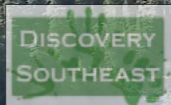


Eeyákw  
(Amalga/Peterson)  
Scoping & journals



2009 • updates  
2017, 2020, 2025

*Richard Carstensen  
Discovery Southeast*

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Cover: NW over head of Amalga Meadows, 20170411

**Preface, 20170412:** From 2007 to 2011, *Discovery Southeast* was contracted by CBJ Parks & Rec to create interpretive signs & publications for 10 trail systems. Scoping documents for each watershed begin with a fairly standard **natural & cultural history description**, from bedrock to human ecology. Then, in Part 2, I add **field notes** from decades of visits to that area.

Two summers ago, Steve Merli & I offered a teachers' workshop called *Ecology out-the-road*, addressing educational potential for classes basing out of the 4 large-group facilities between Amalga and Berners. We & director Shawn Eisele considered it a contribution to teachers' toolkit of outdoor ed options. Eagle Valley Center is a showpiece in that kit, and a destination in our field course.

**Preface, 20201001:** Little progress in the world of education, but I'll continue to update this scoping-&-journal collection. Maybe, post-covid, we can revive *Ecology-out-the-road*? But whether or not I'm part of physical gatherings of teachers and students here, this place-journal #4 will hopefully be useful to those who love Eeyákw.

**Preface, 20251213:** Well, 16 years after draft#1, I guess this is about ready to post to JuneauNature. **Enjoy!**



## Background

Amalga Meadows is one of 10 watersheds on CBJ land studied and described by Discovery Southeast during [trails-interpretation for Parks & Rec, 2007-2010](#).<sup>1</sup> My original version of this background 'resources' document assembled natural & cultural history information used in signage, interpretive booklets, brochures and web products.

Earlier, in 2003, Discovery published a study of Amalga Meadows and the Eagle River area based upon our work for SEALT (Southeast Alaska Land Trust).

1 Other trails: Treadwell Historic; DZ middle school, Outer Point; Auke Lake; Fish. Gold; Montana; Arboretum, Cowee Meadows.

## 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 Lingít 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, I default regretfully to the colonial.

Our final report, [Wildlife out-the-road](#),<sup>2</sup> described habitat and wildlife use of the 'Risen Valleys' area from 24-mile to 29-mile, Glacier Highway. Because that report presented a good overview of the natural history of the area, I didn't initially duplicate all of the regional introduction in this trails-oriented scoping document. Instead, the 2009 version of this collection focused on immediate surroundings of the Amalga beach access trails—features appropriate

2 Carstensen & Hocker, 2003. Related Discovery pubs are listed in [Appendices>References](#). [Most digital media can be downloaded from JuneauNature](#).



for interpretive products closely matched to the site in question.

**PS 2020:** As I reshuffle folder structure, moving everything Eeyák'w-related into *D:\0 placejournals\4 Eeyák'w*, geographic scope re-enlarges. I'm trying to be more logical and comprehensive in my delineation of 'places' for Áak'w & T'aaǰú Aaní. On next page is the northern half of [JuneauNature's map of 'watersheds'](#), numbered from NW to SE, 'lumping' culturally significant



landscapes, which (as USFS recognised with its not-always-hydrologic VCUs) don't necessarily conform to drainage patterns. Watersheds #3 *Asx'ée-L'ux* and #4 Eeyák'w share cultural histories through a century-old miner's road that trailbuilders [have just resuscitated](#).

On the north end, Eeyák'w's boundary with #3 *Asx'ée-L'ux* is Horsetram Saddle, traversed by the new

**Left:** Sunny April visit to Eagle Valley Center. DSE's 3-panel trailhead signs in lower left. ● **Above:** NE to Amalga Harbor. Arrows, left to right: trail outlet at Eagle River Landing; Kayak Beach, and Eagle Valley Center. Eagle Glacier in background.



Pano southeast to Lichen Point.  
Described in *Field notes* for [20201007](#)

Horsetram Trail. This means, for example, that on 20201007, when Cathy and I first hiked this trail, my notes from the northern end went into that Asx'ée collection, while photos, flights, notes, etc south of the saddle go into this one. <sup>3</sup> Picky, perhaps? Or sensible?

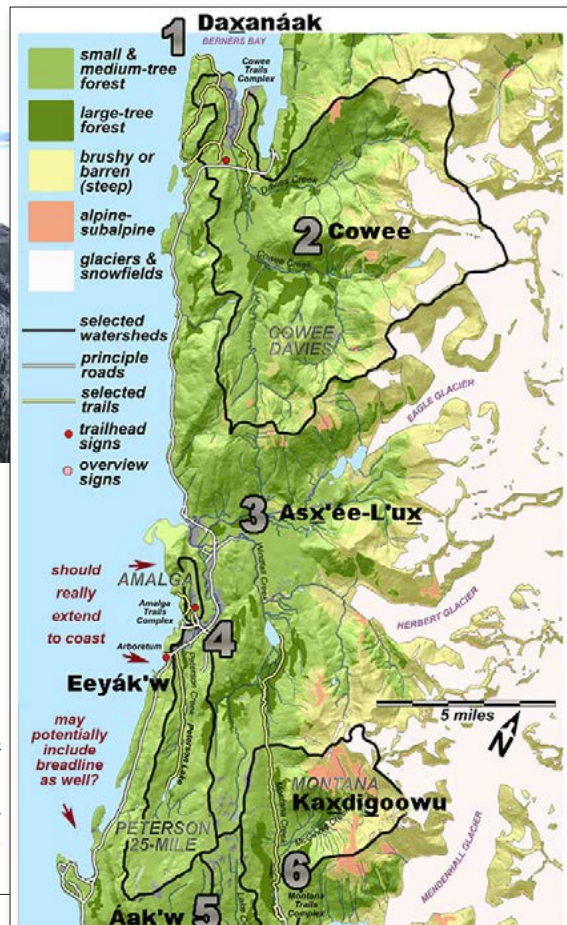
In terms of actual watersheds, this #4 unit includes both the tiny Amalga Meadows subshed, plus the larger Tool T'eik, *lowbush cranberries* (Peterson) basin, black-outlined on adjacent map. None of my units on this *JuneauNature* map so far include the Breadline coast, or Tee or Lena Coves.

<sup>3</sup> Notes on technical aspects of droning go into yet another journal, G:11 FNs\1-dronelog\droneog4.pdf.

These are mostly privatized, not popular hiking destinations. But if I do find cause to add them—for example something on the new Lena picnic shelters—watershed #4 would be their logical home.

*JuneauNature* has an [interactive version of this watersheds index](#). From each hyperlined polygon, you can click to jump to that content page.

This crop for the northern portion shows why distinctions between "watersheds" #3 and #4 are in several ways arbitrary.



## Scoping Geography & geology

Much larger watersheds (thick grey lines on map, right) encompass the small Amalga Meadows basin. The meadows drain a small northern lobe of Tool T'eik (Peterson) watershed, which derives primarily from Peterson Lake [noTN?] to the southeast. The historic horse tram that began at Eagle River Landing turned northwest up Amalga Meadows and crossed through Strawberry Creek into L'ux (Herbert), then Asx'ée (Eagle) Watersheds *en route* to the mining settlement of Amalga, at that time right next to terminus of Eagle Glacier.

Many historic mines and prospects occurred at contact of Cretaceous rock types (*KJ*, green), with older Triassic slates (*Trclt*, blue). This occurred not only on the hillside above Amalga, but in Kaḵdigoowu Héen (Montana) and Windfall watersheds.

Compare bedrock types as mapped here by USGS, 2004, to the 1912 map by Adolf Knopf, excerpted below. I return to mining in the section titled [Human history](#).<sup>1</sup>

<sup>1</sup> For more detail on deep-time geologic history, plate tectonics, mineralization of the Gold Belt, etc, see [fish-scoping.pdf](#) & [roberts-scoping.pdf](#). These documents provide overviews for Gravina belt and Taku terrane, respectively.

### Bedrock codes

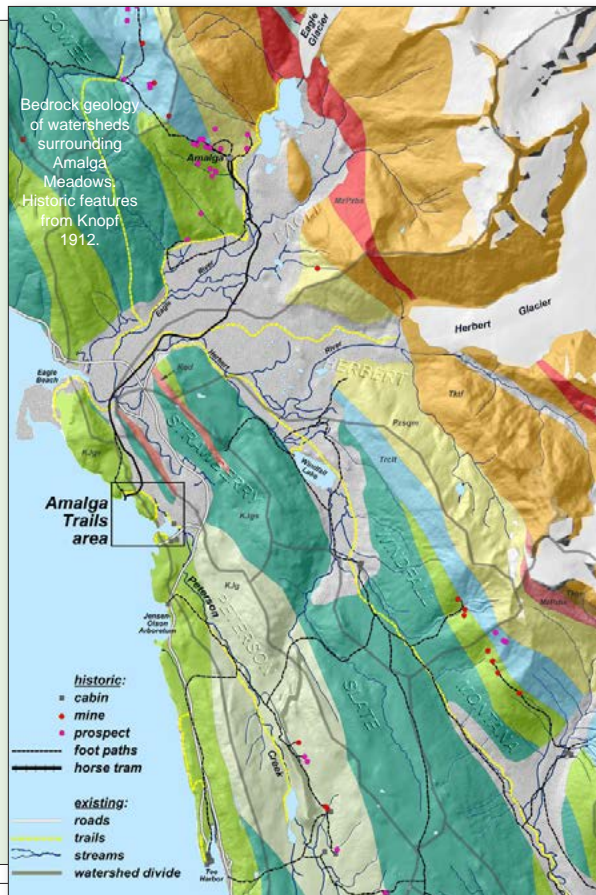
*from USGS layer for Southeast Alaska*

**KJgv Volcanic rocks of the Gravina belt** (Cretaceous and Jurassic): Augite bearing flows, volcanic breccia, and intercalated tuff, volcanic graywacke, phyllite and slate; andesitic to basaltic composition; weathers dark greenish gray; relict augite phenocrysts.

**KJg Sedimentary and volcanic rocks of the Gravina belt, undivided** (Cretaceous and Jurassic): Mixed and undifferentiated rocks, inter-tonguing of Seymour Canal Formation (KJss) and Douglas Island Volcanics (KJsd); exposed on mainland and Douglas Island Graywacke, dark gray slate and argillite (locally calcareous), polymictic conglomerate, fine-to-coarse-grained volcaniclastic rocks and breccia, and augite porphyritic mafic flows. Unit is at least 3000m thick.

**KJgs Sedimentary rocks of the Gravina belt** (Cretaceous & Jurassic): Graywacke, slate, and minor conglomerate; volcanic debris, except for conglomerates, polymictic with granitic clasts; most graywacke and slate were turbidites; weathers dark greenish gray. Graywacke and slate/argillite are locally calcareous and lighter colored; sedimentary structures common. Limestone nodules and lenses to 50 cm thick are common in argillite. On Douglas Is hosts Treadwell "albite diorite" sill—host for Treadwell gold. Unit's at least 2500m thick.

**Trclt Carbonaceous slate, phyllite, and limestone** (Triassic). Includes dominantly well foliated and commonly lineated dark gray fine-grained phyllite with minor thin dark gray semischist interlayers,



weathers medium to dark gray; with extensive interlayered green phyllite that weathers light green; former probably derived from fine-grained clastics; latter from tuffs or fine-grained volcanogenic sediments; metamorphic grade increases from prehnite pumpellyite/low greenschist facies in SW to upper greenschist facies in NE.

**Pzsqm Siliceous metasedimentary rocks and marble** (Paleozoic): Quartzite, carbonate-rich metaturbidites, marble, and siliceous and quartzofeldspathic schist, with subordinate mafic metavolcanic rocks, pelitic schist, and orthogneiss. Quartzite includes pure orthoquartzite, calcareous quartz metasandstone, lithic quartz metasandstone, with subordinate interlayered pelitic schist, marble, and mafic to silicic metavolcanic rocks and flow rocks. (In Port Houghton, schist contains 2 generations of garnet.) Protoliths probably Silurian-Devonian.

**MzPzhs Hornblende schist and gneiss of the Coast Mountains** (Mesozoic and Paleozoic): Poorly to well foliated, locally lineated, interlayered hornblende schist, semischist, and lesser biotite schist; fine to coarse grained; weathers greenish gray, dark greenish gray fresh; probably from intermediate to mafic volcanic flows,

tuffs, or volcanic sediments. Metamorphic grade increases NE from upper greenschist facies to amphibolite facies, compatible with metamorphic facies of nearby biotite schist and gneiss unit (MzPzbs).

**TKtf Foliated tonalite** (Tertiary and Cretaceous): Correlated with tonalitic plutons forming thick sills for at least 800 km along west margin of Coast Mountains plutonic metamorphic complex. Homogeneous, well foliated, non-layered; locally lineated; medium to coarse grained; color index ave 25; gray when fresh, weathers darker; locally hornblende porphyritic with phenocrysts up to 2 cm; some bodies have distinctive skeletal garnet; gneiss inclusions occur locally. Mapped with Quaternary pluton in BC, and foliated tonalitic bodies forming eastern margin of Coast batholith in SE AK.

**TKtm Migmatite** (Tertiary and Cretaceous): Migmatite consists of intimately intermixed paragneiss and orthogneiss, with widespread

injection gneiss. Amphibolite facies (hornblende) biotite quartz feldspar schist and gneiss invaded and deformed by tonalite; schist and gneiss fine to medium grained, locally include calc-silicate layers, and typically weather rusty; invader is generally the Biotite-Hornblende and Hornblende-Biotite Tonalite, etc. unit (TKto), characterized by foliation and local aligned hornblende phenocrysts.

**Qa Quaternary alluvium:** valley fill, stippled.

I have variably referred to the Knopf map as 1910 or 1912, but should probably be consistent and say 1912. That's the publication date for both the beautiful color plate, vignette below, and Adolf's associated 64-page report, Bulletin 512. It does help to know, however, that topographic surveys producing the extraordinary, entirely ground-based 50-ft contours, were lead not by Knopf but JW Bagley, under direction of Alfred Brooks, a few years earlier, 1909-1910.

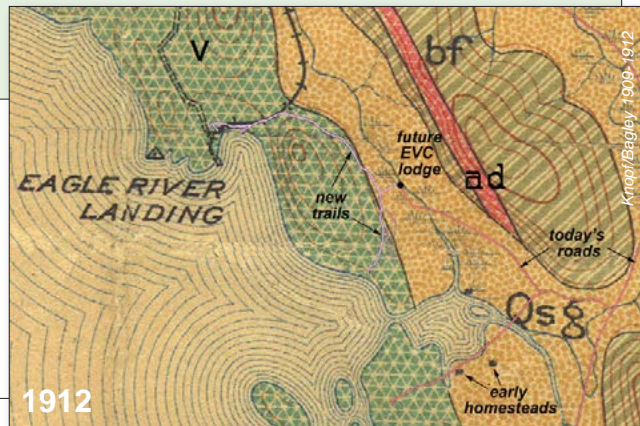
## Geologic influence on vegetation

Adolf Knopf (1912) mapped and described bedrock geology in the Eagle River Region. An understanding of bedrock and surficial geology helps not only to explain early mining history of the Juneau Gold Belt, but also sheds light on patterns in vegetational communities.

For example, the volcanic greenstone

### Excerpt from Knopf 1912. Rock codes:

- **v** Volcanic greenstone, lava, tuff, breccia and conglomerate composing much of the Juneau shoreline. Not gold-bearing; extension S forms backbone of Douglas Island.
- **bf** Berner's Formation. Gold-bearing slates and greywackes. The ridge mapped here hosts no mines.
- **ad** Augite diorite. Narrow intrusive dike. This accounts for the pale cliffs exposed above upper Amalga Meadows.
- **Qsg** Quaternary fines. recent unconsolidated deposits. Marine deposits ~2 to 3 centuries ago.



underlying upland portions of the Amalga beach access trails (“v” on Knopf map) appears to be of low-to-medium productivity for forest development. Rarely are large trees found on this bedrock, or the thin blanket of glacial till that covers it. <sup>1</sup> The highland trail that continues north from Eagle River Landing passes through several peat bogs on more level sections (probably veneered by fine marine sediments). Maximum tree diameter in the scrubby old growth is rarely more than 3 feet.

Similarly, the surficial marine deposits (*Q<sub>sg</sub>* on map) are mostly fine sand and silt, poorly drained and slow to be colonized by forest. Most of Amalga Meadows would be classified wetland. <sup>2</sup>

An instructive contrast can be seen at Jensen-Olson Arboretum to the south, also on CBJ lands. Here, greater wave exposure during submergence 2-to-3 centuries ago left a deposit of beach gravel, better drained and ideal for gardens, lawn and tree plantings.

<sup>1</sup> PS 2025. This was written before LiDAR, which hugely advanced our ability to search whole watersheds for tallest trees. On 1203, Discovery naturalists hiked up to some [magnificent spruces only a few minutes from EVC](#).

<sup>2</sup> PS 2017: Since I wrote this prediction in 2008, Discovery participated in CBJ’s wetland surveys of 2014-15. The valley is indeed classified almost entirely wetland by Adamus assessment protocol. For synopsis and unit-by-unit descriptions see [Supplement to the JWMP](#) (Juneau Wetland Management Plan), (Carstensen 2016)

**Above:** Volcanic greenstone frames Kayak Beach. Most Eeyák’w/ Asx’ée (Amalga/Eagle) shoreline is too steep for comfortable hiking. View south to salt chuck tidal gut. Cleared launching route through boulders. Used today for launching kayaks, but did it originate as precontact yakwdeiyí, *canoe ramp*?

**Below:** NNW to cliffs at head of Amalga Meadows. Augite diorite is an igneous rock more resistant to glacial erosion than softer slates and greywackes of encompassing Berners Formation (*bf*). This dike (*ad* on map) therefore maintains steeper faces, while the metamorphic and sedimentary rocks form gentler topography, usually obscured by forest.



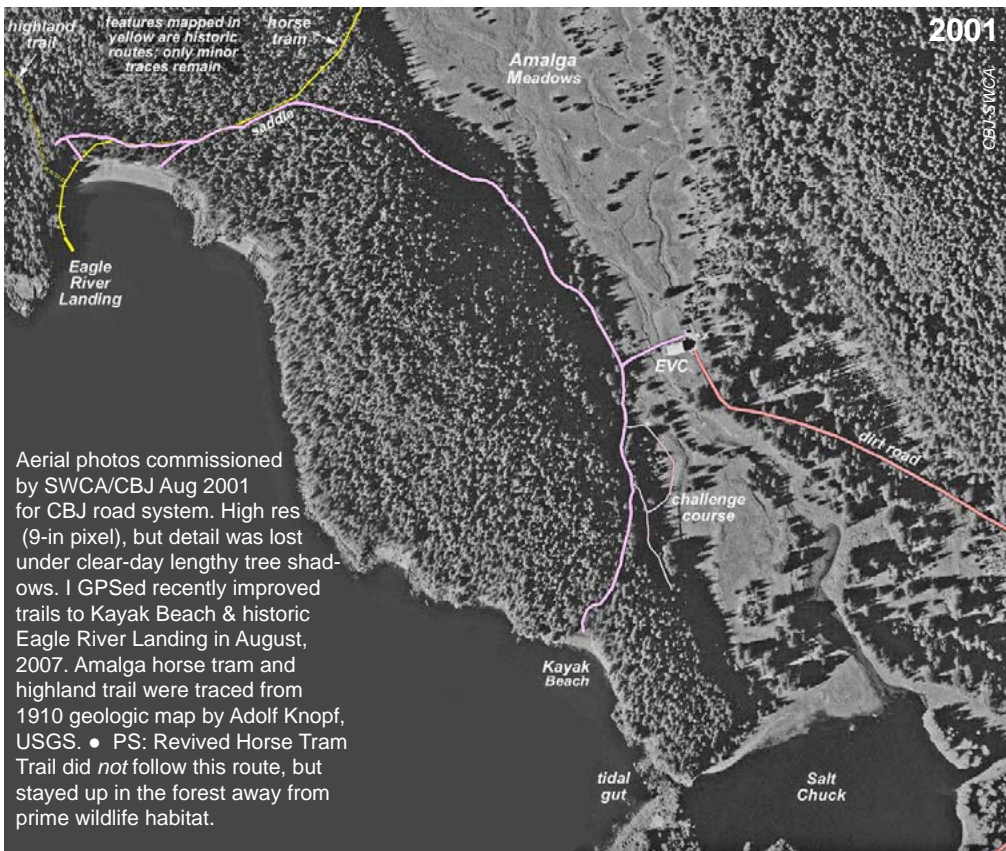
## Sea-level changes

Juneau-area glaciers reached their maximum down-valley positions in the mid 1700s, a period known as the Little Ice Age. Meantime, along marine shore-lines, the greater regional weight of ice depressed the land. As the ice age ended, reduced pressure caused the land to rebound.

Current rate of glacial rebound in the Amalga/Eagle area is about 0.7 inches per year. At Eagle Beach where I lived for 12 years and mapped uplift landforms, the greatest apparent height of raised tideland above current sea level was about 10 feet. The significance of this uplift is so profound that Kathy Hocker and I named the Amalga/Eagle area '*Risen Valleys*' during our work for SEALT (SE AK Land Trust) in 2003.<sup>1</sup>

Few areas of the world are experiencing significant glacial rebound (Most are confronting sea-level *rise* as a result of polar ice melt. In Southeast, land still rises faster than global sea level). I feel that uplift meadow and parkland is the most globally unique habitat in the Juneau area. Substantial acreage of this habitat is restricted to 3 areas in the CBJ: Taashuyee-Chookan.aani (Mendenhall Wetlands), Risen Valleys, and Cowee Meadows. In the former, most original uplift habitat has been developed.

<sup>1</sup> PS: On receipt of 2013 LiDAR we confirmed this estimate. Wave carved faces from max-LIA marine intrusion are consistently at about 32 feet, ie, ~11 feet above today's HTL (Corps-defined high tide line).



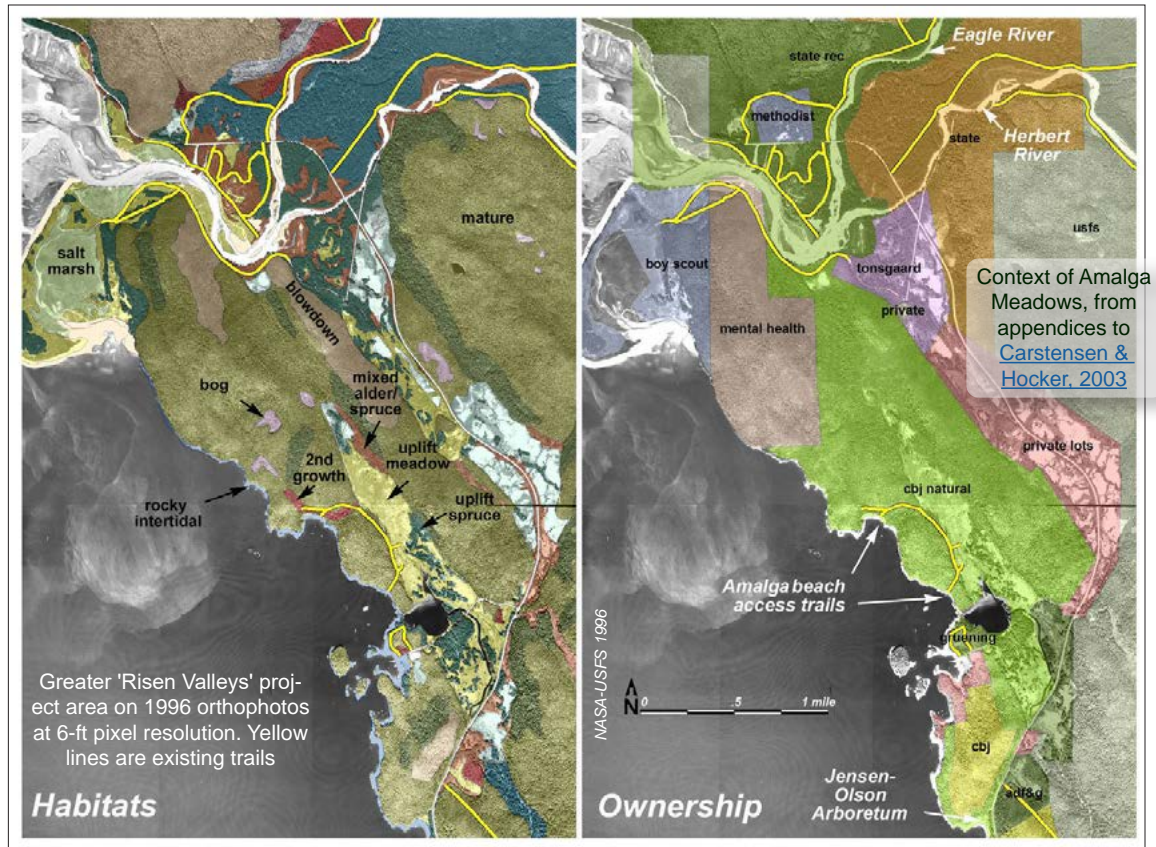
Aerial photos commissioned by SWCA/CBJ Aug 2001 for CBJ road system. High res (9-in pixel), but detail was lost under clear-day lengthy tree shadows. I GPSed recently improved trails to Kayak Beach & historic Eagle River Landing in August, 2007. Amalga horse tram and highland trail were traced from 1910 geologic map by Adolf Knopf, USGS. ● PS: Revived Horse Tram Trail did *not* follow this route, but stayed up in the forest away from prime wildlife habitat.

Only in Risen Valleys and Cowee Meadows can we witness its exceptional importance to wildlife, most notably bears. It's no exaggeration to call Risen Valleys "Juneau's premier natural area."

To my knowledge, no scientific study has addressed the ecological importance of uplift habitats. In contrast, a great deal of work has been done on land exposed by receding glaciers. The discrepancy is strange. Uplifted tideland covers more acreage than deglaciated lands in northern Lingít Aaní. Because marine shorelines are meccas for most Southeast fish and wildlife, it offers greater habitat value than interior glacial barrens and subsequent successional stages. Impacts to uplift habitats from human development and *even recreational activities & infrastructure* are serious. Interpretive signs & publications are an opportunity to increase awareness of the importance and uniqueness of these places.

## Vegetation

Veg-type descriptions for Risen Valleys are in [Carstensen & Hocker \(2003\)](#). I



won't repeat them here, but instead note some details of specific types traversed by Amalga beach access trails.

**Uplift parkland** The trailhead at Eagle Valley Center is on a better-drained portion of the Little-Ice-Age tidal deposits. No accident: it's on the corner of Homestead Entry Survey 105, later owned by Joe Smith who picked the best-drained location to build on. Spruces framing the last part of his long driveway have grown tall and fast, testifying to good drainage.

Amalga Meadows offer a magnificent mosaic of well- to poorly-drained microsites, interlaced by former tidal sloughs, now slow-moving creeks full of rearing **coho salmon**. The upper (north end) meadows, in particular, have an



**Right:** Dampest sites have quaking mats of *Sphagnum* and *Drepanocladus* mosses with cotton sedge. 'Hotfoot trail' from **black bears** placing feet in repeatedly in same spot.



intricate interspersion of tree cover and productive, sunlit herb communities, optimal foraging sites for grazing **deer, bear and porcupine**. But examples of this habitat diversity are seen along the first part of the beach access trails; both the northward branch to Eagle River Landing, and the southern branch to Kayak Beach. (We could do better, however. [Future trails](#), below.)

An important management question for Amalga Meadows is the extent to

which non-native plants have colonized this mid-successional habitat. What species are poised to enter? On a 2003 survey we found introduced clover close to north end of the meadows. It probably dates to a time when cattle were pastured here. Most threatening is reed canary grass (*Phalaris arundinacea*). This grass grows taller and thicker than native species and crowds them out. It

*text continues after sidebar*

*richard.carstensen@gmail.com*

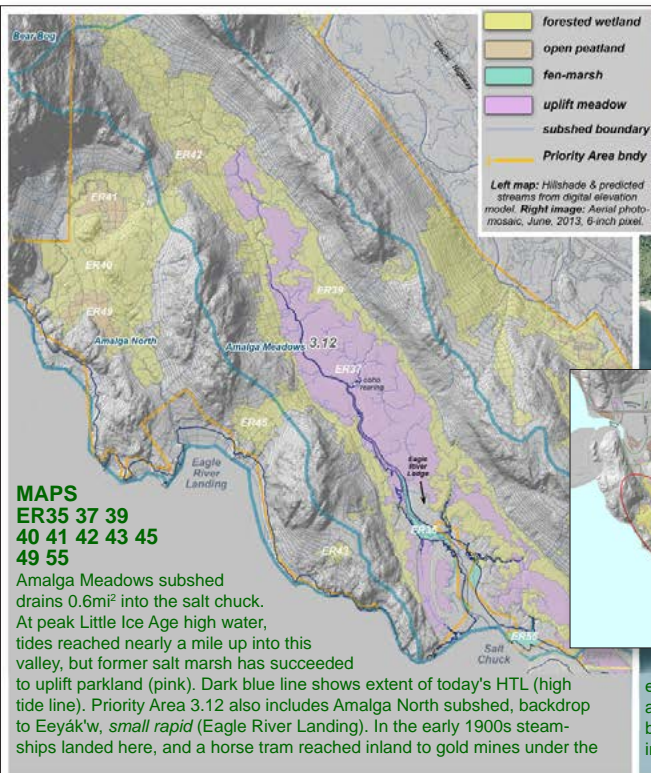
## Wetlands from the Supplement

In 2014 & 15, Discovery subcontracted to Bosworth Botanical Consulting, surveying wetlands throughout CBJ, pioneering field & analytical uses of the City's LiDAR-based DTM (digital terrain model) and 'norm-veg.'<sup>1</sup>

The official report called *Juneau Wetlands Management Plan* (JWMP) is available from CBJ's website.<sup>2</sup> More useful to the naturalist is my 510-page *Supplement to the JWMP* (Carstensen, 2016), with overviews of 10 CBJ regions—eg: Eagle River (ER)—and unit-by-unit natural history descriptions. ER37, coded pink for uplift meadow, was informally named *Amalgaupliftparkland* by our crew. The *Supplement* is used only as an internal document by Community Development Department, not archived. Map-pairs from

<sup>1</sup> Normalized vegetation was the vendor's early name for dtm (ground) subtracted from dsm (highest veg). More recently it tends to be called the canopy height model (CHM)

<sup>2</sup> **PS 2025.** my link here to JWMP update circa 2015 is dead, and searches through the [CBJ's exhaustive archives](#) only show resources from earlier Adamus assessments and related discussion.



### MAPS ER35 37 39 40 41 42 43 45 49 55

Amalga Meadows subshed drains 0.6mi<sup>2</sup> into the salt chuck. At peak Little Ice Age high water, tides reached nearly a mile up into this valley, but former salt marsh has succeeded to uplift parkland (pink). Dark blue line shows extent of today's HTL (high tide line). Priority Area 3.12 also includes Amalga North subshed, backdrop to Eeyá'k'w, *small rapid* (Eagle River Landing). In the early 1900s steamships landed here, and a horse tram reached inland to gold mines under the

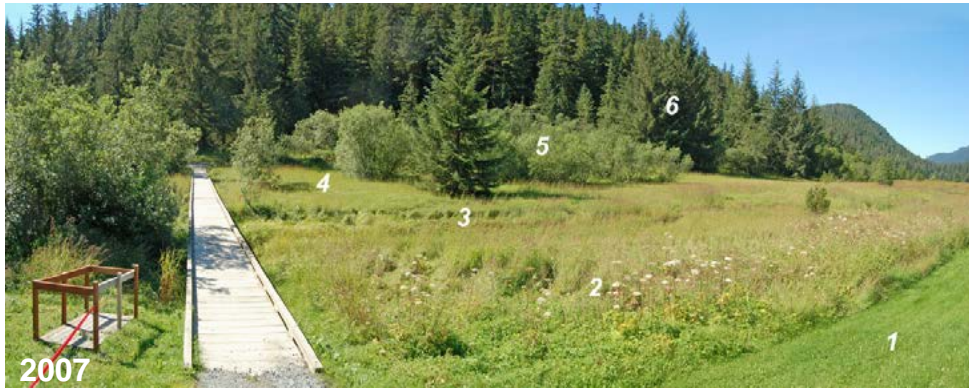
the *Supplement*, above, show 4 kinds of ground-truthed wetlands in the vicinity of Amalga Meadows. Everything coded pink is below the Little Ice Age HTL contour.

**PS 2025:** several years after submitting the *Supplement*, I received



expanded Eagle Glacier. Dairy operations displaced Áak'w Kwáan fish camps along the coast. Most of the divide seaward of Amalga Meadows is steep till-on-bedrock, but gentler slopes have marine fines and support small open peatlands in a matrix of forested wetland.

permission to share it with friends. Introductory portions are [downloadable from JN](#), but at half a gigabyte it's too large to archive. So, contact me (email below) if you'd like to copy the whole thing from sd card.



seeds prolifically and tolerates both wet and dry soils. A *Phalaris* monoculture now chokes sections of Jordan Creek near the airport.

Other grass species were introduced in the dairy days because native grasses were of low attractiveness to cattle. <sup>2</sup>

**Old growth** As discussed in [Interpretive locations & styles](#), I'm not a fan of spooning out generic information about habitats or species on interpretive signs; this stuff is covered in natural history guides like our *Nature of Southeast Alaska*. (Carstensen *et al* 2014). But I do think it's helpful to draw hikers attention to locally meaningful changes in forest character.

Old-growth forest occurs in highland sections of both Kayak Beach and Eagle River Landing trails. One way to engage hikers in a more interactive way would be to present basic geologic/topographic background in a trailhead sign or brochure/booklet introduction; we should not expect to see trees older than about 150 years on the level, Little-Ice-Age raised tidal surface. Then,

**Left:** Trailhead at Eagle Valley Center: **1)** Mowed lawn, excellent drainage; **2)** Cow parsnips only in better drained portions of uplift Meadows; **3)** Former tidal slough, now sluggish freshwater creek with invasive forget-me-not; **4)** Mixed grass/sedge community indicates slowly drained soils; **5)** Willows on damp soils; **6)** Uplift spruces frame most of Amalga meadows, backed by old growth on upland slopes. • **PS 2025:** Trailhead was moved south and this plank bridge is gone. But signs are holding up well. Spruce #3 has doubled in height.

**Right:** New beach access trail turns NW along edge of raised tidelands. Red alder in these transitions is puzzling to me—unusual as major component of uplift parkland elsewhere. *Alnus* needs exposed mineral soil to germinate, and uplift meadows are generally 'captured' by mosses, gramminoids and herbs.

Perhaps some seeded into pits dug by **bears**? My currently favored hypotheses is that the unusual amount of alder in this uplift meadow is a legacy of mud exposed by **cattle**—ie. habitat *improvement* by these heavy-footed disturbance agents. Whatever the mechanism, alder is a key element in the high wildlife values of Amalga parkland.

<sup>2</sup> I posted a 2-part slideshow on the [dairy history of the CBJ](#).



**Left:** Chicken-of-the-woods is a delicious edible shelf fungus known and collected by many hikers. An uncut cluster like this one, right next to Kayak Beach trail, suggests low current use of this trail.

I've only seen this fungus on senescent, rotten-centered hemlocks, so it qualifies as one of our best old-growth indicator species.

**Right:** Section of the Eagle River Landing trail that coincides with the old Amalga horse tram route. Regrowth has been remarkably slow in this century-old clearcut. Preservation of old cut stumps is also unusual; generally, medium- to small tree stumps rot into the forest floor long before 100 years in Southeast rain forests. Some of the more intact-looking, semi-flat-topped stumps may have been cut subsequent to original tram construction around 1903. It could be that tram-margin forests were not felled immediately, but 'picked away at' over the life of the mine, which closed in the mid 1920s.

Most forests logged a century ago were cut for the quality of their wood; if stumps remain they tend to be larger than these. The difference here is that the

stumbling blocks. For example, tree size doesn't correlate well with tree age along this trail. Young trees reach larger diameters on productive raised-marine surfaces than do most ancient trees on the less productive upland til/bedrock slopes.

<sup>3</sup> 2025: I'm retaining these thoughts that date back to origin years of the CBJ Natural History Project. The deliverables from that effort have long since been printed, installed, and uploaded to *JuneauNature*. But



forest was cut initially to clear a path through the saddle into future Amalga Meadows. Secondly, the timber was probably used to construct the plank&rail tramway. So far, there's no indication that a large-tree forest ever grew here.

More investigation of this clearcut—tree coring, stump searches etc—is warranted.

**Second growth** Sections of both horse tram and highland trails were logged about a century ago. Early clearcuts like these are rare (prior to chainsaws most logging was selective), and therefore important to Southeast foresters anticipating transition from old-growth to second-growth timber programs. How long, for example, does it take after logging for a forest to be ready for second entry? What are relative wildlife values of old vs young forests?

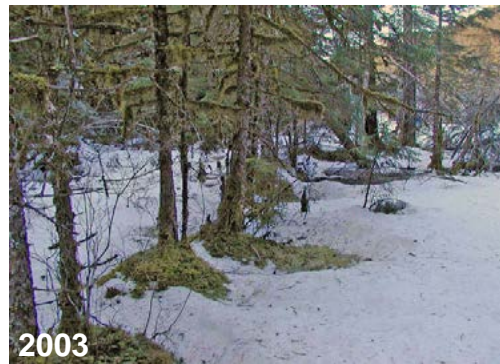
On existing trails, best site for interpretation is the high

ask the reader to be alert to changes in forest structure as the trails begin to climb away from that surface: tree species composition, understory, etc.

