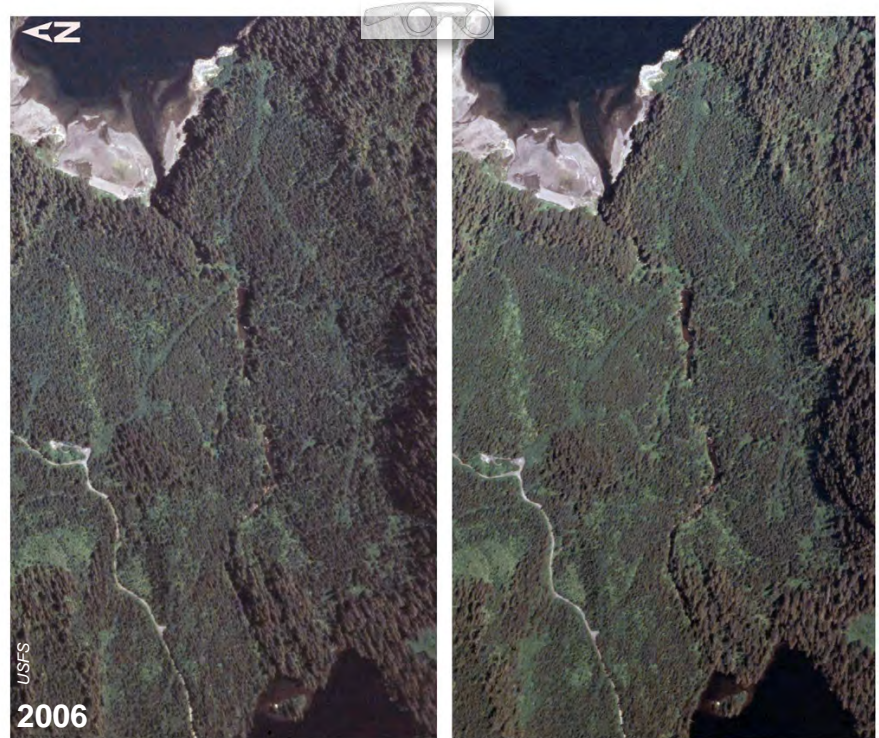
was taken first. I was puzzled why that gappy lakeside stand on right margin never got logged, until noticing on the bedrock map that this is granitic.

1976 These aeriels were taken a year after logging. 'Wheel-spoke' line patterns are drag lines converging on collection points. Stripping off the forest gave a detailed view

of the canyon and one remaining cave section (Dipper's Refuge on previous cavers' map). But I'd rather have waited for the LiDAR point cloud.

2006 By this time, doghair second

growth owned the Silurian valley. As Bob Christensen put it, another great "opportunity" for enhancement gapping and thinning.



WSW at low tide over the delta, and beyond through Kák'w valley. Thin strip of remnant old growth backed by 0.4 square miles of 33-year-old second growth.

As of 2018, I don't think Dan's outfit is taking visitors here. (PS, still not as of 2023?) Bob Christensen & Biorn Dihle flew drone aerials and posted them with ground shots on [Sustainable Southeast Partnership's flickr site](#). I've included some of Bob's ground and air views in the following sidebar.

Thanks to industrial logging, eastern Chichagof Island (*noTN?*) is now threaded with roads.

2008



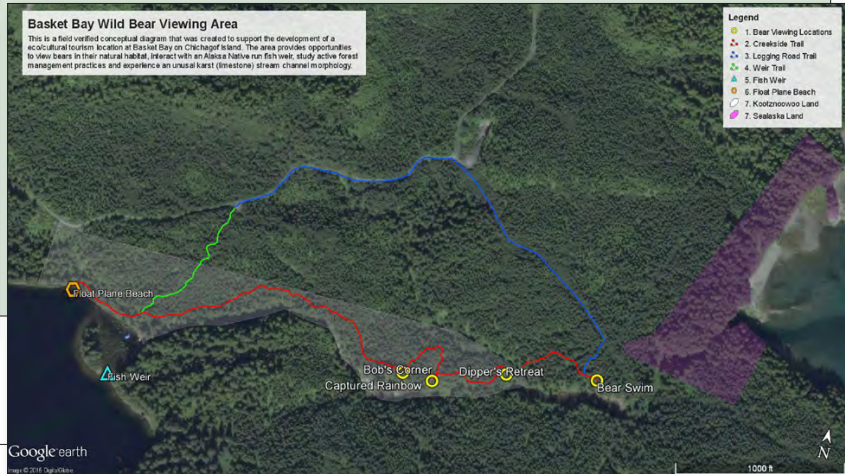
Bob's captions, clockwise:
"Kook Creek is a sockeye stream that intermittently flows underground through a cave system.

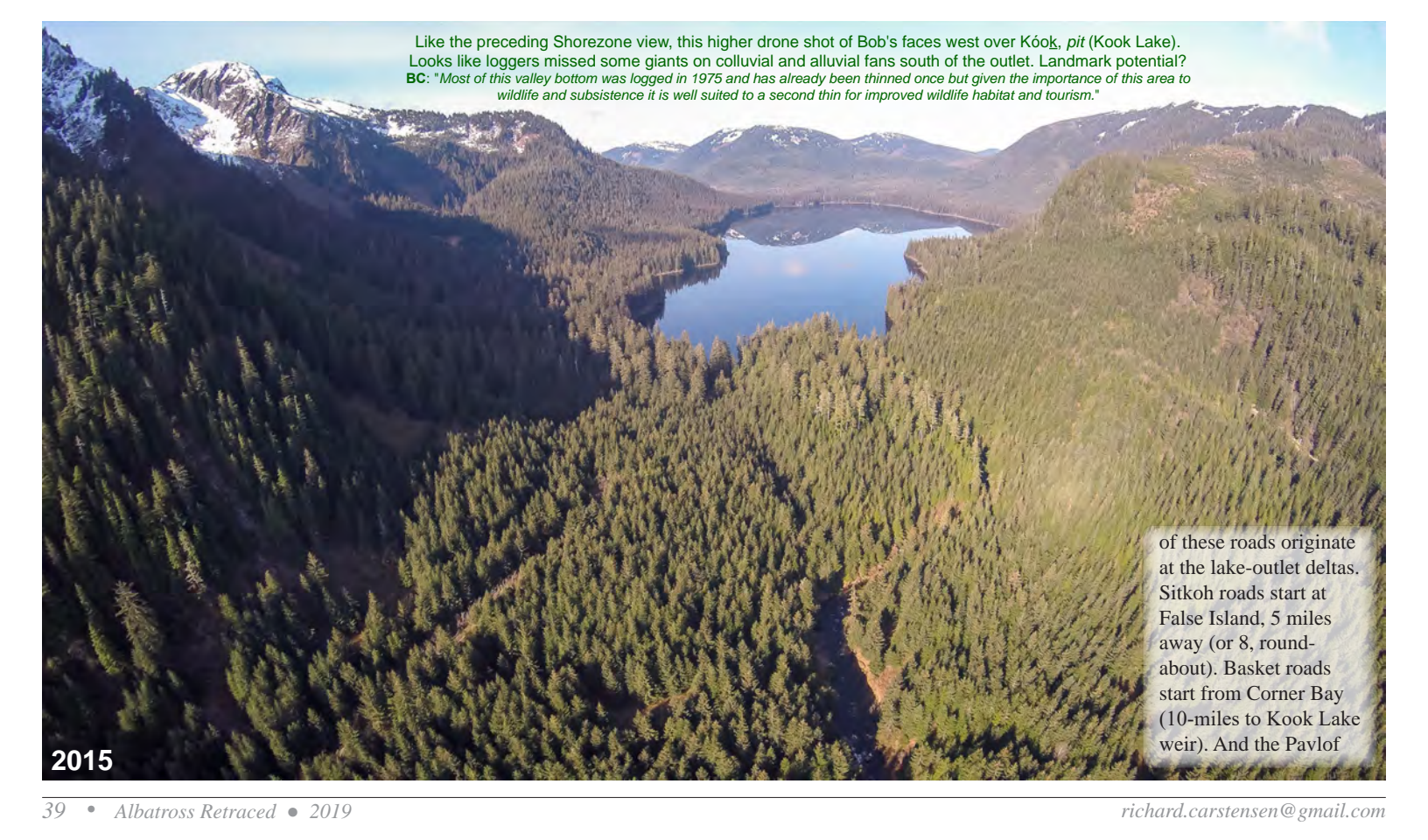
- *Old Kook Lake Trail on Sealaska lands near beach. Only beach-logged here; trail still highly visible, used by bears, people, etc.*

• Captured Rainbow lookout will be developed above cliffs on right for viewing of bears fishing where creek runs underground in center-pano."



The sockeye lakes at Sitkoh and Basket were mostly shaved to the banks. At Pavlof, the road stopped short of the lake but approaches closely enough to access the feeder-delta in a 1-mile bushwalk. None





Like the preceding Shorezone view, this higher drone shot of Bob's faces west over Kóok, *pit* (Kook Lake). Looks like loggers missed some giants on colluvial and alluvial fans south of the outlet. Landmark potential? BC: "Most of this valley bottom was logged in 1975 and has already been thinned once but given the importance of this area to wildlife and subsistence it is well suited to a second thin for improved wildlife habitat and tourism."

of these roads originate at the lake-outlet deltas. Sitkoh roads start at False Island, 5 miles away (or 8, round-about). Basket roads start from Corner Bay (10-miles to Kook Lake weir). And the Pavlof

2015

dead end spur traces 35 miles back to Hoonah. Although these roads brought devastation to the large-tree forests of northeast and southeast Chichagof, and ongoing jeopardies to far more than just sockeye production, they also present logistical opportunities for longterm monitoring and study of watershed we target on *Albatross Retraced*.

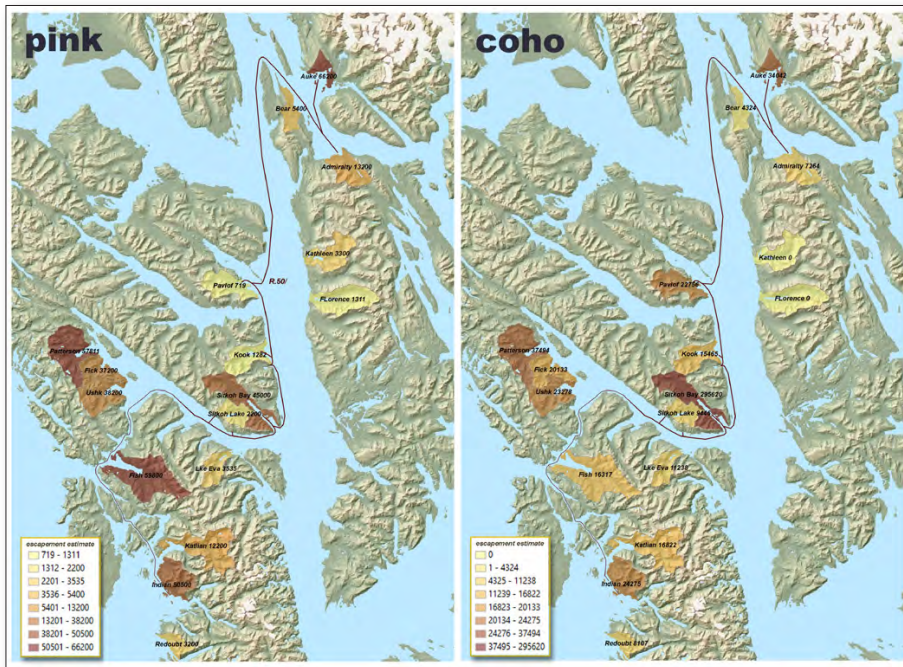
Tlaaguwu Aan (Tenakee)

The only refueling stop close to our line of travel is Tlaaguwu Aan, *ancient village* (Tenakee Springs). It's not a sockeye watershed but holds opportunities to ask some key questions about resilience and respect.

Gordon and Sterling Chew own TLC (Tenakee Logging Company, <http://tenakeelogging.com/>), with a staff of 5, the largest employer in their little town. I consider them the poster-boys of appropriately-scaled, home-grown timber stewards for Lingít Aani. Southeast conservation groups agree; SCS and SEACC have repeatedly held them out as the future of logging in our ecoregion. Gordon's one of the only logger/mill-operators who's given me thoughtful, grounded answers to the question of tree age as it relates to sustainable cutting.²

That said, nobody to my knowledge has quantified long-term impacts of yellow-cedar removal from the Tenakee Use Area by TLC. Could Gordon's great-great grandchildren still be cutting *xáay* at present rates in the 22nd and 23rd Centuries? If not, could we help him redirect to more sustainable species and markets?

² Yellow-cedars around Tenakee are younger and smaller than elsewhere in the archipelago, says Gordon. He mostly cuts a cohort that *maybe* colonized in cooler decades of the Little Ice Age. The operative word in this hypothesis is "*maybe*." Could we test that by visiting Gordon's stumps?



Salmonsheds

I don't have averaged escapement numbers for **sockeye** systems, but Flanders *et al* (1998) did provide them for **pink** and **coho** in selected watersheds. Each salmon species has different requirements. Coho, for example, make more use than pinks do of upper tributaries. Scanning for greatest differences among our proposed watersheds, it appears that Pavlof is one of the best coho systems, but poor for pinks, maybe due to the barrier falls?



Tax'áas, rock waterfall, concentrates bears as well as tourists.

Pavlof stop. **Pros:** Historical importance to Angoon; ongoing importance to Hoonah. **Con:** Sock-eye production nearly extinct compared to other proposed stops.

posted by Lindblad Expeditions. My bear-guiding friends advise against a bushwack up to the lake at salmon time, but I'd consider doing it with a large, fit party who remain close together for security. Of all the sockeye lakes on our potential itinerary, Pavlof is the one I'd most like to see.

There are nice drone views of Pavlof Harbor, falls and lake, taken by Kevin Morris and [posted to slowboat](#). I haven't included em here because they're copyrighted,

Taakw'aani (Pavlof Harbor)

The settlement here—not precisely located in T&M12—was Taakw'aani, *winter village*. The chart on next page by Richard Meade shows an "Indian Salmon Fishery" on the north bank of the stream mouth, but I doubt this was inhabited in winter. More likely, the village was a half mile north and around a corner, where uplift forest above a nice canoe beach with goon héen makes a more inviting home. ¹ The forest would only have been sapling parkland in Meade's day. I've shown this context in a following sidebar, originally in my edited compilation of the Meade journals, 'borrowed' for this scoping document. ²

Today, Pavlof is a frequent stop for mid-size cruiseships hoping to see **brown bears**. The above screengrab is from a video

¹ Another strong village prospect is 1.3 miles SE, in an east-facing cove with better defensive views toward the entrance of Asáank'i, *little freshwater bay*, and the tip of Neenáx Lunáa, ___point or nose (Iyoukeen Peninsula) See map and discussion in Van Allen (2004) sidebar.

² My [pdf for Meade's journals](#) can be downloaded from JuneauNature

Moser journal: Pavlof

From the 1901 report p 373-4: **Freshwater Bay, Stream and Lake**

"On E Chichagof, ~12 miles below Pt Augusta, is Freshwater Bay, a deep inlet. On its S side, 4 miles in from East Point, is a cove known as Pablof Harbor, which affords a good anchorage, and receives at its head the waters of a stream carrying redfish, and known among the fishermen as the Freshwater Bay stream. It was examined by a party in charge of Ensign Kempff on June 20.

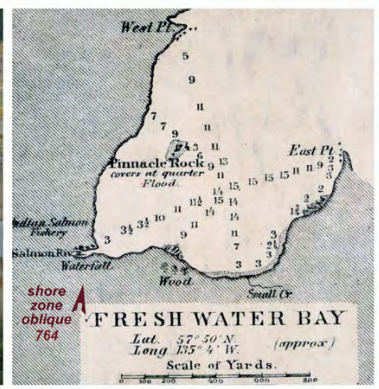
Near the mouth on the southern side is the old site of the cannery of the Astoria and Alaska Packing Company, which made a pack in 1889 and then moved to the South Bay of Pillars where it was destroyed by fire in 1892.

Freshwater Bay Stream, the outlet to a lake, is <1.4 mile long, 100 feet wide, 9" deep, and flows with strong current over rocky and gravelly bottom, between rocky, well-wooded banks. Just without, water flows over a broken fall, 10 feet high, but so stepped that fish easily ascend at high water. There are no barricades. Temp 43°F.

The lake is 3/4 mile long and 1/2 mile wide, running NE by E and SW by W. The shores are low, grassy in places, with heavily wooded areas in the background; the beaches are muddy, and the body of water seems moderately deep. Temp 45°F near shore. Elevation 20 feet.

A large feeder at the S end with islet in its mouth was examined for a distance of 5.5 miles. It flows in a winding channel, through a gradually rising country, in 2 general directions: first to the SE, then NNE. At a point measured it was 100 feet wide, 9 inches deep, with strong current. In the lower course are numerous wooded islands, and about 4 miles from the mouth is an extensive flat, the stream flowing around a low island, nearly 1/2 mile long. The banks here are grassy, with much elder, while in other places they are heavily wooded. Except through the flats the stream is rocky, with intervals of gravel patches. The water has the brownish tinge usual to lake water in SE AK, and temp 40°F. Highest point reached, 180 feet. At this point there were no signs of a second lake; later however, some of the Indians stated that there was a second lake beyond, to which salmon ascended. Inaccessibility would make the second lake unsuitable as a hatchery site, while on the first lake difficulty would probably be encountered in securing mature fish and pure water for hatchery purposes.

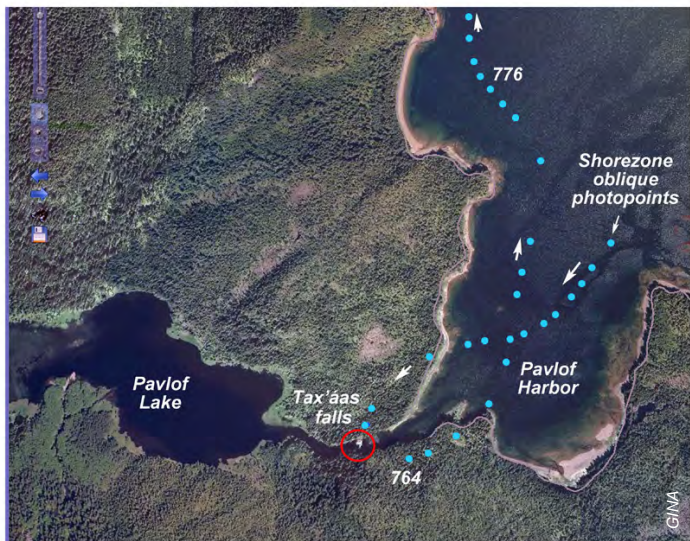
There is no record available for this stream, but from the best authorities it is stated that it will produce 50,000 redfish per season under good conditions.



Left: Shorezone oblique shows approximate location of the former fish camp. ● **Right:** Meade's 1869 "Indian Salmon Fishery," with 3 mapped buildings, probably just smokehouses.

but they're worth studying. One is an oblique looking WNW from the lake outlet, showing lush, green marsh extending out as much as 40 yards from forested uplands. On the preceding aerial it's tan, overwintered thatch, either grass or sedge or some mix thereof. I'm puzzled by this unusually extensive marshy fringe and would like to ground-truth it.