'Answers' await farther along the trail, on a map showing habitat transitions. Interpretation might emphasize potential



**Clockwise:** James King on a more intact section of the old horse tram route in the saddle south of Boy Scout trail. As on the new Eagle River Landing trail, regrowth has been extremely slow in this century-old clearcut. ● Here the tram traversed a poorly drained section of raised tideland in upper Amalga Meadows. Ditching improved drainage, and a line of small trees now grows in response to locally reduced soil moisture. (Both photos taken 20030123. Further info in following [journal for that day](#).) ● West from Kayak Beach. Unconducive to shoreline travel and even more challenging for boat landings.



point along Eagle River Landing access. Unfortunately, the new gravel trail has been laid directly over the original timbers supporting the tram. In most cases this is the logical place to build, requiring no further tree-cutting. But for interpretation purposes, if trails are extended, there are opportunities to leave sections of the original tram structure intact. In the above photo, for example, a new trail could be routed alongside the tram for a short distance, removing a few of the 6- to 8-inch spruces where James is standing.<sup>4</sup>

Any tree cutting for future trail construction offers opportunity to preserve 'cookies,' *ie* thin sections of tree trunks, sanded and preserved for

examination of ring patterns. These are excellent interpretive resources. Photos could be included in signs or booklets. The ultimate cookie (or increment core sample) would come from a 'release tree,' a tree that stood next to the clearcut but was not logged. These individuals typically show increased ring width in the year following the logging.

**Rocky beach** Pristine bedrock/boulder beaches bracket the 2 small embayments accessed by Amalga beach trails. Those framing Kayak Beach are so steep that they don't beckon would-be bushwackers beyond the little pocket bay—fortunately, for limiting impacts of humans & dogs on beach-foraging wildlife.



<sup>4</sup> PS 2025. The new trail did in fact bury almost all evidence of the old horse tram.



2003

At Eagle River Landing, beach-scrambling is easier. In fact, a delightful experience. In 2003, above these salt-sprayed bedrock outcroppings 'felt different' from Áak'w Aani's more heavily traveled destination beaches such as Lena Point. That changed, as word got out about this lovely undeveloped but suddenly accessible beach. Lichen-draped boulders and several of the spray-tolerant vascular species could not withstand increased trampling.

So this 2003 closeup is our 'before' shot. It should be retaken periodically over the coming years to document impacts, now unavoidable at Eagle River Landing. What we learn here might be important in future trails planning. The point was a major **otter** haulout. It'll be interesting

**Left:** Lichen Point enclosing Eagle River Landing prior to trail upgrade. (I've also called it Otter Point in some entries; should sweep through and standardize.) In some ways I find it sad to name places for things we've pushed aside. But one could also say it's still proper to acknowledge that history. • **Below:** Imperfectly framed retake. (didn't have original in field for tighter replication). [Journals for 20201007](#) and [20251222](#) have more on evolving conditions here. Lichen Point is still white-topped but looking pretty flattened • Looks like in 2003 I nearly laid my old Olympus ultrazoom on the rock, and also used a narrower zoom setting. For perfect retakes should also photograph straight down onto a rock-crack, for cam-station, reminder, then measure up, & record how high to hold it.

to see how that changes as well.

And maybe it's a productive discussion stimulator. So what, if the frilly lichen is gone? Was it just an aesthetic change, or something deeper, ecologically?



2020

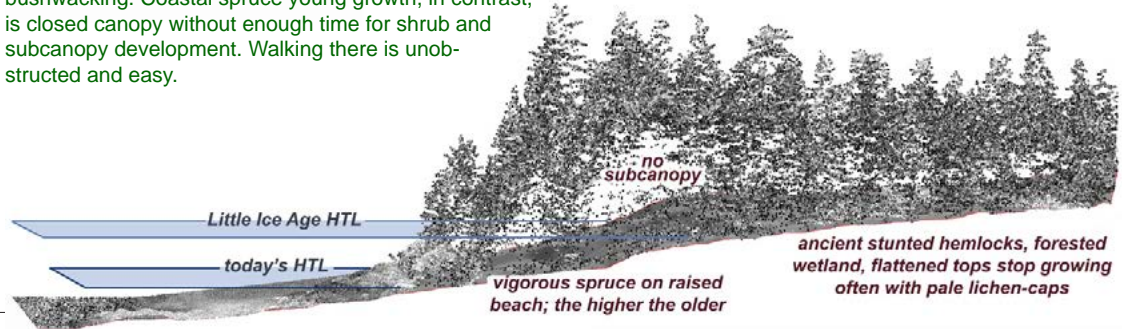


**Gravel beach/successional series** Eagle River Landing (above) and Kayak Beach (right) both have inviting 'pocket beaches' of gravel, punctuating otherwise steep and inaccessible bedrock shorelines, with some areas of sand fine enough for good tracking. Upper intertidal gravels have a narrow band of salt tolerant ryegrass,

**Clockwise:** 'Uplift spruces' seaward of trail at Eagle River Landing. At 4 feet diameter, they're the largest on beach access trails, but far from oldest. Large branches low to ground indicate they're 'open grown.' When saplings, they grew at high tide line, rooted in raised, well-drained beach gravel. Most are scarcely >100 yrs old. • Kayak Beach is accessed from a south-forking trail that leads past the challenge course. These young spruces are also on a recently raised beach. • Belt profile through 2023 point cloud at Eagle River Landing, with today's highest tides, compared to max Little Ice Age level. Above that is ancient forested wetland, but since those hemlocks are on soggy soil, they don't even reach the height of far younger raised-beach spruces, rooted well below them. Short, dispersed hemlocks allow light to shrub and subcanopy, unpleasant bushwacking. Coastal spruce young growth, in contrast, is closed canopy without enough time for shrub and subcanopy development. Walking there is unobstructed and easy.



backed by spruce forest. A textbook successional series runs upslope; trees of increasing size and age on progressively older surfaces, culminating in 4-foot diameter uplift spruces by the trail, [shown earlier](#).





2003

## Wildlife

**Black bear** In Risen Valleys, the species most on everyone's mind is black bear—fascinating to life-long residents and fresh-off-the-tourshippers alike. Neither is there an end to literature on bears, so why belabor them on signage or in brochure/booklets? Well, I can think of 2 needs for further bear information at Eeyák'w (Amalga Meadows) and greater Asx'ée-L'ux (Eagle/Herbert).

First is the *sign* bears leave; scratch trees, hair on rub trees, perennial and ephemeral hotfoot trails, beds, poop, partially eaten salmon, assorted diggings, grazed vegetation, and footprints in beach sand or muddy stream banks. When you notice these things, the woods come alive.

Bob Christensen and I have long felt an entire book could be written about bear sign alone. I wouldn't propose this for Amalga beach trails specifically, as it falls into the [disparaged category of 'generic info,'](#) not closely linked to specific places. Ideal would be a 30-to-50-page color illustrated booklet—not for any single CBJ trail but part of the larger offering that includes such guides. It would address both **black** and **brown** bears, because the latter

Ed Mills with a scratch-tree on Peterson Creek east of the highway. There are many marked alders in Amalga Meadows as well. Because they last many years, scratch trees might make interesting interpretive sites for future trails here. Bear in mind, however, (sorry) that these trees are usually found in areas of high anxiety for bears (one theory is that the marking is stress-relief behavior). Trails should not be routed into these areas.

are becoming more common here in recent years.

A second subject relating to bears is the question of whether to encourage “*neutral habituation*” in places that are evolving into viewing sites. In contrast to “*food conditioning*,” (attraction of bears to human foods, leading to unpleasant interactions) habituation refers to the lessening of the flight/fight response following repeated non-threatening encounters. The situation at Glacier Visitor Center is currently a fairly good example of neutral habituation. An elevated sightseeing walkway allows habituated bears to trace the bank of Steep Creek directly beneath excited humans, scarcely appearing to notice them. Well-trained staff are usually on hand to keep tourists on the walkway and bears off it. Of course there will always be exceptions.

Habituation has also happened less intentionally at Eagle River State Park. Here, walk-in campsites were unfortunately developed in an area of high bear concentrations. Increasing numbers of residents and visitors are coming to the State Park specifically to look for bears. Habituation inevitably happens when high concentrations of bears and people overlap. Whether it gets out of hand depends upon the skill, dedication and funding of managers, whether **dogs** are restrained, and whether users are held to strict standards about predictable courteous behavior and food security.

Among 'natural' habitats—as opposed to, say,



garbage dumps—the only one that concentrates bears in so small a place that managers might consider enforced neutral habituation for viewing purposes is a salmon stream. This is the case at Mendenhall Visitor Center (Steep Creek) and the Eagle River State Park (primarily the outlet of Saturday Creek). In places such as Amalga Meadows—lacking 24-hour management presence—habituation should be discouraged.

Bears make major use of Amalga Meadows, but

are dispersed over too broad an area for traditional viewing. In spring and early summer of 2003, EVC caretaker Dave Troup estimated that bears had been seen at the lodge about every other day, and that there appeared to be about 6 different individuals. Brian McGorry, another SAGA employee, said scat was less common on the old tram route in the saddle than down in the meadow habitats. Our Discovery

**Left to right: Snowshoe hare** is rare but present in the Salt Chuck area. Densities are higher on floodplains of glacial rivers 2 miles north • Few expect **hoary marmot** tracks in beach sand: this would make a good puzzler. • Track-maker itself; a yearling in boulder fringe at Eagle River Landing. All it takes is one fast **dog** (or a succession of slow ones) to eliminate this viewing opportunity. As Mt Roberts tram demonstrates, marmots habituate to humans who stay on trails. *PS 2017: The tram has recently offered dog passes. Off-leash dogs have radically reduced viewing potential for sensitive species like **marmot, grouse and ptarmigan.***

tracking surveys showed highest activity in the intricate parkland of the northern half of the meadows, with high-use trails running through the forest fringes along both valley walls.

Because of the extreme importance of Amalga Meadows to bears, *I would not recommend a connection to Boy Scout trail through the valley bottom or along the valley margins*. But there are opportunities for low-impact distance viewing. I return to this idea in [Future trails](#).

**PS 2025:** In early phases of scouting for trails and signage here, I was searching for a way to promote distance-viewing, in contrast to close-up bear-watching that attracts hundreds per day at managed facilities like Pack Creek and Glacier Visitor Center. I no longer feel there's a 'market' for such patience-demanding activity. We're just too accustomed to immediate gratification and nearly-hands-on encounters.

So ideas such as a tree-top observation platform are probably unrealistic. However I have since become a [fan of motioncams](#). These could offer non-invasive insights into bear and other wildlife use of the parkland. Transmitting cameras could be viewed from the lodge by renters, or anyone anywhere, such as the old livestream beavercam at the glacier. There was even a telephoto goat cam there.

**Species most impacted by recreation** Discovery's 2003 report to SEALTrust was aimed principally at this question, and I won't duplicate the discussion here. We mapped sign of mammals most likely to be displaced or harassed



by increasing traffic of humans and especially our **dogs**. The latter is an issue demanding diplomacy; many otherwise thoughtful people react defensively to the suggestion that their dogs could be a problem for wildlife.

Wildlife impacts were probably not the reason for the *No Dogs* sign at Jensen Arboretum, but it does set a precedent for dog-free policies on other CBJ lands.

One more reason to keep trails out of Amalga meadows. On September 8th, wrapping up a summer of wetland surveys for CBJ, I encountered this very tame doe only 300 yards north of the lodge. She was unafraid and allowed me to film from only 30 yards. Such habituation couldn't have evolved near a dog-frequented trail. • Deer were scarce throughout Risen Valleys in the years I was caretaker at Scout Camp, 1980-92. Warming winters and perhaps reduced wolf presence have since allowed moderate population increases 'out-the-road.'

In addition to bear, mammalian species most susceptible to human/dog impacts in the vicinity of Eagle Valley Center are: **mink, otter, snowshoe hare, and hoary marmot**. The most susceptible bird is probably **sooty grouse**, especially during nesting and when chicks accompany the hen.

Our 2003 report explains why these species are often displaced around areas of recreational use, and builds the case for restrictions on dogs in particularly sensitive areas.

**Western toad** This species may once have been the most common vertebrate in Risen Valleys, but has declined to very low numbers. During intensive amphibian surveys throughout the Juneau area in 2002 and 2003, we found only a handful of toads between Amalga and Eagle River (Carstensen, Willson and Armstrong, 2003).

Because of persistent reports of small metamorphs and 'yearlings' in Amalga Meadows, and occasional sightings of adults by SAGA staff, we are convinced a spawning pond exists somewhere between the Salt Chuck and head of the meadows. But we couldn't find it, and none of the local residents we interviewed had seen tadpoles in the area; in spite of abundance of earlier terrestrial forms.<sup>1</sup>

Informing the public of the presence of toads

<sup>1</sup> PS, 2017: We're still looking for this spawning pond! ... ahhh ... [journal for 20201001](#).



near Eagle Valley Center could have both positive and negative results. More eyes (and ears; toads vocalize briefly in April) could eventually lead us to the spawning pond. But if the location of that pond became widely known, collecting could endanger the population. Illegal collecting is rife at Fish Creek dredgepond.

Toads are most vulnerable at the time when all adults in the area congregate to

In September, 2014, Our wetland assessment partner Andrew found this large adult female just across the watershed divide into Strawberry Creek lowlands, only a decade after what I'd like to hopefully call the "*bottom*" of the great Southeast-wide toad crash. Residents David Waters and Kristi Allen reported a large female using their garden for multiple years even before this. So a few individuals persisted, hopefully building resistance to the chytrid fungus we think was responsible for declines.

Presumably, this female travels every spring to a breeding pond somewhere in the Strawberry bottoms, but we don't know where that might be. I hope a few males have survived to rendezvous there.

spawn. Few Alaskans are aware that collecting toads requires a state permit. Humans are also potential vectors of the chytrid fungus thought to cause western toad declines from California to Colorado. During our study for ADFG, Bob, Mary and I would not publish locations of the 7 spawning ponds located during our 2002-03 study.

**PS 20200624:** Throughout CBJ we're seeing more toads and toadlets and hearing more reports! For the most part they're near 'traditional' spawning-&-rearing areas that stayed active during the crash. But a few outliers hold promise that toads are even recovering range lost in the quarter century between ~1990 and ~2015. Go *Bufo!*



Amalga Meadows Creek is more conspicuous on good air photos than on the ground. Very narrow, often overhung with grasses, it is nevertheless excellent **coho** rearing habitat. Deep and cool, with many undercut banks for hiding cover. We have consistent reports of **toads**—both adults and metamorphs—from this area, and rumor of **frogs**.

## Fish

Amalga Salt Chuck (also known as Peterson Lagoon) is outstanding fish habitat. In 2003 we were told that a few **pink** and **chum** run from this lagoon up 'Amalga Meadows Creek' nearly to the lodge. Whether this also happened prior to DIPAC releases, I don't know.

Spawned out DIPAC fish wash up at kayak beach and Eagle River Landing. Interpretive discussion

of salmon would be appropriate even for Amalga beach access trails—which do not directly intersect a spawning channel—simply because of the fish's huge influence on distribution of many species that depend upon it.

During tracking visits we noticed rearing **cohos** even in the smallest incised, slow-water creeks at head of



Washed up DIPAC **chum** at Kayak Beach. Places where these spawned out carcasses can be gathered are important for small, less experienced bears, as well as countless other scavengers. Prints of **ravens** and a yearling-sized **black bear** were in the sand above this fish.

Amalga Meadows. Vegetation lining small-but-deep channels binds fine sediment with grass runners and other roots, allowing development of overhanging banks. My [20030517 field notes](#) include CP observation from waypoint 48.

Although not mapped by the USFS channel-type layer or the ADF&G Anadromous Waters Catalog (AWC), it would be typed by USFS as a 'palustrine' channel.

**2025:** I've greyed out the preceding paragraph, written in early drafts of the CBJ signs project, 2007-2011, because it's now obsolete. I've always felt that the two terrestrial GIS layers for Lingít Aani representing most boots-on-the-ground are the fed's USFWS eagleness database, and the state's ADFG AWC—their fish streams (polyline file) and species locations (point file). Fish&Game is also constantly **updating**

## ADFG fish-hab

Excerpted from ADF&G Fish Habitat Assessment for Juneau area streams (Bethers *et al*, 1995):

"Peterson Creek heads in Peterson Lake, N of Auke Mt. & flows ~7 miles NW before emptying into salt water in Favorite Channel. A lagoon (Peterson Lagoon) lies upstream from salt water, inundated by salt water on high tides.

Stream gradient is moderate to low from the lagoon to a lower barrier falls about 1 mile upstream. . . . Peterson Creek has at least 6 tributaries below the lower barrier falls that provide excellent fish habitat. . . . coho salmon are the predominant rearing species below the gorge.

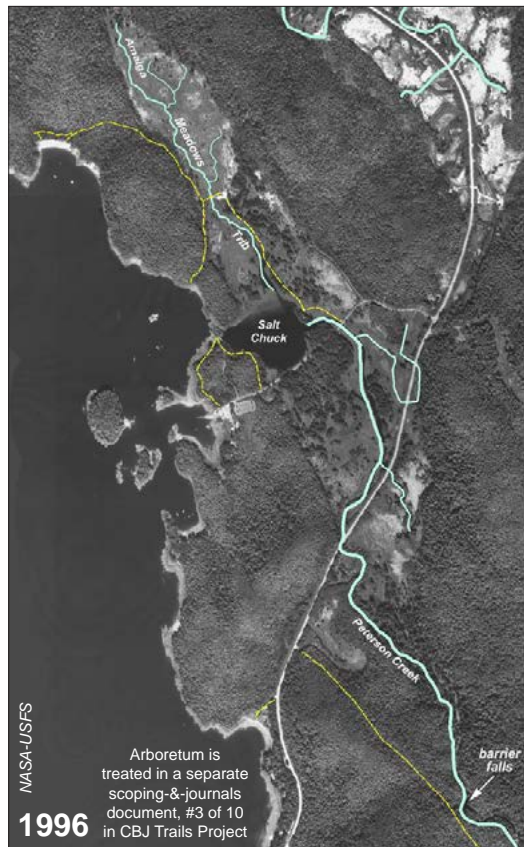
Peterson Creek has populations of coho, pink, chum salmon, rainbow/steelhead, cutthroat, and Dolly Varden. . . . Peterson Creek downstream from the barrier falls has provided the most popular steelhead fishery on the Juneau road system for many years. The Sport Fish Division operated a steelhead weir on lower Peterson Creek from 1989 through 1991. . . . Rearing steelhead are not as numerous in the anadromous portion of Peterson Creek as one would think, given the level of adult escapement. Evidently, the lagoon . . . provides the major rearing habitat. . .

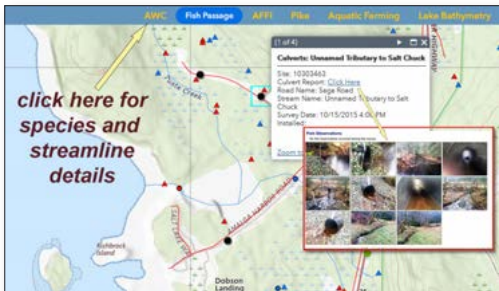
Amalga Harbor . . . has been used for release by Douglas Island Pink and Chum Inc. (DIPAC) for cost recovery since 1990. Large numbers of chum fry are released annually. A barrier-escapement control net is used in the stream mouth to prevent over-escapement of chum salmon into the creek.

From Glacier Highway downstream to the lagoon, stream gradient is low. This section runs through meadows and has nearly continuous overhanging banks with grass cover. The lagoon . . . provides an excellent area for anadromous fish to undergo their freshwater-saltwater physiological changes. . . . About 30 acres in area, it has a maximum depth of about 50 feet. Crabs and other marine species inhabit the bottom of the lagoon."

I upgraded the USFS channel-type layer for lower Peterson Creek, adding tributaries shown on sketch map in Bethers *et al* 1995, and tracing Amalga Meadows Creek from the new, high-res CBJ imagery. Background for this view, however, is coarse 1996 orthophoto. ● **PS, 2017**: USFS and ADFG stream layers were for the most part created by tracing from air photos. In 2014, during wetland survey work for CBJ (Carstensen, 2016) we began to use a LiDAR-based streams model that's an order of magnitude more detailed than these prior stream maps. ● **PS, 2025**: I was quite proud of the map on right when creating it during early drafts of this scoping document. It deserves retaining, but now mostly as a retrospective on how cartography accrues. For stream **line** files, LiDAR—next page—has radically 'upped our game.' But LiDAR still can't see the **points**, *ie*, baby fish hiding under cutbanks. That's where intrepid minnowtrappers and electroshockers come it. F&G also solicits citizen nominations to the AWC.

the AWC. For non-GIS users, the online map portal [Alaska Fish Resource Monitor](#) is both comprehensive and intuitive, only requiring a little patience with acronyms (CO = coho etc.) As 2026 approaches, I've downloaded the current AWC, and as anticipated, found a trove of channel



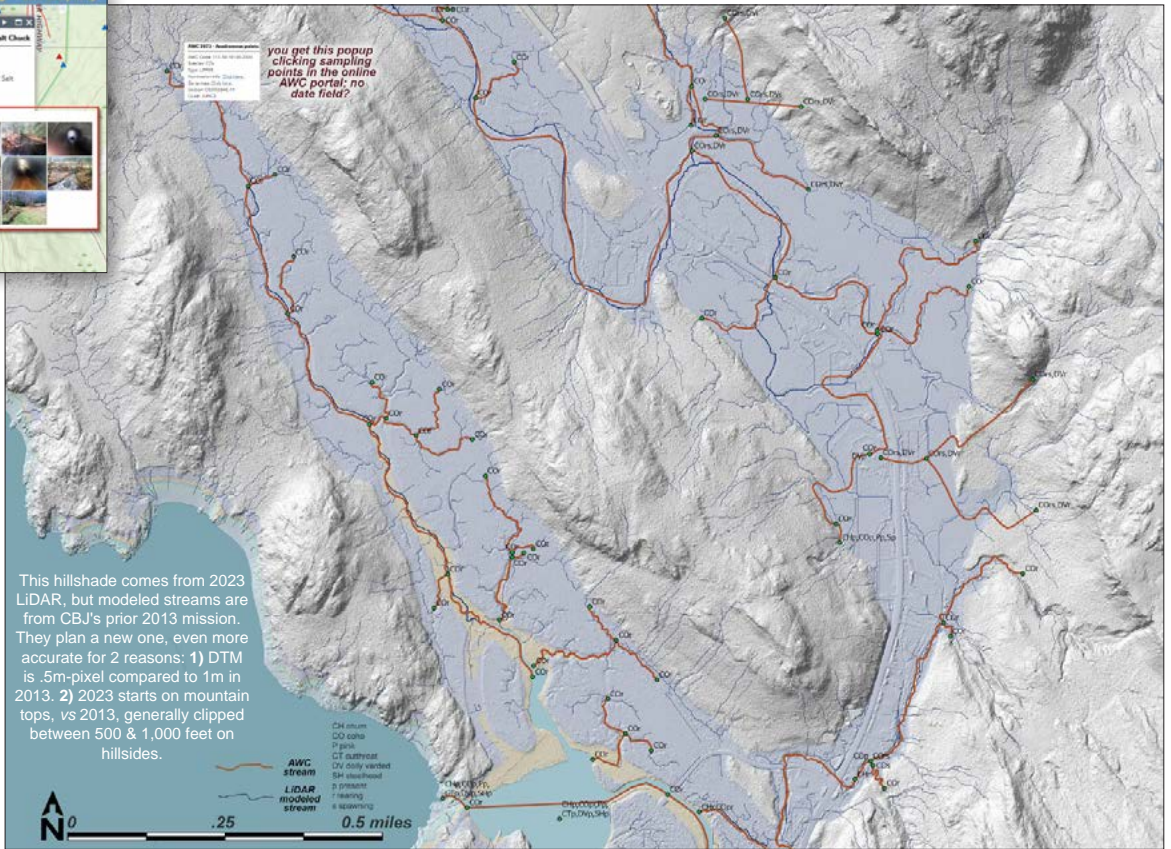


In addition to basic AWC tab on blue header, *fish passage* tab displays results of culvert condition surveys and even site photos. (CBJ would prefer retiring the name Saga Road)

and trapping data, added since I last refreshed my personal drive collection.

The map on right allows comparison of extremely accurate LiDAR-modeled streams (blue) with AWC polylines (red). The fit is tighter in recently updated Amalgam Meadows than over in the Strawberry Creek bottoms, which were roughly traced from air photos, back in the pre-LiDAR dark ages.

1 I can't find a date field in the attribute table. Must be buried in there somewhere, right?



This hillshade comes from 2023 LiDAR, but modeled streams are from CBJ's prior 2013 mission. They plan a new one, even more accurate for 2 reasons: 1) DTM is .5m-pixel compared to 1m in 2013. 2) 2023 starts on mountain tops, vs 2013, generally clipped between 500 & 1,000 feet on hillsides.

## Human history

**Tlingit** Goldschmidt & Hass (1946) explain that the Eagle River area was claimed by the L'eeneidil clan (Dog Salmon People) of Áak'w K'wáan Tlingit. <sup>1</sup> Interviewees detailed use of Asx'ée (Eagle River), and even of Eagle River Landing.

From Jake Cropley:

“The Eagle River was a source of salmon for the Auk people, who had big fish-drying racks there. I have seen 20 fish racks covered solid. You could just gaff salmon steadily.”

From Dave Wallace.

“The Indians get cohos, sockeyes, cranberries, mountain goat and black bear there. William Kunz owns this place, and my grandfather used to have a place there. I am used to going there, but Kunz is in charge. I have not been there for 7 or 8 years, but Kunz still goes there. Now, whites have homesteads in that area.”

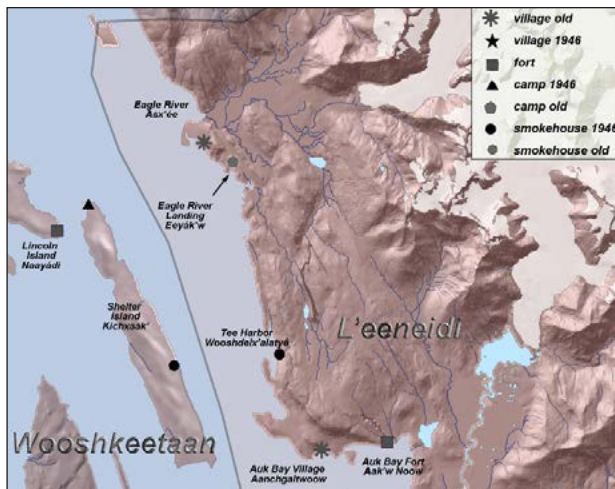
Goldschmidt & Haas noted that as of 1946, the area was accessible by automobile, and that a Boy Scout Camp had been established there.

The most direct, first hand information on the immediate Eagle River area given to G&H in 1946 was from William Kunz. Dauenhauers also quoted William's testimony to Goldschmidt & Haas, but with addition of some Tlingit names.

<sup>1</sup> In my scoping document for Jensen-Olson Arboretum, I summarize what G&H 46 tells about use of the coastline to the south of Amalga, particularly Tee Harbor. See [jensen-scoping.pdf](#).

I've incorporated their changes [mostly in brackets] into this transcription of William's testimony:

“I am a native of Juneau, born at Eagle River—Uskaya [Asx'ée]—on May 7, 1875. My grandfather was born there, his name was Nowiskate [Naa.uskheitl]. My father was also born at Eagle River, and his name was James Kunz: Dathka [Daalgéink]. I belong to the Áak'w K'wáan group of Thlingets and to the Raven Clan, known as the Yaxhtittaana [Yaxte Hit Taan]. The name of the chief of our group was Koth luth cheen [Kaalatseen]. At the time of my birth at Eagle River, I estimate the number of my people to have been in excess of 50. I was born at the place known as Eagle River Landing, Eeyák'w, although we more frequently occupied the land and site now used by the Juneau Boy Scouts as a summer camp. In 1882, I moved with the members of my clan to the Auke Bay Village—Aanchgaltsóow—which is now known as the Auke Bay Recreation Area. However, since moving, I have always gone back to Eagle River to hunt and trap. . . My forebearers . . . have continuously used the Eagle River area for their summer and winter camps, although we considered Auke Bay our permanent camp. The members of our group consider ourselves to be the owners of the land from Berner's Bay [Daxanáak] to Juneau and we never fish, hunt or trap outside of this area claimed by our clan.



After Chart 6 in Goldschmidt & Hass (1946-98). I changed occupancy designation for 2 sites, at Eagle River, and Eagle River Landing. Based upon William Kunz's statement that ~50 people lived at rivermouth in 1875, qualifies as “village.” His birth at Eagle River Landing qualifies that site as an “old camp,” ie unoccupied 1946, but important previously. ● This delightful, SW-facing cove with great canoe landing surface—and in the Little Ice Age at least, a perennial stream—was a priority campsite, easier to land at than broad shoals of Eagle River to the north. As noted in following text and fish camp photo, it is unclear whether the principle village—Asx'ée—was on the north or south side of Eagle River. (PS 2017: I now lean toward a vanished sand bench just south of Scout Camp, eaten away since I moved there in 1980.)

*My forebearers and myself have used, continuously, the areas of Auke Bay, Tee Harbor (Wooshdeig'alyatyé), and Shelter Island (Kichxaak') for hunting, trapping and fishing. I have had a summer camp continuously on Shelter Island for over 50 years, from which base I have carried on the preparation of my winter's source of food, fish, berries, and gardening.*

## Kunz family

*Paraphrased from Dauenhauers (eds) 1999:*

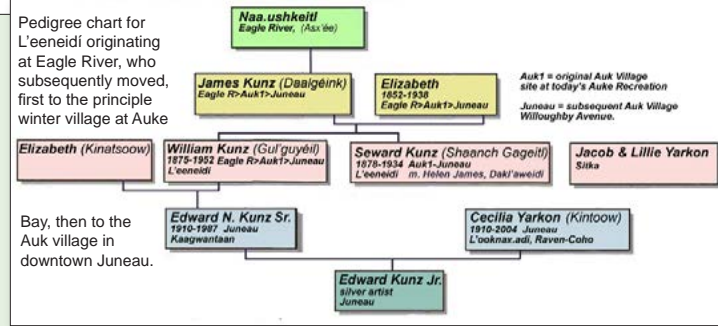
**Seward Kunz • Shaanch Gageitl**  
**April 27, 1878 - December 14, 1934 •**  
**Raven; L'eeneidí • Kaagwaantaan yádi**  
**Yaxté Hit (Dipper House, of Auke Bay)**  
**Juneau; ANB Camp No. 2**

Seward Kunz was the son of James, a man of the Box House Kaagwaantaan, whose Tlingit name was K'ans, anglicized as Kunz. The Tlingit name of Seward Kunz is Shaanch Gageitl. It means "Creeping On," and refers to an old dog salmon aging in the creek.

Seward had an older brother named William Kunz, who had 2 Tlingit names. Oox Cháas' (meaning "Humpie Teeth") was his ceremonial or big-shot name, and his "regular" name was Gul'guyéil. Seward and William also had 2 sisters, but we do not know their names as of this writing.

Seward married Helen James, a woman of the Dakl'aweidí, on February 13, in Juneau. . . Their children . . . died young of TB. William's wife's name was Elizabeth in English and Kínatsoow in Tlingit. [RC: Both Helen and Elizabeth are shown in a photo of the founders of the Alaska Native Sisterhood, below right.] They had several children, including Daniel, James and Elizabeth, all of whom died young. Their son, Edward Kunz,

Pedigree chart for L'eeneidí originating at Eagle River, who subsequently moved, first to the principle winter village at Auke



Probably the first contact between the L'eeneidí and Europeans was on July 18th, 1794, described in the journal of surgeon-botanist Archibald Menzies (Olson, 1993).

*"Next day we resumed our examination by an intricate channel with rocks and islets about two miles wide between the group of islands and the eastern shore [the Benjamin Island group], and soon after passed an immense valley inland [the Herbert/Eagle] choaked up with rugged ice similar to those already mentioend from this Valley a*

lived for many years, and was the husband of Cecilia Yarkon Kunz. The children of Ed and Cecilia are Danny (deceased) and Ed, who is a silver artist in Juneau.

Seward and William both attended Sheldon Jackson School. Seward Kunz became one of the first Tlingit Presbyterian lay missionaries. He combined his mission work with



Left: Seward Kunz. Above: Seward's wife Helen, & Elizabeth, wife of Seward's brother William.

the ANB, and each activity served to complement the other. He served as lay minister in Klawock. William was also involved in church work. . .

Like most Tlingit men of his generation, Seward Kunz engaged in commercial fishing. He was a carpenter and miner, but he eventually quit mining to devote himself to his ministry work.

large Rivulet issued forth through some low land, on which we saw several Indians, who kept beckoning to us as we passed along, but the boats could not approach them on account of the shallowness of the water which here extended some distance from the shore.”

Olson includes a footnote from Vancouver’s account (second-hand from Whidbey’s notes) indicating that they might even have gone ashore at Eagle River Landing:

“...they came to the north point of a small bay where the shoal terminated...”

The Landing, called by Eeyákw, *small rapid* by William Kunz, would have been the first place after the inaccessible mudflats of Eagle River where Whidbey’s 12- to 15-person rowing vessels could put ashore. My interpretation, however, is different than Wally’s. After much study of the reports of both Vancouver (derived from Whibey’s notes) and Menzies, I speculate that the mid-day break spot was near Point Louisa, not Eeyákw.<sup>2</sup>

<sup>2</sup> For more on this Whidbey exploration through Áakw Kwáan territory, see my narrated slideshow [first encounters](#)

Following is from the rootsweb site: [\[dead link, 2025\]](#)  
<http://wc.rootsweb.ancestry.com/cgi-bin/igm.cgi?op=GET&db=klea&id=I22431>

PS 2025: In 2013, for our Goldbelt Heritage class Why do we live here? we made extensive use of this online database for AK Native genealogy. It has since moved offline. Probably those with authorization from SHI can access it, at least by going to their offices downtown.

ID: I35882 Name: ● Elizabeth KUNZ  
Birth: ABT 1852 in Auk Village  
Death: 6 Jul 1938 in Juneau

86 year old widow identified by death certificate, Alaska Vital Statistics, 1938. Resident of Juneau where she resided at #11, Native village. She died of senility. She was 5’ 1” tall & weighed 120 lbs. Son William Kunz was resident of Juneau. Both parents were born at Auk Village.  
Change Date: 15 Jun 2009

ID: I22431 ● William KUNZ  
Birth: 7 May 1875 in Auk Village (Auke Bay)  
Death: 6 Sep 1952 in Juneau ● Burial: 10 Sep  
Identified by death certificate of Daniel Clifford Kunz. AK Vital Statistics, 1948, living at that time in Juneau, in 1923 according to death certificate of Mrs. Alice Kunz, AK Vital Statistics, 1923.

His birthplace was Auk Village by the death certificate of son Daniel. He was widowed, living at #22 Village Street. He was a retired fisherman, 5’ 9” tall and weighed 197 pounds. He died at the ANS Hospital of hypertensive cardiovascular disease. Social security # 574 05 1705.

ID: I22424 ● Edward N. KUNZ Sr.  
Birth: 15 Mar 1910 in Juneau  
Death: 15 Nov 1987 in Juneau

Identified by the death certificate of Daniel Clifford Kunz. AK Vital Statistics, 1948. He was living in Juneau, AK in 1952 according to the death certificate of William Kunz, AK Vital Statistics, 1952. Middle initial and month and year of death were obtained from Juneau Empire, 11 Jul 2003. He was Kaagwantaan.

Change Date: 5 Dec 2008 at 20:07:41

ID: I22425 ● Cecelia YARKON or Kintoow  
Birth: 20 Aug 1910 in Juneau  
Death: 28 Jul 2004 in Juneau

Identified by death certificate of Daniel Clifford Kunz. Alaska Vital Statistics, 1948 Further ID from Juneau Empire, article included her photograph. Juneau resident Cecelia Kunz, 93, died July 28, 2004, in the house she was born and lived throughout her life. She had suffered a stroke two months ago and broke her pelvis. She was born on Aug. 20, 1910, in Juneau to Jake and Lily Yarkon. She was L’ooknax.adi, Raven-Coho.