Another thing that fascinates me about



Raised beach with young spruce colonizing storm berms Smooth gravel with optimal gradient for canoe landings. Goon héen, a springfed stream, enters on left. Most importantly, this crescent beach is better situated than the enclosed estuary for defensive views.

2009

Alaska Shorezone



I've copied this sidebar over from 2015 meade1868.pdf: Above: Stereo of Pavlof Lake in 1929. Entire lake shoreline freshly logged, including fan-delta at inlet stream that once hosted giants, as indicated by the dark survivors just upstream. This early cut is not in USFS *activitiespolygon.shp*. Comparing to GINA aerial on left, fan is still alder-captured almost a century later. The falls is midway up the outlet stream. Moser (1902) said the broken 10-foot falls was so stepped that fish could ascend at high tide (there's a ladder today). He reported an abandoned cannery of the Astoria & AK Packing Co on the south side of the cove—one of Alaska's earliest—destroyed by fire in 1892. The Pavlof Harbor Packing Co. acquired and rebuilt in 1918. Judging from this photo, that fits the date of lakeside logging. ● Above left: Alaska Shorezone flight index on orthophoto base (no date). Each blue dot is an oblique photo. Unfortunately, although their helicopter flew directly over the falls, it wasn't captured in any oblique stills. Freshwater Bay is claimed by the Xutsnoowú Wooshkeetaan. Most numerous in Áak'w Aaní, the Wooshkeetaan also had 3 clan houses in latter-day Angoon. I think of them as the 'in-between' clan, controlling virtually all lands on boundaries of Áak'w, Xunaa, and Xutsnoowú Kwáans. That included what we now call Berners and St James Bays, Point Couverden, Hawk and Funter Bays on Admiralty, and Tenakee and Freshwater Bays on Chichagof. T&M12 shows 2 place names here. Tax'áas translates *rock waterfall*, referring to the steep, bedrock-controlled falls in previous Soboleff image. Taakw.aaní means *winter village*. Studying this orthophoto, it seems doubtful the 3 buildings (smokehouses?) mapped by Meade were in a suitable position for wintering. This site is too close to brown bear concentrations, with poor views of approaching enemies. In all regards except wind and wave exposure, the crescent-shaped cove to the north (Shorezone #776) would have made a superior overwintering location.

the Pavlof aerials is the inlet delta. This was logged, probably by the second cannery, sometime after 1918, as described in the sidebar. Former large-tree spruce was

Vincent Soboleff ASL-P1-134
Freshwater Bay falls.



1901?

2018



'captured' by alder, which has persisted for a century. Few examples of mature alder forest of this age are available for study, which would shed light on the future of thousands of acres of alder-dominated alluvial second growth throughout the Tongass.

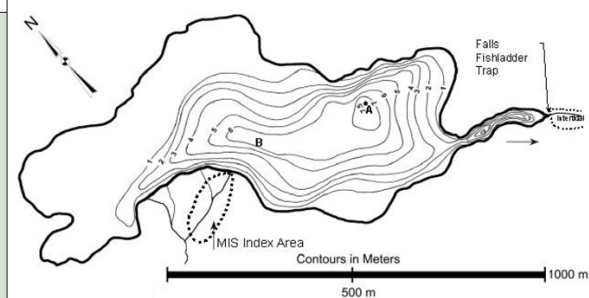
Pavlof was once productive but now has a small and declining sockeye run. In 2004, Ben Van Allen reported on a 3-year

From Van Allen (2004) "Pavlof sockeye escapement was 1,350 (CV = 6%). Run extended from third week in June to the third in July with midpoint ~July 3. Less than half used the fishpass to migrate into the lake. They spawned in the lower part of the main inlet stream from late-July to mid-August. Age-1.3 fish dominated the escapement.

Pavlof Harbor is ~30 miles by boat from Hoonah or Angoon and 15 from Tenakee. Pavlof Lake has a surface area of 90 acres, maximum depth of 25 ft, mean depth of 7.5 ft, volume of 3 million ft³, and elevation of 16 ft. This small, shallow lake has an extensive growth of *Nuphar* and other aquatic vegetation. It does little to buffer rainfall or snowmelt, with wide range in daily stream flows, particularly in fall.

The area is in Wooshkeetaan traditional territory of Angoon, Auk (Juneau), and Tenakee (GH&K98). They lived in a small village near Pavlof Harbor called Asaank'í with a smoke house below the waterfall. De Laguna (1960) interviewed an elderly man in Angoon who confirmed GH&K98. When he was a small boy there were 2 "Wuckitan" lineage houses in a small village ~1 mile east of "the sockeye stream in Freshwater Bay." ² De Laguna (1960) clarifies this territory originally belonged to an independent division of the Wuckitan, the Freshwater Bay branch, and that they subsequently "inherited rights at Angoon when the Kootznahoo branch of this sib became extinct."

A cannery operated in Pavlof in 1889 and 1919-1923 (Shroeder & Kookesh, 1990). The waterfall was incorporated into cannery operations. The Federal Works Progress Administration constructed a concrete fish ladder with 14 step pools on the left side (looking



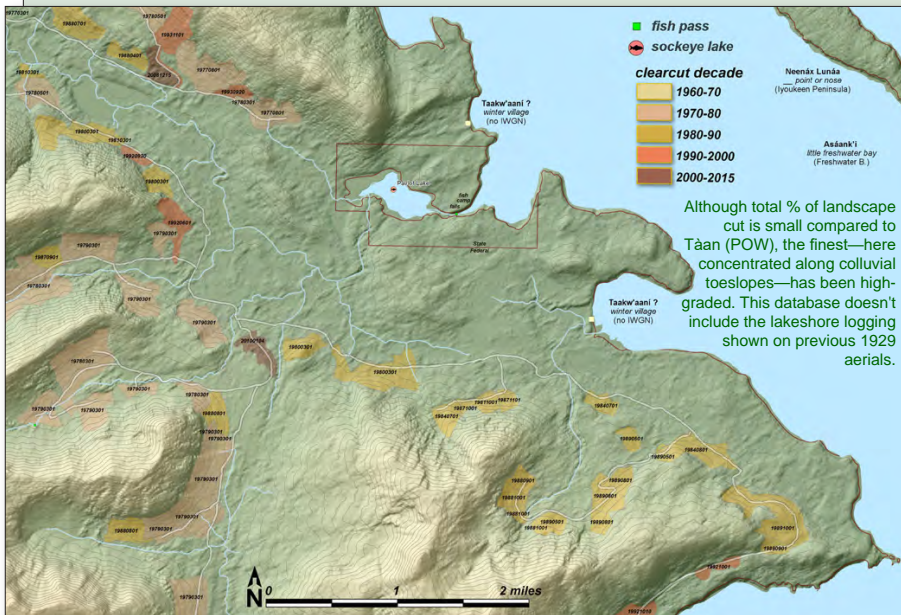
1 T&M12 give Asáank'i as the general name for Freshwater Bay.

2 This better matches my speculation above (p37, footnote 1) that Taak'waani is closer to the entry to Freshwater. Alternative locations on map, next page.

downstream) of the falls in 1935. Prior to this ladder it's believed the cascading falls were a partial barrier to upstream migrating salmon (Barto & Cook 1999). The USFS installed an aluminum "Alaskan steep pass" inside the concrete fish ladder in 1986. They installed another on a waterfall in the main inlet tributary in 1987 to provide *coho* with better access to upriver spawning and rearing habitat.

The State owns the land around the lake and outlet but the majority of the watershed is National Forest. Much of the watershed was clearcut from 1977 to 1993. Roads now connect to Hoonah. The area immediately around the lake has not been logged and it is not possible to drive to the lake or outlet.

Barto and Cook (1999) conducted a limnology and fisheries investigation of Pavlof Lake in 1997. Their study evaluated rearing conditions and applied sockeye production models to identify potential management or enhancement strategies for optimizing production. They concluded carrying capacity was relatively small, that sockeye production was near capacity, and that coho production might be compromised if the lake was fertilized to boost sockeye.



Coho spawners from Pavlof were a brood source for a FRED Division effort to boost sport fishing in the Juneau area. Between 1987 and 1996, 109 coho adults were killed during egg take operations in late-September in the upper reaches of the main inlet stream. These eggs were incubated in Juneau and the fry released into Juneau area streams.

The Pavlof area is not in either a Federal or State customary and traditional use area. Subsistence use data ranked the Pavlof Lake area as **high use** by **Tenakee** and **middle use** by **Hoonah** and **Angoon**. Sockeye salmon returning to Pavlof would be harvested in Icy Strait and Chatham Strait area fisheries. Rich & Ball (1933) reported 6 years of sockeye taken in Freshwater Bay starting with 25,000 in 1900 and ending with 30 in 1923. Sockeye harvests in Freshwater Bay since statehood (1959) are between zero and 1,582 fish. These seine openings target **pinks**.

Pavlof Harbor is a popular anchorage for pleasure boaters. Sport fishing for trout and salmon is popular here. However, sport harvest of sockeye is small; only 9 were reported from 1977 to 1999. Saltwater sport effort and harvests are trending upward in the area.

Aerial and foot escapement surveys since 1980 have usually counted around 200 sockeye in Pavlof River. Run timing of sockeye and pink overlaps and tannin-stained water makes counting fish difficult."