October 16, 2005 Juneau Empire article included a photograph. Edward Kunz Jr., left, and Herman Davis stand with other members of Coho clan, faces marked to signify their loss during a memorial Friday for Cecelia Kunz held at the Alaska Native Brotherhood Hall. The matriarch of the Juneau Native community, whose Tlingit

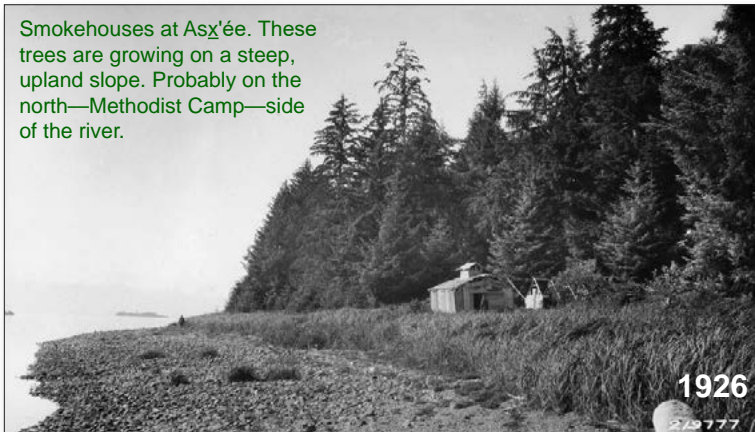
*Kunz family, continued*

name was Kintoow (“Birds Flying”), died July 28, 2004. Edward Kunz Jr. is her grandson

ID: I22929 • Jacob “Jake” YARKON (Stuwukhaa or Yaakhwaan)  
Death: 1918

Identified by Juneau Empire, 30 Jul 2004. Alternative spelling of family name, Yaquan. Chief of the Tlingit. Marriage of his daughter Elsie to William “Willie” Jackson of Wrangell helped bring peace between Tlingit in Juneau and Wrangell areas. He was referred to as the the “*William Jennings Brian of the Alaska natives*” for his peace work. He helped avert many wars and the 1917 marriage of his daughter was part of the negotiated peace with Chief Shakes of Wrangell. The marriage was arranged when representatives from Sitka, Hoonah, Klukwan and Taku went to Yaquan on Jackson’s behalf to ask for his daughter in marriage. He was one of four hosts of the “Last Potlatch” given in Sitka, AK in December 1904, hosted by the three Wolf Houses. “His house was known as Ghooch Hit (Wolf House, Aayadi Hit (Nobility House) Lingit Aanii Hit (World House).”

Smokehouses at Asx'ée. These trees are growing on a steep, upland slope. Probably on the north—Methodist Camp—side of the river.



## Retakes project

In 2004 and 2005, Kathy Hocker and I began a project to catalog and [rephotograph historical images](#) throughout Southeast Alaska. So far, only a few of the images we've collected from the Amalga area are mapped, but I hope to add others from our collection, such as Ray Dame photos from 1938 (sidebar, following).

Judy Maier first alerted me to the 1926 photo above, and I found one ultimately in a Forest Service collection of digital scans. The 6-digit handwritten number in the lower right is how USFS identified images in their historical collection, spanning 1904 to the late 1950s. Alaska State library has a low res version, (ASL-207-21-14) but associated notes reference USFS #219777. Photographer was Melvin Merritt, assistant district forester under Charles Flory. Title is “*Old Indian smokehouse on right shore, ' below mouth of Eagle*”

<sup>1</sup> Presumably “*right shore*” means looking downriver.



1903

g05011

*River, 1926.* I include it in this Amalga collection because it was owned by villagers from Asx'ée, of which Eeyák'w, *small rapid* (salt chuck outlet) was a southern outpost or 'suburb.'

The 1903 smokehouse photo above is indicated on 1948 aerial, right, by a NE-pointing triangle out on the water. I'm only guessing these were L'eeneidí smokehouses that pre-dated the mine landing. Two more recent photos are also mapped. Cattle on the landing beach are probably from ~1930, judging from known dates of contiguous USFS ID numbers.<sup>2</sup>

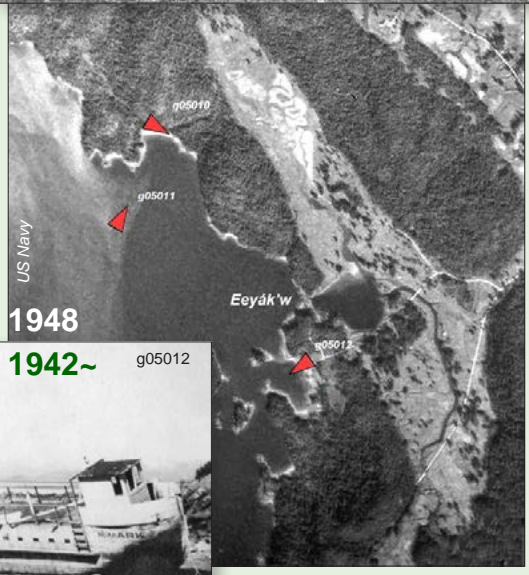
Satko Arc photo was probably from the early 1940s.

<sup>2</sup> PS 2025: Can't remember where I got the idea these cattle and beached troller were at The Landing. Background hill matches pretty well in arc tipup mode, and the beachfront houses roughly match 2 buildings on USS #0, for wharf parcel & adjacent beach. Other somewhat boat-friendly beaches in this mostly steep & unlandable area are Amalga itself, and Arboretum cove. But this photo doesn't fit them as well as it does The Landing.



g05010 1930~

**Clockwise:** At this early date, probably L'eeneidí smokehouses (?) at Eagle River landing. Did these belong to the Kunz family? By this time the wharf had been built, just off the left side of this photo, but we have no known images of that establishment—only maps ([USS claim maps](#) sidebar, following). ● Photopoints from Retakes database, on a 1948 base image. ● Satko Arc's final (?) resting place. (*Satko saga* sidebar, following)



1948

1942~

g05012



Shifting gears from indigenous to invader history mostly means **gold**, & the overpass into Asx'ée/L'ux valleys. But the coastal hub for those operations was down here at The Landing. So I think I'll keep following mining stuff here, along with all-things-EVC. After all, like the mine itself, this salt chuck area is named Amalga.

**Euros** First European settlers arrived in the Salt Chuck area around turn of century, long before a road connected to The Valley or Downtown. Gold was discovered at the face of Eagle Glacier in 1903, and Eagle River Mine (later named Amalga) grew into a sizable community with post office by 1905.

In order to transport ore to steamers, a deep-water wharf was needed. Asx'ée-L'ux (Eagle/Herbert) estuary was too gently shoaling, and the nearest feasible site was at Eagle River (or Amalga) Landing, just north of the Salt Chuck.

Patricia Roppel's article *Amalga* (1976) explains:

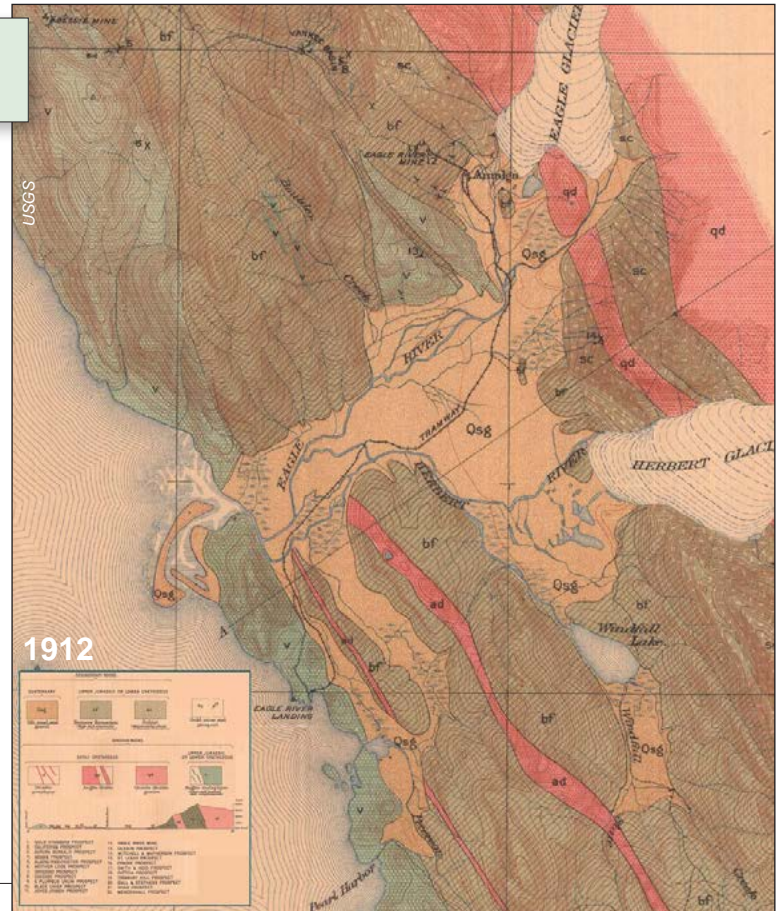
*"Wooden rails were laid on planks and the wagons, pulled by a horse or mule, had flanged wheels to fit the rails. . . Down at the harbor, at what was known as Amalga Landing, a wharf and warehouse were built."*

Knopf (1912) described the early transportation options:

*"Local steamers plying on a 6-day schedule between Juneau and Skagway call regularly at Eagle Landing [=Amalga Landing] on Lynn Canal. . . . A well-built Government trail, made during the summer of 1909 and 1910, traverses the length of the belt and connects Juneau with Amalga, where a **post office** is maintained. This trail renders the extreme inland portion of the gold belt somewhat more accessible than it has been in the past, but for the transportation of heavy freight from Juneau the waterway is far more preferable."*

It's hard to make out which among the maze of trails on Knopf's geologic map might have been this Juneau-to-Amalga trail; none provided a sensible direct-line approach. Three different symbols were used for overland routes but the key didn't address them and usage was inconsistent:

- 1) Standard 'ticked line' symbol for the primary horse tram to Amalga.
- 2) Commonest was single dashed; eg, miner's trail from Pearl Harbor



Two Winter & Pond photos, both ~1910. **Left:** East over Amalga Mine buildings to terminus of Eagle Glacier, since receded one mile out of sight, uncovering 2 large lakes. • **Right:** From left to right, mine superintendent Bart Thane. (for whom Thane was named); unIDed; photographer Percy Pond.

(today's Arboretum) into Prairie Claim on Tool T'eik (Peterson Cr). This was actually a "4-mile planked horse tramway" but the heavier ticked line symbol seems reserved for Amalga tram.

3) Double dashed line, unique to what I've here called 'highland route' from Eagle River Landing to saddle between today's Amalga Meadows and Boy Scout Trail. I've walked this route several times and am still puzzled over its original function. Perhaps it was considered a shortcut for those on foot, but it's only 300 yards shorter and climbs a hundred feet higher than the Amalga parkland tram route.

Unlike the tram line, this highland route frequently meanders around trees and rough places. It doesn't appear wide enough for a wagon road, and soils in the bog portion would've been too soft for heavy horses. However, as it approaches its northern intersection with the tram line, the highland route was cut into a steep hillside at considerable labor. Perhaps this was an original attempt at a horse tram route, later abandoned in favor of the meadows?



According to Mary Lou King (1999) this highland route was a "haul road."

*"During the gold mining days horses were used to haul heavy freight from Eagle Harbor up over the ridge, then the freight was loaded on the horse tram to be hauled down the hill then on a more level trip to the mine."*

My opinion is that several stretches of the "haul road" would've been too boggy for pack or towing horses, certainly more difficult than the mapped tram route that connects all the way to Eagle River Landing. If horses were used frequently on the highland route, there should be more evidence of their passage today.

My interest in the highland route to ERM is that it offers a lower-impact connecting trail between Eagle



Valley Center and Boy Scout Trail. This route would be far preferable to the meadow tram route in terms of wildlife displacement, and it would traverse lovely peat bogs, with potential short spur to a knoll overlooking both the ocean and the peaks above Eagle Valley. ' Another alternative along the east-side ridge is described in the *Field notes* section, for [20030517](#).

1 2025: this route was in fact selected. C&I first walked it on [20201007](#)

Earl Redman (1987) reported total output of Eagle River Mine was \$400,000. After 1915, the mine was quiet. Nothing came of the renewed interest in 1935 ([Resurrection sidebar](#), below). In 1980, yet another company restaked, abandoned, the mine:

*“Today [1987] the casual visitor to ERM will find almost nothing. With some searching, a few crushed buildings can be found and the old Pelton water wheel that powered the mill is still there. But all the tunnels are caved and the dark drifts and crosscuts are sealed off by mud and fallen rock.”*

King (1999) gives more recent history of the Amalga Meadows area:

*“In 1997 CBJ purchased the old Ackerman Homestead from Joe Smith. The Ackerman family had farmed this area early in the 20th Century and remains of a few shake-covered structures can still be seen in the meadow. In more recent years the Smith family kept some of their dairy cows here during the summer. . . . The Smith family dairy was in active operation until the mid 1950s.”*

*Gastineau Channel Memories, Vol II* (Pioneer Book Committee, 2004) has an entry for Joe Smith, including a photo of Joe with his wife Betty Kirk Smith at their “Peaceful Valley Ranch,” in Amalga Meadows.

Methodist Camp was named for John Argetsinger who came here in 1949 to start Alaska Public Works. With volunteers he built a short-lived log footbridge across Eagle River. In October of the same year (date not given; presumably early 1950s) the bridge was washed out by a flood.<sup>2</sup>

<sup>2</sup> There have several ill-fated attempts to bridge these Rivers. On the 1948



Argetsinger and his volunteers replaced the bridge with a cable ferry on pulleys. The ferry was propelled by changing the angle to the current, depending on crossing

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stereogram, Satko sidebar, a bridge was in place. But Argetsinger's bridge wasn't until at least 1950. Later still, a footbridge spanned Asx'ée near Saturday Creek confluence, but it too washed out in short order.

Horse tram crossing at L'ux (Herbert R), Goat Mountain in background. Confluence of the rivers has changed so much it's challenging to relocate exact crossing site. James King showed us footings on Scout Trail side. [Carstensen & Hocker \(2003\)](#) and my [Sydney Laurence](#) talk both have historical series showing channel migrations here. Considering the many old photos of Amalga itself, and views along horse tram route, it's surprising we don't have a good shot of Eagle River Landing (= Amalga Landing in Roppel's article). This would be worth further search at AK Historical Library & City Museum.

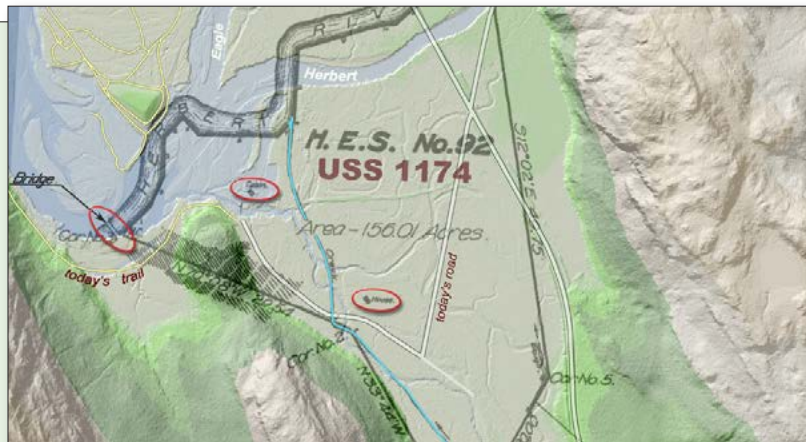
## Mapping the 1910 crossing

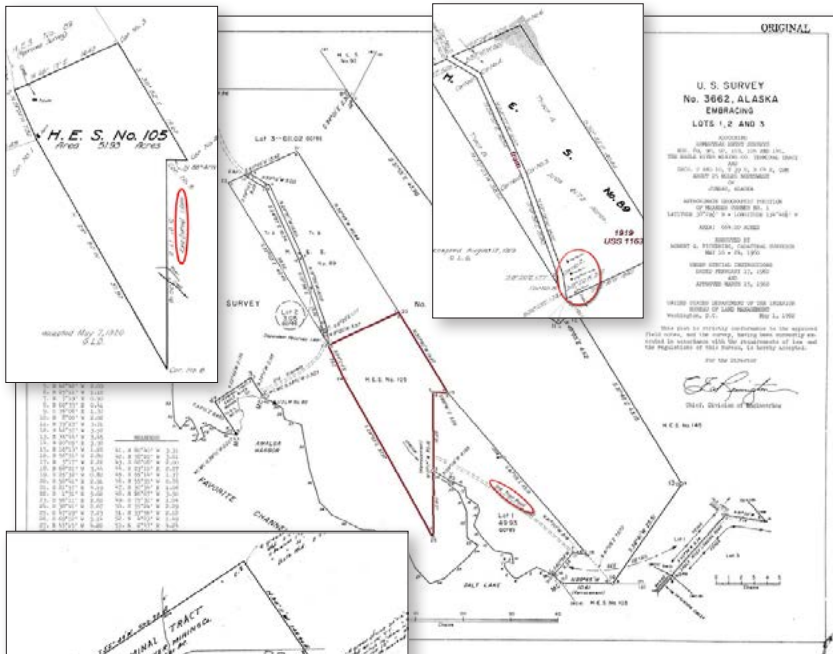
In June, 2020, with a team of 7 naturalists, I did some ground-truthing and mapping on Very Beary Berry **Wetlands**. Combined with Herbert **River** Wetland to the north, this recent SEAL Trust acquisition **totals** over 200 acres protected—some of the richest fish and wildlife habitat in Risen Valleys—in fact, in all of Áak'w Aani.

Both pieces date to century-old **homestead** claims. Gelsingers Tract was United States Survey 1174, and the new piece, Henry **Alexander's**, was USS 1164. Eagle River **Mine's horse** tram ran through Gelsingers, including the old **bridge** site. Channel migration's been so **radical** I couldn't place it **exactly** til georeferencing the USS plat.

Doing **that** also shows where to look for homestead **remains**, or **char-coal** from Tlingit **camp**s that usually preceded em. Ortho on lower right shows where they are. Gelsingers house was 300 yards northwest of Dave Waters & Kristi Allen's

More USS maps follow in the next sidebar. My journal for the Land Trust on the 2020 survey at VeryBeary survey is not archived online, but shareable on request.





### USS claim maps

The BLM has a pair of related map portal sites from which you can look up and then download any of the United States Survey (USS) maps dating back to first euro settlement. Also in those archives are HES (Homestead Entry Survey) maps. Above is

the master USS map #3662, overlaid with more detailed HES maps that show locations of houses, barns, roads, etc.

I've traced the pertinent information onto a 2006 orthophoto. Just east of the boundary of HES #105 is the annotation "Kunz (native claim)," in the area now occupied by the access road to Eagle Valley Center. Those claim maps must be archived elsewhere from the BLM site, because I can't find anything for this Kunz side of the N-S border. In Glacier Bay and on northern Chichagof, the BLM site shows 9 Native claims that were given USS numbers, but this is apparently a different type of claim (or perhaps never completed?)

## Amalga ghost town

Local group uncovers lost piece of Southeast Alaska's gold mining history [Article by Brian Weed](#) [Article includes Winter&Pond photos & Knopf map, already in my collection]

"25 miles north of Juneau rest the remains of the once profitable gold mining town of Amalga. The town's beginnings can be traced back to a chance discovery made by Neil Ward and O.L. Sandstone, who were prospecting near Eagle Glacier in 1902. After a hard day's work, they were heading back to camp, and Neil wanted to stop for a break. He leaned against an uprooted tree to catch his breath, and was surprised to see gold-bearing quartz trapped in the root system of the tree. C. D. Mallory of Macon, Georgia, learned of the find and took an option on the property later in 1902.

With the help of Bart Thane, the Eagle River Mining Company was born. Around this time, the Daily Alaska Dispatch stated, "*The ore at the Eagle River property is said to be the richest in Alaska.*" When the mine started up, Paddy O'Neil became the mine foreman. He hired 25 men to work inside the mine and another 25 for the mill and support buildings. Several years later O'Neil became famous for driving the 2-mile-long Sheep Creek tunnel for the Alaska Gastineau Company.

Thane became superintendent, and under his watchful eye a 7-mile road was built from the mine to Amalga Harbor. A 10-stamp mill was brought in, and flumes, a waterpower plant, boarding house, bunkhouse, general store, assay office, sawmill, blacksmith, machine shop and two-mile horse tramway were built. By 1904 the mill was fully operational. Another 10-stamp arrived in 1905. Douglas Island News reported the mine was doing so well that men did not have to work on Sundays but still received half pay for the day. Mallory was in Juneau in February overseeing the mine, but then left town quickly

in early March. A Juneau newspaper mentioned that Mallory, of the Eagle River mines, was a passenger on the Princess May as it was heading south. However, the Ketchikan Mining Journal reported that he was actually chased out of town after being charged with seducing the young daughter of a prominent resident of Juneau. A number of shots were exchanged between the parent and Mallory before he was run out of town.

The mine continued to operate from 1904 to 1915. A total of 74,876 tons of ore was mined, with 19,451 ounces of gold recovered and 8,900 ounces of silver, for a total of \$399,991 dollars or about 10 million dollars at today's prices. The peak year was 1908 which produced a total of \$97,376. After 1908 gold production dropped drastically. Thane left Eagle River Mine in 1910 to become superintendent of the Kensington operation north of Berners Bay, and James Whipple became the new superintendent.

Over the next few years more tunnels were dug but less gold was extracted each year. In 1915 mining stopped for good at the Eagle River Mine, and the town of Amalga was abandoned. Most residents quickly moved out of the company town, but a few stayed as late as the 1930s. Many of the buildings were dismantled, and, along with some of the lighter pieces of equipment, hauled out on the seven-mile-long horse tram. Over time the remaining buildings fell down due to snowfall and rotting timbers. Nature took over and the area was covered with brush and moss.

In 1935 and 1940 the area was explored once again. The Whelan Exploration Company restaked the area in 1980, and Placid Oil Co. and Houston Oil and Minerals Co. did



some drilling in 1981, 1982 and 1985. Over 5.5 miles of underground workings exist in the area with 10 different levels, however most are now caved in. Buildings are flat and in ruins; the remains of the old aerial tramway still exist and head up the hill towards caved-in tunnels. The Risdon Stamp Mill, now uncovered, stands out on the hillside looking very out of place.

Using a GPS application on my phone called "Back-Country Navigator," several old pictures, and a map from 1914, I recently visited the site on two different occasions with other members of the hiking group, *Juneau's Hidden History*, to locate the center of the ghost town. Greg Taylor, Gerald Hewes, Jennifer Garcia, Ammie Rector, Jason Rupp and I searched around the area. Four-inch-thick moss covered everything and devil's club and alders were thick on the hillside. After a few minutes of looking over the area, it appeared that there were no manmade



objects around us. I began to get worried I had messed up on the GPS data, or flipped the image of the town around somehow. As my doubt took hold, Greg yelled out that he had found something. It was a 55-gallon barrel that had been converted into a wood stove. Jackpot! Nearby we peeled back sections of moss from the ground; dishes, pots and pans were uncovered. The foot of a stamp from the mill, a wash basin, and then a large boiler were found.

With our excitement growing, we split up and started to grid-search the area. Using the old photos of town we began to locate where the buildings once stood. The machine shop/lumber mill and blacksmith were located, and the ghost town of Amalga started to take shape. Large pieces of equipment covered in several inches of moss went unnoticed for some time as we walked around them. The remains of Superintendent Thane's house were located, along with the Risdon 10-Stamp Mill that was not removed from the mine upon its closing in 1915. We carefully removed moss from the larger pieces of

equipment and building ruins, and took photos and video during the process in order to show the before and after taking place. We marked several GPS coordinates on our maps to show where the buildings once stood. The town of Amalga could be seen once more. We spent several hours locating some of the collapsed adits in the area. Many still had rail tracks covered in moss running right to them from the town site.

We followed the tram cable up the hill to the 1,800-foot level to find the main working adit, and dump sites. The most unique thing we found up on the moss covered mountain was a claw-footed bathtub, which seemed to weigh several hundred pounds. It was tipped on its side next to an old wheelbarrow. Piles of old boots, glass bottles, and rusty pieces of food cans were everywhere on the hillside. Our group explored Amalga until late in the afternoon.

Heading back to camp was difficult as going downhill is often harder than going uphill. We arrived at the Eagle River cabin late in the afternoon, where our friend, Gordon Taylor, was waiting for us and that afternoon we soaked our tired feet at Eagle River Falls, about ¼ mile south of the cabin. The group spent the night at the cabin, enjoying the wonderful views of Eagle Glacier and the pink mountain tops at sunset. In the morning, we hiked out the 5 ½ miles back to the parking lot. What an amazing adventure!

<sup>1</sup> This bench is probably where I used to pause for a break on my way up to my alpine camp in the early 1980s.

*Eagle Glacier Trail is located at mile 27.3 Glacier Highway in Juneau, Alaska. The trail to the cabin is 5½ miles long. The cabin can be rented at [recreation.gov](http://recreation.gov). The trail is strenuous but has very little elevation gain. Several washed out sections, fallen trees, and many dangerously slick wooden stairs exist on this trail. With full overnight packs and our packrafts on our backs it took us a little more than 3 hours from the parking lot to the cabin. It is also possible to rent a helicopter and fly in, as there is a clearing near Eagle River Cabin. On one trip we flew in with Temsco Helicopters ([www.temscoair.com](http://www.temscoair.com)) about \$800 one way, split between four people. The trail continues another 2 miles past the cabin toward Eagle Glacier, but at this time it is nearly impossible to reach the face of Eagle Glacier due to the steep cliffs on either side, and quicksand-like silt at the river delta. As you hike this trail remember the miners that came before you. They left a lot of history behind. Enjoy it while you can; it will not be here forever.*

RC: As scout camp caretaker living on the delta, I frequented this mine site in the early 1980s. It was my turn-off point for bushwacking up the mountain, pausing on that 1,800-ft landing littered with bottle and metal fragments, to my alpine camps above Yankee Basin. Down at the mine, larger timbers were still intact but no buildings were standing. Judy Maier said that in the 1950s, you could go inside them and find old newspapers, still legible.

## Eagle River Mine

*From Thane 1916:*

"A company, known as the Eagle River Mining Company, was organized, in Macon, Georgia, to purchase and operate the mine. In the year 1903 I was offered the management and in July of that year began active work. . . Under the option it was necessary to immediately build a 10-stamp mill before any considerable development work could be accomplished. The necessary wharves, road from the beach to the mine, 7 miles in length, mill with all accessory buildings, aerial tramway, flumes and waterpower plant, mine buildings etc, were completed and [operation continued] without interruption through the year 1909. In 1908 10 stamps were added to the milling plant.

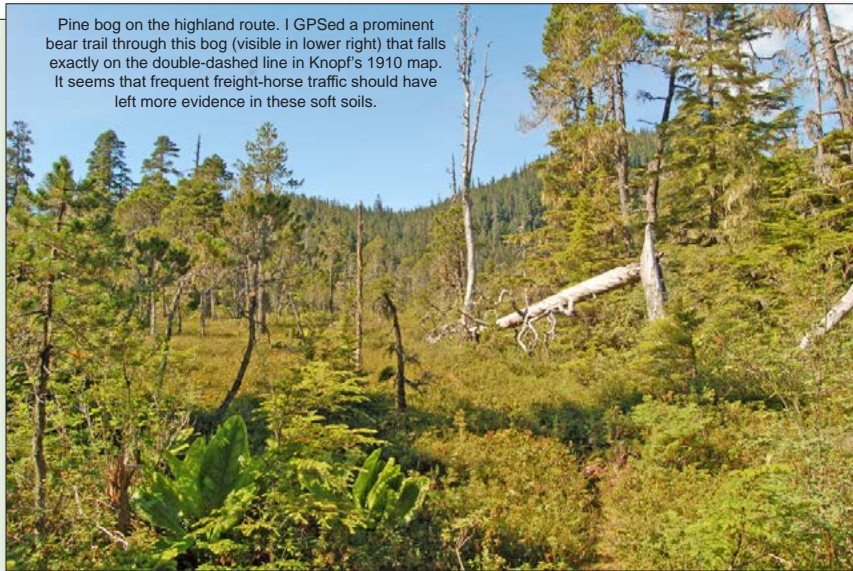
. . . [The Eagle River "sub-belt" of the Juneau Gold Belt] is made up of slate, graywacke and igneous contacts. . . The ore occurs in chimneys and lenses in the slate zone. The mineral content is galena, pyrrhotite, pyrite, a small amount of zinc and copper sulfides, arsenical pyrite with gold, both free and contained in the mineral. The percentage of mineral throughout the belt will average about 2% so that the ore may be classified as a free milling and concentrating proposition.

The stockholders of the ERMCo were men of small means and had strained themselves to purchase and equip the mine. . . It was decided in 1912 to abandon the old workings and endeavor to locate the vein system by means of an adit tunnel, some 500 feet lower in elevation than the lowest tunnel of the old operations. This tunnel was driven in 1913-15, a total length of 3000 feet. In 1914 the first ore was encountered. The graywacke footwall, the characteristic narrow band of graphitic black slate with the lenses or chimneys of ore proved the location and discovery of the Yankee Chief vein system in depth.

There were no funds available to develop this new ore. There was less free gold than in the old works."

*Thane went on to say that the property was now (1916) up for sale, because his new duties as manager of the Alaska Gastineau Mining company (Sheep Creek) precluded giving Eagle River the attention it deserved.*

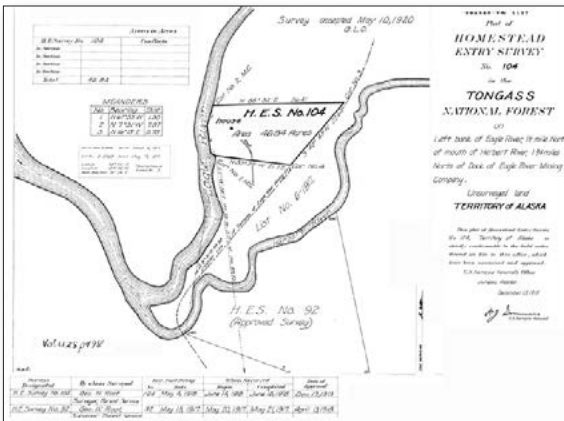
Pine bog on the highland route. I GPSed a prominent bear trail through this bog (visible in lower right) that falls exactly on the double-dashed line in Knopf's 1910 map. It seems that frequent freight-horse traffic should have left more evidence in these soft soils.



## Homestead at Eagle River

*Long before the Satkos, a guy named James Huffman homesteaded on the north side of Eagle River. Following is from DeArmond (1957).*

"HUFFMAN HARBOR - the more southerly of the two bights on the east side of Eagle Harbor, 20 miles northwest of Juneau. Named for James Huffman, who claimed a homestead near there in 1887. Huffman was born February 21, 1868 at Chandlersville, Ohio, and came to Alaska in 1887. For many years he owned a cabin in Douglas, but he spent most of his time around Eagle River where he worked some mining claims. In 1911 he filed a homestead claim on the north side of Eagle River near its mouth and built a cabin there. In October, 1934, he was drowned at the mouth of the river while returning from Douglas in his motor boat."



over a government trail 5 miles in length to camp. From camp, El. 220 ft, a trail leads up to the slope of the Flume Tunnel, E. 560 ft.

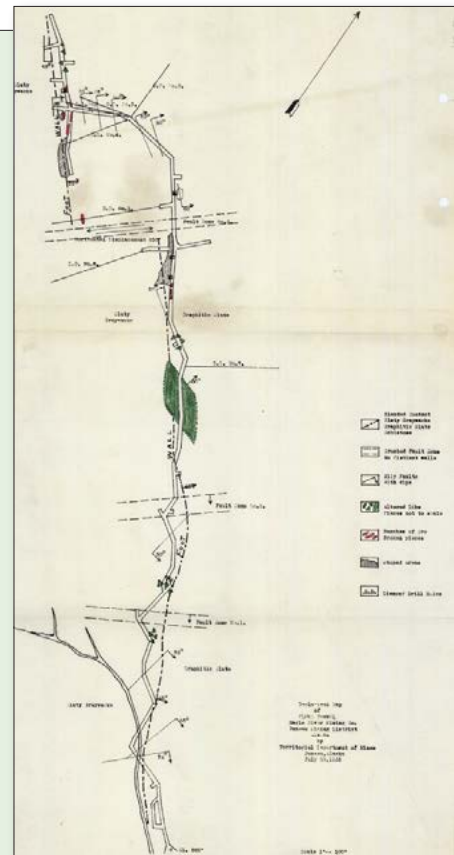
[Cites Knopf report for early workings: several tunnels, crosscuts, raises and stopes.] These old workings are inaccessible at the present time. . . In 1912, the Flume tunnel was started to tap the ore bodies at a greater depth and to get below the much faulted condition of the upper workings. [from 1912 to 1915, with Thane financing] the mill ran on ore encountered in the Flume tunnel.

This Flume tunnel was reopened last season and since the condition of the ground is bad, the probability of its remaining open is uncertain. Thus, the accompanying geologic map was made and this report herewith contains conditions as observed in this tunnel.

The tunnel was driven about 3000 feet in a zig zag NW direction following a somewhat intercalated contact of slaty schistose graywacke and graphitic slate. The slate appears to rest on the graywacke and both dip to the northeast. This contact is a zone of weakness, a soft crumpled, crushed mass with small quartz lenses, stringers, gash veins. Where the quartz stringers are numerous it constitutes a low-grade ore. Two small lenses or faulted blocks of lenses were encountered as shown by the stoped areas on the sketch.

Past the first stope a fault zone was encountered that displaced the zone horizontally 250 feet to the west. Since this zone is tightly timbered, movement along the zone could not be seen. . . Two large normal fault zones are marked Nos 1 and 2. These are wide crushed areas and very recent. They appear to have been caused by the melting away of Eagle River Glacier leaving a very steep bluff that later crumbled down and over. These show only vertical movement . . . , carry considerable water, and necessitate timbering."

Attached letter to Bureau concludes "There is little promise, but the property cannot be entirely condemned on present knowledge."



I wonder exactly where Huffman homesteaded. It could have been the site of today's Methodist Camp. • PS, 2017: I now have a collection of homestead maps, among which is this 1920 HES survey (left) adjacent to the old ERM tram route. Although no claimant is named, I suspect it's the old Huffman parcel. One could georeference this plat, and search for the cabin remains and access road, which appear to be quite carefully mapped

## Resurrection of the ERM

It appears that there was an attempt to start the Eagle River Mine up again. I found this report, along with one of Roehm's great sketch maps, on the USGS archives:

**The flume tunnel, Eagle River Mine, Eagle River Region, July 19, 1936. J. C. Roehm**

"The flume tunnel represents the latest and lowest workings of Eagle River Mining Company. . . the property is reached. . .

**Clockwise:** Before departure from Richmond. • Satko children on Herbert River, view upriver from bar on SE side, opposite homestead. • Paul with brown bear. • The Ark en route to Juneau.

## Satko saga

*In 1940, the Satko family from Virginia home-steaded on Herbert River, directly opposite today's Windfall Lake trailhead. Their shoestring trip to Alaska gained national attention.*

### Satko's Ark

*Family journeys to Juneau in 1940 on an ark*

*By John Dapcevich as told by Joe Satko - Juneau Empire*

The Satko family came to Juneau not by plane or ferry, but the biblical way—by ark.

The vessel, with "Ark" painted across its unusually deep hull, became a legend in Juneau and a news story across the nation in 1940. The pioneering family weathered a storm of criticism from Washington authorities who said the boat was not fit for the 7 children



aboard. The Satkos also rode a wave of popularity as their supporters helped them continue their journey.

By the time the family arrived in Juneau and settled in, the boat had run aground several times, the family had outrun U.S. authorities, and an 8th child had been born on the boat while it was beached.

The idea for the journey began during the Great Depression, when Paul Satko lost his 24-acre farm, his gas station & parking lot in Richmond, Va.

In 1938, Satko, his pregnant wife, Mollie, their 7 children and one black



cat embarked on an 81-day journey across the United States, partially built ark in tow. They settled in Tacoma for the next year, and Satko removed the chassis from under the boat and attached 2-inch-thick fir planks to the frame of the boat. On Nov. 28, 1938, the boat was launched. The family's journey was covered heavily by the media, which constantly referred to the contraption as the Ark, so Satko decided to name the vessel the Ark of Juneau.

The Ark was painted a bright yellow and three tons of cement were

placed in the keel to make it draw more water. On the trial run, the boat reached a speed of 8 knots. In May 1940, thousands of well-wishers watched the Ark depart from Tacoma. The next day it went aground on the shoals off Magnolia Bluff in Seattle.

Local officials prevented the family from proceeding northward because the Maritime Pilots' Association believed the ship was not seaworthy and Satko was not qualified to captain it. The welfare court removed the younger children from the ship and prevented them from reboarding until certain repairs were made.

On May 25 family members pretended to go to bed. Instead, at midnight they cast off. Satko calculated that, with a head start, the Ark would reach Canadian waters before the faster Coast Guard boat could catch up.

They arrived safely the next day in Nainamo, British Columbia, where the Canadian authorities found their papers in order for a trip to Alaska.

41 days later, after bad weather, 2 more groundings, problems with the 1928 Buick power plant & stops for hunting and fishing, the Satkos landed in Ketchikan.

The family's progress was followed closely by the media, including the New York Times. Movietone News filmed the Ark's arrival in Ketchikan. There the family was given the key to the city and interviewed in a program that became Alaska's first radio broadcast to be heard nationally. The Ark finally reached Juneau on July 26, 1940. Shortly after the family arrived, a daughter, North Sea, was born on the Ark.

The Ark was beached on Eagle Landing and the Satkos obtained a homestead between Herbert River and Eagle River. The family lived on the Ark while Satko and the older children built a cabin on their homestead. The family developed a large garden and sold produce in Juneau. The products were sold to the public and some were sold wholesale to George Brothers' Grocery Store.

However, the U.S. Department of the Interior would not give Satko a title to his homestead because he failed to file for the title within the prescribed time. [RC: *this is now State land.*]

In 1946, after the war was over, Paul and Mollie, along with their children, returned to Virginia. The Ark became a victim of time and the weather, and only parts of the steel keel remain. Paul Satko died of a heart attack in 1957 at the age of 66. Mollie died in Washington in 1995, just a few days before her 92nd birthday. Only Joe of the original settlers remains in Juneau.

#### **The Satko family has a great website:**

[www.satkoarkofjuneau.com/home.htm](http://www.satkoarkofjuneau.com/home.htm)

*In addition to the above photos, it includes a series of 12 audio interviews that Paul Satko gave to Juneau historian Amos Burg in 1941. The first 10 recordings tell the story of the ark and the trip. Only the last 2 have information on the homestead. In these, Paul said he filed on 2 homestead lots at what was then the end of the road. The 2 lots totalled 122 acres. Satko went to work homebuilding immediately, before receiving confirmation on his application from the Interior Dept. He cleared land and dropped trees for a log house. During this time he was commuting from the Ark.*

*The snow got deep and he had to quit for the winter with walls only 4 feet up. To meet the homesteading requirement that he be settled on site within 6 months, he was ordered to build smaller interim cabin.*

*By the time of his interview, Paul already had 8 acres under cultivation. As he told Amos Burg, he was pleased with the coarse sandy soil that gave good drainage in spite of the heavy rainfall. He spent the summer of 1941 gardening, and then resumed home construction, moving into the big house before the next snows.*

*Residents were pessimistic about Paul's commercial gardening prospects. People said nothing would grow. But he bought 47 pounds of seed. Cucumbers were selling*

*for 15 cents, so he planted 1500 hills, but they all failed. yellowing in the rain. His first beans didn't like the cool rain either.*

*There's a lot on the web about the ark and the journey, but little about the homestead, which of course was illegal. I did find reference to a pair of photos by in the ASL collection PCA-295 by John Brillhart. The description for photo 49 in this series reads "Homestead Satko's ARK, 1949. Satko built this boat on the east coast, and moved his family to Juneau on it [boy standing on rocky beach next to boat at Amalga Harbor]" Photo 50 says: "Satko's Homestead - Eagle River Landing area. 1940's [log cabin in snow.]" Vilda doesn't post these photos, but perhaps they're on file at ASL.*

*Pioneering doesn't always "stick."*

SEATTLE (AP)—Still in a pioneering mood, Paul Satko and his family headed east Wednesday for Arkansas, disappointed after 6 toil-filled Alaska years but still wanting to "prospect around a bit".

The one-time unemployed Richmond, VA, machinist ran into some state-wide problems right away. "I'm beginning to realize you've got quite a housing shortage down here," he said. Mrs. Satko said she was glad to get away from the Alaska rain. "But I'd rather have made the back the way we went north—in our ark," she said. "There were 48 children on the ship coming out, and that's too many." Satko broke in: "A single man could make a go of it in Alaska, but not one with all my dependents."

Although we may romanticize the Satkos, I'm thankful Interior ultimately denied Paul's claim to the neck of land between the Herbert and Eagle Rivers. Otherwise, there would be a housing tract or gas station there today.

## Ray Dame photos, 1938

Dame was a federal photographer with the Ickes trip to Alaska. He took high res pictures. These are from the Amalga/Eagle River area. Positions of the first 3 shots are shown on the 1948 aerial below.

**1** AMRC-b75-175-526 Description for this photo says “guerneys at Eagle River flats.” Actually it was taken on east side of the Salt Chuck, looking WSW out the gut. Photopoint is shown on 1948 aerial as a red arrow.

**2** AMRC-b75-175-528 View NW across the Salt Chuck. Amalga Meadows extend into the valley beyond the buildings. Note that buildings were

already at that location on the 1910 Knopf map, p 5. “Lollipop trees” are trimmed for better view. Would be interesting to relocate these.

**3** AMRC-b75-175-527 Amalga Harbor at low tide. View WSW to Kishbrock Island in right distance.

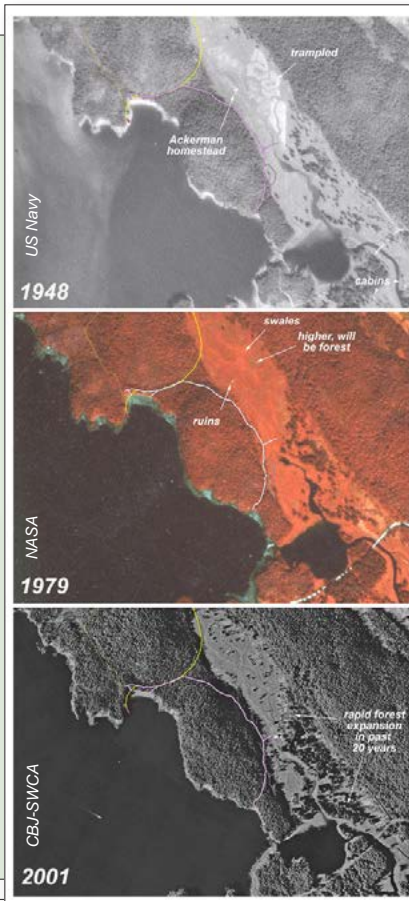
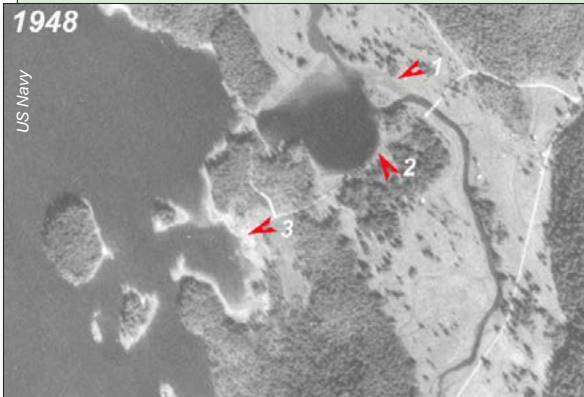
**4** AMRC-b75-175-530 NW along the newly constructed road. The ASL description says ~22-mile, but it’s actually on the old alignment

**Air photo historical series for Amalga Meadows.** Compare also with 1910 map above. Prior mining trails (yellow) and subsequent beach access trails (lavender) added for reference.

Pale areas on the 1948 photo were being grazed by cattle. Note the straight line forming the eastern edge of the largest, palest patch. This runs almost true north-south, suggesting a fenced property border.

Comparison with 1962 photos shows that these grazed patches shifted dramatically, shifting northward into the upper meadows.

Comparing the grazed patches to the color signatures on the 1979 color infra-reds indicates that cattle were kept primarily on the higher, better-drained surfaces. By 2001, these places were being colonized by spruces. Confined livestock compact meadow soils. They usually alter species composition long after grazing is ended.



between 25 and 26 mile.  
Mountain in distance is on  
the far side of Eagle River.

5 AMRC-b75-175-531 ASL  
description says ~24-mile.  
I don't know if this is in  
Amalga Meadows or the  
25-mile area.

View of homestead near Eagle River. "Buildings about 3/4 mile away."



These downloads are from the vilda website, Anchorage  
Museum at Rasmussen Center (AMRC), Ickes Collection





## Future trails <sup>1</sup>

Various additional trails have been proposed in

<sup>1</sup> 2025: most of this section was written nearly 20 years ago, and some of the "future trails" now exist. But it's helpful to reflect back on the social planning process, just as ecological retrospectives help us understand succession, and better predict future conditions.

the Amalga area. One of the purposes of our [2002-03 study for the Land Trust](#) was to evaluate potential impacts of these trails to wildlife, which after all are one of the primary reasons people come to recreate here. In discussion with the combined P&R

SE to Eagle Valley Center and uplift parkland from treetop on east-side ridge, taken on hike detailed in following journal for [20030517](#). This is atop the pale augite diorite cliffs shown in [Scoping>Geology](#). A viewing platform here would be the ultimate place to scan the entire Amalga parkland for wildlife, and a ridgetop trail would have far less impact to wildlife than a valley-bottom connector. Trail construction expense would be higher, however. <sup>1</sup>

Note decline in size of the uplift spruce in the meadows as you move southward toward the lodge onto lower (and more recently tidal) surfaces.

<sup>1</sup> 2025: the coastal-side route was selected, and this inland-side ridge remains wild and untraveled.

and State Parks advisory boards, general consensus was that proposals such as a bridge over the Salt Chuck gut would have high environmental and visual impacts, and was unacceptable. Further development of the shoreline of the Salt Chuck would 'box in' species such as **mink**, **bear** and **geese** that forage here.

The Amalga and Amalga uplift parklands are already heavily fragmented by roads and trails. It's exciting that so much of this superb habitat is now in public ownership, and that we can improve both its recreational and wildlife values. To achieve the latter goal, however, we must resist the temptation to build trails into the most visually exciting landscapes, without regard for the species that depend upon them.

The stand-out **bear** habitat in this area is the northernmost half mile of Amalga parkland, where interspersed

of spruce and alder groves creates an intricate mosaic with cottonsedge wetlands and chest-high patches of lady fern and cowparsnip. For anyone attuned to the subtle and not-so-subtle signs of bear activity, passage through this parkland makes the neck hairs rise. In my opinion, this place should be left to its four-footed residents.

But Amalga Meadows could be a great place to experiment with 'distance viewing.' This has been discussed among managers and guides as a less invasive alternative to the growing number of close-up bear-viewing locations on salmon streams. Tidal estuaries in spring and early summer are the best examples. For people fascinated by bears but respectfully foregoing close approach, a spotscope or good binoculars offer insight into bear foraging behavior and habitat use. It also extends bear-viewing season beyond the period of salmon spawning.

To the bears of Risen Valleys, the Amalga uplift parkland is a safer alternative to tidal estuaries—too exposed and/or preempted by people and dogs in this area. Judging by sign observed on August 10th, 2003, heavy use continues into late summer. This parkland may therefore have more protracted period of use than in estuaries, where activity declines in June.

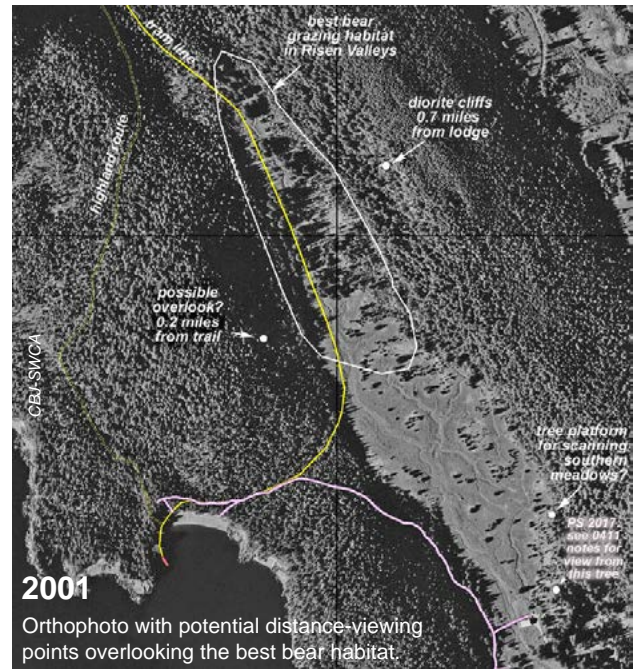
Viewing locations high on valley walls above Amalga parkland are worthy of discussion. Whether or not they were part of a through-route to

Scout Trail, overlooks would promote a new paradigm in the relationship of people to Juneau's wildlife. Here we'd watch from a distance, leaving prime real estate to critters, instead of elbowing them into suboptimal habitat, the prevailing practise since Europeans arrived on scene 120 years ago. <sup>2</sup> It would get people talking about a new wildlife etiquette.

Spur trails to valley-wall overlooks needn't be constructed to the standards of the current beach access trails. They could begin as rough, brushed-&-flagged trails to 'test the waters,' before investing in upgrades.

Simpler than a valley-wall viewpoint would be a platform in one of the taller spruces near Eagle Valley Center. The down-side is liability—problematic in a facility frequented by teens. But a belay rope and removable ladder could address safety concerns. And a tower only 90 yards from the lodge would see more use than a spur trail of .2 to .7 miles. (PS: *panorama from tree top is in notes for [20170411](#).*)

<sup>2</sup> 2025: .Make that 145 years ago :)



## Interpretive locations & styles

First, some basic personal philosophy in regard to goals of interpretive signage and printed matter for field use: I believe that appropriate field interpretive materials are those that open our eyes to the uniqueness of the *place we stand in*, as opposed to

generic descriptions of, say, Canada geese, or old-growth forest. If they don't achieve that, then they're just blocking the view

Hiking the beach access trail this early in the project, when passing friends, I queried them on attitudes to interpretive signs on local trails. Reactions were mixed. People I've asked about this in the past have also been hesitant to endorse more signage. Some feel that signs intrude upon the 'natural feeling' of a trail; that you're 'down south,' not in Alaska anymore.

I think most local hikers would agree that signs in areas of extremely high visitation—like Mt Roberts Tram and Mendenhall Visitor Center—are appropriate. In summer, when passing the signs Kathy Hocker & I designed for Mt Roberts Stewards, there's usually people gathered around reading, sometimes out loud to friends. Probably 10 times more people have read those signs than have read or even browsed through *The Nature of Southeast Alaska*.

Likewise, few local trail users would object to an elaborate interpretive triptich of signs at the trailhead. These might include habitat maps, historical series, seasonal life-history charts for key fish & wildlife species, etc. Many Juneau trailheads already have roofed bulletin boards where regulations, maps, etc are posted.

In general, though, I think that for trails used

primarily by local residents, subtlety would be favored. Numbered signposts low to the ground with accompanying brochures [*PS: or online links*] are a good alternative.

This spring I climbed a mountain trail in the Adirondacks that had both numbered and lettered signposts, corresponding to booklets intended for summer and winter use, respectively. At Amalga Meadows, a winter booklet could feature information on tracking.

One of the mothers I talked to on the trail this week said that personally she didn't like signs too much, but that they did help to focus her daughter on interesting natural history subjects. Especially with children, interactive puzzlers are great. Pose a question at one point on the trail, and answer it at another; clues are gathered along the way.<sup>3</sup>

*Examples: Is this a young or an old forest? How do you know? If it's not a really old forest, why is it young? What disturbance eliminated the previous forest? Or was there a previous forest? What clues does the topography offer you? What changes do you notice as we leave this level valley bottom and climb onto the upland slope?*

Etc. You could even withhold the fundamental 'introductory' explanation of glacial rebound as

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<sup>3</sup> Kathy Hocker's kid-oriented signs (Sea Reach) along Auke Lake Trail are a great example. Even in that high-traffic area, vandalism is occurring. Amalga would be more at risk, which further tips the options toward 'cloud' interpretation and/or removable, seasonal signage.

the ultimate puzzler. Let people discover rebound themselves from the clues.

With numbered signposts, there's the option of alternative brochures to match the user's preference: beginner or advanced; fact-feeder or puzzler, etc. Not that you'd have a rack full of these choices in the trailhead dispenser (too vandal-prone), but a web address could direct you to them.<sup>4</sup>

While I don't favor a connector trail running deep into Amalga Meadows I do agree the current access trails to Kayak Beach and Eagle River Landing miss the really exciting uplift parkland habitat. The southern spur passes through some good wildlife habitat, but it's been heavily altered by the challenge course, and the City is trying to keep folks out of here for liability reasons.

We should think about a short uplift-parkland interpretive loop in the immediate vicinity of EVC. This would be an asset to facility staff, leasees, and their program participants as well as to local hikers and visitors.

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<sup>4</sup> **PS 2017:** Interpretation in-the-cloud has evolved considerably since I wrote this around a decade ago. I now have a website for distribution of pdfs, but Discovery is still only dabbling around the edges of truly interactive apps and field guides. • **2025:** I'd have to say we're still dabbling. In theory, your cellphone could vibrate or ding when you pass a gps-linked station, and open to an interp or puzzler page. This obviates the expense of installing and maintaining numbered signposts. We are piloting such an app at Glacier Visitor Center, and if successful, that model could easily be extended to other favorite hiking destinations.

**Interpretive stations** These should be identified by unobtrusive numbered signposts or gps-linked app-alerts, corresponding to brochure, booklet (ps, or app) descriptions. Numbers are for existing trails; letters are on a possible loop covering some of the parkland habitat inadequately traversed by existing trails.

1) Introductory maps, historical aeriels, species calendars, milages, etc. Puzzlers could be posed here. [PS 2025: *the 3-panel signs have been here since 2011. They're still in pretty good shape. A few vandal-divots but nothing obscuring interpretive detail. And colors are almost as good as new.*]

2) Intersection. Explains options.

3) Ropes-course managers would probably appreciate a sign here explaining why they prefer people don't use this area.

4) Old growth forest structure;

5) Small patch of uplift spruces, intertidal zonation, mention of DIPAC wash-ups, tracking in sand, 'canoe-drag' puzzler (strictly recent or pre-contact?).

6) Alert hikers to forest transition as trail leaves raised tidal surface onto upland slopes.

7) Horse tram, logging, succession.

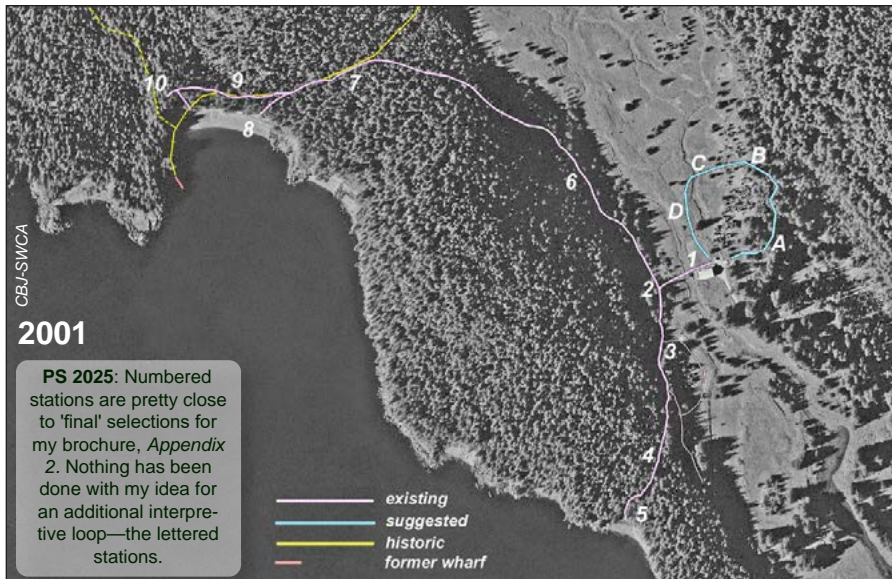
8) History of Eagle River Landing. Note gravel, for comparison with station . . .

9) Same well drained gravel beneath these trees as out on the beach. Why? <sup>5</sup>

10) History of the highland route.

**Lettered stations:** A lot of the diversity of Amalga Meadows

<sup>5</sup> This beach fringe has the perfect SW exposure for gardening. I wonder if it was a Tlingit summer camp prior to European arrival. Any evidence? No perennial stream though. And not a good supratidal surface for lodge construction.



and parkland could be showcased in a simple, low-impact 600-yard loop trail passing from well-drained to wetland soils.

**A)** Tall, fast-growing spruces on optimum drainage. One of them could be selected for an observation platform. [PS: *see notes from 20170411*]

**B)** Scrubbier spruces on intermediate drainage

**C)** Former tidal slough, now freshwater coho

rearing stream

**D)** Routed through maximum variety of meadow vegetation.

PS 2020: You can download my [4-fold amalga trails brochure](#) from *JuneauNature*.



## Journals

*Below are journal entries and photos beginning in 2003, from our many field visits that year to Eeyák'w for tracking, habitat mapping, trail-scouting, amphibian search, aerial photography, and a variety of other objectives.*

### 20030123 Tracking with King & Grochow

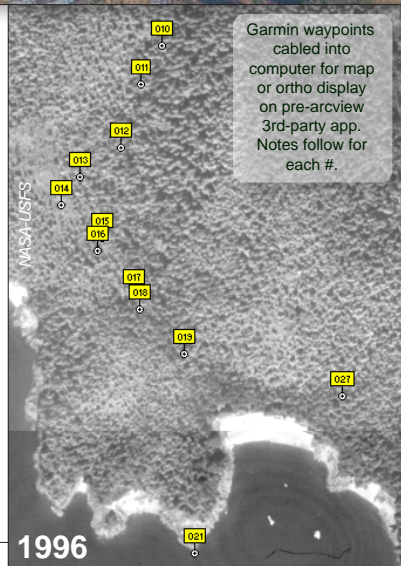
**Preface 2017:** In 2003, James King Jr was director of Trail Mix, and Bob Grochow was City Trails Ranger. We scouted an alternative connection between Scout Trail and EVC that would be less impactful to critters than running up the old tram route through the center of Amalga Meadows.

Bob Grochow picked me up at 8 am and we joined James King and headed out to the scout trailhead. Started out the trail at 9 am. Temperature 17°F. Out in Lynn Canal a stiff northerly was blowing up whitecaps, but we hardly felt the wind all day. At waypoint 2, James showed us where the old

tram left from a bedrock point. He says he found rails sticking out of the sand bank over by the confluence point. Of course that wasn't the actual other side of the bridge; it probably angled NW to a surface that no longer exists (historical sequence in Carstensen & Hocker, 2013). I shot a laser distance to riprap dike across the river. It's 152 yards. \*

From this bedrock point to Bear Bog, are several tree line-ups & shallow ditches on old tram alignment. We hiked south up the bog on hard packed snow. Bust for tracking but delightful for covering ground. Under forest canopy almost no snow at all.

Alders at head of the bog where tram clearing begins have no **bear** scratches. First stretch has a fair gradient. No trees grow on tram route itself, partly due to occasional traffic over the decades and partly from heavy shade.





**2025: Waypoints vs photopoints; numbering for 2003 journals.** In early days of digital photography, phones had cords, cameras had no gps, and even Bob Christensen was only just starting to realize we could link photopoints to garmin tracks by syncing timestamps.

Today I almost never take a waypoint; no need when photopoints serve that purpose. Large white numbers on these photos were retroactively assigned by me in ACDSee, and do **not** coincide with the many waypoints (wpt) I pinged for display in pre-GIS ozi-explorer. In journal text, photo#s are Arial bold—**06**—versus waypoint#s in Times bold—**18**.

At waypoint 6, Knopf’s double-dashed trail (henceforth “*foot path*”) diverges from tram route. There’s a yellow cord tied around a tree here. Foot path splits off to the right at a steeper gradient, and the railing, nearly continuous up to this point, disappears.

On return I set the altimeter. Tram route peaks at about 100 feet above sea level. We never measured the foot path route, but I’d guess it’s between

150 and 200 feet at its high point.

**9** is open hemlock forest with sphagnum right in the path. Would need fill, say James and Bob. At **10** path peaks and begins the drop to coast. Lots of menziesia here. Wide-spaced small hemlocks and many snags.

**12** metal fencepost hammered horizontally into a tree, supporting a plywood sign with the letters “LM” or “IM” Possibly the corner of Mental Health Trust Land? From here, gradient increases. A bit of bracken fern as we approach the bog at **13**.

**04** Lovely bog has **bear** trails running down both sides. I photographed these trails with South Porky rock cliffs in the background. The



North of Eagle River Landing. Wpt 21 is on outermost high lichen knob.

foot path, unmistakable til now, gives up in the bog, and people just follow the bears’ route. Bog has deep sphagnum with pine, *Ledum*, and *Empetrum*. Ocean side has a little knoll with view of both ocean and peaks above Eagle valley.

We discussed how to do trails through this bog. James generally dislikes boardwalk for several reasons, but agrees it’s less disruptive to deep organic peat than filling. As we dropped, he looked for a skirting route but found only a wet swale.

**18** another smaller boggy opening where we turned back last time. The marginal logging for corduroy comes up to this bog, and my veg type should reflect that. This swath is generally less than 25 yards on



either side of the trail. Trees are much smaller than the 1883 blowdown.

**19** on declining foot path where we felt it best to diverge eastward. The path leads almost straight south towards Cathy's licheny point. James said if we felled trees across the old foot path, we could steer people away from that area. Of course, we wanted to see it ourselves, so we continued.

**11** At first, **otter** sign doesn't jump out because rain has dispersed shell fragments. But on closer inspection you see bits of **crab, barnacle & mussel** shell everywhere among the lichens. These semicrustose white lichens (not *Placopsis*? What species?) almost completely carpet the rocks and would not survive quadruple the level of human visits.



Fairly intact section of old horse tram route in saddle south of Scout trail. Regrowth very slow.

We lunched in sun on upper cobble beach at Eagle Landing. Temp probably mid-20s° here and sheltered from north wind. Sat comfortably in low humidity for 15 minutes. Heading from here inland, back on regular tram route, forest is extremely scrubby, (**27**) with hemlocks 4 to 9 inches and an occasional spruce to 12 inches. Slow recovery considering nearly a century elapsed since logging.

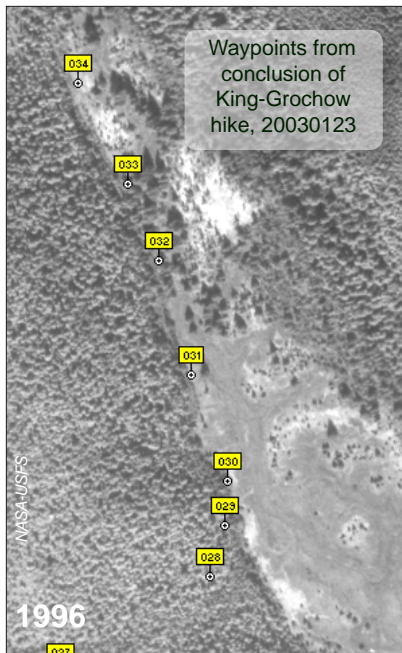
Back in Amalga Meadows we headed north on exposed sedges with only 1/3 snow cover. Not sure why snow is more complete on sphagnum bog than on uplift meadows. Took a shot from here of cliffs on Blowdown ridge. These would provide a great view of the meadows if the trail were to run up that side instead, but there are definitely more appealing

features on the westside route.

**31** southernmost of uplift spruces at head of Amalga Meadows. Incised uplift slough here that we followed for several hundred yards carries a small amount of water, covered by fragile ice.

Lots of **porcky** activity at **32**. There's red alder here, some with **bear** scratches and a rub tree or two, although not as much as on Peterson (0119 notes). Also lots of **sapsucker** drillings. Tram sticks to left side of valley bottom. Next opening had complete snow cover, showing whiter than sedge meadows on summertime ortho b&w. Something about soil moisture that controls snow cover.

**34** open fen, possibly still an uplift surface? Probably equivalent to



Bear Bog on scout trail. Both at extreme upper Little Ice Age submergence, likely retaining original peat, altered to unknown degree by salt saturation. <sup>1</sup>

<sup>1</sup> 2025: This was my first(?) expression of the 'poisoned-peat' hypothesis, best developed in 2024

Back in the lenticular bog that we saw from above, picked up snowshoe and ski pole tracks, and possibly old dog prints. Wpt 36 is in the center, with pine and TSME.

At **37** gradient increases. Imperceptible until now. By wpt 38 we've climbed 40 or 50 feet. Call this 80 feet above sea level, compared to 90 or 100 a bit farther on in the saddle. (Later check on road said 20 feet, so my altimeter guess setting was quite close.) This is mature hemlock, up to 2 ft. diameter. Not a major large tree forest but tallest of the circuit. Gappy on aerials. Some cones, surprisingly, are TSME.

At **39** this large-tree forest suddenly goes scrubby. There are a few big ones, so you don't see the difference on the aerials.

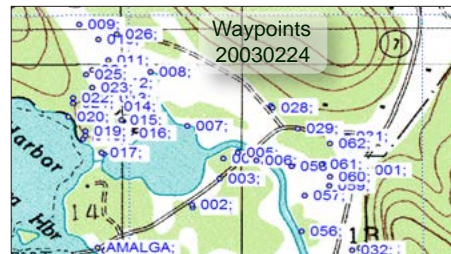
### 20030224 Tracking with Hocker

Kathy came by at 9:30 and we headed out to Amalga in Cheryl's truck, nice to have on snowy roads. Temp about 32°. Medium overcast, breeze light to none.

*Note again that **photo #s** do not correspond to **waypoint #s**. This was when I was first learning how to download GPS. Pre-Arcmap integration.*

Several inches on the ground in town, but by ~15 mile we were out of the falling stuff. Still, we waited one day too long for prime tracking. At Amalga an inch of overnight snow covered the harder base. If we'd gone out yesterday we'd have had almost a week's worth of sign accumulation to record. We saw fairly fresh stuff less than ~8 hours old, plus tracks of larger animals who left deep enough indentations that 1 to 3 inches of new snow couldn't obscure them. No toe detail, but usually gait was sufficient for ID.

Ironically, we may have been seeing older sign and missing stuff



only a few days old. Recent cold temps (down to about 5°) have gradually made surface harder and less indentable. We saw no small rodent tracks, only a single fresh **shrew** tunnel only hours old. Plenty of recent but faint **mink** and **weasel** sign on yesterday's harder snow, completely missed today. But we covered a lot of ground and learned a lot.

Section between road and head of salt chuck has lots of human and **dog**, including ski trails, maybe caretaker Dave Traup's daily commute to EVC. Should ask Walt Chapman about critter effects of a proposed accessible fishing platform here.

Found old **weasel** tracks at **5**. A relief to see this with all the people and **dog** activity.

After crossing the Amalga bridge, we turned left along the lagoon shore. Lots of human and dog. Maybe Dave skies through

here. Black lily stalks and *Plantago macrocarpa* through the snow. Fair amount of alder up to head height coming up through the meadow here. We wondered if fire or bear digging allowed this.<sup>2</sup>

Between **7&8** skier tracks spread out and cover more area than if there were a trail here. Kathy wondered about relative merits. A trail might narrow swath of impact, but encourage more use.

Kathy says there are some deep spots in the creek above EVC footbridge that might allow **salmon** spawners. Should ask someone at the lodge. I'm guessing inner terrace has Lyngbye sedge. Almost broad enough here to invite a **goose** to land.

**Weasel #2**—across lagoon from first set so probably a second individual.

Kathy says a diver found **sea cucumbers** in the salt lagoon. So it's quite saline at least at depth.

**12** long swale that shows darker green on the 1984 aerials. I think it's Lyngbye. First **porky** tracks at **14**, a small one. We later saw lots.

Found our first **hare** tracks at **16**. The year Davey Lubin showed me the 'resident' **lynx** here, he said there were no hares. (KH says although hare numbers on Douglas are low, there's a bunch of willow on one creek that might support a larger

<sup>2</sup> In absence of these disturbances you get 'meadow capture,' sometimes for well over a century. Herbs and mosses so completely cover soil that winged seeds of conifers & alder, or plumed seeds of cottonwood and willow, are unable to germinate.

population.)<sup>3</sup>

Going into the forest from here, there's a nice mix of alder until you reach the upland slope. Lots of **squirrel**—definitely edge critters. We noticed several times today that leaving sprucey edges for hemlocky interiors, track and midden density fell off dramatically. Most squirrel sign we saw was less than 12 hours old, yet they were the most abundant tracks by far.

Abrupt rise above the LIA salt marsh level, into the hemlock forest. At the base of the hill is a **bear** trail.

**09 17** the gut. Kathy found a **mink** track here. You could easily wade across in rubberboots, but no sign of people doing that, even though it would be the shortest daily route for Dave. Open water begins just above the outlet riffles. K says consensus is that entry floods at a ~17 foot tide. You'd think that'd be enough to make the ice unsafe, but as we were finishing, the 16-yr-old 4-wheeler headed out from Amalga parking lot (after several practise 180s), telling his mom he was gonna check out the lake. And of course all 16 year olds are experts on salt-lagoon ice.

**Kingfisher** on the rocks. **Sea lions** surfacing. Towboat bringing in the net pens. We located

<sup>3</sup> PS 2017: Hares are high all over the CBJ right now, and Kristi West told us she'd seen lots of tracks this winter around EVC.



the main route that a **mink** takes from gut northward into the forest. Very small, probably female, almost overlapping with **weasel** in size, but broader straddle. Very important place here. Few humans mess around in the woods on this north side. Would be a shame to bridge the gut. We should leave the north side of the gut to critters and occasional anglers.

I wondered if maybe fisherfolk were less apt than most hikers to bring dogs along, but Kathy says neighborhood dogs follow anglers. Maybe for hand-outs? By the way, K says Dave Traup's dogs are kept inside the Gruening cabin in the summer when he's not out with them. Not sure about the winter. (PS: He *did* let the **malamute** free-range to head of meadows: footnote 1, [20030620](https://doi.org/10.20030620))

Snow in forest just a dusting—can still see a lot of the moss, maybe ocean effect. From outside the



woods looks spruce dominated but just inside, switches to hemlock, possibly 1883 blowdown. Color shift on 84 aerials from darker spruce rim to paler hemlock interior.

Trail building would be hard here. Series of deep gullies perpendicular to beach line requires climbing up and down. On top of that, it's an important stretch of beach for **mustelids**.

In the woods are **porky**-stripped hemlocks averaging 10 inches in diameter. One spruce also chewed, resulting in much more bleeding pitch.

**12 kh12** hole too small for otter, probably mink, right at the top of a natural chute up through the cliffy section. Below, about 20 feet in from the edge, we found a **dungie** shell opened at the back end, typical of mustelids. Tooth size fits **mink**



rather than otter. Also in this midden was a small purplish **urchin** test.

**17** Kayak Beach is more enclosed than Eagle Landing. This makes it a much lower impact coastal destination, since people and dogs are not lured NW along the coastline into fragile lichens and mustelid fringes. Kayak Beach has about 50% fringe of sitka alder.

There's a canoe drag at wpt 20. Probably recent, as this wouldn't have been an important beach for the Tlingit. We followed the trail up to the saddle pass, and noticed a ridgetop trail heading SE. Followed it for a ways. Pretty well defined. Very brushy. As the trail faded, we dropped down to the group climbing wall.

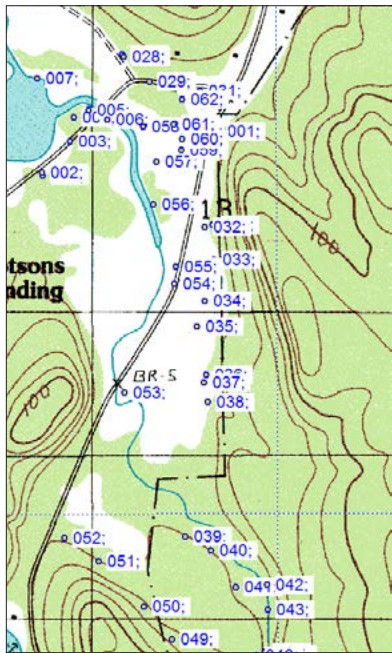
**18** Back down along the edge of the forest near



the ropes course, we found the only small mammal track of the day. A **shrew** was here only hours ago. We're not seeing mouse tracks cause they're more nocturnal, and any activity last night would've been covered. Shrews are out at all hours.

Back on EVC road we found fresh **dog** and no human, ranging off to the side. Then K realised it was probably being run behind a car (fresh tread marks in snow) We walked quite a ways out the road before investigating NW side, where some suggested a trail to keep people off the road.

**27** rich mixed forest with alders to 40 feet (shorter and younger over on the SW side of the road. A slushy slough parallels the road. Trail building would be hard here, and impactful to some really nice habitat. I'll bet the birding is great along EVC



road in the spring. Very brushy, devil's club and highbush cranberry. At base of hill is a well defined **bear** trail. **Dog** tracks range to about 30 feet from road.

**30** evaporated from AT map but lists in the txt file. This is where a road on

fill cuts up to a little clearing surrounded by young alder, then mature hemlock. Well drained upland surroundings. Kim Keifer proposed a parking lot here on CBJ land. Lidded 4-ft culvert placed vertically, fuel cans. Checked surroundings and didn't find critter sign. I'd call it a fairly low impact proposal.

At **31** there's a little creek running from Hagen's place south past some big old cottonwoods. Huge flock of **crossbills**, possibly 1,000, swirled over ridge east of the highway. Kathy's been seeing flocks like these near her Douglas place.

**20** Crossed the highway and began working south through a broadening wedge of uplift meadow with the day's first **otter** track. Single individual, 4x gait with occasional belly drags, muffled by fresh snow, ~40 feet from highway, plain view. Kathy mentioned she hadn't tracked groups of otters overland. Don't think I have either.

Lots of **squirrel** in here. We also found a very fresh **porky** track and followed it into a little spruce grove, where the ~2 year old maker was sitting out 10 feet from the trunk on a branch. Posed for photos but not very happily; quills were erected.

Back on the **otter** trail found a jumble of snow at one end of a belly drag where it seems to have rolled a bit.

**35** is an interesting successional puzzle. About 5 large dead spruces in a cluster, decay class III. Surrounding meadows wet, but beaver flooded. Coming up in the meadows are head-high spruces, hemlocks and a few pines. Ages probably about same as death-ages of the big spruces. Maybe a grassfire killed the large ones and gave a foothold for seed-ins?

**36**, on Beaver Trib, single set of human prints. Later we followed human prints smaller than mine up Peterson, but with **dog** and this person had none. This trib feeds beaver pond next to highway. In stands of spruces along trib, found clear **bear** trails. Even close to spruces no



sign of rubbing. But Kathy found brown hairs on a sharp branch that sticks out into the trail. At edges of openings are alders with some cranberry and crabapple. Nice big wolf trees to 4 feet in diameter.

## 20030401 Amalga with Ed Mills

It snowed in town yesterday and the forecast was for continued cool and windy conditions. In Juneau almost all snow melted quickly but we figured it might stick out the road. I called Ed Mills and he said they got about an inch. He also agreed to take us to his scratch tree area.

Kathy Hocker and I met at Steve Merli's at 10:30 and we all went out to Amalga in Steve's new Vista. Wind was howling into Amalga so Ed invited us inside for a map session before our hike.