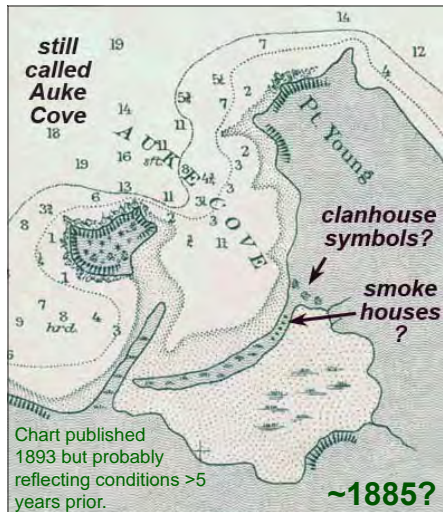
cooperative study between Hoonah Indian Association, ADF&G and USFS (sidebar).

This concludes my wish-list of sockeye watersheds to visit on a 2019 *Albatross Retraced* voyage. But before returning to Auke Bay, one last potential stop is at major lake system on northern Xutsnooowú that, mysteriously, is *not* known to have ever supported sockeye.

Tsaa T'ei Héen (Admiralty Cove)

Tsaa T'ei Héen, *behind the seal water*, has deep history among Áak'w and T'aakú K'wáans. Depending on where our support-boats live, it's either directly on the route to X'aat (Mayflower Island/Douglas Harbor), or only a short detour from Áak'w Ta (Auke Bay Harbor)

My [33-page scoping document](#) for this Áak'w K'wáan cultural site can be downloaded from *JuneauNature*. As noted at the



beginning of this proposal for 2019, it would make a wonderful finale-stop for a teacher expedition, especially in the scenario of mid-trip swap-off of Sitka-for-Juneau educators. Greater awareness of the role this old village played in Áak'w history will help to bring NGO support and financial resources to a 'lost-village' initiative that some of us have been

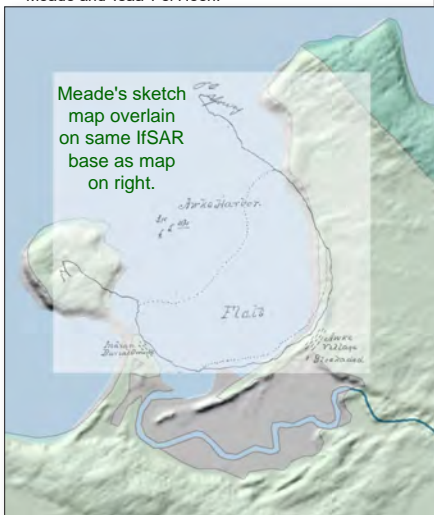
Tsaa T'ei Héen stop. **Pros:** Historical importance to Áak'w and T'aakú K'wáan. Analogous for the Áak'w L'eeneidi and T'aakú Tsaat'ineidi to Chatlk'aanoow for the Sitka Kik'sádi. **Con:** Not a stop for *Albatross*. No known sockeye runs, but this poses interesting *why-not* questions.



envisioning for the past decade.

When we first began asking where, exactly, were the 14 clan houses reported by Meade in 1869, I had no maps showing structures of any kind. At the time of occupation, Euro maps were little more than impressionistic sketches from the decks of steamers. Fortunately Meade (below), had a good eye. Explanation of this overlay is in my [Evening at Egan talk](#)¹ for November, 2018. If we

¹ Drag slider to ~17 minutes for the portion about Meade and Tsaa T'ei Héen.



Why no sockeye? (from the Tsaa T'ei Héen scoping pdf)

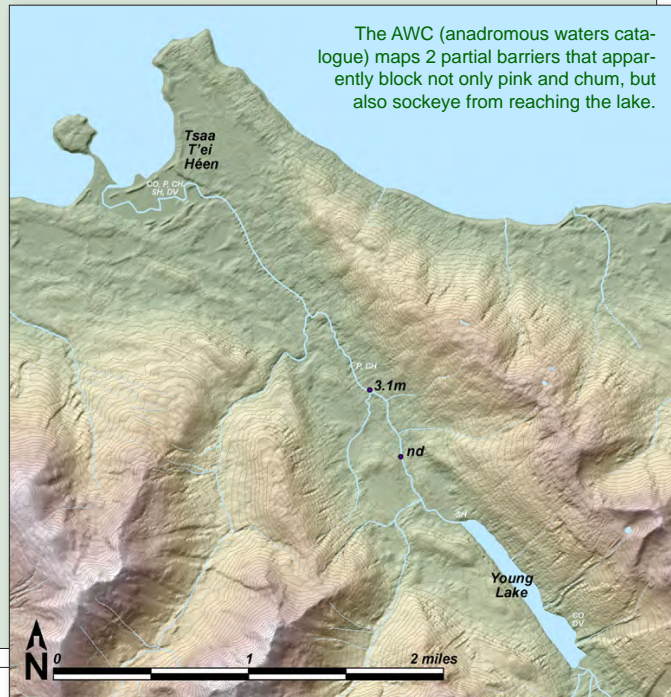
Young Lake (noTN?) and gentle Tsaa T'ei Héen would seem to have been the ultimate sockeye system. The lake is at only 320 feet elevation. With about 4 miles of stream, average gradient is only 1.5% slope.

In late May, 2002, on reports of very large spruce forest from Jim King, Sam Skaggs and I guided a visiting journalist about a mile up the creek in search of Landmark Trees. We were surprised to find several places on this large stream where mossy, spanning logs provided perfect foot-bridges. They had obviously lain in place for many years without being dislodged by high flows. I don't think I've ever seen a stream of this volume with so little seasonal or annual fluctuation in flow. The lake must exert a powerful buffering effect.

In spite of that, and the low gradient, **sockeye** apparently don't make it upstream to the lake. Dropping the USFS stream barriers layer onto my arcmap project, I discovered the “*cascading falls*,” 2.5 miles upstream. According to the metadata, this “incomplete barrier” is <70°, and passes the more vigorous salmonids—in this case **coho** and **dollies** who continue all the way into Young Lake's inlet stream—while blocking **pink**, **chum** and **steelhead**. This 3.1-meter-high falls is in a bedrock controlled V-notch. **Sockeyes** ascend what I'd call a more formidable cascading falls on the outlet stream of Kanalku Lake.

The Anadromous Waters Catalogue (ADF&G) lists all 5 of the above salmonids, but not sockeye. Since the lake is inaccessible to them, there may never have been sockeye here, even prior to the fish-trap days when many runs were extinguished. Out of curiosity, I checked the log of the Steamer *Albatross*, which assessed sockeye systems throughout Southeast at the turn of the century. I can find no mention of a stop at Tsaa T'ei Héen. Sockeye biologist Ben Van Allen agrees it's puzzling there are no records of an early run.

But pink & chums probably made this and Bear Creeks the most productive salmon streams on the Admiralty portion of Aakw' Aani. As the previous testimony from G,H&K98 indicates, it was used for subsistence long after the village fell into disuse residentially.



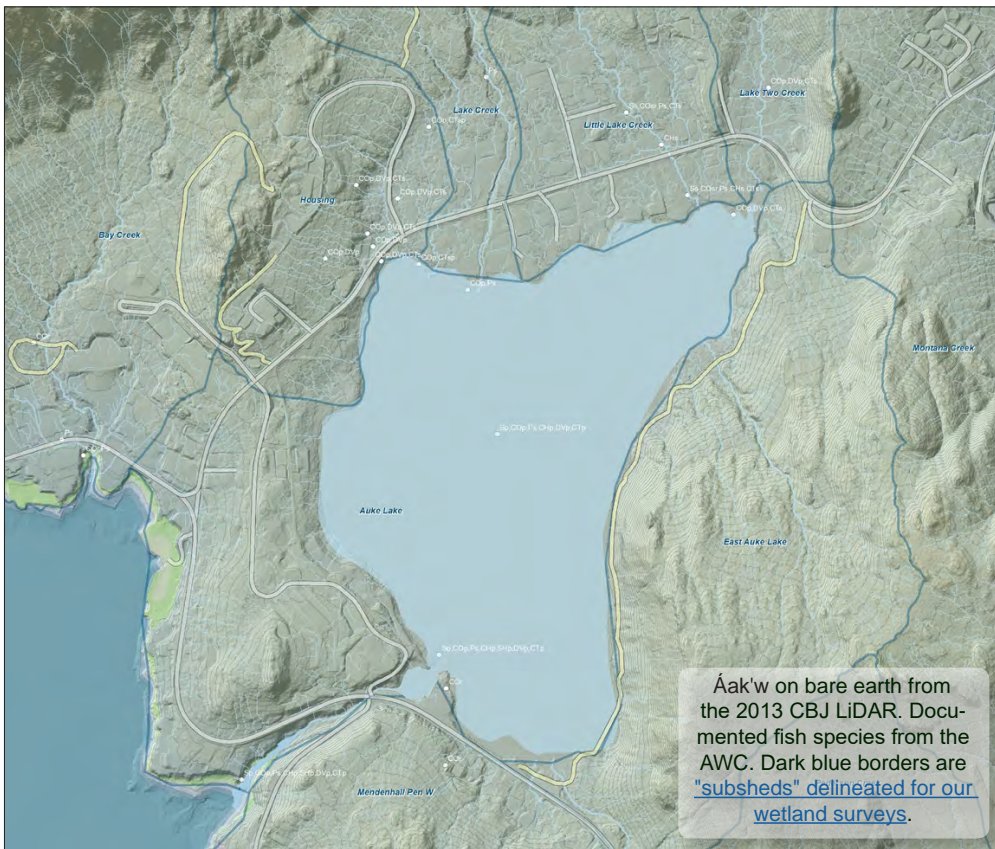
add Tsaa T'ei Héen to our 2019 itinerary, including a culture-bearer from Áak'w K̓wáan would be essential. ²

Áak'w (Auke Lake)

Áak'w K̓wáan takes its name from this lake. Partly because NMFS until recently headquartered at its outlet, and maintained a hatchery and weir there, Áak'w has possibly the longest continuous record of fish numbers and related environmental parameters of any lake in the world. I suppose this might point us toward *starting Albatross Retraced* at the Juneau end, the better to assemble questions one might ask in less well-studied watersheds. At the least, we should involve local biologists in design of the most effective possible itinerary and documentary process for this expedition. Balancing the distinct but overlapping needs of research, education (for teacher participants, and community outreach should be a fascinating task.