Ed says the new logging road is gamey—marginal brush is good foraging for both **deer** and **bear**. He's hiked up to the 500-foot knob that James proposed as spur to the spine trail—good deer place. In fact Ed has a spectacular view of this knob from his picture windows. **Beaver** are being heavily trapped locally to keep water levels under control near houses—not sure which houses he means—don't think any in the Amalga community (9 homes I think he said).

Ed says Bob Ritter isn't one of the Amalga residents, so he must be out on the road somewhere. Lots of **bear** activity could make for some interesting confrontations on proposed trails here. Sows with up to 3 cubs, who frequently get treed by hikers including Ed. EVC driveway is a hotspot. Young bears take DIPAC salmon washed up on beaches in Amalga Harbor. A 3-year-old hung out

almost full time between Ed's and neighbor's. SW shore of salt chuck that Alice wanted to avoid in Gruening trail construction is hot for bears because drift-down **salmon** wash up here—not because live salmon could actually be captured along the shore.

**Deer** are increasing. This is the first year Ed's seen em right around Amalga, and he's been here 6 years.

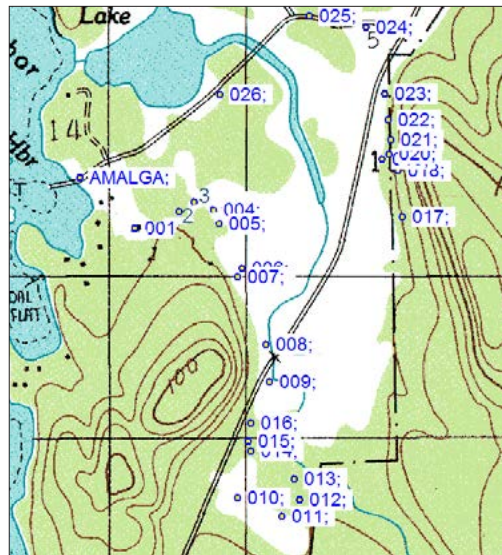
DIPAC sets a weir at the gut around last week in June, pulls it around end of August. Then **pinks** and **chums** flood into Peterson Creek and **otter** start working it. Some fish seem imprinted on beaver-dam trib, nosing into the sticks—otters clean up on these. **Mergansers** (commons?) raise broods along Peterson.

Every home in Amalga has at least 2 **dogs**. Ed says none range widely (though Kathy's repeatedly seen em tagging along after anglers). They're all well behaved and Ed doesn't feel they have much impact on wildlife. On the other hand, he

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1 Ed died in 2006. He was a superb observer from whom our SEALT study benefited immensely. I can't, however, let the opinion about benign dogs pass without comment. All of us have blind spots, and my efforts with Kathy Hocker—herself the owner of a trained search&rescue dog—to educate Juneauites about dog impacts forced us to confront what became vehement denial by a surprisingly large component of the dog-owner community. Reminded me of my own dog-days, when I, too, would have snorted at the suggestion that my dog was displacing wildlife.

PS 2025: I often try to reconstruct my shift on dogs. I'd at least like to think that in the 1980s I'd've been open to the likelihood my dog had exclusionary impact, but resistant to the notion I had an ethical obligation to mitigate that. My empathy for wild things needed space



feels trapping should be shut down near Juneau roads & trails. Trappers clearly depress furbearer populations.

Excellent tracking on our walk. About 1 inch of fresh snow persists on top of remaining older base. Where it fell on vegetation it's mostly melted off. Plenty though to pick up tracks <12 hours old.

---

away from dogs to mature.

Just not too conducive to following any one set for much distance.

**Wpt 1** future parking lot, bog, **dog** tracks

**2** **squirrel** tracks in hemlock forest. Light dispersed dusting of snow beneath trees on informal trail from houses to parkland near highway.

**3** major **bear** grazing place

**4** **mouse** or **vole** with tail drag, ~6" leap

**5** good for spring sedge grazing, often **sows** with cubs here.

**6** **porky**, and second set of **mouse/vole**

**7** **bear** trail just inside woods. Many spurs lead up hill SW to day beds.

**8** first **dog** sign, ~50yds from bridge. Probably belongs to people across the road. Walt said woman's name is Kelda. Less than 12 hrs old, shepard sized. From here downstream, Ed says breeding **mergies**, spring feeding **geese**, **bufflehead**, **teal**, **mallard** and **pintail**. In fall there's ducks but not geese. Big sedge meadow east of highway is best place to see **bears** grazing from mid April to mid June.

**9** **house cat** crossed road here. Also probably from Kelda's. About 150 yds south on road, near yellow curve sign, is one of first greenup places for spring **bear** grazing.

Two **glacier bears** here and the **white bear**.

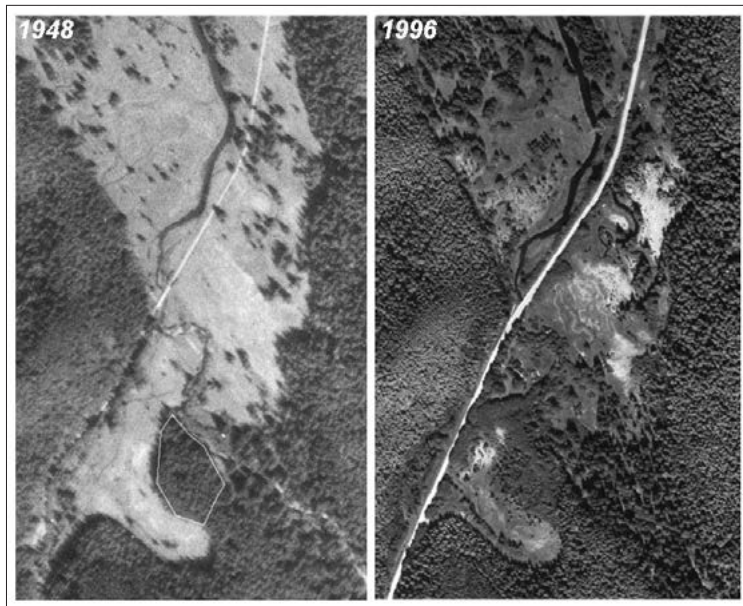
Sow with glacier cub plus mature one. Large male **cinammon** that's fathered several similar cubs. Ed

saw the white bear 5 years ago and thinks the one in Pat's photos is small to be the same animal.

**10** **Mink** in the creek and probable **shrew**—very little tracks. Meadow has snow about ankle deep that we sometimes punched through. On top of that ~1 inch of fresh.

**11** **bear** growled at Ed here ~1st July. Ed has an article about the Peterson sisters. He thinks they used a mining road NE of creek—not the one on Knopf map.

**01** **12** middle of **bear tree** second growth on slight rise above LIA salt marsh surface—gently undulating bedrock or possibly till substrate. Alders ~40 feet and 8 to 10 inches diameter. Steve & I photographed scratches, callibrating to age. Last summer's marks



have no healing around edges, brighter red.

**02** Stumps of previous forest 2 to 3-ft diameter with occasional 4-footer. In 1984 photos alders were just getting started. Forking skid roads show denser, taller alders. On Jan 19 notes from hike with Bob and Cheryl, I included 1979 aerials showing site freshly logged. I assume the 62s would show original forest but all I have right now for this far south are the 48s.

Tracks of **house cat**—maybe same as **9**.



01



02

**13** is just beyond photo **02** of Steve next to largest cut stumps—about same decay state as 1946 stumps behind Dryden.

**14** is **mallard** kill with speculum for clincher. Under mature alders on (natural?) channel paralleling the highway.

**15** **mink**, possibly same as **10**

**16** back on road. Ed says paralleling bear trail on

steep NE side. **Bears** frequently cross here.

Back on the creek Ed mentioned **geese** on water within past week. Also on salt chuck.

**17** **bear** trail at base of hill about 20 feet in from alder fringe. Upland slope rises steeply—wave cut face?—with spur trails climbing to day beds.

**18** old **deer** tracks. Ed had a fresh one here recently. Upland slope has been logged here, but not throughout.

**19** **bear** trail merges with a meandering slough incised ~10 feet. **Beaver** have worked this but we saw no fresh cuttings. There's remnants of an old dam that would have brought water up out of the channel and overflowed into the sedge meadows

**21** bank den dug into fine sand/silt. We crossed the stream on logs here.

**22** probable large **vole**. leaps up to 8 inches. At first we thought it was an unusual weasel track, smushed out so widely in last night's soft snow. Tail drag.

**23** major **bear** crossing. Obvious path emerging from woods on uphill side. Bears often seen here.

**24** trib flowing south toward big cottonwood. Another place to see bear.

Guy in a trailer at pullout from Amalga Rd where Kim's recommending a new parking area had up to 30 unneutered **cats**. Humane Society rounded em up & city evicted him.

**25** almost to SAGA spur Ed pointed out a **bear** trail that leaves the little upland island south of road. This would quickly connect to the trail paralleling SAGA spur that Kathy and I followed 0224. **Mallard** breeding on little sloughs



01

here.

**26 Heron** fishing on north (far) side of salt chuck.  
**Geese** feed on both sides of road here.

### 20030504 Eagle River Landing

Continued clear dry weather. Cathy, Cindy Lagadakis & I went out to Amalga tram beach for picnic dinner

**01** Stopped *en route* to assess one of the selected fen ponds, no larvae (amphib folder has that part).

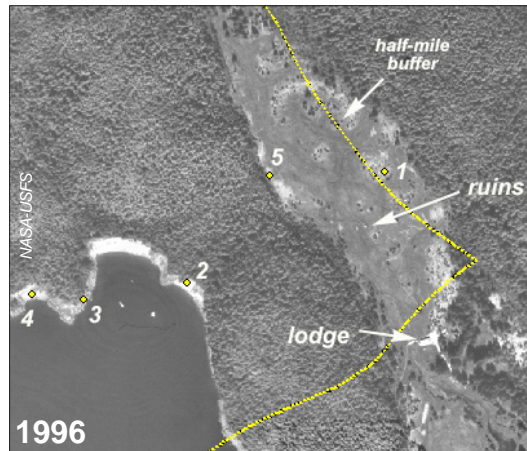
Talked to lodge caretaker Kristy Ford. She too has seen



07

a **toad** here within the past year. Adult male size, toward head of meadows. We should look for breeding ponds on next greenzone tracking visit.

Around January this year, Kristy saw possible **wolf** track along tram route in forest, solo, headed towards Scout side. Snow was fresh and no human tracks around. Size of large dog. (PS: *actually, a dog.*: footnote 1, 20030620)



Yellow line buffers road by half-mile, for pond selections during amphibian study with Armstrong & Willson. No trail crossed the saddle in 2003.

Within past week 6 **trumpeters** in Salt Chuck. Good for migratory birds during that period. Kristy says the **white bear** chose Amalga Meadows as a base for most of last summer. This further persuades me that a trail up the center (or either margin) of the meadows would be really arrogant.

We bushwacked out to the beach instead of taking the tram route across.

**2** South Amalga beach. Point between south and middle beaches has white lichen similar to [Cathy's point that I photographed this winter](#).

[richard.carstensen@gmail.com](mailto:richard.carstensen@gmail.com)



**07 Marmots** here, fairly tame. Adult and yearling, latter allowing close approach but adult whistled while we were still ~100 yards away.

**04 Marmot** track in sand. Would make a good puzzler for Southeast Alaskans who only tend to see their tracks in snowy subalpine meadows in early summer. Nobody expects them on the beach. (PS 2025: In the intervening 22 years, several

beach populations have become established.)

**10** On hillside above south beach there's a prominent spruce whose flattened crown reaches to the skyline. Very large tree, possibly landmark caliber.

**11** All over the main (middle) beach there were 4-wheeler tracks. At first I worried that it had come over the tram route but a couple on the trail said there were no tracks there and that it probably was offloaded from a skiff.



**20030517 Eeyák'w w Penn, Pohl & Hart.**

Multifaceted day. Intertidal critters in early morning; stream walking mid-morning; and ridge walk plus herp-hunting in the afternoon. Clear all day. Temp on Auke Bay clock 49°F in the morning, and 65° coming back.

Michael Penn wanted to get some shots for the Alaska 24/7 book. Since the year's lowest tide (minus 4.8) was

at 8:40 am, we decided to crash the UAS faculty outing at the shrine for some intertidal critters. Shirley Tamone was leading a critter walk, and lots of little kids were finding really cool stuff in the tide pools. I got photos of **decorator crab**, **decorated warbonnet**, and **sailfin sculpin**. The last two were 'life fish' for me.

On to Peterson Creek. I figured I could do greenzone tracking, plus maybe an amphib note or two, and get Michael some big tree shots in the process. Just enough time to do this, then meet Cathy & Karla at Eagle Valley Center for recon of alternative spine trail.

**wpt 1** is a pool ~8m long by ~4m wide. Belt of sphagnum on road side. LYAM & CAPA. ~1ft deep. No fish but does have a tricky outlet to Peterson.

**2** deer tracks.

**3** pond ~12m long by 3m wide. About 1m deep. Thick *Fontinalis* covers ~2/3. Angular boulders on bottom. **Coho** fry. Unique pond, but doesn't look 'toady.'

We found many pools in gravel along the creek that had stranded outmigrant **pink** and **chum**. Recent rains have ended, lowering water levels. We looped clockwise, fording the stream to see the big spruces. Michael got shots at the tree I found with Kathy Hocker. Forgot waypoints but pt3 on ortho shows a guess. Time to move downstream, to





From hemlock crown over Knopf's 'albite diorite' cliff face. Notes follow for waypoint 34.

my appointment with C&K.

Met Cathy and Karla Hart at Eagle Valley Center (EVC), **wpt 4**, Karla calls this the dynamite house. Joe Smith built it on CBJ instructions when he was blasting. Our goal was to scout a potential trail up the forested ridge enclosing the east side of Amalga Meadows. We understand the appeal of connecting

EVC with Scout Trail, but are concerned that running a new trail up one of Juneau's most sensitive wildlife foraging areas could displace **bears**, **grouse** families, **hare**, **mink**, and other vulnerable species. We were particularly interested in the view of the valley from atop the white albite cliffs. Could this give folks a less disruptive overlook,

and still efficiently connect the 2 trail systems?

**5** is prominent **bear** trail just back from the road. LYAM common here. TSHE dominant. Upslope are big hemlock stumps from a near-clearcut, prechainsaw. Some large enough to have spring-board cuts. Up to about 100 feet off the road the whole slope seems to have been cut. Left small



TSHE that are now good sized—strongly released. No hint of this cut on the aerials.

**7** strange long-healed cut in a PISI. Blaze tree? Bear uprooted LYAM and fresh footsteps on a game trail.

**8** at 280 feet. top of dramatic 50 foot dropoff with game trail running along the edge. **Bear** bed and scat with unIDed small-seeded purple berries. Great views through understory.

**10** flat-topped hill 330 feet. Altimeter fits the contours superimposed from the metric 1:24,000 maps.

**11** also on top. Very flat up here. TSHE, *Vaccinium*

**13** decided to get off of a false spur and cut to the inside ridge. TSHEs down in this protected area up to 3 ft diameter, and ~120 ft tall. Thicker brush - tough bushwhacking compared to blowdown forest.

**14** close to the inside edge

**15** near bottom of saddle, flagging ~1yr old may mark traverse trail. Worst place to cross through—lots of blowdown logs and tall brush.

**16** bottom of saddle. briefly better going. more erratics here. Vacc fully leaved, COCA just starting (but see clifftop notes.)

**17** top of bedrock knob. LYAM in a **bear** scat.

**19** edge of 1883 blowdown patch. Shows well on the DOQs. Diameters here are mostly <1ft, whereas previous blowdown patches has been larger and older—maybe >18 inch dominants.

**20** about to climb. *Sphagnum* everywhere. Elev 210'

**21** top of very dense stuff where I lost satellite coverage briefly (otherwise had excellent reception on this forest hike!)

**22** traversing on game trail—probably mostly **poriky**.

**08 25** good overlook. Can see almost to Eagle Valley Center on left and on right almost into the saddle. This would be the place to bring the connector trail.

**26** 250 feet. As soon as we descended we lost the view and got back into blowdown forest.

**27** still in TSHE blowdown. Nice understory for such a young stand. Plenty of Vacc, COCA, RUPE. **Bear** pile. Whitish crumbly bedrock exposed under tipups. [PS 2009. *Is this Knopf's augite diorite?*]

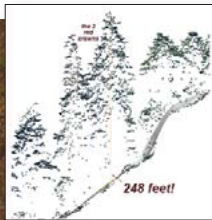
**29** starting to climb a bit. uniform blowdown. Stake driven into TSHE identical to the one on the old wagon route. White plywood sign with number 171. Whoever drove these signs into the trees had a big sledgehammer.

**30** Most distinct game trail we've encountered on the ridge.

**31** 370 feet, out of the blowdown and up into the tough bushwhacking.



This photopoint is actually slightly over the divide into Asx'éé watershed. On 20201007, reviewing horsetram trail in LIDAR, discovered a patch of trees here (inset) that might be our tallest in Aak'w Aaní—more than 240 ft high. Notes in [asx'éé.pdf](#)



22

32 410 feet.

33 down slightly from the top. Descended to the inside to get a view of EVC lodge.

01 34 climbed a photopoint tree. Challenge getting up 1st 2 sets of branches but after that the TSME was pleasant climbing. Tops of left-pano hemlocks are lovely—like my Eagle Beach treetop panorama from 1988. I hope I'm still tree climbing 15 years from now. (PS: 14 years & counting!, eg following 100-ft treetop pano in [notes for 20170411](#) PS: 23 years later, gotta drone now :)

35 photos NE to Eagle and Herbert glaciers.

36 Continued long summit—altimeter still reads 450 ft. Tall MEFE here—thickest bushwhacking we've seen.

21 37 younger blowdown. Trees only 6 to 8 inches.

38 descending N through young blowdown. Grey *Lobarias* (?) coat tree trunks, similar to Pt Bridget trail. 410 feet. Surprisingly rich understory of *Vacc*, *COCA*, *RUPE*

39 290 feet. We tried descending straight into the saddle but hit cliffs, so detoured a bit north and found this nice **bear** trail through a slot. From this position can see even aged blowdown on inland side, and look down to big protected trees in the saddle

02 40 hooked backwards into valley bottom. Big PISI up to 5-ft diameter on the sw-facing slope, and large **porky**-skinned TSHE to 40-inch diameter on the bottom.

41 valley bottom. Cathy heard a **creeper**, a good bird for this ancient large-hemlock forest. Almost no PISI. Photographed unravelling *Polystichum*, which Cathy thought might be related to limy rocks on exposed cliffs above us.

42 tram route follows scrubrier TSHE on ocean side of the valley. Lots of *LYAM*. *Pleurozipsis*, *STAM*,



21

PS 2020: Karla recalls that when we got back to EVC, SAGA folks who'd been watching said there was a bear quite near to us.



**43** tram emerges from closed canopy into partial cover. Thicker understory

**44** 80 ft elevation, out into sedge fen. PICO, *Ledum*, sloping down to NW. Cranberry.

**45** lush fen with big sedges, crowberry, *Ledum*, TSME, PICO,

**46** drifted off tram route to E side of valley on meandery informal human/bear trail. No hint of hotfoot trail. Must get a fair amount of human traffic. Rich fen. From up on the cliffs we could see what looked like leafless alders but they're just way behind—leaves < 1 inch long.

**26 47** incised creek with convoluted meanders. Lush green terraces contrast with the sedge margins which are still mostly tan from winter-dead turf. Passed a small *Plantago macrocarpa* meadow.

**48** another stream that Cathy checked and found unIDed salmonids.

**49** entering another meadow that's spongier, with softer sphagnum. Maybe during harder rains ponds form here, but probably too ephemeral for toads. Back a ways Karla found a small pond under the shade of a spruce with mosquito wrigglers and no aquatic veg. When I mentioned that I didn't consider these shady ponds good prospects



for breeding toads, Karla said long ago when her family lived just north of Auke rec campground, a tree uprooted, forming a little pond in the depression. **Toads** bred there. The pond was not only small but ephemeral and quite shaded. So I guess I shouldn't bypass ponds just because they don't fit my search image.

**50** wettest part of spongy sphagnum fen. Pond only 2 m across with LYAM.

**51** elongated pond with *Caltha* that on closer examination had too much flow for amphibs. This is a raised tidal slough.

**03 52** hotfoot trail and bear scat with grammoid contents. Best defined bear trail we found in the meadows. Crosses E-W.



## 20030620 Meadows with KH

Kathy came by at 9:30 and we headed out for a day of mostly **bear** tracking. Weather was fine—generally clear or patchy clouds. Lots of **mosquitos** but not biting aggressively.

Talked to Dave Troup about critters. Early summer **bear** activity has dropped off. At peak they were seen ~every other day, maybe ~half dozen individuals. Hasn't seen the white bear this year. Keglars saw it ~4 years ago as a small bear. (more bear notes from Dave and Brian below at end of field notes)

Dave has never seen or heard **wolf** here. The possible wolf track this winter that Kristie mentioned was probably Dave's **malamute**, which

he lets run from the lodge in winter. <sup>1</sup>

Dave only has seen a few **deer** in Amalga Meadows (but Brian later said there have been recent tracks in the garden) No **hare** sign (but we had some)

Below are way points. Numbers in parentheses are photo IDs, mostly K's.

- 1 parking lot
- 2 squirrel cache tree. LYAM-filled creek that probably runs SE to the approach road.
- 3 downstream on that creek, CAPA, steady flow
- 4 3 kinds of **bear** sign: scratch tree, veg scat and perennial trail

<sup>1</sup> PS 2017: this information explained several psuedo wolf-track reports. I can't think of a more efficient way to depopulate Amalga Meadows than letting a large athletic dog range freely there, 24/7.

5 hotfoot trail dissipates

6 fresh flattened trail in sedges, bed, stand of spaced ALRU, with MADI, FRCA, sedges, lots of grazing sign

7 defined trail in woods

8 woods trail fades, **poriky** scats (deer-like pellet clusters) on top of log

9 back in meadow with cool mixture of ALRU and small PISI, sedges, FRCA, RUAR, violets,

10 well defined meadow trail, healed **bear**-scratched ALRU

11 scratch tree (**kh79**), bedded on top of LYAM (**kh81**) quite a few veg scats, ~5 within 25 yards—some weathered black, some fresh looking. Can't ID contents but Kathy noticed we weren't seeing many freshly clipped sedges

**12** bear trail quite straight and well-worn  
**13** cut back into the woods to check trail there—pretty distinct. Kathy stayed out in the meadow and noticed a **stickleback** in the stream. Standing water at alder forest edge.

**14** where my forest trail faded out K noticed spur coming out of woods joining stronger meadow trail

**15** trail under tree. Low branch has hair on it including a pale tipped guard hair. Is this the white bear?

**16** trail splits. K followed the meadow branch and I went into the woodland. K found lots of light divots in the moss. What for? **Ants**? Roots?

**17** **porky** trail. more meandery in response to microtopography, and goes under PISI branches too low for bear. Probably they like to come out to these open-grown spruces for escape cover when munching the meadow salad greens. K has also seen **porky** sign out here in the winter.

**18** classic quaking mat. *Eriophorum/Sphagnum*. In one of the small bear divots K found a **pupa** ~1cm long. Very tough skin of several layers. Is this what **bears** are digging? Good scat concentration here—some unweathered—*ie* less than 2 days old

**02** Tons of **bear** scats show recent use of meadow. some places had especially high densities suggesting latrines.

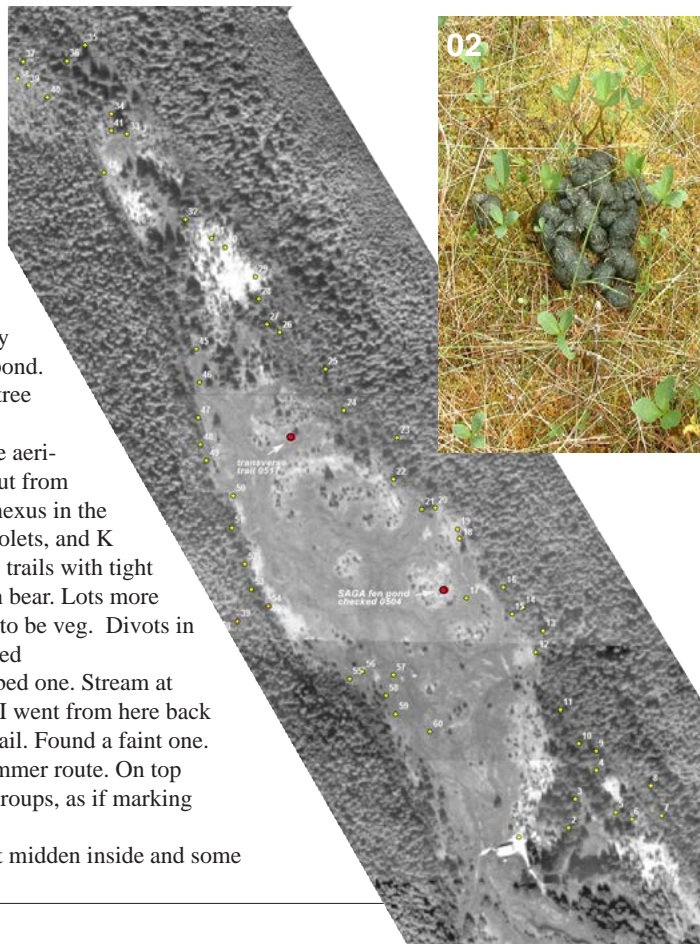
**19** many shallow ponds that probably dried in May drought. One METR pond ~10m long x 3m wide that I didn't see on the visit with Cathy and Cindy on May 4th. This one may have survived the drought. 100% METR cover but plants are still puny compared to wpt 25 below. Maybe this is because of less reliable water here. Certainly gets more sunlight than wpt 25 pond.

**20** 4-foot-diameter PISI wolf tree with squirrel cache

**21** stream incised ~3 ft. On the aerials this shows as a trib leading out from the E-side forest into a channel nexus in the center of the meadow. Lots of violets, and K found a nipped one. Mashed veg trails with tight meanders are likelier **porky** than bear. Lots more **bear** scat here though. All seem to be veg. Divots in some places are quite concentrated

**22** clump of alders. **Cub** climbed one. Stream at forest edge with LYAM, CAPA. I went from here back into forest to look for a woods trail. Found a faint one. Wouldn't call it an important summer route. On top of logs found more **porky** turd groups, as if marking something.

**23** hollow **porky** log with scat midden inside and some



on top. **Bear** hair on several of the branches across the trail.

**24** rich broad margin of ALRU, VIED, LYAM, tall sedges, herbivore heaven. Many wet places with 1 dm water after the hard rains of the past 2 days. One even had *Sparganium* floating in it. CAPA. Outboard of this, Kathy called to say she had a well-defined **bear** trail. I'm thinking that this habitat merits a special color on the veg type layer. I currently have it mapped as mixed conifer/deciduous, and that's the best pick of the existing types. But this habitat is so open and moist that the trees do nothing to impede the lushness of the meadow herbs below. It's the optimum mix of cover and forage for a large herbivore.

Do **bear** eat MADI? We've seen no sign of that. Kind of odd, considering how important it is to deer in summer. Also noted that none of the LYAM have deformed tips, as typical of areas where **deer** clip the spring sprouts. \* K pointed out a few with slight splits in the tips; these may have just been frost-nipped. K also found nipped *Sanguisorba*.

**25** Best prospect I've seen in Amalga Meadows for **toad** breeding. 100% cover of tall, robust METR and even some NUPO in

one corner. Certainly survived the May drought. Temps only 11°C. That could be the limiting factor. Filled out a quick amphib assessment form.

**01 26** continued through wonderful lush ALRU, lush CAsp, LYAM type. Scratch trees, Kathy took a panorama here ([2 pages back](#)). Understory of MADI, EQAR, grass, not much willow.

**28** edge of big cottongrass opening. Lots of meandering hotfoot trails, but short stride.

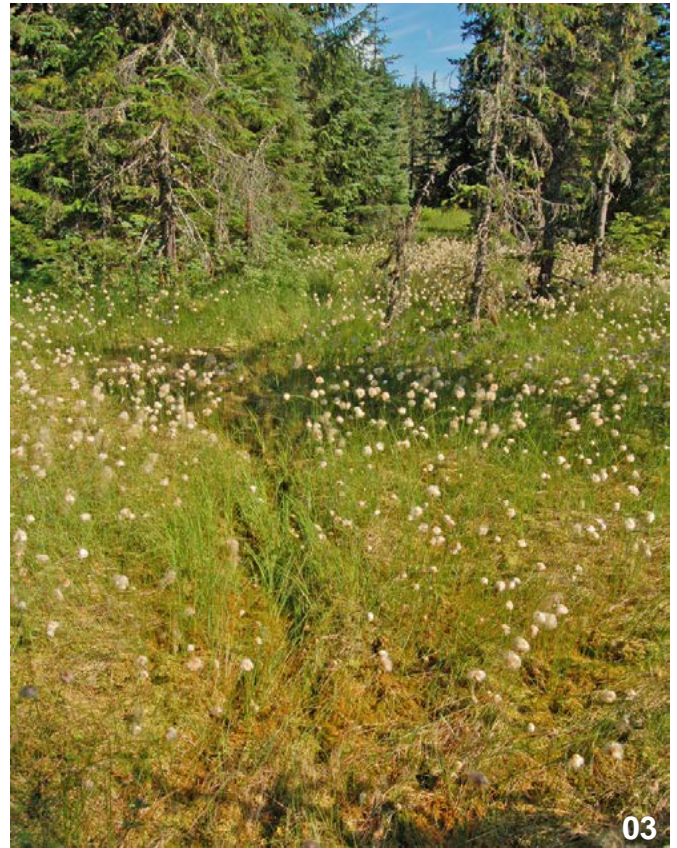
**29** pond in the cottongrass fen

**30** upper edge of the fen. Striking change in the veg from the lush LIA surface. Vacc, MEFE, TSHE. As we continued, the surface dropped into the LIA high-water zone again. So this is a lobe of high ground that probably has deep peat, uninfluenced by tidal waters over the past several centuries. <sup>2</sup>

**03 31** Hotfoot trails. Possible **toad** breeding pond ~6m x 1m, sphagnum border, cottonsedge emergents.

**32** left cottonsedge fen and dropped back into the lush fens. Creek here still

<sup>2</sup> 2025: Well yes, but as our probing later showed, even the young raised-tidal wetlands have consistently more than 4 feet of peat!





has **salmonids**, as Cathy found on May 4. Nice undercut banks. I should try to map this all the way down to EVC. Presence of fish probably brings **mustelids** up here.

**33** still on the little anadromous trib, ALRU lining

**04 34** obvious **bear** bed in an orchid meadow. FRCA, RUAR, COCA, EQAR. Still has lush LYAM but canopy is now 30-50%. A little ALRU, OPHO (new); transitional feeling. VIED beside Vacc, more TSHE than below. Stream still anadrous.

**35** finally at end of meadows. Dense MEFE, noticeably climbing now. Wet enough that the forest isn't yet closed.

**36** closed forest, heading cross valley to pick up tram route. TSHE even aged except for a few craggy individuals. Diameters

to 2 feet max, ~120 ft tall codominants. Understory of RUPE, COCA, Vacc. Creek coming out of the saddle. **Fish**.

**37** KH photo (follows) of scramble egg slime 'collar' around a small spruce trunk.

**38** where we split up in the sloping fen. Current SAGA-to-BS path leads through here, but I'm not sure where the original tram route passed—more likely just below. K bushwacked up to the “wagon road” while I headed down west fringe of Amalga Meadows.

**39** on the path. Too meandery for tram route but too steady for a bear trail.

**05 40** recent scratch tree. Claw marks at about 7 feet, just above a healed blaze (?). Tufts of hair stuck to downslope side.

**41** out into sedge meadow with yellow-green orchids. Route disperses here because people can walk wherever they please.

**42** ponds that could serve breeding **toads** in a wet spring. One with METR ~30m<sup>2</sup>. I've now scanned about a dozen shallow ponds with good visibility in Amalga Meadows for tads, and I think it's pretty safe to say these were empty. Also, if there were successful breeding last year in any missed ponds near our route today, we'd have passed a few 2-yr-old hoppers like at Wigeon Ponds and St James Bay. I checked forest on ocean side and found no bear trail, so they, like people,



use the meadow for travel.

**43** photo of tree line-up along the ditched tram route. <sup>3</sup>

**44** on the dominant stream. Strong flow, ~1cfs, tannin but not turbid, overhung banks with LYAM, CAPA, MADI, probably anadromous. **Bear** trail alongside is well used. Becomes even more obvious in duff under a big PISI wolf tree.

**45** 3D navigation back. Lots of **bear**-grazing meandering swaths. Creek is inset 5 feet here. Still following main channel downstream. Should add to stream layer as anadromous. Lots of buttercups on the inner terrace. Kathy wondered if these are invasive *Ranunculus repens*—legacy of Ackerman homestead. Just downstream I found a few sprigs of clover, definitely escapes. Not much of it, so clover may have a limited future here in competition with taller natives. This is right beside tram route.

**47** poked into the complete cover—slope immediately rises. Only a minor **bear** trail—maybe just seasonal use. **Porky** turds and skinned TSHEs.

**48** photo (culled) of very clear section of forest **bear** trail. So it's variable on this side of the meadows, as on the other side. Suggests

<sup>3</sup> Poor satellite reception for 43 and 44. They came up way off, so I deleted them in photoshop on the orthophoto.

Here & following are non-rectified photos from the walk. I think this one is pretty close to northern limit of LIA-flooded portion of the meadows. Descending into former tidal slough. Beyond this limit, peat comes deeper and streams are not incised.



bears never travel completely within the conifer cover, but move in and out.

**49** back into the open. Rich belt of crabapple mixed with the alder. Still inside the tram line, there's a bear trail with several veg scats.

**50** edge of open meadow. Transverse **bear** route runs out into meadow, probably toward the hotfoot trail we mapped on May 17th (red dot on ortho) Very wet and sphagnumy along this forest edge. Lots of blooming nagoons—so damp that RUAR doesn't have to compete with taller meadow veg. Quite a few veg scats.

**51** 10 feet above meadow level. Meandering porky trail, with probable **bear** use also. Lots of upslope and cross-slope trails in 7-foot MEF. **Porky** turds and skinned TSHE. On one of the most distinctive trail segments, frequency of porky chewings makes me wonder if they aren't more important to trail maintenance here than bears.

Line of MAFU within the young forest edge. They probably had decent light when first establishing but are now in deep shade. The thin trunks ~ 4 to 6 inches rise to 15 feet or so, thin bend over feebly and sometimes even touch the ground. Clearly they've given up on the vertical race, but they're managing to hang on, maybe by not investing as much in stiffening fiber as most trees do.

**52** inside tram line, more **bear** trails.

**53** forest trail continues but I went back out into the meadow. Very wet here. Meandering belt of deep cottonsedge and sphagnum where you could top your boots if careless. Several possible toad ponds. Sampled one, ~6m-x-1m. Temp



slightly cooler—14°C—than wpt 25 METR pond on other side, but pH lower—5.1. Lots more like this one in the area. Just down valley is where SAGA groups slosh through the meadow (needs boardwalk) to the tram crossing route.

PS: I later asked SAGA's Brian McGorry how often they take parties out to the beach and he said about once per week. Brian also said there hasn't been much **bear** scat on the tram saddle route, compared to what's in the meadow. There was a **brownie** seen on Kayak Beach about 3 weeks ago, but it's probably the



one that was since shot. I hadn't heard about this. Shades of Alfreda. <sup>4</sup>

From **53** south there's no old tram route at the forest edge. I poked up into the upland woods but it's very tangled and apparently trailless. The mashed down bear paths are right at meadow edge. Veg scats.

**54** old down thickly colonized nurse log forms a diagonal ramp up into the forest, with a strong bear trail following. This is one place where a SE-travelling **bear** could

<sup>4</sup> Alfreda was a **brown bear** that hung out at Scout Camp and Amalga in the early 1990s who eventually became food-conditioned and was shot.

move into cover while passing Eagle Valley Center. I didn't follow it though. This area looks logged. Shows on aerials as a flaring dark texture. I should add that on the veg type. <sup>5</sup>

**55** little trib from hill, ~ 1 foot deep

**56** still on this trib, old ruin, shows on 84

**57** junction of trib with center-valley stream, ~1m wide, 3dm deep.

**58** main stream, **bear** walked here recently

**59** hummocky inner terraces are hard to walk on, incision ~ 8 feet here.

**60** iris with EVC lodge beyond.

### Kathy's waypoints:

**61** hit Mary Lou's "wagon road" (*sic*?) above oval fen, old people and dog tracks

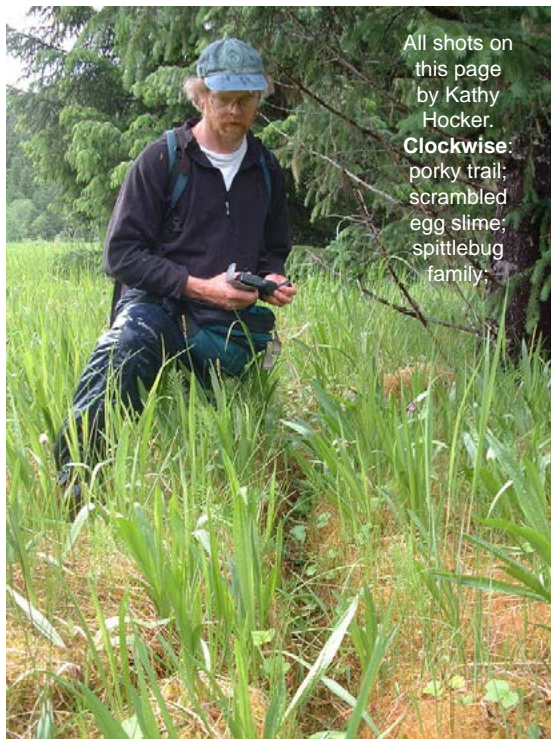
**62** veg map shows "old"—actually very open, TSHE/PISI, VAOV & MEFE

**63** bear scat with last year's VIED berries

**KH01** (next page) in **64** bog. **hairy woodpecker** nest only ~8 feet above ground. At least 2 babies. Adult visited while Kathy was there.

**65** bear (/deer?) trail in bog along the

<sup>5</sup> PS: comments like these refer to the goal of this survey for Diane Meyer at the Land Trust. Our publication, Carstensen & Hocker (2003) contained a color-coded veg map for all of Risen Valleys.



All shots on this page by Kathy Hocker.

**Clockwise:** porky trail; scrambled egg slime; spittlebug family;



opposite side from the wagon route. (PS: deer were scarce from 80s&90s up through probably the teens, when warming winters and possibly reduced wolf

predation allowed moderate increase. By 2014 I got a nice movie of a very relaxed doe on one of my wetland survey visits, just north of EVC.)



66 clearcut begins here on ocean side of wagon road

67 clearcut. big **squirrel** midden just above beach campsite

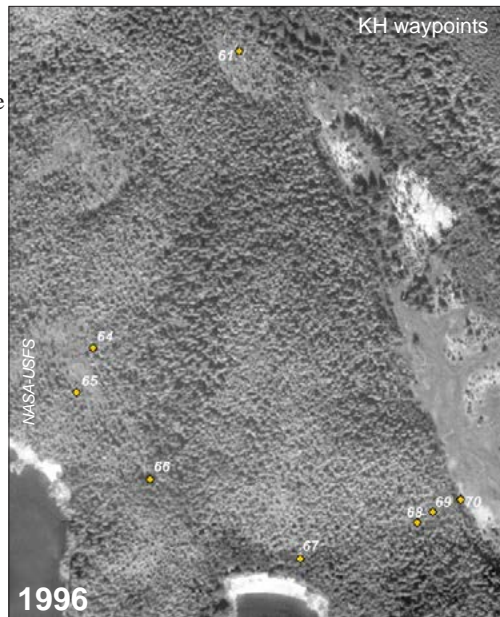
68 clearcut. branch from old wagon road down to Amalga Meadows

69 clearcut edge. Probable **goshawk** pluck perch. **Snipe** feathers?

70 meadow. flagged trail (= rc53)

We rendezvoused at the car and downloaded respective waypoints and K's photos onto the laptop. This was the first time the gps-to-state plane conversion has gone through without major head-scratching. (whew!)

At the lodge we talked briefly with Dave Traup and Brian McGorry. Mostly I've already inserted their comments into the preceding field notes. One cool note though—Brian saw several **toads** right near the lodge porch last year. Size sounds like adult males. Probably July. And even more potentially exciting, he says



there's **frogs** in the creek. He comes from green frog country back east and appears to be clear on the frog-toad difference. Says the kids catch them. We need to set some traps or do net sweeps.





### 20040214 Winter flight

On a February ski trip to the Yukon I got a few useful photos of the watershed. They were taken around 1:30 pm, with long shadows pointing NE from the low winter sun. On this set, it looks like snow only covered the southern, shady half of the chunk. Is that from greater melt on the sunnier, northern half, or more related to wind deposition patterns?





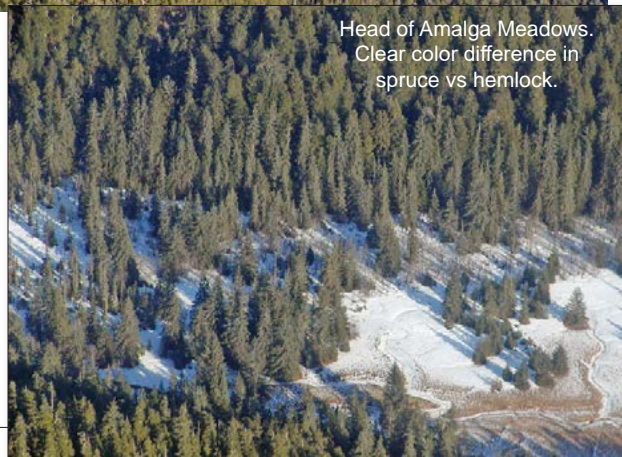
Also from the 20040214 flight. I stitched this pano manually, and there are some fuzzy boundaries, but still a useful way to view the horse tram pass connecting Amalga meadows with Herbert-Eagle confluence.

## 20090814 Toad hunt at Amalga

Amalga is irrupting with **toadlets**. Around July 25th, hundreds of metamorphs were seen at Eagle Valley Center (EVC) and near the Amalga turnoff from Glacier Highway. Dave Troup called to say he delayed mowing the lawn for fear of toadlet genocide. In several years at EVC, he'd never seen anything like it. Shortly afterward, Sarah and Pete Hagen called with similar news about the road near their greenhouse. Like Dave, they'd never seen so many toadlets in the many years they've lived at Amalga. (A couple decades, seems like.)

Taken together, these 2 reports were surprising because I've never seen metamorphs disperse more than about 100 meters from their natal pond in the month following metamorphosis. Either these Amalga toadlets were way more mobile than normal, or there is more than one breeding pond. Hagens and EVC are a kilometer apart; 10 times that far!

Between 2002 and 2004, when I monitored toad breeding ponds with Bob Armstrong and Mary Willson, metamorphosis always took place between the last week in July and the first



Head of Amalga Meadows.  
Clear color difference in  
spruce vs hemlock.



Koren and Mary hunting toadlets on the Amalga Road.  
View east; Hagen's white greenhouse in center distance.

week in August. This held true over 3 years and 6 different ponds. But clearly these Amalga toadlets emerged earlier, probably around first week in July.

I decided to check on these toadlets just before the EVC plant walk with Nancy Turner. Mary Hausler and Koren Bosworth were attending Nancy's walk, and agreed to come out early for a toad hunt.

Jennifer Moore is doing a study of western toad genetics in Southeast at UAS. Koren and I collected samples for her on our recent trip to Hyder. Jennifer couldn't make it on this Amalga visit, but asked me to bring along a chytrid fungus kit, and get some swab samples from the metamorphs.

As mentioned in sidebar, Pete Hagen told me there were good odds of finding toadlets

in his greenhouse. We found at least half a dozen within a few square meters under the tomato plants. As he predicted, they were really active! I've never seen toads of any age so hard to catch. We finally caught and swabbed two. Sample vials #1 and #2 are from the greenhouse.<sup>1</sup>

Afterward, we walked the road where Pete and Sarah have been seeing toadlets for the past 3 weeks. Found none. Fine drizzle may have discouraged activity; in our 2002-04 study we found yearlings (and in a few cases

<sup>1</sup> Set up an ArcPad project, assuming I could get lat-longs for these swab locations from GPS-linked photos. Strangely, though, track wouldn't drop onto either NAD83 CBJ imagery or the NAD27 FS orthos; in both cases it ended up 100s of miles away. I suspect ArcPad TrackLog lost its datum somehow. Tried to re-establish as WGS84, to no avail. No big deal for today's excursion; got my 2 lat-longs from Google Earth.



We've scanned this area fairly thoroughly for the breeding pond that *HAS* to be present somewhere on this photo. So far, no luck. Water bodies checked either have too much flow (almost anything can flush out larvae), or dry up by mid-summer.

late-season metamorphs) much more visible on sunny days. One thing that attracts toadlets to roads is warmth, and on a day like today the asphalt is probably no warmer than the vegetation. Pete said we'd probably at least see squished ones on the road, but I didn't notice any. Are **corvids** cleaning them up?

Next, we followed Pete's suggestion and checked out the only substantial pond on NE side of EVC driveway. I've labeled this on the 2006 aerial. It doesn't look to me like a viable tadpole pond. The south side is heavily shaded—more so than any breeding pond I've seen. And we spooked several dozen 2- to 4-inch fish. They behaved more like **cottids** than **salmonids**, darting and freezing. When they stopped they instantly disappeared beneath soupy flocculent, so I didn't get an ID. Probably **coastrange** or **prickly sculpin**. Either of these, in such density, would make short work of toad larvae.

At Eagle Valley Center, Melinda Lamb told us she'd just seen several toadlets at the western edge of the mowed lawn. (It's definitely been cut since Dave Troup reported hundreds here, so I hope not too many were blundered.) We followed the edge behind the lodge and found another 20 mm metamorph

## Pete Hagen thread

### Aug 13 Hello Richard

The toadlets still seem to be roaming about. On the Amalga harbor road between the highway and Peterson Creek bridge is where they are easiest to see—generally close to vegetation next to ditch on north side but some times in middle of the road. The last few days some of our neighbors have been walking the road as well on collecting missions to pass them along to others with ponds. So between them and the traffic and predators, I'm not sure how much longer they will be easy to spot along there. If you head out here you are more than welcome to stick your head in our greenhouse. This past week during the afternoons there are almost always 2 or 3 next to our sunflower plants and in and around the young spinach.

Attached is a photo of one I saw on the road.  
[RC: size range 16-22mm SVL = snout-vent length].  
The ones in our greenhouse have been too active to hold in our hands for good photos—but maybe it was just the time of day. I'll try again on those.

### RC to Pete,

Thanks for the photo. Attached is a series of photos from Juneau breeding areas showing typical growth, from metamorphosis through mid summer of the "yearling" year. As you can see, your Amalga toadlets are pretty precocious. Most are already considerably larger than the ones we photographed a month after metamorphosis. Your toadlet most resembles my 3rd shot, of an overwintered "yearling."

But I doubt your toadlets could be last year's, because: 1) there are way too many of them, and 2) by this time of the summer, yearlings should have more muscular legs, like my 4th shot in the series.

So, assuming the Amalga toadlets are this year's metamorphs, the question is when and where were they born. From their size,

and apparent wide dispersal, I'm guessing they've been out of the pond at least a month, which would put metamorphosis ~July 10. We've never seen anything that early. Even on the southern Tongass, metamorphosis is much later. I've just come from Hyder, where there were still tads with no leg buds in the ponds in late July.

Toad larvae are known for the ability to accelerate metamorphosis if their ponds are drying up. Maybe with the warm summer, their pond was shriveling and they figured it was now or never. But your reports and those from Eagle Valley Center sound like this was an extraordinarily successful breeding year, not a last-ditch survival effort from a sub-optimal pond.

Would be nice to know where the pond is. Or *ponds*, plural. Your toadlets seem better developed than normal for the time of year, it's possible to imagine them dispersing farther from the pond than the 100 meters or so that was the maximum distance we noted in the month following metamorphosis. When you see them on the road, are they mostly going in one direction, or is it random?

By the way, my growth series photos are politically incorrect; you're supposed to handle amphibians with latex gloves. If folks are doing lots of handling, you might want to caution them not to touch toadlets if they have bug dope or sunscreen on their hands; their skins are extremely absorbent.

I'll be out at Amalga on Friday afternoon. I'll try to get there before my meeting so I can do some toad hunting. Thanks for letting me check out your greenhouse. A toad researcher at the University has asked me to take some swab samples to analyse for chytrid fungal infection.



**Typical growth series for Juneau area western toad. Photos from different ponds and different years.**



beside some stacked boards. Fortunately it was not as flighty as those in the greenhouse or we'd have lost it under the woodpile. Our swab sample for Jennifer is in vial #3. This is probably—but not definitely—from a different breeding congregation than samples #1 & 2.

So our swabbing was a success, but I'm no closer to answering the question of the natal pond. Nor do I know if the Hagen and EVC metamorphs came from the same birth waters. Judging by the alacrity of the greenhouse hoppers, it's remotely conceivable they traveled a kilometer or more. But that hyperactivity seems artificially enhanced by the hothouse environment.

*Hmmm*, I wonder if the tads aren't emerging from the Salt Chuck itself?! Kathy Hocker says it's salty enough at depth to support sea cucumbers, but it probably has a pretty serious freshwater lens on top. Back on the Soule delta near Hyder I saw my first truly intertidal tad pond. It flooded on several

**Pete to RC:**

I think we first started noticing them about July 25-26 on the road. It's possible they were there earlier but we weren't walking it regularly then. Shape-wise I don't think they were fresh metamorphs as shown in your pictures—no remnant tails. So perhaps that fits with your early July date for metamorphosis. The ditches at that time had water and we would put a few of them back in to get them off the road but didn't see any others in the water when we did so. No one I have talked with has mentioned seeing tadpoles.

If I had to guess I'd say that there was movement from north to south, but that would have been initially. Now they seem to be hugging the shoulder if they are along the road. My assumption had been that they emerged from the ditches on the northside of the road. However given your pictures and comments I'm not too sure.

As another possibility, along the EVC driveway—there's an extensive chain of bogs on the east (hill)

side created when Joe Smith Sr. punched in the road. I believe the bogs drain to a small pond about half way to the lodge (200 yards?) where a culvert goes under the road. It is quite possible that is the origin and they are dispersing in both directions. <sup>1</sup>

But I suppose there is no way of verifying that at this point. However it might be worth checking if the pond is there when you come out or if it has dried up. Other than the Saltchuck marshes which are fed by a creek that drains the meadow behind the Lodge I don't recall any other standing bodies of water. There was a lot of snow this year that would have lingered quite a while in the bog area and perhaps that provided a refuge to make for a good year class.

<sup>1</sup> PS I think this is about where [City workers reported larvae in 2020](#).



successive high tides, but the nearby river so diluted the ocean water that salinity was apparently negligible. Could this be happening at Amalga?



### 20090814 Nancy Turner at EVC

Paul Hennon of Juneau's Forestry Sciences Lab (FSL) brought well-known BC ethnobotanist Nancy Turner to Juneau for a Tlingit-Haida culture camp, based at Eagle Valley Center (EVC). In the afternoon, Paul scheduled a field trip, so that Juneau's senior (as well as junior) naturalists could meet Nancy, and get a taste of what it must have been like in the days when entire cultures shared her depth of knowledge and spiritual relationships with plants.

EVC is a happening place! Wet tents were *everywhere*. I guess I've never visited the facility when it's really up on step.

At about 1:30 PM, Paul rounded up the crowd for introductions. An impressive showing of naturalists, biologists, and cultural specialists assembled in the parking lot. FS staff participating in the culture camp were Paul Hennon (plant pathologist), Melinda Lamb (invasive species) and Regional Botanist Mary Stensvold from Sitka. Lillian Petershoare, Tribal Government Relations Specialist,



Nail-painted culture-camp teen turns up new leaf.

USFS Regional Office. Several folks from Tlingit-Haida Central Council whose names I didn't catch. Merrill Jensen from the nearby Jensen-Olson Arboretum, where they are planning an ethnobotanical section. Elizabeth Kunibe who's working on Tlingit potatoes. Dan Monteith, archeologist at UAS. Former FSL ornithologist Toni DeSanto. Local naturalists Dan Hopson (Gastineau Guides) and Brenda Wright (formerly FSL fisheries). Grass/sedge aficionado & wetland delineator Koren Bosworth. Dzantik'i Heeni teacher and former Discovery naturalist Mary Hausler. And me. I think I'm forgetting a few others.

We started with an introduction to the valley—uplift, primary succession, mining history, grazing—and then headed out the trail to Eagle River



Making a berry basket from a thimbleberry leaf.

Landing. I was delighted to see quite a few of the culture camp girls, apparently so inspired by their time with Nancy that they ran right back out in the rain to pick berries. Our adult party of botanical-tidbit-pickers leapfrogged noisily along the trail with them. Here are some random notes from Nancy:

**Highbush cranberries** were a big deal for coastal peoples. Regrettably, **deer** have nuked them on the Haida Gwaii (HG). They were not dried like blueberries but preserved in **eulachon** oil in bentwood boxes. Such a gift was from someone who *really* liked you, probably on your wedding.



After Pacific yew (note Nancy's pendant), Oregon crabapple is the hardest wood on the coast, used for bows, mallets, etc. She knows someone who carved an emergency outboard prop out of *Malus*.

**Black lily** fields were tended. Nancy knows elders in different tribes who as children were responsible for re-planting the unused base of the roots—the “whiskers.” In general, there was far more culturing of plants than we attribute to these presumably non-agricultural northwestern peoples. For example on Skeena River terraces in Tsimshian country there are communities of crabapple

and *Viburnum* with an understory of rice root. The upper branches of the crabapples were partially broken to bend downward for easier picking. This sounds almost as intense a human signature as described by folks like Gary Nabhan (*Cultures of Habitat*) and Wade Davis (*One River*) for tropical and subtropical environments.

Think of **devil's club** (OPHO) as spiritual protection. The “*highbush cranberry of the grizzly bear*.” Never pick more

than 4 stalks at one time, and think only of the person you are trying to cure. The Haida use OPHO in the stick gambling game.

Nancy's never seen so much devil's club as in Juneau. You can learn to pick it with bare hands, by running your palms up the green stem below the leaf in a spiral motion, flattening the spines. (Can **deer** do this with their tongues and gums? Reminds me also of Ken Leghorn's amazement at Judy Brackel removing OPHO bare-handed for Disco clients on the cross-Baranof hike.) As with cranberry, on the Haida Gwaii, introduced **deer** have chased OPHO back to cliff faces and stump-tops. Canadian biologists explain that in the millennia without herbivores, HG devil's club lost its defenses, and became highly palatable. I asked if that meant fewer spines, and she said no. <sup>1</sup>

<sup>1</sup> So OPHO that *has* coevolved with deer deploys chemical deterrents in addition to spiny armor to make it less palatable? On Southeast's outer, wolfless, “banana belt” islands, high deer pops perennially hammer OPHO, just as they've done more recently on even balmier-&-wolfless HG. Deer even eat OPHO routinely in August on Xutsnoowu (though without notably reducing its cover), an island where many plants one might imagine tastier are available.

I think it was Thom Hanley who wrote that OPHO has highest crude protein content of any browse on the Tongass. I always figured OPHO was prickly to temper its

In a similar vein, **yellow-cedar** (CHNO) is thought to have become tastier on the Haida Gwaii in the millennia without deer, so that when they arrived by human agency it was annihilated. I didn't ask if comparative palatability studies had been done. CHNO is avidly eaten on the Tongass, but in some provinces and microhabitats seems to pass through the vulnerable sapling stage to adulthood in spite of our nearly ubiquitous deer. Probably deep snow is a plus for CHNO in the **deer-suppression** category, as well as the protection snow offers from root damage that Paul Hennon is documenting. Deep snow is probably only a memory on all but highest HG elevations.

The berries of **red osier dogwood** have an eye-opening taste. You wouldn't want more than one per hour, but it makes a nice mouth freshener,

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desirability (deer or no deer). Because spines are clearly incomplete protection, OPHO has 2 "backup guardians:" wolves, and deer-smothering snow. Haida Gwaii has neither. Aak'w Aanii has both, ergo world-class OPHO density.

How and why do plants gain or lose palatability? Breeders coax corn from a pinky-to-forearm-sized fruit. Bug-&-browser defenses 'drift, even over an individual plant's lifetime. In theory, adding or removing a keystone browser like deer *should* fairly quickly affect palatability, but how is that change expressed in OPHO? If 10,000+ years without deer on HG has not caused OPHO to lose its spines, this suggests that either: **1)** spines are not one of the malleable attributes, or **2)** spines are not about deer protection. (HG *did* have a caribou that went extinct in historical times, but this was a Holocene boreal leftover, never abundant in the way of Sitka blacktails.)

These ideas butt up against each other rather awkwardly, which I find stimulating. Who wants to comfortably pigeonhole our most sacred medicine?

leaving a pleasant aftertaste.

So what about its relative **ground dogwood** (COCA)? Nancy told us part of a complicated story associating cedar with ground dogwood. An evil man chased his wife up a cedar and stranded her there. She died, impaled. Her blood drops fell to the base of the tree and became ground dogwood berries, her gift to the people. This is why *Cornus canadensis* is so common on the flaring root buttresses of cedars.

The story reminded me of what deer biologist Dave Person speculated about association of deer with big **redcedars** on Taan (POW Is). Hunters say there are more deer in these forests. When I asked Dave why, he mentioned this phenomenon of COCA/RUPE (5-leaved bramble) on buttresses. In addition, tree crowns shed snow better than other conifers, resulting in snow craters that make tree bases preferred foraging sites in winter. So it's all really thanks to Cedar Woman.<sup>2</sup>

On Haida Gwaii, 80% of **bear dens** are

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<sup>2</sup> OK, I confess. I photoshopped COCA onto the redcedar buttress on the photo above (the deer, however, was really there). I also confess I rarely see it there on lowland timber surveys, probably because deer eat it all. Does Cedar Woman date to neoglacial times of scarce deer?



in redcedars, often in CMTs.<sup>3</sup> (Dan Monteith added there's evidence of CMT use by bears on the Tongass as well.) I asked if bears denned high in the trees on HG, as on POW and Mitkof. She didn't think so, but said to contact Audrey Pearson. When I reflect on it, the incentive for denning 30 feet off the ground on POW and Mitkof is probably wolves. There'd be no reason for bears to worry about that on Haida Gwaii.<sup>4</sup>

**False hellebore** (VEVI) has names in every coastal

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<sup>3</sup> CMT = culturally modified tree.

<sup>4</sup> Should we send HG some wolves to tend their deer? I generally oppose introductions, but this might be seen as analogous to importing a weevil to control a purple loosestrife invasion.

## Our food, our life

from *Juneau Empire*, Eric Fry, March 2005. Announced 3rd edition of booklet Lillian says is now going into version 5.

"When the U.S. Forest Service approached Southeast Alaska elders about how to revise a booklet on Tlingit food, the elders asked that "subsistence" not appear in the title. "Subsistence" connotes handouts, but putting up food isn't an easy job, elder Ray Wilson said Tuesday. <sup>1</sup> The word seemed to be a regulatory term and didn't convey Native respect for nature and food, elders told the agency.

"You can tell there that this was our way of life for generations and generations," Wilson said Tuesday, after hearing archaeologist Madonna Moss talk about elaborate Tlingit fish weirs several thousand years old. "Each generation improved on how we caught fish, how we prepared it, how we took care of the land."

"The *Subsistence Lifeway of Our People*" now has a Tlingit title for its third edition, "Haa Atxaay' Haa Kusteey'x Sitee." In English: "Our Food is Our Tlingit Way of Life." The 50-page booklet is based on oral interviews with elders dating back to 1978.

"In this book recipes are shared; there are detailed

descriptions of how to dry fish; there are ways of preparing fish that can be replicated," said Lillian Petershoare, a tribal government relations specialist with the Forest Service.

Copies of the new edition soon should be in school, university and public libraries and at tribal organizations, she said. The booklet is not copyrighted and may be copied, she said. The booklet was first published in 1984. It was compiled by the late Richard Newton, a Tlingit who worked for the Forest Service as a historian, and Moss, an archaeologist at the University of Oregon.

The latest edition updates the spelling of Tlingit words, adds more photographs of elders, and includes a compact disc in which Tlingit words about food are pronounced by Native speakers. A brief closing section about how Tlingits view their homeland was recast from the past tense to the present tense. When the booklet was first published, the culture wasn't as vibrant as it is today, Petershoare said.

The section now "reads as a vibrant culture that is very much alive," she said. At first the Forest Service planned to simply reprint the booklet, but the project grew into a revision with the help of Goldbelt, Juneau's urban Native corporation; the Tlingit-Haida Central Council; the Southeast Alaska Inter-Tribal Fish and Wildlife Commission; Sealaska Heritage Institute; and KTOO Public Radio. The partners turned to elders for advice. "The elders are the ones who are knowledgeable about our traditional ways," Petershoare said. "If this revision was to be culturally accurate, it was important that the elders guide us. Because it's the voice of our ancestors that you hear (in the booklet)."

Wilson, an elder from Juneau, said working on the revisions brought together Southeast Alaska Natives and opened doors between Natives and the Forest Service.

Many Tlingits have hard feelings about the Forest Service "because we feel they stepped in and took our land," Wilson said. "Eventually, this booklet's going to be used as a tool by the younger generation so they'll know how to follow what happened here."

The Forest Service in Alaska has been trying for several years to work more closely with Natives, said Dennis Bschor, the Alaska regional forester. "This is Tlingit land as far as their historic land, and we're stewards of it," Bschor said. To be better stewards, the Forest Service needs to know what the Tlingit culture is, he said. <sup>2</sup>

The partners celebrated the publication at a luncheon with traditional food Monday at ANB Hall, at which co-author Richard Newton's daughter, Myrna Newton Allen, said she'd like to think her father would view the third edition with pride.

On Tuesday at the Goldbelt Hotel, co-author Moss gave a talk and slide show about what archaeologists have learned about Tlingit food. Their studies help show what people ate, the seasonal use of areas, and changes in habitat. . .

When the information in Moss' talk can be brought out, "as our elders brought out their blankets, it brings out strength" said Paul Marks, a Tlingit who lives in Anchorage. "When I see these things, I feel the arms of our ancestors wrap around us."

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1 RC: Interesting! I had assumed discomfort with "subsistence" was almost opposite to this—that it implied barely eking out a living, whereas abundant venison and coho are actually foods fit for royalty. Has Wilson perhaps confused "subsist" with "subsidy?" The part I like about "subsistence" is that it suggests taking no more than we need.

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2 Well said, Denny. How about also cancelling the Logjam sale!

language. The root was carried in a pouch for protection, especially after European diseases began to decimate the tribes. A snuff was used

to clear the sinuses, but is very dangerous. You shouldn't handle VEVI if you have open sores on your hands. I didn't realize that any Southeast plant

except *Heracleum* was toxic to mere touch.

Paul has a list Nancy gave him of the Tlingit and Haida names for many local plants. Lillian



recommended the document Dick Newton and Madonna Moss created on traditional plants (preceding sidebar).<sup>5</sup> This is now in its 5th reprint, and includes a CD with pronunciations of the names. A committee of elders renamed this document, excising the offensive word “subsistence.”

In more than one culture, **5-leaved brambles** are known as Steller’s jay berries. I wonder if that’s because the name spread from one tribe to the other, or because they independently observed RUPE’s use by jays.

There have been no known fatalities from our species of **baneberry**. (I think she said there may be a more poisonous *Actaea* in Europe.) Dan Hopson told us that one of the Gastineau Guides was explaining its toxicity to a tour group when a client

<sup>5</sup> Newton, Richard G. and Madonna L. Moss (2005) *Haa Atxaayi Haa Kusteeyix Sitee*, Our Food is our Tlingit Way of Life: Excerpts of Oral Interviews. USDA Forest Service, Alaska Region, R10-MR-30, March 2005. Juneau, AK.

responded “*Boy, I don’t see how you could swallow more than one!*” He had just sampled a berry on the tour, unnoticed by the guide. Apparently *Actaea* does its best to warn us.

The white fungus that occasionally appears on **menziesia** (MEFE) is called “earwax fungus,” and is edible. The branches are good for slingshots. I didn’t ask if any native folks used slingshots. Guess it would have to have been post-contact, after access to elastics. I can’t think of a pre-contact rubber surrogate. Probably this MEFE attribute was discovered by juvenile delinquents of multiple ethnicity.

**Fern-leaf goldthread** is a promising medicinal, similar in properties to goldenseal. Grows slowly and could be jeopardized if a commercial market develops.

I’ve never seen the native **perennial clover**, *Trifolium wormskjoldii*, which just barely makes it into southern Southeast. Farther south, it was cultivated in rectangular plots on river terraces. Called Indian shpagetti; tastes like bean sprouts.

Fields were thick and knee-deep. Timing experiments show that gathering the roots was a fairly efficient process; TRWO was not just feast food for special occasions. But with European arrival it was renamed “cow clover,” and didn’t last long. I imagine those fertile river terraces were the first places to be preempted by white farmers. They must once have been beautiful.

**Yarrow** is the most widely used medicine in the world. The genus is named for the failed attempt to cure Achilles’ heal with yarrow. Nancy knows a woman whose son cut off his fingertip with an excessively sharp knife (I never did understand the claim that it’s dull knives that cut you). She stuck it back on, packed with a poultice of *Achillea* and tobacco. Several days later it had grown back together.

Google *Dan Moerman ethnobotany database* at University of Michigan for the most comprehensive source on native plant uses.

As our group dispersed, I asked Lillian who among the elders today is most knowledgeable about use of plants, she said perhaps the more pertinent question is who is willing to *share*. (Locally, for example, Rosa Miller gathers, but won’t divulge.) Lillian suggested I check out the Kayaani Commission. At home I visited their website (sidebar).

Imagine living on the Eagle River delta 200 years ago in a band of 50 people. Ten of the women know as much about plants as Nancy Turner (9 more than currently inhabit the entire northwest coast). Ten of the men know that much about fish and wildlife. Everyone else is a full-time nature-nerd, apprenticed to these teachers. Each 4-year-old is more tuned in to the country than the average Juneau adult of 2009.

Homeland security.

*Field notes pick up next on 20170411. Not included in this 8-year interval are the many days our wetlands team spent surveying in the Amalga area in 2014. These are covered in my informal journals for those field days, available on request. Mapped wetlands are described by Assessment Area in Carstensen, 2016.*



## Kayaani Commission

The [Kayaani Commission](#) was established by an ordinance of the Sitka Tribe to preserve and protect native plants and their traditional uses. This photo comes from their website. Commissioners as of 2004 were: Irene Jimmy, *Kiks.adi*, Tribal Council Appointee; Jessie Johnnie, *Chookaieidee*; Ethel Makinen, *L'uknax.adi*, Elder of the Commission; George Bennett, *T'akdeintaan*; Libby Watanabe, *L'uknax.adi*; Scott Brylinsky, Public At-Large seat.

Kayaani began meeting in 1997 in response to USFS plans to create "Special Forest Products" monitoring guidelines for the Alaska region. These non-timber beings include plants, bark, roots, moss, and mushrooms.

On other National Forests such programs have been controversial among Native communities. To broaden the clout of their commentary, the Sitka Tribe's Kayaani, with Park Service funding, reached out to all Southeast Alaska Tribes with a regional plant conference, held at Sitka in May, 2001. I think this is why Lillian pointed to Kayaani as the Southeast regional gatekeeper of traditional plant knowledge. If it's not alive in Kayaani, it probably doesn't exist.

A great NPR piece on [devil's club by Ketzel Levine](#) delves into issues faced by Kayaani Commission. This radio story takes you foraging with George Bennett, and interviews commissioners who feel that knowledge of plant uses is intellectual property, not to be shared with a culture such as ours that disrespects sacred relationships with plants, and steals information for commercial gain. In counterpoint, Ketzel gives us Pauline Duncan, actively teaching these traditions, who renounces ownership of knowledge as a fast track to cultural extinction.

I first heard of The Kayaani Commission from my friend Scott Brylinsky, first executive director of Discovery Southeast. The original classes that Scott, Cathy Pohl and I taught for Discovery in the late 1980s were about wild edibles—easiest topic to "sell." (Sadly, we never got rich :) Scott then moved to Sitka, where his expertise soon became recognised.

**Back:** Irene Jimmy, George Bennett, Sr., Scott Brylinsky, Libby Watanabe. **Front:** Jessie Johnnie and Ethel Makinen. **PS:** Scott is now (2009) off the commission but still attends meetings.



I was pleased to hear he had been named 'at-large' member to Kayaani. Like the commission's founders, his guiding principle (and his earlier vision for Discovery) is *connecting Alaskans to their natural home*.

The disconnect, however, is profound. I fear that 95% of oral continuity—the mouth-to-mouth transfer of Southeast Alaskan plant wisdom—is gone. <sup>1</sup> It rests at least partly on those willing to *read*, to resuscitate these traditions. That will inevitably involve transfusions from better-recorded First Nations to the south. On the down side, it means transplanting some traditions that didn't necessarily evolve *en situ*, at 58°N. On the plus side, multicultural specialists like Nancy can select the best from a broad spectrum of traditions. <sup>2</sup>

<sup>1</sup> 2017: My feeling about loss of plant knowledge hasn't changed in the ~decade since writing this. But I had the opportunity to co-teach with Shangukeidi elder Helen Watkins for 2 days of a workshop on putting foods by. Helen is the 'real deal', a master. Pages 15-18, Carstensen, 2015.

<sup>2</sup> 2025: Wow, times change. Sort of. We're now in a renaissance of teaching about traditional uses, edibles & medicinals. I worry though about where the knowledge is coming from. My journal for Discovery's 2024 teachers outings titled *The outdoor kitchen: Where's the food?* is still in draft, not yet posted. Happy to share though on request.

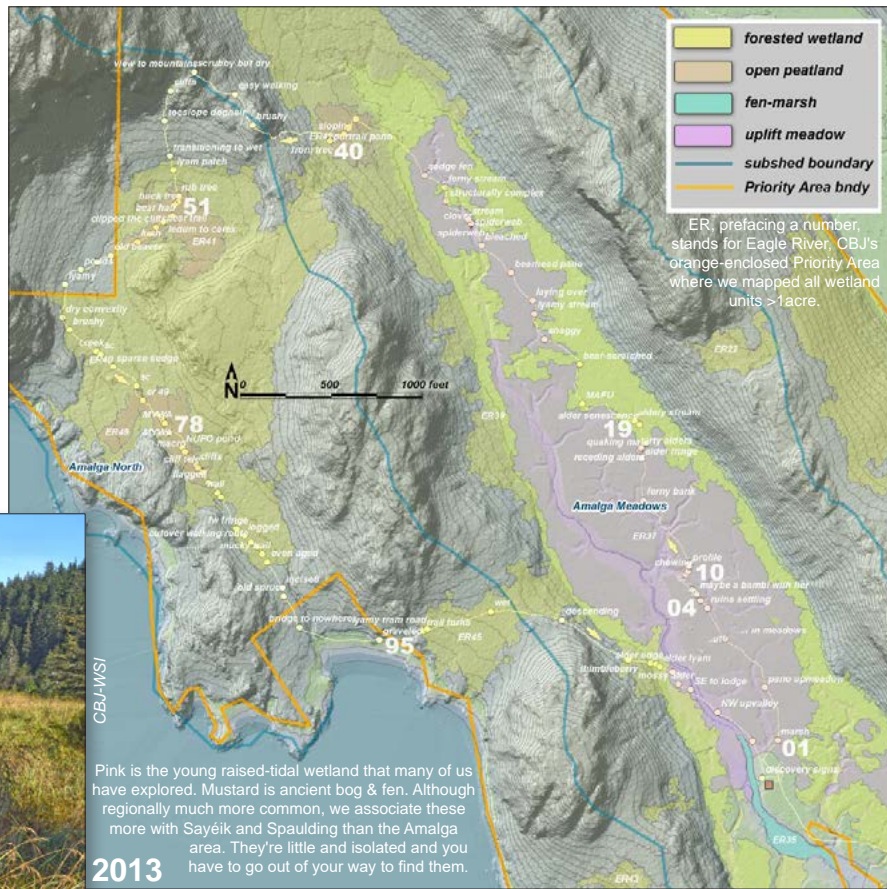
## 20140908 Wetland survey

Clear autumn day. Earlier in the summer our Bosworth Botanical team spent days just east over the divide into Foggy Bottom and south in the salt chuck area, but we haven't finished mapping CBJ's orange-outlined ER (Eagle River) Priority Area from EVC north. <sup>1</sup>

So today I looped counter clockwise up Joe Smith's 'Peaceful Valley,' west over the blueline subshed divide, and came back through lowland bogs and forested wetlands few humans have seen—not even me in the 12 years I lived just over the divide at scout camp. Numbered photos are the ones included here.

**01 Marsh** NNE of the lodge ~200ft. Adamus protocol only accepts units an acre or larger, so this gets subsumed within uplift wetland ER27. Good prospect for toad breeding.

<sup>1</sup> While my partners walked boundaries between upland & forested wetland with survey-grade trimble gps units, my task was filling out field forms within each color-coded unit. ER35 for example, at bottom right, is a fen wetland by Adamus reckoning. On today's loop I added 7 units to the 345 AAs (assessment areas) we tallied in 2014 & 2015.





19

so accepting of human proximity—maybe using us for wolf-cover?—but she'd better get wary soon. Doe season opens on the 15th.

**19 Alder scenescence** Along this edge many of the alders are dead. How did they even get started here where it's always been wet? Livestock disturbance? And once established, why'd they later drown? Is water table getting higher for some reason?

**04 Ruins settling** Remains of the Ackerman dairy.

**10 Relaxed doe** I think she had a fawn nearby. Maybe that's why she allowed me to hang out filming, distracting my attention. Great to see her



04



10



40

**40 ER42** Nice thing about the discipline of our assignment from CBJ-Adamus is directing us into country we'd never otherwise think of exploring. In pre-trip measurement of peatland openings in GIS, I found 3—ER41, 42 & 49—larger than an acre, ' prominently numbered on preceding routemap. These are more out-of-the-way

<sup>1</sup> By WESPAK protocol, the Adamus assessment recipe, all wetlands >1acre must be mapped and form-filled. In my symbolism, *op* (open peatland) is mustard coded—surrounded typically by yellow-toned *fw* (forested wetland).

than Amalga meadows, openings where bear and deer are unlikely to see a person or dog.