Áak'w watershed was one of 10 selected by CBJ Parks & Recreation for my 2007-2010 trails interpretation project. So I have a great deal of background information, collected in a 57-page scoping document.

² Preferably L'eeneidí, skiffed or flown out to join us if not part of the expedition.



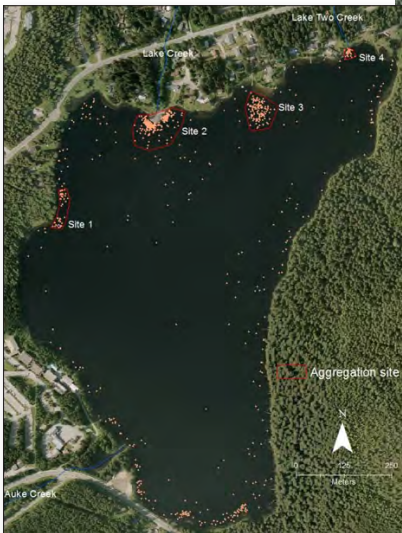
Áak'w stop. **Pros:** Foundational importance to Áak'w K̓wáan. One of the world's best records of sockeye history and trends.

Con: Not necessary to have ship support for this one. Could be included in a separate, road-based workshop or optional teacher's follow-up project (non-contact hours).

³ This includes notes from longtime fish biologists and observant lake residents such as Jerry Taylor, retired Lab director, and Gretchen Bishop, retired fish biologist who grew up on the

3 [5auke-scoping.pdf](#), 2010. Available on request. This and 9 other summary documents from the Juneau Natural History Project currently serve as resource material for gradual updates to *JuneauNature* and other endeavors.

From Ray *et al* (2014). Red-outlined **sock-eye** aggregations during creek spawning in 2012. Dot locations for total study period.





Aak'w rearing habitat. Although pondlily is still common in the shallow fringes, Gretchen Bishop says it's declined considerably over her lifetime on the lakeshore. Another change is local extinction of toads, whose polliwogs once packed into this fringe in uncountable hordes.

2009

lakeshore, splashing around with her dad, my consulting mentor the [hydrologist Dan Bishop](#).

Who else should come?

For best odds of 'success'—which of course has alternative definitions—we might consider adding several experts to our expedition.

Ideally, it would be wonderful to have somebody from the the clan claiming each sockeye stream (or in cases like Sitkoh where ownership changed hands, several clans). That comes to quite a few clans, and with limited berths on a teachers' expedition, it's probably impractical.

More realistic would be a representative from SHI or GHF, who knows a lot about the history of Sheet'ká, Xutsnoowú and Áak'w kwáans, as well as protocols for showing respect when visiting these ancestral settlements.

As noted in several places above, it would be nice to include a researcher experienced in lake-bottom sediment sampling, for historical reconstruction of salmon abundance. That of course depends (footnote #1, page 19) on whether salmon-derived nitrogen levels in Southeast lakes can be distinguished from 'background' values.

A specialist in sockeye studies would be a huge contribution to the success of *Albatross Retraced*—not only for our ability to contribute to original research, but also to quality of the educational experience for our teachers.

III Appendices

1 SCS at Sitkoh

From http://www.sitkawild.org/harvesting_sockeye_in_sitkoh_bay
No date or author listed.

"Salmon fishing is a pillar of life in Southeast Alaska. A few of us at the Sitka Conservation Society tried our hand at subsistence gill-netting in Sitkoh Bay, on the southern end of Chichagof Island, hoping to fill our cupboards with fresh, vibrant sockeye. Sitkoh creek has a well-known sockeye run, and draws fishermen from Sitka and Angoon when the fish start running in **mid-July**. Tlingit communities have been harvesting here for millennia, and today, Alaskans of all backgrounds come to fish this rich stream system. This is one story of a fishing trip in Southeast Alaska, including a few lessons learned on the water from some first-time subsistence gill-netters.

Preparation The Alaska Department of Fish & Game oversees all fisheries, and is the primary resource for fishermen curious about regulations, requirements, and guidelines of personal use fishing. We acquired our free subsistence permit in just a few minutes at the local ADF&G office, and familiarized ourselves with legalities of the fishery before we left. Subsistence and Personal Use Salmon Fishing permits are granted to Alaska residents. There is one permit allowed per household, and each management area specifies a limited amount of salmon that may be harvested. While we chose to use a gill net, other legal fishing methods include beach seining,

dip netting, gaffing, and spearing.

After procuring the right tags, and letting ADF&G know when we were going to be fishing, we put together a set of equipment to prepare ourselves for fishing. We brought mending twine and a needle in case we needed to repair the net. A friend lent us a fish pick, which is a plastic-handled tool with a small metal point, and helps to smoothly remove gill net from even the most entangled fish. The most important gear item is of course the net. Sockeye eat plankton, so they can't be caught on hook and line like King or Coho salmon. These red-fleshed beauties must be netted. A gill net is typically made of a fine filament sea-green mesh, and hangs vertically in the water. The net dangles from a line of floating corks, and the bottom of the net is weighed down by a heavy rope, called the lead-line. Flotation on top and weight on the bottom create a wall of net that salmon swim into headfirst, fatally catching their gills when they try to swim away. Our net was lent to us by a local troller, the type of person who keeps a three hundred-foot gill net in his backyard, along with other marine miscellany typical of Sitkans who harvest their own food. The net on its own was heavy and large; it required at least three people to lift it and move it from yard to car, to net shed, to boat, and finally to ocean. Before taking the net out fishing, we stretched it out in the net shed adjacent to Crescent harbor. We familiarized ourselves with the net, made sure it was the legal length of 50 fathoms, and mended some salmon-sized holes before

taking it fishing.

Gill-netting Lesson Number 1: the net does not belong on the bottom of the ocean. We left Sitka on an overcast Tuesday in two heavily loaded skiffs, four deckhands deep. The crew: Phyllis Hackett, a salty Sitkan who lives on a roadless island just off of town; Stacey Woolsey, accomplished hunter, backpacker, teacher, and thorough Alaskan; Matt Dolkas, photographer, former NOLS instructor, and SCS intern; and me, a former commercial fisherman and current intern for SCS.

By afternoon, we finally set our net near the mouth of Sitkoh creek. "Should we be setting the net this shallow? I'm not sure it's supposed to be on the bottom..." Stacey wondered aloud, dubious of laying a 25-foot deep net in 9 feet of water, as the tide ebbed. Despite her wise premonitions, we continued to set in the shallows, thinking that the nearer the creek we were, the fishier our net would be.

May you learn from this mistake! We hauled in the net by hand, heavy with an array of unexpected sea-floor biota. Dungeness crabs tangled their pincers in the web. Mussel-laden rocks, heavy sticks, and a vibrant display of seaweed also found their way into our net. We thankfully caught a few salmon as well, but picking out all of the non-fish was time-consuming and exhausting.

Lesson 2: A gill net has a mind of its own Another difficulty we encountered was controlling the net's shape and location, as it tended to wrinkle and wander at the whims of the wind and tide,

Ideally, the net is kept somewhat taught and in a straight line, maximizing the surface area for fish to swim into. In a set gill net fishery, one would simply anchor the ends of the net, solving this problem. It is not legal, however, to use an anchor while gill netting in Sitkoh bay. So, it seems best to leave one end of the net connected to your boat, allowing you the freedom to drift the net behind you as you like. This has its own set of difficulties: the net is quite heavy, placing strain on low horsepower outboards, and one must be vigilant about keeping the net away from the propeller.

Lesson 3: Read the tide book We set up camp on a rocky beach, our tents flattening tall stands of sedge. As I lay in the tent exhausted, Stacey and Phyllis kept watch on our anchored boats, and monitored the incoming tide as it neared our tent. I could hear the water lapping nearer and nearer as I fell asleep, and wondered in my exhaustion if I would even get up if the water started to trickle into our shelter. Smelling of fish and camping in bear country, tide inching closer to us, the reasons to sleep lightly piled up. Simple as it seems, checking the tide book would have saved us some worry.

Lesson 4: The work doesn't stop after you've caught the fish We brought supplies to clean and ice our fish onboard, until we could process them fully at home. Phyllis used a wedge-shaped plywood tool as a base for cleaning her fish, a useful item for holding the slippery fish in place as she made the proper incisions. We sliced the salmon's bellies from anus to gill, and scraped out the guts, careful not to bruise the bright red meat, the prized object

of our labor. Then we made a shallow cut down the bloodline of the fish, scraping out blood and any remaining detritus. The end product was a clean gutted fish, whose belly would be carefully stuffed with ice. We brought ice from a local fish processor before leaving town, and brought along coolers and Rubbermaid totes to store our catch.