Climbed an open-grown spruce for this NE-facing pano, moderate 8% slope. Description in [wetland-supplement2016.pdf](#) says:

*"High snag density. Isolated from head of Amalga Meadows by rich scrub forest with dense LYAM & MAFU, and sparse CASI over Sphagnum-EMNI-COCA-Ledum. Horse tram once passed through lower unit—mid-distance in pano. Ditching improved drainage, now revealed by line of young spruces.*

**51 ER41** Seaward bog just over subshed divide slopes at 5%, more of a classic sphagnum bog:

*"Lots of pines, EMNI-Ledum. Molar-shaped peatland, most open in NW corner, brushier to SE. Although beaver don't use this bog as mapped, there is sign just downstream in a contiguous fen just outside the*



51



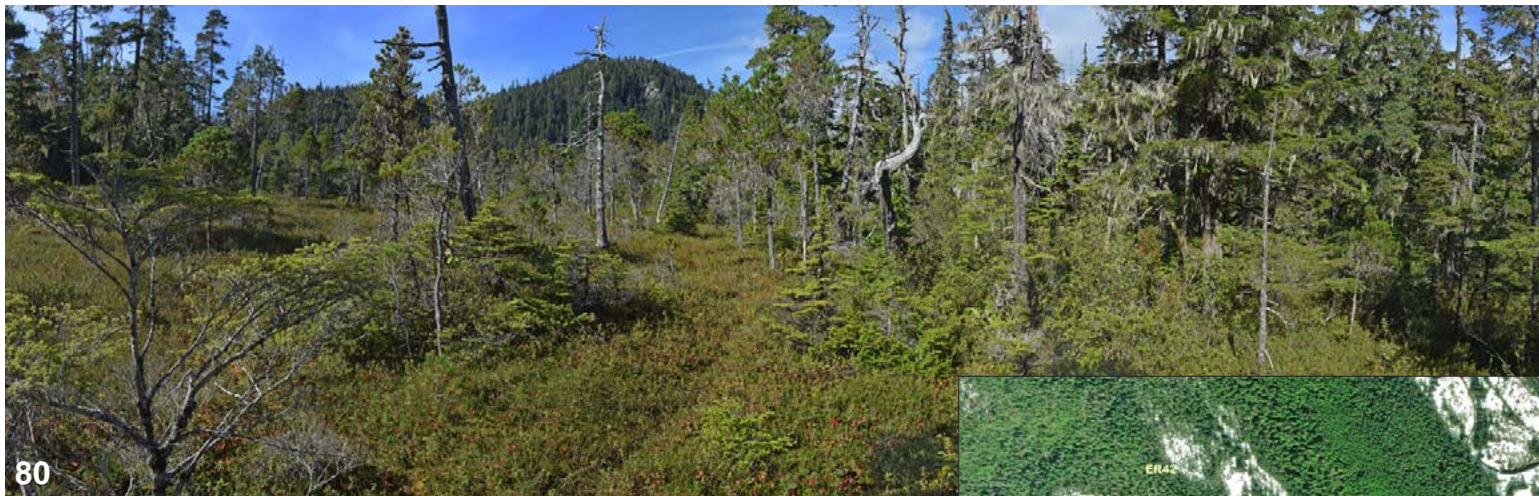
78



95

*Priority Area. Lots of bear use. Scratch trees and hotfoot trails*  
**78 Lilypond** ER49 is southernmost of my WESPAK peatland units. Half the lily leaves are turning gold. (PS 2025: Renovated Horsetram trail [now passes through](#) in sight of this pond.) From Supplement:

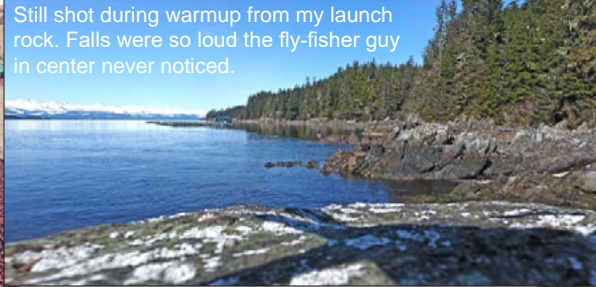
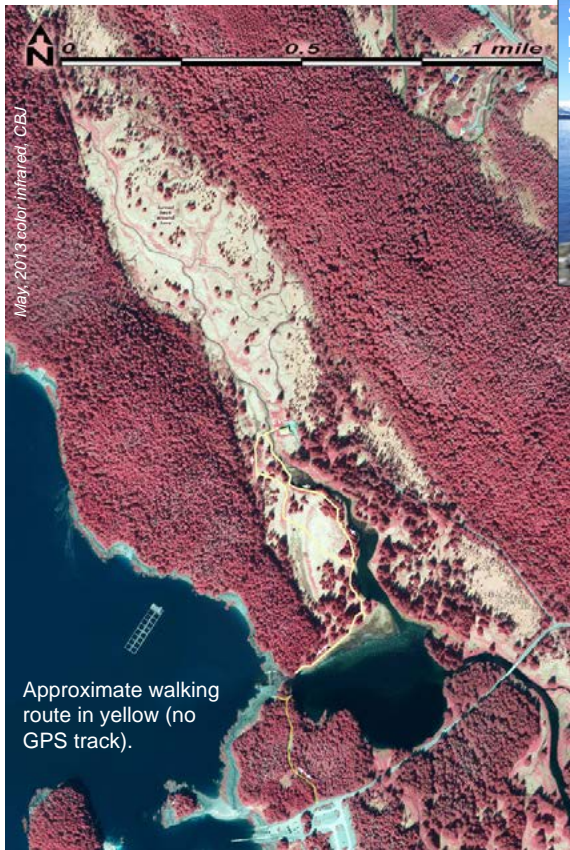
*"Wraps seaward around low hill in a molar shape with 'roots' pointing seaward. Heavily used by bears.*  
**95 Graveled** Freshly upgraded trail thru saddle from EVC to Eagle Landing beach.



**80 ER49** NE to Knopf's [augite-diorite cliffs](#). Rounded crowns are bog pines. From this bog it's less than 100 yards SW to bluffs offering spectacular ocean views. Environmental impact of an overlook spur would be relatively light, and for single-car hikers starting from EVC, this might become a destination. In contrast, through-hikes to Scout Trail by larger parties are more conveniently made by staging cars at both ends.

Flipping thru Wayback for clues to seasonality, found this mid-April ortho with lingering spring snowpack. Bogs 41&42 still had lots but 49, closer to moderating sea-air, was mostly melted. Younger Amalga Meadows, ER37, was still blanketed except for the central creek. According to our contours that area *is* tidal, but only extremes reach that far. Checking NOAA archives, highest tides for the week preceding this photo were only 16 feet. • Two hypotheses for the melted inner swale: **1)** groundwater movement brings slightly warmer hyporheic waters near surface. **2)** Even during neap tides the chuck level—fixed by bedrock outlet elevation—serves to back up rainwater flows through the meadows.





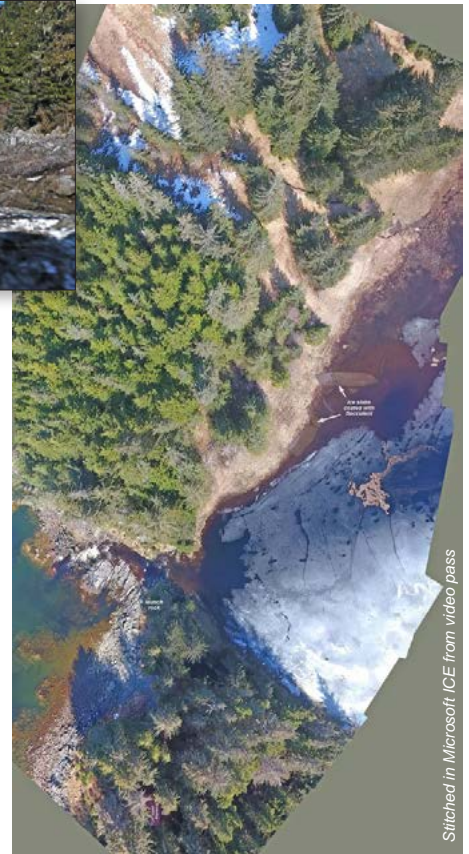
Still shot during warmup from my launch rock. Falls were so loud the fly-fisher guy in center never noticed.

### 20170411 Armstrong at EVC

Bob Armstrong was at Salt Chuck yesterday and enjoyed it so much he suggested we return today with Doug Jones, who has a new quadcopter and wanted to exchange tips on UAV photography.

Doug had already flown a successful maiden voyage before we arrived. While Bob filmed waterbirds on the inside, we moved outside to begin my upstream series from saltwater.

Since upgrading the DJI app I've been having trouble connecting. We're in a celltower hole here—only 1 bar (occasionally briefly 2)—so I almost gave up, but with Doug's help finally got online and opened the app. Found a flat-top rock (above, & labeled on right) to launch from. Doug's a good problem-solver who'll be showing me new tricks soon. I'm looking forward to sharing observations on how critters react to the drone. Doug and Bob are avid wildlife



Stitched in Microsoft ICE from video pass



The "salt chuck" is only salty at depth; on this balmy spring day, ice still lingered on surface, in the freshwater lens.

photographers with pretty high standards on filming without disturbance to animals. † Particularly when using the phone's small screen for first-person-view (as opposed to a larger tablet), it's easy to miss

1 Riley Woodford at Fish & Game called after this outing to chat about legalities and ethical standards for UAVs relative to wildlife. He's getting increasing requests about aerial photography, and the Department is trying to come up with guidelines to prevent undue harassment. I suggested we start an online discussion group of flier-photographers and interested parties, who share observations of drone-wildlife interactions and begin to frame recommendations for minimum distances, lists of most sensitive species, etc.

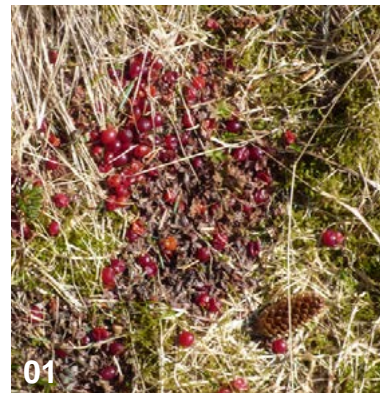
subtleties like a couple birds flushing, let alone head's up fidgeting. For that, it's nice to have a friend watching through binos or spotscope.

First pass was up the outlet falls from the ocean. Bob was scoping **geese, mallards, mergies & buffs** on the Chuck and later said there was no visible reaction. They were concentrated mostly a quarter mile NE where Amalga Meadows Creek enters the Chuck, around a quarter mile away, and although I started low, I climbed to a couple hundred feet by the time I made the turn and headed north. <sup>2</sup>

Doug headed home and Bob & I drove over to the Eagle Valley Center to try a different approach to the Chuck. I wasn't running a GPS but traced a crude route on the preceding CIR aerial.

**01 Bear poop** Highbush cranberry in last fall's scat. Boy! In hyperphagy they sure run it through fast! No messin around with full nutrient processing. Didn't see any fresh sign. Ground's still frozen, and snow patches linger on the north sides of trees, etc. I scanned for **toads**, or eggs in still water, but didn't find any evidence of spawning emergence. We still don't know where the larval pond is for the EVC area. Has to be one nearby, cause we still get lots of reports

2 Later, processing pics in ACDSee, which displays lat-long stamped jpgs on Google Maps, I noticed the creek draining Amalga Meadows has a name—Tusta Creek. This doesn't sound Tlingit and I suspect it's an informal white guy name. I'm not gonna use it, because there's additional errors on that map, suggesting it's user-edited. For example, they label the driveway "Saga Rd," and I know the City wouldn't approve of that. Parks & Rec has asked me not to use "Saga" on maps of this area, as many residents assume it was their private property. More on this below from conversation with Kristi West.



of toadlets and metamorphs. <sup>3</sup>

While Bob set up his spotscope at the confluence, I tried to launch again, unsuccessfully. Frustrating. I suspect from subsequent google search there's no solution for now but to find a place to get online.

**05 Honkers** (next page) Two clusters stood calmly in the creek just north of the Chuck. They let me approach to brace my Lumix on an old wooden sign. Framed filled a couple shots, but this one's more fun.

3 Carstensen et al. 2003. *Habitat use of amphibians in northern Southeast Alaska.*

Reminded me of spring on the goosetongue flats, back when I was caretaker of Scout Camp, 1980-92. Unhunted **geese** got to know me, and let me walk right past as long as there weren't any **dogs** around.

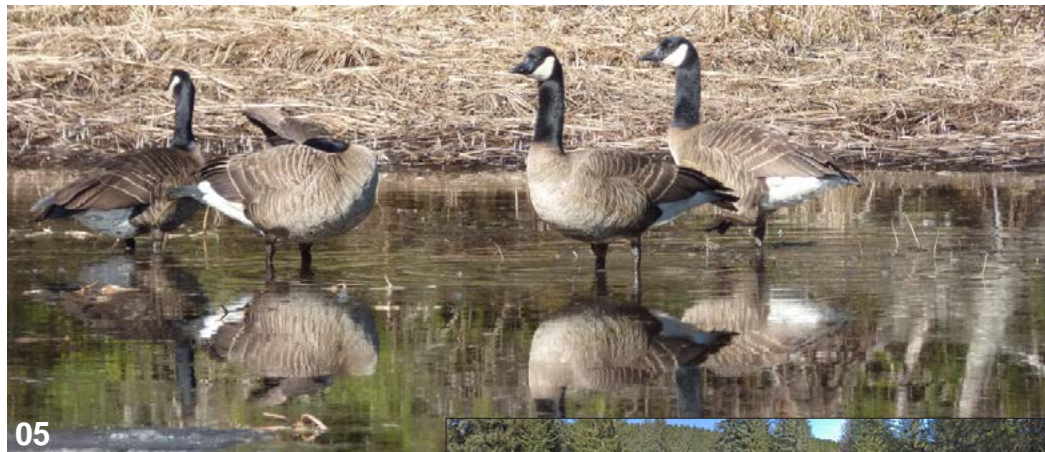
**04i Sprucetop pano** <sup>4</sup> While Bob filmed displaying **mergies & buffleheads**, and fishing **yellowlegs**, I returned to the parking lot. I've long wondered what the view would be like from the top of one of the 100-ft+ uplift spruces northeast of the lodge. Back when a planning group was convened to discuss trails and longterm vision for the greater Eagle-Amalga area, <sup>5</sup> I became alarmed by proposals to run a new connector trail up this valley. How can we satisfy that curiosity more respectfully?

Short of Cowee Meadows, parklands in upper Amalga Valley have the wildlife habitat in the roaded CBJ. Tracking surveys here with Kathy Hocker for SEALT <sup>6</sup> along with prior explorations and naturalist reports, demonstrated that—except for periods when the caretaker allowed

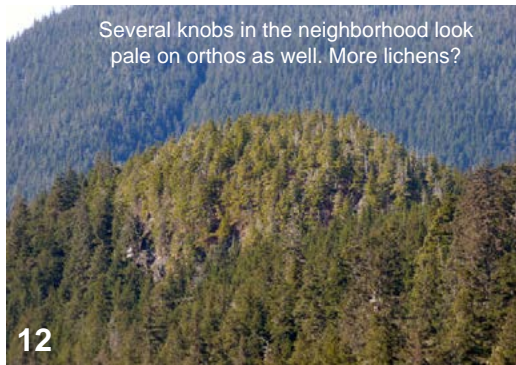
<sup>4</sup> "i" distinguishes iphone shots from Lumix photos. This pano is stitched from 3 individual shots in autokolor pro. Although it doesn't have the vertical depth, I like it better than the sweep-pano I took from same location.

<sup>5</sup> Jan Caulfield moderated this discussion group and would have the notes. They're worth revisiting before folks make any decision on further trail connections.

<sup>6</sup> Carstensen & Hocker (2003) *Wildlife out-the-road*. Also covered in many of the preceding daily journals from 2003.



PS 2025: Outlying spruces are now 50% taller & wider, quickly shutting off views of parkland beyond. I still like my tree-tower idea, but concede its limited lifetime for wildlife observation. Kinda like prospects for glacier viewing from Visitor Center.

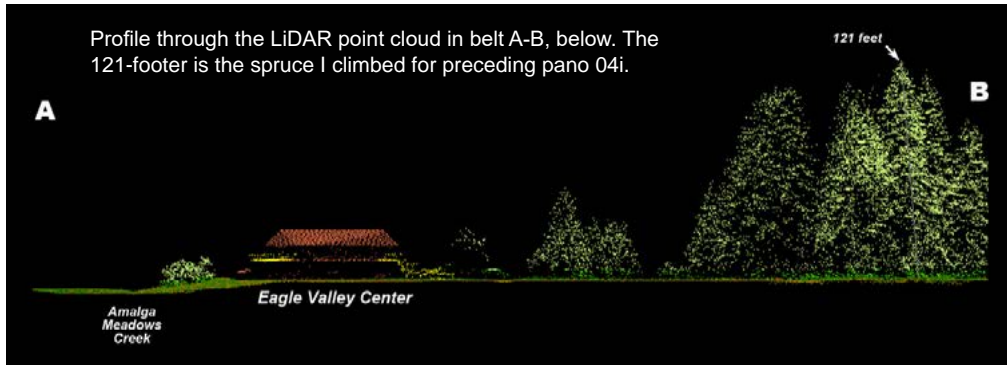


his wolf-dog to free-range—meadows have high value to grazing **sows** with cubs and for locally rare species such as **lynx**.

One approach to giving these critters respectful berth is to observe from a distance—either through a tree platform, or from a cliff overlook as described in preceding [notes from 20030517](#).

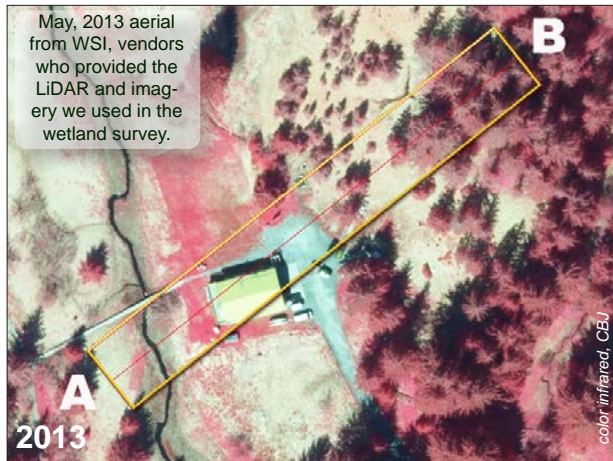
**12 Blowdown knob** Telephoto of scrubby trees above Dave & Kristi's. I traversed this hill on [20030517 \(photo 21\)](#) with Cathy P & Karla H. Diameters only 6 to 8 inches.

As Bob was returning past Eagle Valley Center, he met Kristi West, project coordinator for CBJ's renovations. She invited us inside to see recently remodeled upstairs bedrooms, spacious conference room and upstairs deck. The place is *way* nicer than I



remembered, and got me really psyched for our teachers' workshop this June.

We talked with Kristi about visions for Eagle Valley Center, and the role of Discovery, JIRP (renting for most of this summer), SAIL (who will manage the Ropes course), ABAK, and Scott Ramsey's Alaska Outdoor Science School, from Haines. Seems like SAIL would be the group to pitch my idea of a tree platform to. You could rig a belay rope to make it safe, and trim branches up to 10 feet to prevent unauthorized ascents. When I later mentioned Kristi to Merli, he reminded me that her son Jesse West is a ski buddy of his son



Lucas's. Maybe that's why she didn't bat an eye at my arboreal activities.

Kristi reaffirmed CBJ is solidifying the name Eagle Valley Center (EVC). As I learned during contract work for Parks & Recreation, 2007-11, because SAGA leased this facility for so long, the City perpetually struggled to counter the public perception that this was Guidance Association property. Accordingly, I've swept back through my notes and descriptions in this document, changing "SAGA lodge," etc. to EVC. This is not

Stitched from  
overpass video in  
Microsoft ICE.

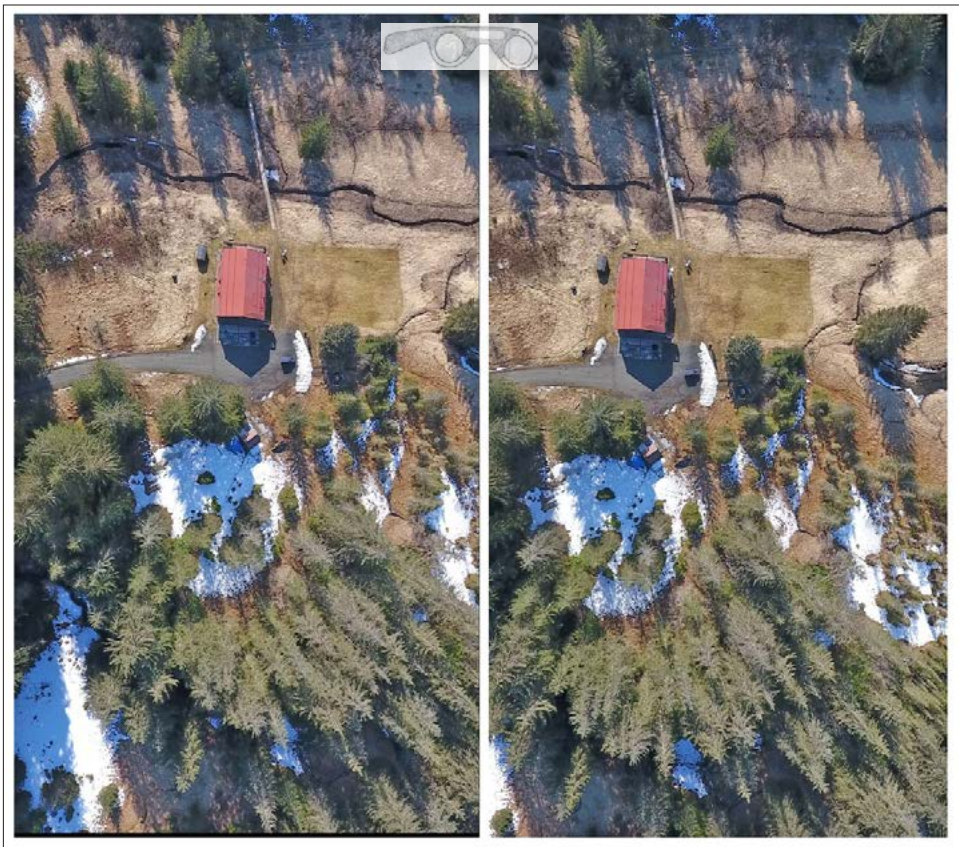
intended to diminish SAGA's contributions to education and trails work, but to help Kristi and the City make the point that this is public land, and folks are welcome. She wants more signs at the beginning of the access road, making that clear.


That said, I find "Eagle Valley" confusing. Everyone knows the real Eagle Valley is 2 miles north. Kristi agrees that we should call this much smaller valley—tributary to Tool Teik (Peterson Cr)—Amalga Meadows. That's the name I chose—with review from P&R staff—during creation of interpretive signs and publications. <sup>7</sup>

I asked if there was cell coverage at EVC. Kristi said it's spotty but they had wifi and could text. Thanks to EVC wifi I was able to reopen my DJI app. I brought the quadcopter up to the south deck and finally connected. Cool! Flew 2 tours of the meadows, at varying elevations and gimbal-angles. This stereopair on right was created by taking screen captures from the video only about a second or two apart.

<sup>7</sup> Granted, "Amalga" does honor the extractive Euro history of this valley, and I'm open to suggestions for a more deeply indigenous name. Is there a Lingit name for bear cub in her first spring & summer?

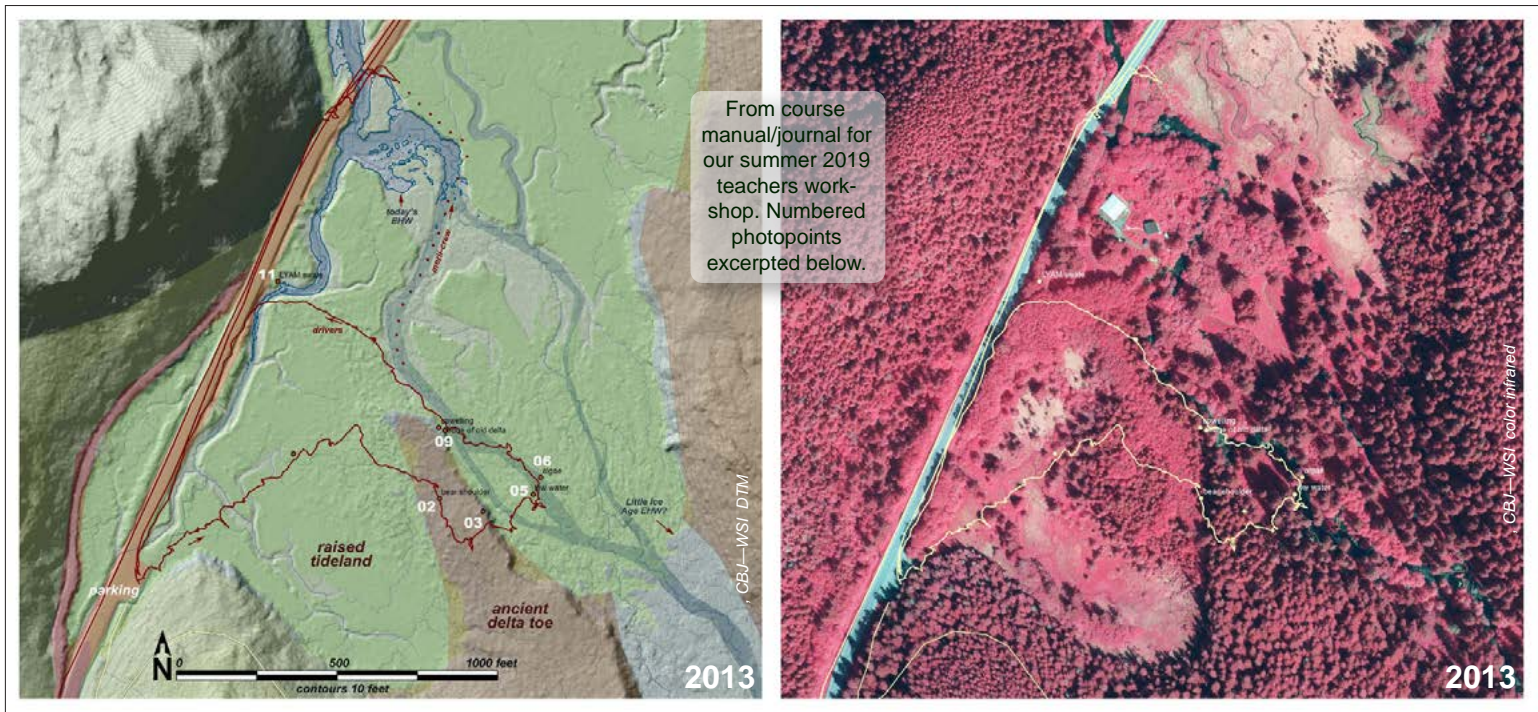
Stereopair of Eagle Valley Center from overpass at several hundred feet. [Load to tablet or phone](#) and view in 3D with a stereoscope. Or try free-viewing: Hold the photopair at arms length, focus your eyes out beyond, then drift them down onto the tablet, trying to coax the 2 images closer together. When they overlap, it'll pop into a 3D model. Once you've 'got it,' you can pinch zoom for greater magnification.



An aerial photograph showing a creek flowing through a landscape. The creek starts from the top right and flows towards the bottom left. The terrain is a mix of brownish, rocky soil and green vegetation, including trees and shrubs. The creek's path is somewhat irregular, with some rocky patches. In the top right corner, there is a stylized 'N' logo. In the bottom left corner, there is a text box with a white background and a grey border.

Amalga Meadows Creek empties into Salt Chuck on the right. Stitched from an overpass video in Microsoft ICE.

Merged elements of 3 flights into an upstream tour, beginning at tidal gut and carrying all the way to upper meadows. [Streamable from JuneauNature](#). From launch down at the tidal gut, Doug was watching **geese** at this nexus and concluded I'd gained enough elevation not to threaten them.



## 20190602 Eeyá'w teachers

[Annual end-of-school-year recert opportunity for educators](#). This year featuring Eeyá'w and Kaḡdigoowu Héen. We hiked first along Tool T'eik (Peterson Cr) from Glacier highway. Paired DTM-&-ortho above have track and

photopoints looping through the **bear**-fishing hotspot [Ed Mills showed us on 20030401](#).

Then reloaded our 3 vehicles and drove to Eagle Valley Center to begin a second walk at old Eagle River Landing for lunch, wrapping back through Almaga Meadows. As usual on these class outings, I was too distracted to



JW01



02



03



04

do justice to photodocumentation. Fortunately teacher John Wade sent me some of his pictures to fill out the journal—labeled JW on following pages. My track loops counterclockwise—forgot to turn on the Bad Elf, so the track's from tablet gps, running in Avenza. I used the iPhone's internal lat-longs, which is why some don't fall exactly on the track line, and why some under canopy didn't register at all.

**JW01 Cub tree** Small-bear scratch marks where mom sends kids up for safety while fishing.  
**02 Bear foreleg** Adult. Great puzzler.  
**03 Yazoo channel** Overflow, elbowed to valley edge by domed floodplain.  
**04 Exposed LYAM roots** Stream not only exposed but cleaned the roots for a rare view of this muck-lover's extraordinary underground radiation.



05



JW02

**JW02 Edge of delta**

How it looks in bare earth model

**05 Mainstem, low flow**

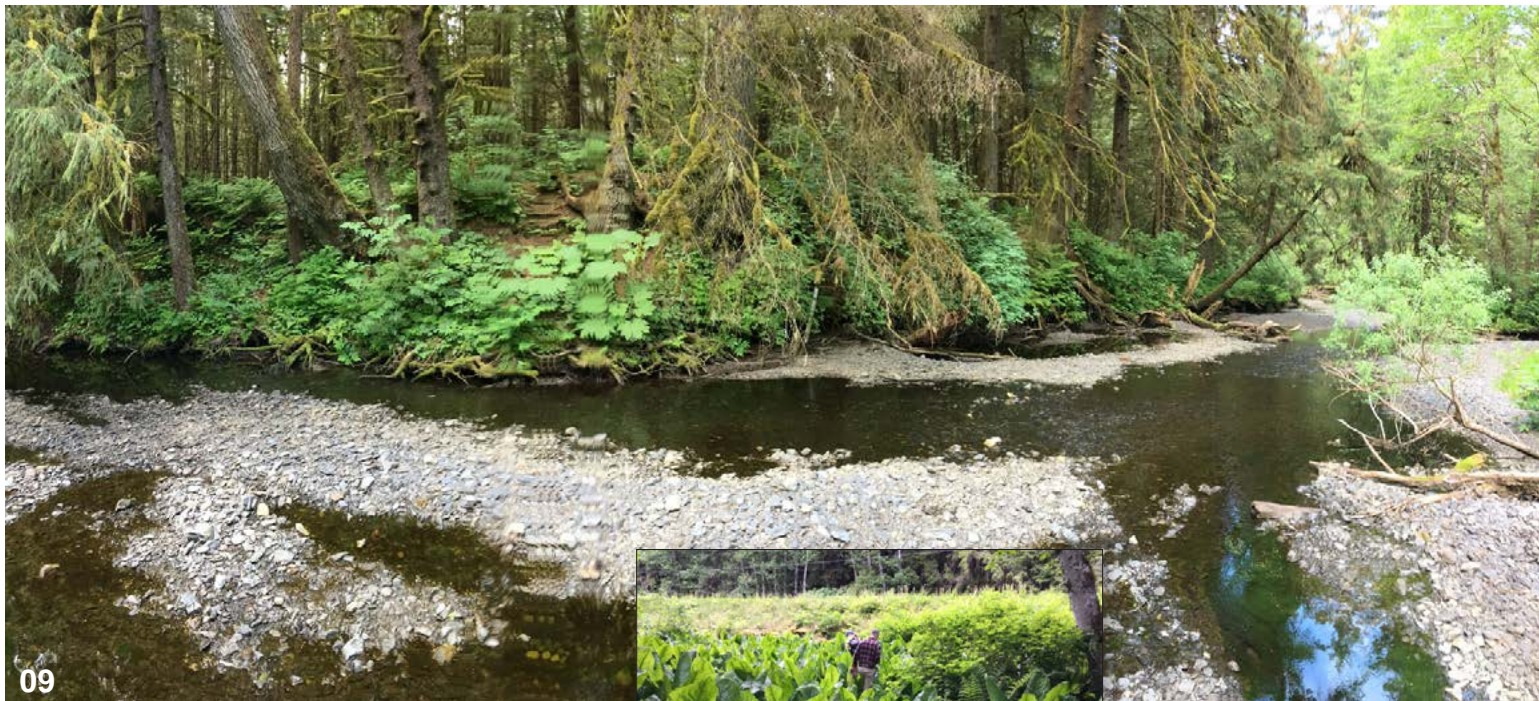
Water's mostly really clear.

**06 Algae in upwelling**

Only in the quiet marginal pockets—can't handle current.



06



**09 Delta-edge escarpment** At LIA maximum marine intrusion this was the delta toe.

**11 LYAM in raised slough** *Lysichiton* is anything but a disturbance plant, but thriving next to the highway? ya gotta wonder. Did groundwater redirection somehow benefit her?



Merli took most of the teachers downstream to the highway bridge, while those of us who'd driven hooked back to laketrail parking to collect the vehicles.



JW05



14

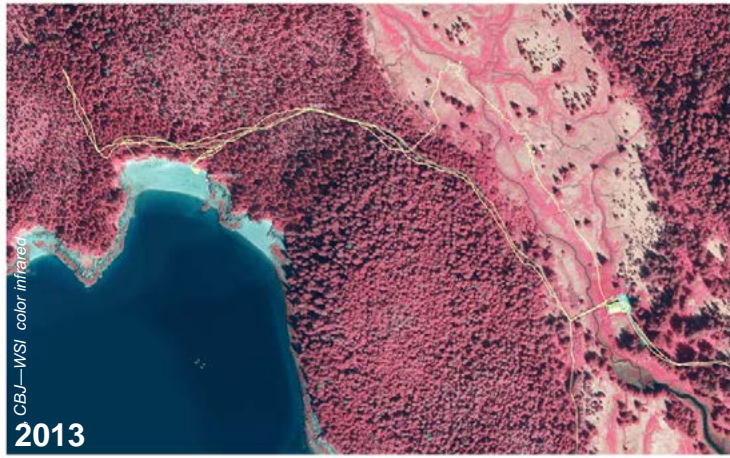
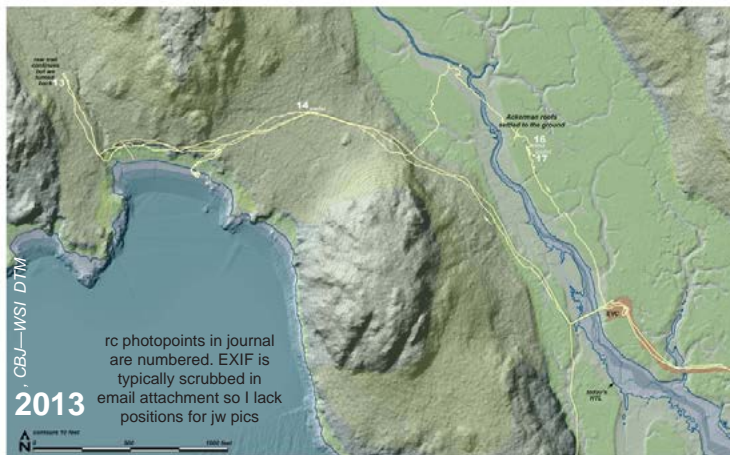
**JW05 Avenza-check** Orienting near start of the freshly constructed trail to Eagle River Landing.

**14 Toadlet ID bumps** Born

last summer, so she's what we call a yearling. Right in the saddle, high point between beach and Amalga Meadows. No likely breeding ponds up here in shady conifers. So she traveled at least 100 yards from natal pond. I'll bet the new trail helped!

On upper hillshade, blue line marks today's HTL (high tide line, defined by Corps as 20.8 ft) · Salinity's probably minimal way up here, so larvae could

1 2025: since reduced to 20.6.





in theory survive from eggs laid in the central creek/slough. But judging from our surveys in 2003-2005, current flushing during high flow rules out even little streams like these as toad breeding waters. We haven't yet pinned down the focal mating pond (or ponds?) at Eeyák'w, but they are probably quieter and fairly isolated.