While cutting the dorsal fin off of a salmon, per ADF&G subsistence regulations, Stacey's hand slipped, and sliced a tendon below her knuckle. In hindsight, sheet metal scissors would be a better tool than a knife for cutting this bony fin. Though she resiliently kept quiet about her injury, Stacey's cut tendon was a serious concern. As Matt put it, "If you were one of my NOLS kids, I'd probably get you out of the field." Considering this wise counsel, and that we hadn't caught nearly enough fish to fill our quota, we decided to pack up camp and head home. We returned to town salty, sweaty, and smelling of sea. Stacey drove her skiff 60 miles back to town with a splinted finger that would later be operated on, and I blinked away the stinging jellyfish in my eye. Remnants of blood splattered the decks of our boats, a gory testament to our harvest of salmon, and to Stacey's severed tendon. Despite our bruises and cuts, and the steep learning curve inherent in fishing, subsistence gill-netting was a richly rewarding way to harvest our own food. The salmon we caught were hand picked out of our net, and we saw them through the entirety of harvest, processing, and consumption. Truly, it is hard to think of something more gratifying than eating the fish of your labor.

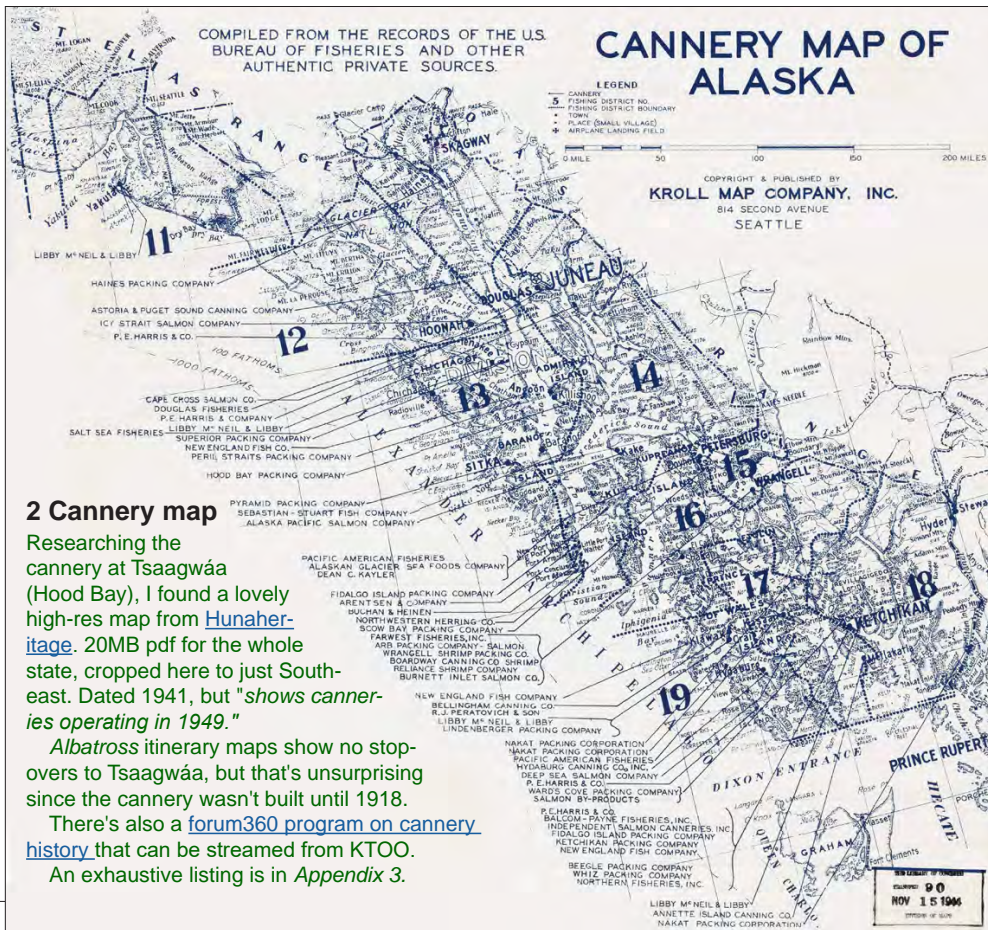
The final step of our subsistence journey (before eating, that is) was to process our salmon. In the cozy haven of Stacey's home kitchen in Sitka, we cut all of our fish into steaks and canned them. After spooning salt into the jars with the steaks, we put them in pressure cookers with boiling water. The steam and heat cooked and softened the salmon, leaving it tender, juicy, and preserved for winter days when salmon are harder to come by. I found canning to be simple, time consuming, and meditative. Harvesting fish is something I grew up with, yet have rarely given deep thought to. As I sliced flesh and tightened jars, I considered the meaning of harvesting such important and life-giving animals, and inwardly thanked them for their lives, and the nourishment they provide.

Restoration: Taking care of the Tongass Gill-netting is just one way to harvest the bounty of Alaska's waters, and to enjoy the natural riches the Tongass provides. The sockeye run in Sitkoh Bay is only possible because of the temperate rainforest ecosystems of the Tongass National Forest and the protection and responsible management of its watersheds. Fish need the habitat provided by these forest streams in order to survive and continue their life cycles. We in turn need this remarkable Tongass habitat, so that we may continue to harvest salmon to feed our friends, family, and ourselves. Harvesting one's own food is a way of life in Southeast, and salmon are a mainstay of the subsistence lifestyle.

The Sitkoh River and Sitkoh lake restoration projects are important steps in the direction of repairing salmon streams that have been harmed

by past logging practices. These projects are joint efforts between the Sitka Conservation Society, Trout Unlimited, and the U.S. Forest Service. Jointly, these organizations are working to restore natural conditions to damaged salmon streams. This summer, Sitkoh River has been returned to its natural path, and large wooden structures have been added to create spawning and rearing grounds for coho salmon. Restoration work such as this means better salmon habitat, and thus more production of salmon and improved future livelihoods for Southeast Alaskan fishing communities. For the sustainability of the incredible salmon runs that support this wild land and its communities, it is critical that we protect their habitat in the Tongass National Forest."

*More on SCS's recent restoration projects:
Restoring the Sitkoh River(Juneau Empire) [broken link]*



3 Cannery chronology

I'm copying this great list into the 2012 Angoon journal, as I research the saltery>cannery>fishtrap era. Probably needs to ultimately become a standalone document.

It comes from AHS (Alaska Historical Society), on a webpage called [Alaska Salmon Cannery Chronology: Lewis MacDonald's Alaska Salmon Cannery Chronology, 1878-1950](#)

Sites of special interest to the Albatross Retraced project are **highlighted in red**.

¹[Note: Thanks to Jim Mackovjak for condensing MacDonald's 3 reports into 1 searchable document.]

Introduction

In March 1949, Alaska's Territorial Legislature created the Alaska Department of Fisheries. The new department's mission was to assist in conservation and perpetuation of the territory's fisheries resources; to promote resident ownership, management and control of the fisheries; and to cooperate with the U.S. Fish & Wildlife Service. C.L. Anderson, a Seattle-based fisheries biologist who had a substantial understanding of fishing methods and fish processing, was hired as director of the new agency. Anderson selected Lewis MacDonald, a former enforcement officer with the Fish & Wildlife Service in Alaska who had broad knowledge of Alaska's commercial fisheries, as fishery supervisor. MacDonald was in charge of field work, including enforcement, and was the agency's liaison with the Fish & Wildlife Service. He was also interested in the history of Alaska's fisheries, and his chronology of Alaska's salmon canneries—incorporated serially into the annual reports of the Alaska Department of Fisheries for the years 1949 (Southeast Alaska), 1950 (Western Alaska), and 1951 (Central Alaska)—are a valuable contribution to Alaska's history and a fundamental reference for historical research regarding Alaska's canneries. • Jim Mackovjak, October 2013

Part One: Chronological History of Salmon Canneries in Southeastern Alaska (Parts 2 & 3 for SW and C Alaska not copied here)

Compiled by Lewis G. MacDonald from records of the Bureau of Fisheries, Fish & Wildlife Service and other sources.

Long before the advent of the white man in Alaska, the native inhabitants utilized a small fraction of the abundant fisheries. The early

Russian American Company shipped a few thousand barrels of choice salt fish to California and St. Petersburg. From **Redoubt Lake, near Sitka**, they supplied a large local area with red salmon without providing for sufficient escapement, thereby depleting the run there.

Salteries preceded the canneries. There was a saltery at Klawock before the first cannery was constructed there.

Mortality among the salmon canneries in Southeastern Alaska has been high. During the years, 1878-1949, covered by the following history, 134 canneries were built; 65 burned and were not rebuilt; five burned and were rebuilt; ten were moved to other sites; some operations were consolidated. There were 37 operating plants in Southeastern Alaska in 1949.

1878

It was not until 11 years after the United States purchased Alaska from Russia that the first cannery was built at **Klawock** by the North Pacific Trading and Packing Co. in 1878. It was operated until 1929 when Libby, McNeill & Libby bought it, operated it in 1929-30 and then closed it permanently. • The Cutting Packing Co. also built a cannery in 1878, but at **Sitka**. This cannery operated until 1880 when it was dismantled and moved to Cook Inlet.

1882

Chilkat Packing Co. (M. J. Kinney); **Chilkat Inlet**; burned 1892.

1883

Northwest Trading Co.; **Pyramid Harbor** (Chilkat Inlet); 1888 sold to D. L. Beck & Sons; burned 1889; rebuilt; sold to Alaska Packers 1893; abandoned 1908. • Fox Packing Co. (M. J. Kinney); **Boca de Quadra**; sold to Tongass Packing Co. and moved to **Ketchikan** 1886; burned 1889.

1887

Aberdeen Packing Co.; mouth of **Stikine River**; moved as Glacier Packing Co. to **Pt. Highfield** (Wrangell Is.) 1889; joined Alaska Packers 1893; closed 1927. • Boston Fishing & Trading Co. (Ford, Rhode & Johnson); **Yes Bay**; first operated 1889; sold to Pacific Packing & Navigation Co. 1901; sold to Northwestern Fisheries 1904; sold to C. A. Burkhart 1906; sold to Alaska Consolidated Canneries 1922; closed 1928.

1888

Cape Lees Packing Co. (Andrew and Benjamin Young); **Burroughs Bay**; closed 1890; sold to Alaska Packers, dismantled 1893. • Cutting Packing Co. (Alaska Salmon Packing & Fur Co.); **Loring**; joined Alaska

Packers 1893; closed 1930.

1889

Astoria & Alaska Packing Co.; **Pavlof Harbor**; moved to **Pt. Ellis** 1890. • Baranof Packing Co.; **Redoubt**; moved to **Red Fish Bay** 1890. • Thlinket Packing Co.; **Pt. Gerad** (Wrangell Is.); sold to Pacific Packing & Navigation Co. 1901; closed 1902. • Chilkat Canning Co.; **Chilkat Village**; joined Alaska Packers 1893; later dismantled.

1890

Bartlett Bay Packing Co.; **Bartlett Bay**; crude packed 4,300 cases; ice from Glacier Bay halted operations 1891; sold to Alaska Packers 1893; dismantled. • Annette Island Packing Co.; **Metlakatla**; owned by the Village; burned; rebuilt; still operating.

1891

Boston Fishing & Trading Co.; **Pt. Ellis**; burned 1892. • Baranof Packing Co.; **Red Fish Bay** (equipment from Redoubt plant); sold to Alaska Packers 1898; dismantled.

1896

Pacific Steam Whaling Co.; **Hunters Bay**; joined Pacific Packing & Navigation Co. 1901; closed 1904; sold to Northwestern Fisheries, Inc. 1905; closed finally 1930; plant sold to Pacific American Fisheries 1933 but not operated. • Quadra Packing Co.; **Mink Arm** (Boca de Quadra); sold to Pacific Packing & Navigation Co. 1901; closed 1904-05; sold to Northwestern Fisheries 1906; reopened 1907; closed 1931; plant sold to Pacific American Fisheries 1933 but not reopened.

1899

Icy Straits Packing Co. (stockholders of the Quadra Packing Co.) **Petersburg**; sold to Pacific Packing & Navigation Co. 1901; closed 1903-05; sold to Northwestern Fisheries 1905; sold to Norway Packing Co. 1906; taken over by Petersburg Packing Co. 1915; sold to Pacific American Fisheries 1929; operating.

1900

Western Fisheries Co.; **Dundas Bay**; sold to Pacific Packing & Navigation Co. 1901; sold to Northwestern Fisheries 1905; closed, 1931; sold to Pacific American Fisheries 1932 but not operated. • Royer Warnock Packing Co.; **Beecher Pass**; operated one year. • Taku Fishing Co.; southern shore **Port Snettisham**; sold to Pacific Packing & Navigation Co. 1901; closed 1902. • Chilkoot Packing Co.; **head of Chilkoot Inlet**; sold to Pacific Packing & Navigation Co. 1901; closed 1904. • Taku Packing Co.; **Taku Inlet**; joined Pacific Packing

& Navigation Co. and closed 1904. ● Fidalgo Island Packing Co.; **Ketchikan**; operating.

1901

Thlinket Packing Co.; **Santa Anna**; no operation 1903-05; sold to Northwestern Fisheries 1905; closed 1920; plant sold to Pacific American Fisheries 1933; abandoned 1938. ● Union Bay Packing Co.; Ken Bay (**Affleck Canal**); plant moved to Bristol Bay 1904. ● Pacific Coast & Norway Packing Co.; **Tonka**; moved to **Petersburg** 1906. ● C. Barnes; **Lake Bay**; sold to Columbia River Packers 1929; closed 1930. ● San Juan Fishing & Packing Co.; **Taku Harbor**; (cannery and cold storage plant); sold to Pacific Cold Storage Co. 1903; leased to Taku Alaskan Packing Co. 1906; leased to John L. Carlson & Co. 1907; sold to Carlson 1911; sold to Libby, McNeill & Libby 1918; operated to 1947 still maintained. ● Chatham Straits Packing Co.; **Sitkoh Bay**; sold to **Pacific Packing & Navigation Co.** 1901; sold to **George T. Myers** 1904; sold to **New England Fish Co.** 1929; operating.

1902

Wales Island Packing Co.; **Wales Is.** (near Ketchikan); island became part of Canadian Territory in 1903; not listed as American plant. ● Alaska Fisheries Union; **Chilkat Inlet**; leased to Lynn Canal Packing Co. 1905; sold to Pacific American Fisheries 1906; moved to **Excursion Inlet** 1908. ● Kasaan Bay Co.; **Kasaan**; closed 1904-05; sold to Gorman & Co. 1905; burned 1906; rebuilt 1911; sold to Booth Fisheries 1915; packing name changed to Northwestern Fisheries 1921; sold to Pacific American Fisheries 1933; operating. ● **Thlinket Packing Co.**; **Funter Bay**; sold to Alaska Pacific Salmon Corp. 1926; closed 1931; sold to **P. E. Harris 1941** but not operated. ● Alaska Fish & Lumber Co.; **Shakan**; not operated 1904-05; sold to Gorman & Co. 1906 (Shakan Salmon Co.); sold to Booth Fisheries 1915 (operating as Northwestern Fisheries); closed 1930; plant sold to Pacific American Fisheries 1933; dismantled. ● Pillar Bay Packing Co.; **Pillar Bay**; sold to Fidalgo Island Packing Co. 1918; operating.

1904

Yakutat & Southern Railway; **Yakutat**; nine-mile railway built to fishing site; sold to Libby, McNeill & Libby 1917; cannery maintained.

1908

Astoria Puget Sound Co.; **Excursion Inlet**; sold to Columbia River Packers 1948; burned 1948. ● Pacific American Fisheries moved Chilkat Inlet plant to **Excursion Inlet**; closed 1935; consolidated with Astoria Puget Sound.

1910

St. Elias Packing Co.; **Dry Bay**; closed 1913.

1911

Hidden Inlet Canning Co.; **Hidden Inlet**; burned 1920; A&P Co. built on same site 1922; name changed to Nakat Packing Co. 1924; operating. ● Gustav & Co.; **Skowl Arm**; sold to Straits Packing Co.; burned 1920; rebuilt 1923; leased to United Salmon Packers 1930; leased to Skowl Arm Packers 1932; sold to Deep Sea Canning Co. 1933; closed 1937. ● Tee Harbor Packing Co.; **Tee Harbor**; sold to Alaska Pacific Fisheries 1922; sold to Alaska Consolidated Canneries 1922; burned 1924. ● Hawk Inlet Fish Co.; **Hawk Inlet**; sold to P. E. Harris 1915; operating.

1912

Revilla Fish Products Co.; **Ketchikan**; closed after one year operation. ● Oceanic Packing Co.; Waterfall; sold to Alaska Fish Co. 1913; sold to Nakat Packing Co. 1924; operating. ● Lindenberg Packing Co.; **Craig**; sold to Sea Coast Packing Co. 1917; sold to Libby McNeil and Libby 1929; operating. ● Lindenberg Packing Co.; **Roe Point** (Behm Canal); sold to Northwestern Fisheries 1916; closed 1920; burned 1929. ● Alaska Sanitary Packing Co.; **Wrangell**; burned 1924. ● Beauclerc Packing Co.; **Port Beauclerc**; burned 1926. ● Sanborn Cram Co.; **Burnett Inlet**; sold to Burnett Inlet Packing Co. 1918; sold to Alaska Pacific Fisheries 1930; idle until sold to Burnett Inlet Salmon Co. 1937; burned 1940. ● Hoonah Packing Co.; **Hoonah**; closed 1924; sold to Icy Strait Packing Co. 1934; operating. ● W. Hume Co.; **Nakat Inlet**; burned 1920. ● Karheen Packing Co.; Karheen; sold to Libby, McNeil & Libby 1929; operated 1930 and closed; burned 1933. ● Admiralty Trading Co.; **Gambier Bay**; sold to Hoonah Packing Co. 1915; closed 1923. ● Starr Collinson Packing Co.; Moira Sound; burned 1929. ● Sunny Point Canning Co.; **Ketchikan**; name changed to Alaska Pacific Salmon Corp. 1929; sold to P. E. Harris Co. 1940; sold to Nakat Packing Co. 1949. ● Swift Arthur Cresby Co.; **Warm Chuck** (Heceta Is.); leased to A&P Products Corp. 1922; named changed to Nakat Packing Co. 1925; closed 1929. ● Point Warde Packing Co.; **Point Warde** (Behm Canal); operated until 1921; closed 3 years; reopened 1924; sold to Whitworth Fisheries, Inc. 1927; leased to Alaska Associated Canneries 1929; dismantled 1930. ● Pure Food Fish Co.; **Ketchikan**; leased to Nakat Packing Co. 1927; sold to Nakat 1928; closed 1930. ● Weise Packing Co.; **Rose Inlet**; sold to Southern Alaska Canning Co. 1918; went under Alaska Consolidated Canneries 1922; sold to Alaska Pacific Salmon Corp. 1929; sold to P. E. Harris 1941; maintained. ● Walsh Moore Canning Co.; **Ward's Cove**; sold to Wards Cove Packing Co. 1914; operating. Canoe Pass Packing Co.; Canoe Pass; operated one year; dismantled and moved to Cordova 1914. ● Sanborn Cutting Co.; **Kake**;

sold to Alaska Pacific Salmon Corp. 1926; sold to P. E. Harris 1940; recently sold to the Organized Village of Kake; operating. ● Deep Sea Salmon Co.; **Fords Arm** (near Cape Edwards); leased to A&P Products Corp. 1920; closed 1923. ● Alaska Pacific Fisheries; **Chomyi**; taken over by Alaska Consolidated Canneries 1922; sold to Alaska Pacific Salmon Corp. 1929; closed 1930.

1914

George Inlet Packing Co.; **George Inlet**; sold to Libby, McNeill & Libby 1927; operating.

1915

Doyhof Fish Products Co.; **Scow Bay** (Wrangell Narrows); sold to W. Hume 1919; leased to P. E. Harris 1923; machinery moved to **Lake Bay** cannery 1925.

1916

L. Smiley Co.; **Ketchikan**; sold to Pacific American Fisheries 1928; closed 1932. ● Tenakee Fisheries; **Tenakee Inlet**; sold to Standard Salmon Co. 1920; leased to J. D. Roop Co. 1922; sold to Superior Fish Co. 1923 and was reorganized in 1927 under the name of Superior Packing Co.; operating. ● Union Bay Fisheries Co.; **Union Bay**; taken over by G. W. Hume 1923; sold to Atlantic & Pacific Tea Co. 1924; operation name changed to Nakat Packing Co. 1925; burned 1947. ● Beegle Packing Co.; **Ketchikan**; taken over by P. E. Harris 1944 ● Ketchikan Packing Co.; **Ketchikan**; closed 1921. ● Auke Bay Salmon Canning Co.; **Auke Bay**; closed 1924.

1917

Baranon Packing Co.; **Red Bluff Bay**; closed 1921; used as saltery station. ● Lane & Williams; **Moira Sound**; closed 1919. ● Sitka Packing Co.; **Sitka**; leased to DeLong & Wolf 1921; leased to A. P. Wolf & Co. 1922; Sitka Packing Co. operated in 1923; sold to Pyramid Packing Co. 1924; operating. ● Alaska Herring and Sardine Co.; **Port Walter**; closed 1925; sold to PAF in 1929 but not operated. ● L. Cole & Co.; (**north of Craig**); closed 1920. ● Alaska Pacific Herring Co.; **Big Port Walter**; sold to Southern Alaska Canning Co. after two years; closed 1922; later used as saltery and herring reduction plant. ● Haines Packing Co.; Chilkat Inlet (**Litnekof Cove**); operating.

1918

Pyramid Packing Co.; **Sitka**; sold to Sitka Packing Co. 1923; reorganized 1942 under name of Pyramid Fisheries, Inc.; operating. ● Columbia Salmon Co.; **Tenakee**; sold to Alaska Consolidated Canneries 1922; closed 1929. ● Deep Sea Salmon Co.; **Port Althorp**; sold to

Alaska Pacific Salmon Corp. 1929; burned 1940. ● Northern Packing Co.; **Juneau**; closed 1920. ● Pybus Bay Fish & Packing Co.; **Pybus Bay**; sold to Alaska Consolidated Canneries; 1922; sold to Alaska Pacific Salmon Corp. 1928; closed 1928. ● Hidden Inlet Canning Co.; **Hood Bay**; sold to Hood Bay Canning Co. 1927; sold to Angoon native village 1949. ● American Packing Co.; **Juneau**; closed after two years operation. ● Noyes Island Packing Co.; **Steamboat Bay**; sold to Steamboat Bay Packing Co. 1922; sold to New England Fish Co. 1924. ● E. P. Keegan; **Douglas**; operated one year; closed. ● Van Vlack & Co.; **Thomas Bay**; operated 1918; later used as shrimp cannery and saltery station. ● Alaska Packing & Navigation Co.; **Pavlof Harbor**; sold to Pavlof Harbor Packing Co. 1919; leased to Carlson Bros. 1921; closed 1923. ● Alaska Fisheries Co.; **Washington Bay**; sold to Petersburg Packing Co. 1919; closed 1921; used as saltery and reduction plant. ● Todd Packing Co.; **Todd** (Peril Straits); closed 1921; sold to Peril Straits Packing Co. 1927; reorganized as Todd Packing Co. 1942; operating. ● Southern Alaska Canning Co.; **Boca de Quadra**; sold to Alaska Consolidated Canneries 1922; closed 1928; plant sold to Alaska Pacific Salmon Corp. 1929 but not operated.

1919

Mountain Point Packing Co.; **Scow Bay**; bought Alaska Clam Co. buildings and operated salmon cannery; leased to Wrangell Narrows Packing Co. 1929; leased to O. Nickolson 1932; leased to Hanseth Bros. 1933; sold to Scow Bay Packing Co. 1934; idle 1938-42; leased by Dean Kaylor 1942-45; leased to H. M. Parks Co. 1949. ● Alaska Sanitary Packing Co.; **Cape Fanshaw**; operated 1919-20 then closed. ● Marathon Fishing & Packing Co.; **Cape Fanshaw**; operated 1919-20 then closed. ● Cape Fanshaw Fishing and Packing Co.; **Cape Fanshaw**; operated one year and closed. ● Alaska Salmon & Herring Packers; **Tyee**; sold to Sebastian & Steward 1924; operating. ● Hood Bay Packing Co.; **Hood Bay**; reconverted into reduction plant 1924. ● Douglas Island Packing Co.; **Douglas**; leased to Ellson Packing Co. 1931; taken over by Douglas Fisheries 1933; sold to Douglas Canning Co. 1946; maintained. ● John L. Carlson & Co.; **Auke Bay**; closed 1922; dismantled 1925.

1920

Revilla Packing Co.; **Ketchikan**; operated one year; dismantled 1924. ● R. Strand; **Wrangell Narrows**; operated one year. ● Alaska Union Fisheries, Inc.; **Port Conclusion** (Baranof Is.); operated 1920-21; closed 1921. ● Hetta Packing Co.; **Coppermount** (Hetta Inlet); closed 1930.

1922

Ness Fish Co.; **Petersburg**; packed salmon one year then entered shrimp fisheries. ● Big Harbor Packing Co.; **Craig**; packed one year and closed. ● J. Peratrovich; **Bayview**; changed name to Bayview Packing Co. 1924; leased to Ocean Packing Co. 1932; taken over by Peratrovich & Son 1939; name changed to Peratrovich Packing Co. 1942; leased to West Coast Packing Co. 1945; operating.

1923

New England Fish Co.; **Ketchikan**; still operating. ● Sunrise Packing Co.; **Ketchikan**; sold to Northland Packing Co. 1925; sold to Stuart Corp after one year's operation; sold to Ketchikan Packing Co. 1931; operating.

1924

Chas. W. Demmert Packing Co.; **Bayview** (Klawock); leased to Klawock Packing Co. 1933; leased to Ocean Packing Co. 1936; idle in 1937; leased to Spencer Packing Co. 1938; leased to Bellingham Canning Co. 1940; leased to Libby, McNeill & Libby 1946; now being sold to natives of Klawock; operating.

1926

Tongass Packing Co.; **Nakat Inlet**; put up one pack; went into receivership and closed.

1927

Far North Fisheries; beached the floating cannery Pioneer at **Hydaburg**; operated until 1930; leased to F. W. Kurth, former superintendent, 1930; repossessed, floated and moved to **Ketchikan** 1931. ● Independent Salmon Canneries; **Ketchikan**; started in leased building; erected new building 1929; operating.

1929

Wrangell Packing Co.; **Wrangell**; taken over by Burnett Inlet Salmon Co. 1941; plant not operated after 1942; Far West Alaska Co. formed, consolidated with A. R. Breuger at Wrangell. ● Iverson Packing Co.; **Ketchikan**; (in buildings formerly used by Independent Canneries); sold to Balcom-Payne Fisheries in 1933; closed 1942.

1932

Diamond K Packing Co.; **Wrangell**; became Far West Fishermen, Inc., 1939; reorganized as Far West Alaska Co. 1940.

1934

Berg Packing Co.; **Ketchikan**; taken over by Whiz Fish Co. 1940; closed 1943. Lindenberg Canning Co.; **Craig**; closed 1939-42; packed

in 1942 and closed. ● Lane Bros.; **Moir Sound** (near Ketchikan); operated until 1936 and closed.

1935

A.R. Breuger; **Wrangell**; operated until 1942; reorganized as Far West Wrangell 1942; operating. ● Hydaburg Fisheries, Inc.; **Hydaburg**; packing name changed to Hydaburg Canning Co. 1939; changed to Hydaburg Cooperative Assn. 1944; operating.

1936

Seaport Salmon Co.; **Ketchikan** (in old Steve Selig estate building); packed one year and closed.

1937

Northern Fisheries; **Ketchikan**; closed 1942.

1938

Dean C. Kaylor; **Petersburg** (in old shrimp-crab plant; Scow Bay plant leased and operated until 1946; new plant built at Petersburg 1946 and has since packed under the name of Kaylor & Dahl. ● Salt Sea Fisheries; **Tenakee**; make a pack nearly every year to date.

1940

Alaska Glacier Sea Food Co.; **Petersburg** (began packing salmon in its shrimp plant); burned 1942; rebuilt; now occupied by Kaylor & Dahl.

1941

Cape Cross Salmon Co.; **Pelican**; did not pack until 1944; dock and warehouse were used by a floating cannery; plant leased to Whiz Fish Co. 1946 but is still owned by Cape Cross Salmon Co.

1942

Burnett Inlet Salmon Co.; **Saginaw Bay** (near Wrangell) in the old Port Walter Herring and Packing Company's reduction plant; became Farwest Saginaw in 1943; taken over and operated by Grindall Fisheries 1946; but owned by Farwest Fishermen, Wrangell.

1946

Binkleys Canning Co.; **Wrangell**. ● Lutak Fisheries; **Lutak Inlet**. ● Fancy Packers; **Ketchikan**. ● Smith Morrow; **Sitka**.

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