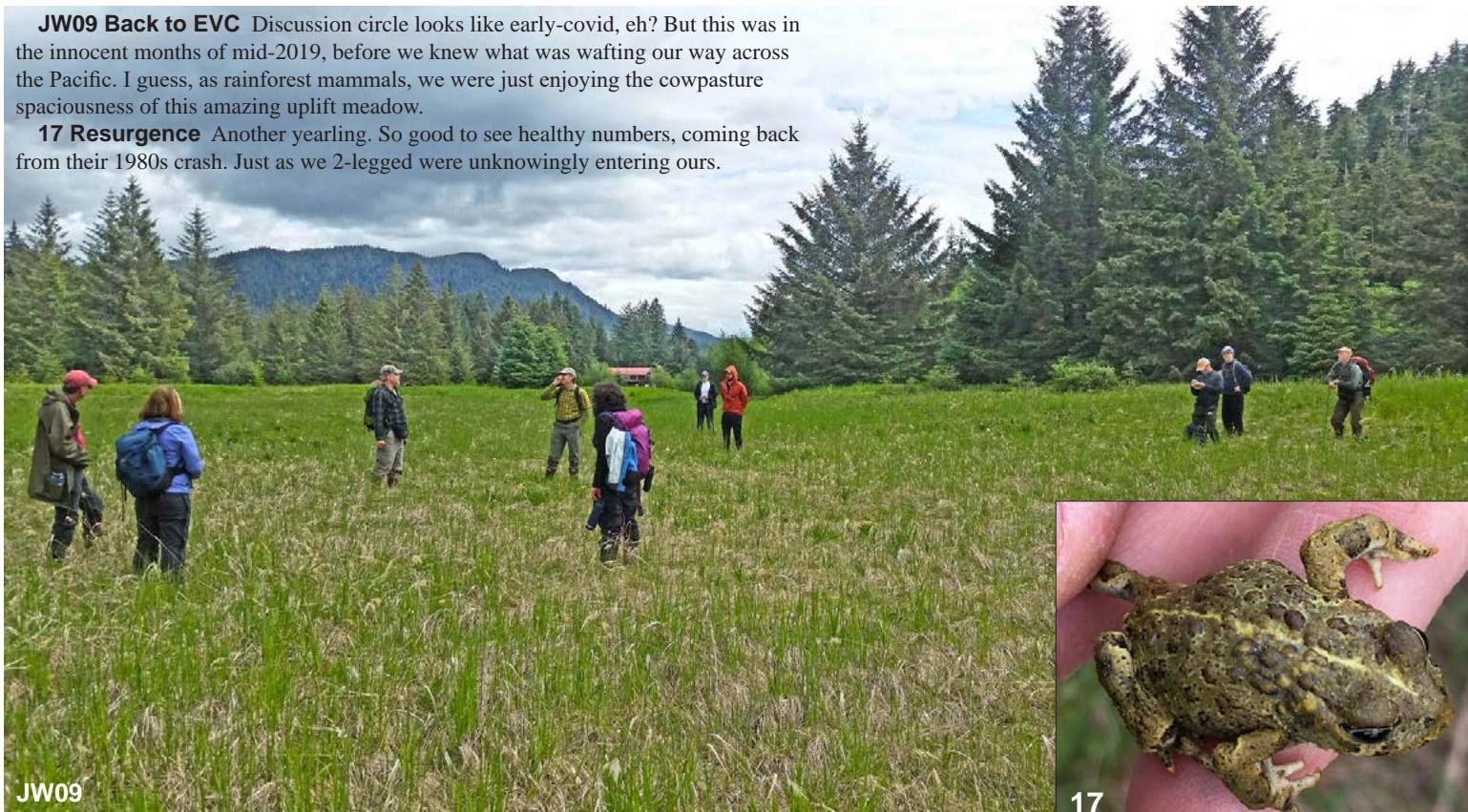
**13 Connector trail construction** Pano spans almost 180°. We followed the new Horsetram Trail for about 100 yards north from Landing beach. Great relief to see they're following our recommendations and keeping this connection to Scout Trail out of the valley bottom. Nice work, Trail Mix!

**JW08 Probing peat depth** John's brother and father joined us on these walks, and he photographed bro probing 'to china' in this young raised-tidal wetland with our 4 foot stainless peat-poker. (I'm actually writing this years later—2025—but don't think we ever hit firm inorganic substrate. Discussion of LIA history follows in journal for [20251203](#))



**JW09 Back to EVC** Discussion circle looks like early-covid, eh? But this was in the innocent months of mid-2019, before we knew what was wafting our way across the Pacific. I guess, as rainforest mammals, we were just enjoying the cowpasture spaciousness of this amazing uplift meadow.

**17 Resurgence** Another yearling. So good to see healthy numbers, coming back from their 1980s crash. Just as we 2-legged were unknowingly entering ours.





**16 Retake** Topaz investigating while the guys gossip. Pretty cool that the 1m-pixel terrain model shows 2 bumps where these buildings are settling. Photopoint 16 suggests this is righthand shed on 1970s photo below. Compare ground shot [only 5 years earlier](#). Also shows bottom center of my cover-page oblique.

**1970 Ackerman ruins** I think Karla Hart might have given me this. Descendents of the Ackermans were active in scouting when I was camp caretaker just over that hill, 1980 to 92. Should've asked em more about their history in this meadow.

16



~1970



09



01

### 20200717 EVC beach cabin

Dale Gosnell's training for the City's covid crews. Walked with younger staff yesterday at Brotherhood; today was for the more senior folks, including him and Kristi West.

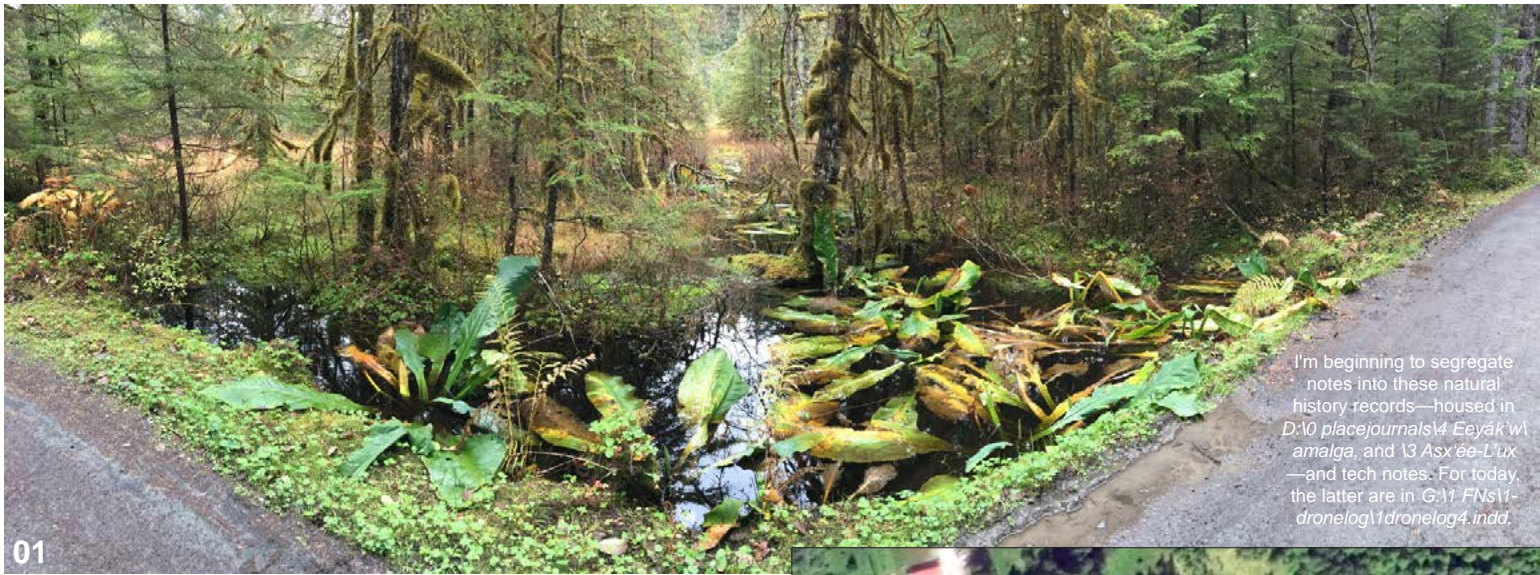
**01 Juvie sapsucker** Very tame, willows near EVC. Allowed close approach.

**09 Southcove** City's new beach cabin. Wes Tyler kit.

**15 CMT** Hiking out, noticed this leaner. Obviously a culturally modified tree. Long ago judging from amount of subsequent growth. At top of LIA cutface, so probably a pitch tree, far from today's beach, but right next to it in the 1700s.



15



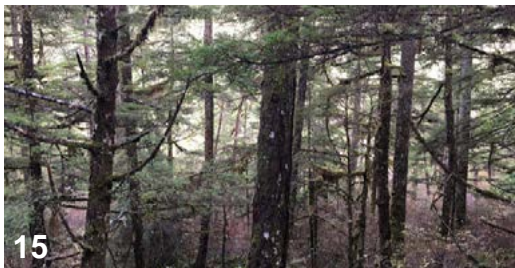
I'm beginning to segregate notes into these natural history records—housed in *D:\0 placejournals\4 Eeyák'w amalga*, and *13 Asx'ée-L'ux*—and tech notes. For today, the latter are in *G:\1 FNs\1-drone\log1\drone\log4.indd*.

## 20201001 EVC spawning pond~

Koren, Cathy & I turned back from an attempted walk on horsetram trail—closed for heli-deliveries. Not a wasted visit, though. I walked in the long driveway while K&C were staging cars, stopping to talk to one of the City's covid-crews whom I met during mid-july training. They saw not only tons of **toadlets**, but when I asked about **tadpoles**, said sure, them too . . .

**01 Spawning maybe?** Pointed down road to slough, kinda shady(?)\*, but extending into a pretty toad-friendly meadow. Photopoint on right from ACDSsee. Should check this out next May. (ps 2025, still haven't :)





## 20201007 Horsetram trail

Cathy & I returned for a second attempt at walking horsetram trail, arriving just after the last heli-dump. Beginning of walk (and end, returning) is in *D:\0 placejournals\3 Asx'ée-L'ux*. Technical notes for upper meadows flight are in *G:\1 FNs\1-dronelog\dronelog4*.

Our southward route was identical to what I scouted with James King on [20030123](#). Planners are to be commended for following what James' mother Mary Lou called the "haul road" in *90 short walks*.<sup>1</sup> By staying out of uplift

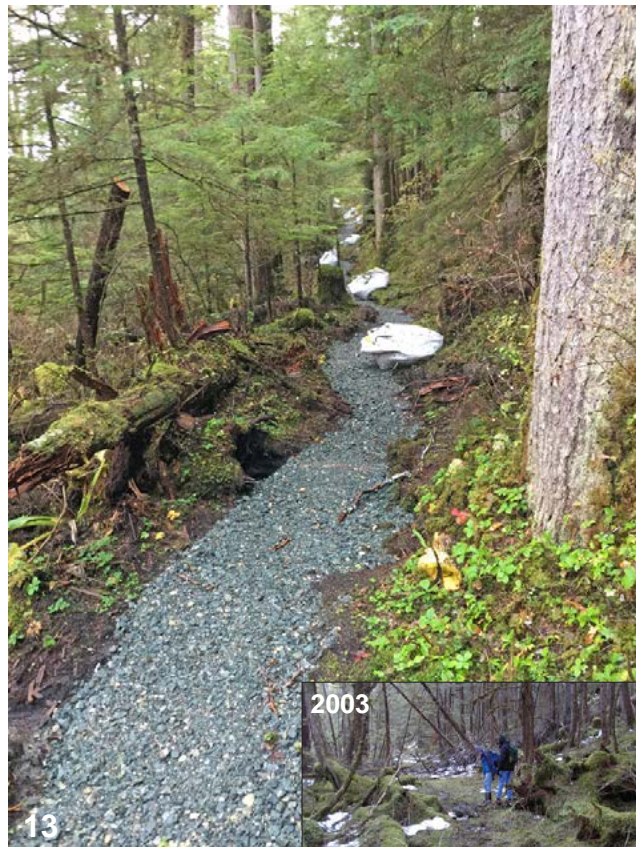
<sup>1</sup> ML said upper route served pack horses, while lower rails carried heavier ore carts. Reviewing my earlier observations on this corridor, I remain confused about amount and type of traffic—especially cargo movement—along Mary Lou's "haul road". I concede it's impressive that 2013 bare earth on next page shows a distinct 'grove' worn into the digital surface, from trampling &/ or roadbuilding. But in bog wouldn't pack animals have sunk in to their knees? Today's trail builders could probably shed light on this. What could the "haul road" offer that wasn't easier on the tram route?

parkland where the old horsetram ran, they've avoided one of our last great pockets of little-visited 5-star lowland wildlife habitat.

**13 Sidehilling** I remember being surprised by this section on my walk with James somewhere off in the distance beyond that 2003 inset. Mine workers did a lot of cut&fill to 'bench' this part of the haul road into steep hillside.

**14 Bedrock** USGS types this as Cretaceous volcanics: flows, breccia & tuff. A piece of it outcrops into the trail but'll be covered by the newer, finer gravel.

**15 Down to bog** Only place where you can glimpse upper Amalga meadows through forest from the new trail (marked #15 on following hillshade). Thanks Trail-mix! Unlike us nosy (& cartographically





advantaged) naturalists, almost no recreational hikers will be lured offtrail into the bear's bedroom from this respectful alignment. I guess Horsetram Trail is actually misnomer: tram itself was down in the valley as shown on Knopf's 1910 map, following. On our homeward leg, we descended here to fly a grid mission.



**16 Old corduroy** Amazingly durable logs, when embedded in anaerobic marine fines. This stuff's been lying here for over a hundred years—to be covered, soon, I guess, like #14 outcrop, by finer cap-gravel.

**18 Scrub forest** On our 2014 wetlands map this is at the border of forested wetland with open peatland.

**19 Bog pano** Ran into Henry Hopkins. Great to see him again. We haven't collaborated on stuff like goats since . . . (2015?) Complimented him, though, on folkfest gig with his equally musical kids.

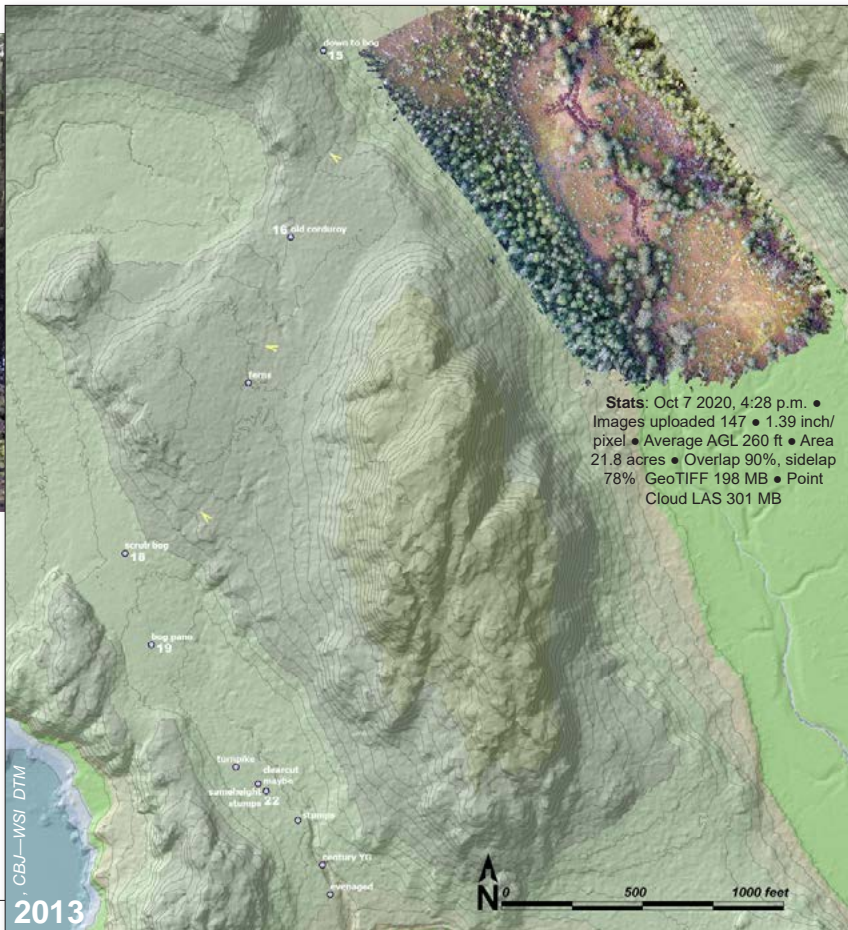


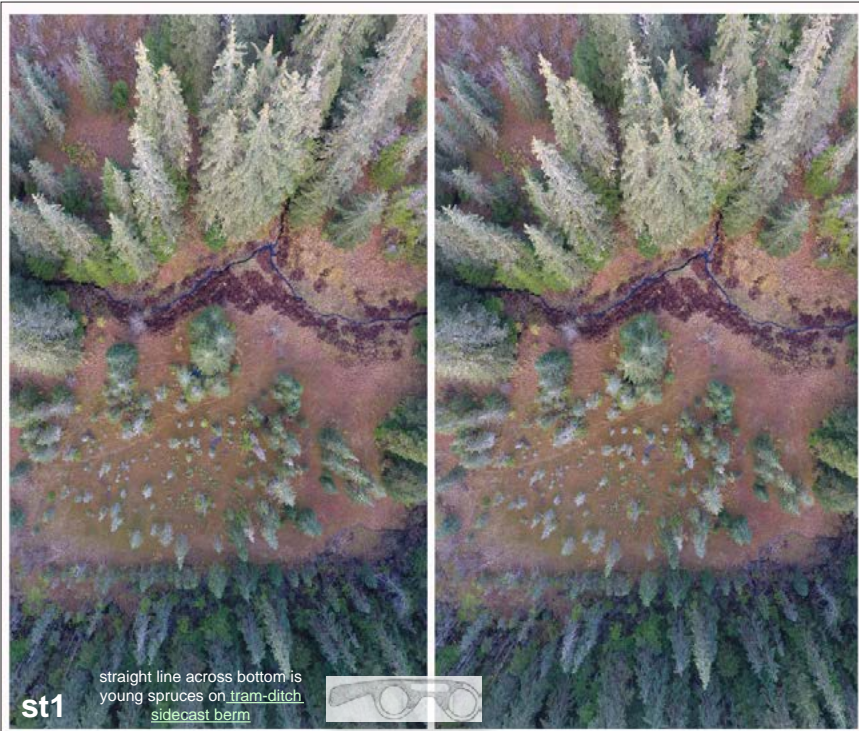


22

**22 Same-height stumps** Unusual for cut stumps this small to stand for more than a century. In fact, if they weren't all topped at the same sawyers' level I'd suspect a different disturbance than logging. But we're right beside the old highland route, where prior forest was felled, mostly for corduroy. *Very* slow regrowth.

**Hillshade & drone ortho DTM** was flown *prior* to trail work. One of my .tif-color breaks is coincidentally at bog-to-forest transition. Oddly, the old trail doesn't show on softer, flatter peatland but leaves a distinct groove, marked with yellow arrows, on firmer, better drained till and marine 'uplands.' Coming back, we dropped into the head of the meadows where raised tideland 'steps up' to ancient peatland. There, flew one of my most successful ortho missions.





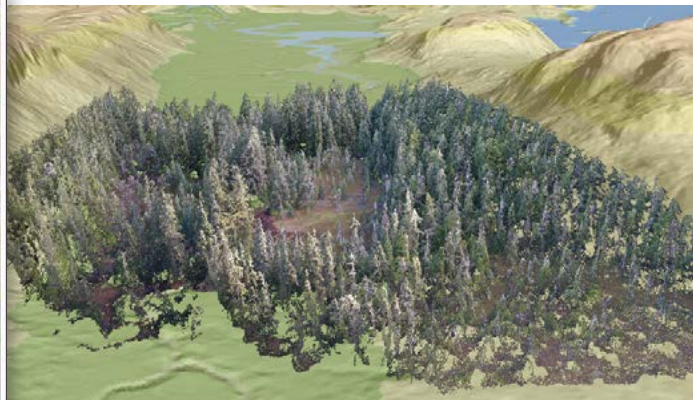
st1

straight line across bottom is young spruces on tram-ditch sidecast berm



**st1 Royal lady** *Athyrium*, lady fern, turns a dignified mauve as she lays over in fall. I wanted to call it "royal purple" but that's garrishly bright by my hippy

standards. On this chart for earlier mauves, comes closest to "old" or "dark." **Points obiqued** Another output from a drone mission is SFM pointcloud,



**Above:** SE down Amalga Meadows with my mission overlaid on 2013 DTM. The point cloud in arcprow's tipup mode. SFM (structure from motion, as opposed to LiDAR) .las files are fun, graphically, because

each point retains its 'native' color. ● **Left:** The ortho was constructed from 147 overlapping nadir images. Any 2 adjacent .jpgs from such missions can be paired for 3D details we can't appreciate in a normal image. If you don't have a stereoscope, try 'free-viewing.'

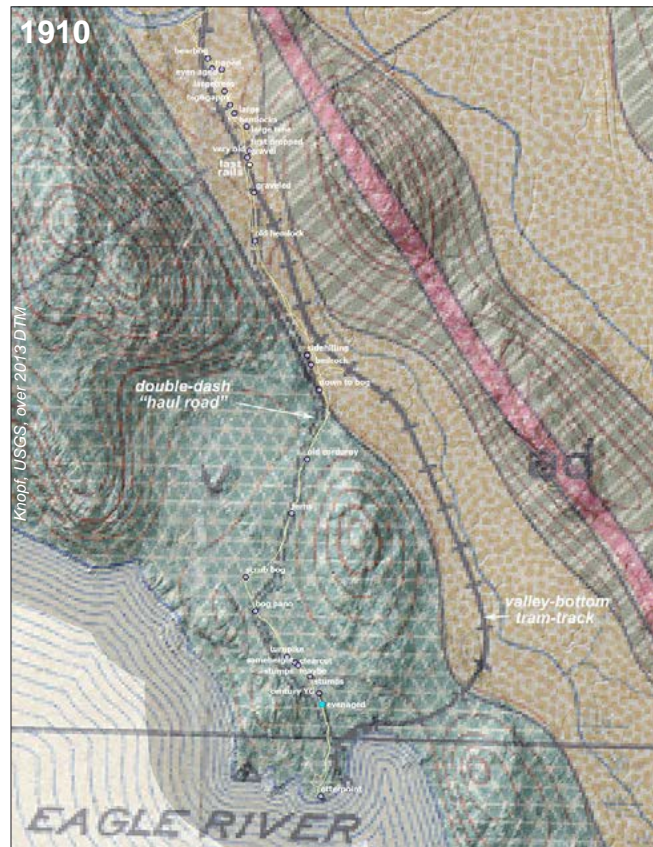
PURPLE MAUVE	MAUVE PINK	LIGHT MAUVE
ROSE MAUVE	DUSTY MAUVE	DEEP MAUVE
MAUVE TAUPE	VINTAGE MAUVE	HEATHER MAUVE
OPERA MAUVE	OLD MAUVE	AMETHYST SMOKE
DARK MAUVE	BROWNISH MAUVE	PALE MAUVE
BRIGHT LILAC	CHASE MAUVE	CHINA ROSE

really more of a 'skin' around each woodland tree. This highest wetland complex has stepped out of LIA-max tidal into millennia-old bog. Upvalley airflow(?) somehow fosters luxuriant beard lichen.



**28 Lichen Point?** More thoughts on this glacier-sanded, cove-framing lookout follow in notes from a staff outing. Calling it 'otter point' is equally backward looking, but *Lutra* stands stronger chance at recovery from our loving-to-death.

**Geo-overlay** I used to credit geologist Adolf Knopf for the whole production. But he only added the bedrock polygons to a masterpiece of contour cartography by WF Peters, in 1902. Fitted to 2013 LiDAR, match is nearly perfect.





02



03

### 20251202 EVC with naturalists

C, K & I drove out to Eeyák'w for a staff walk at 1pm. Only it had been scheduled for noon. *Oops*, sorry Bess. We confirmed my tardiness by phone and arranged to catch up with the Merli-led jaunt on Eagle Landing trail. Charger at EVC, so we topped off the Bolt while hiking.

**02 Otter-rocks haulout** Our 'summiters' are standing on Lichen Point—the glacially rounded, once-frilly *kóoshdaa* dining table on [preceding before-afters](#). This shows how the frills were flattened. But trampling can't explain the grassy uplift terrace in foreground, where a more diverse meadow assemblage should be flourishing. Why the monoculture?

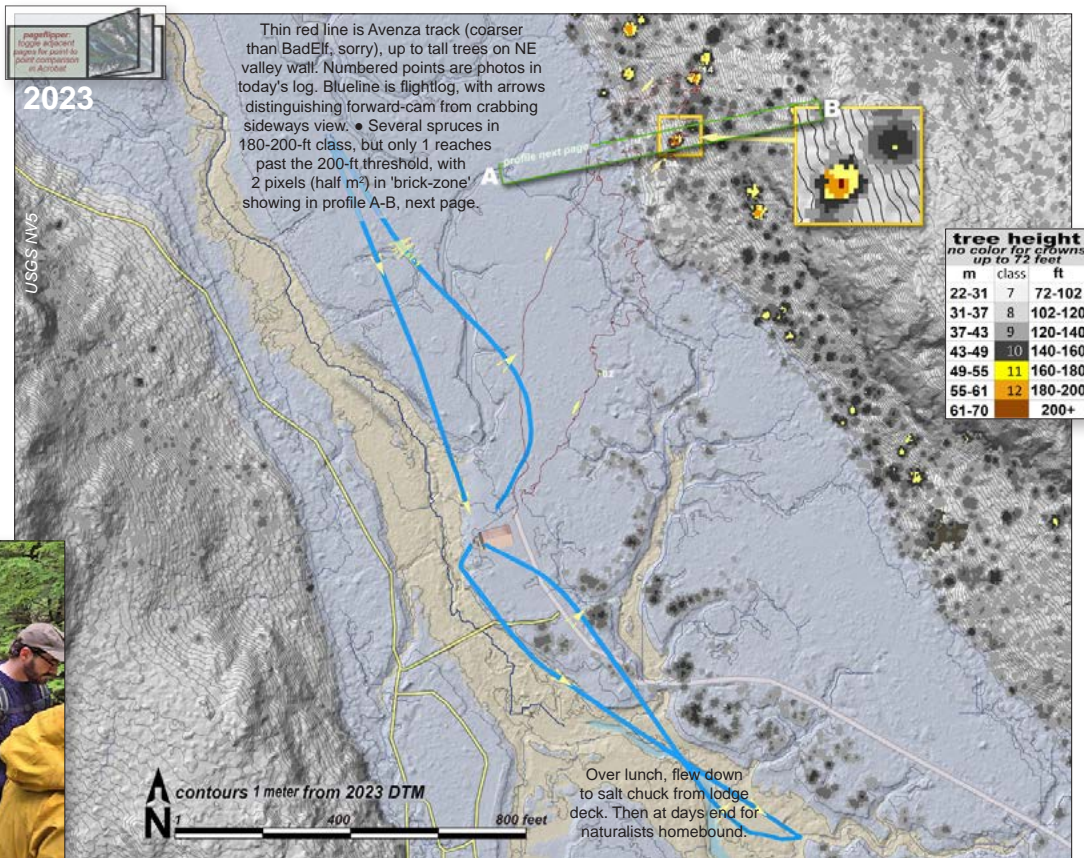
**03 Rocky cove** Next bight north of where Lichen Point. *Sea lion* cruising back & forth.

## 20251203 EVC

Rainy again. Joel's truck cause we had 5 at the Whale, & Bolt holds 4. Morning upstairs brainstorming, then another outing after lunch, 12:30 to 3pm. This time, all off-trail.

Back home yesterday, made this improved version of *eyyakw.pdf* for today's tree-search. Overlaid 2 tiles of canopy height model, for locating the 120-foot climbing trees that I checked out for crows-nest potential in [April 2017](#). Some are now in the 140ft+ class—darkest charcoal 'smudges.' The CHM also revealed a cluster of Landmark-quality spruces on the hillside beyond, a destination maybe?

**01 Woodland** But first we meandered through inviting raised-tidal peatland. Main mystery—as on 2024 [SEAGLA walk in Very-Beary](#)—was deep peat under young sedge fen.





02

**02 'China'** Our declarative upon driving a 4-ft peat probe to its hilt in loose organics. We never hit a firm inorganic bottom. <sup>1</sup> In the SEAGLA-walk journal linked from previous page, I defended my 'poisoned-peat' hypothesis with annotated historicals & nadir pageflippers. Strongest rebuttal to the opposing hypothesis of 'rapid peat-building' is Ogilvie's 1895 oblique from Big Porky Ridge showing a peatland with scattered spruces much like today's. Yet Foggy Bottom was tidal only a few decades

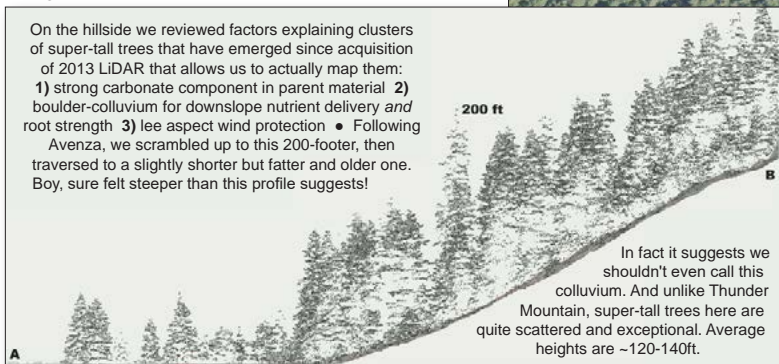
<sup>1</sup> Occurs to me we've never tried it in the creek bed.

On the hillside we reviewed factors explaining clusters of super-tall trees that have emerged since acquisition of 2013 LiDAR that allows us to actually map them:

- 1) strong carbonate component in parent material
- 2) boulder-colluvium for downslope nutrient delivery and root strength
- 3) lee aspect wind protection

Following Avenza, we scrambled up to this 200-footer, then traversed to a slightly shorter but fatter and older one. Boy, sure felt steeper than this profile suggests!

200 ft

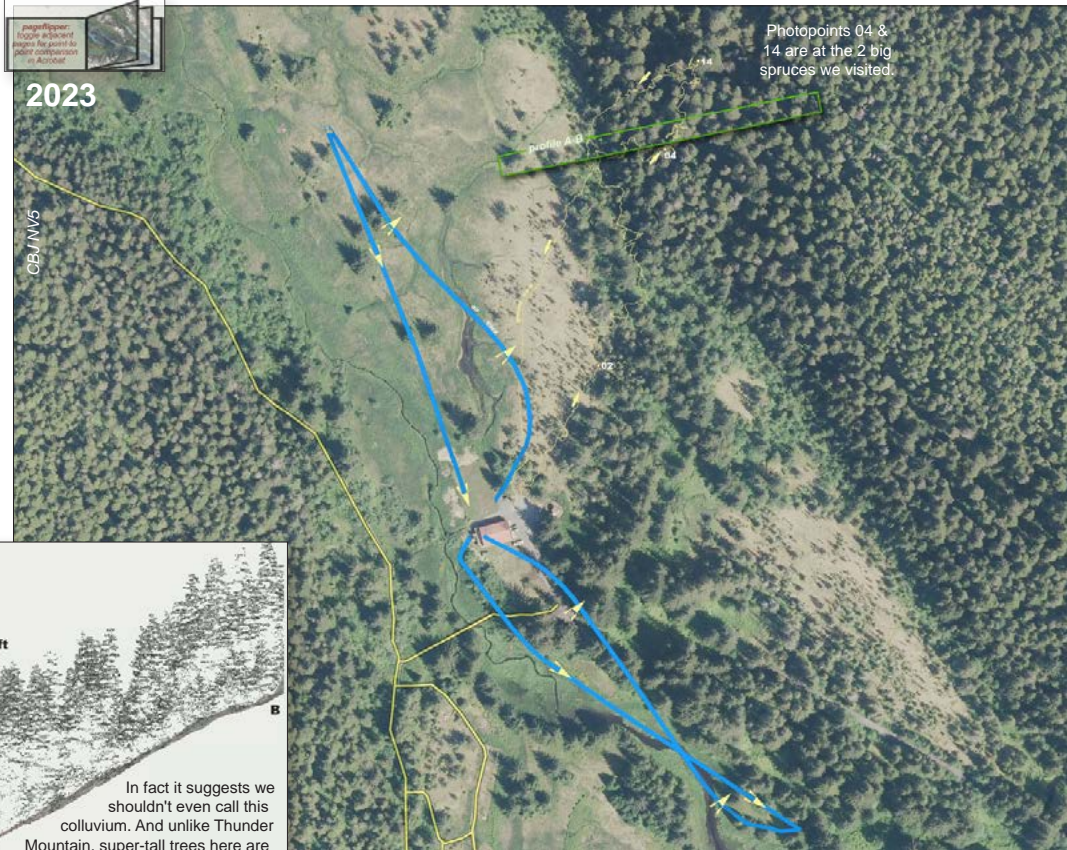


In fact it suggests we shouldn't even call this colluvium. And unlike Thunder Mountain, super-tall trees here are quite scattered and exceptional. Average heights are ~120-140ft.



2023

CB11W/5



Photopoints 04 & 14 are at the 2 big spruces we visited.



09

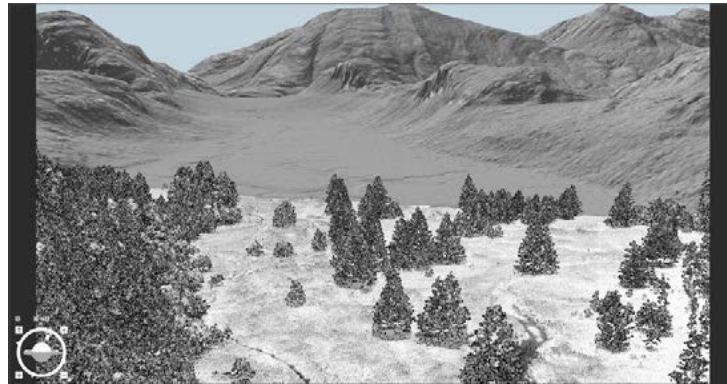
before! Three places with young-but-deep wetlands are: **1)** Amalga Meadows; **2)** Scout Trail Bear Bog **3)** Foggy Bottom (SEAGLA-walk journal.) All in the 'Risen Valleys' complex, tucked away from the coast. None had wave exposure during LIA marine intrusion. In contrast, uplift meadows at Ch'eet' Taay (Cowee) were exposed to

northerlies. Much is wetland, and although we've assessed and dug 18-inch pits, we never brought the 4-foot peat probe. Should do that! Also should probe wetland pockets in Brotherhood Park, recently tidal. I doubt raised-tidal peats are 4 ft deep where flats were wavy.

**04 200-footer** Climbing, you don't see large trees for awhile, and I began to think the canopy model had hallucinated. But nope, here's the spruce with 2 pixels (=0.5m<sup>2</sup>) poking above 200 ft. On profile A-B it's 50% taller than any neighbor. Center-distance \* is on larger diameter spruce, photo-14.

**09 Truffle** In red squirrel midden at base of next, older spruce (#14), we found several truffles. This one's completely encircled with **mouse** or **vole** incisor marks. My first sniff of this one (& not from older sectioned one or even 2nd sniff from this same 'fresh'

NW thru meadows. Arc's 'tipup' for terrain (dtm) & veg (.las) visualization. Background 2023 DTM; foreground 'all points' cloud. I exported 3 fly-thru animations that'll hopefully become part of a *JuneauNature* blogpost.



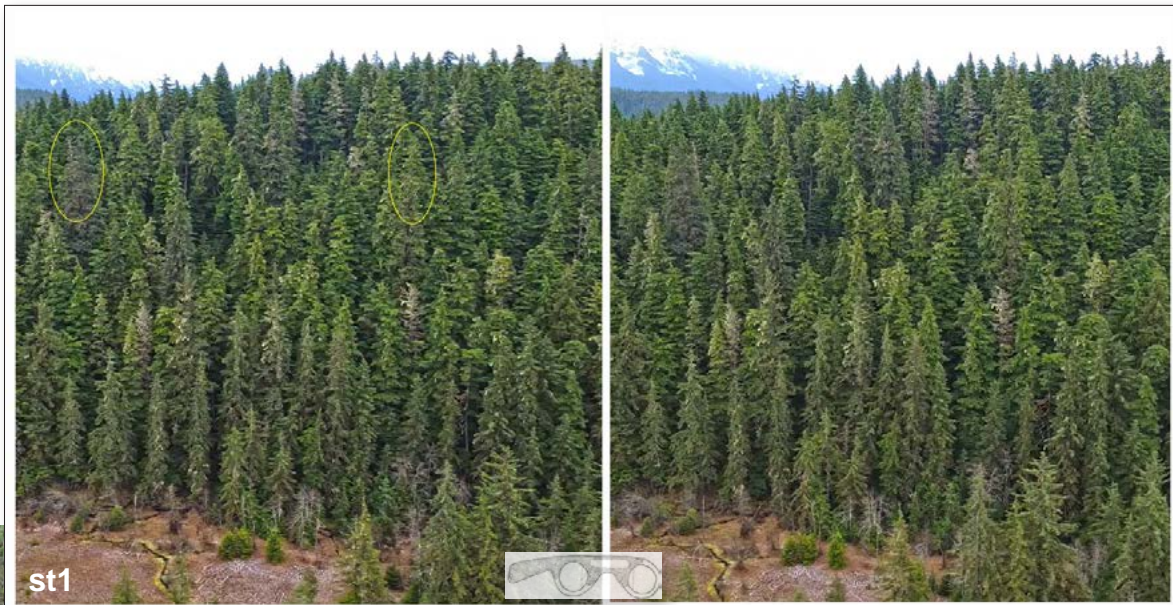
04

one) triggered a faint but intriguing association with . . . what? I'm not a truffle eater and the odor wasn't what I expected. Sharp & clean & ephemeral, as if, once plugging my receptors, I couldn't find it again.

Back home, opened a tiny gourmet bottle of white-truffle-infused olive oil—old Bday present from C—and . . . *yup*, there it was!

So why would voles have meticulously 'peeled' it, without consuming everything. Are the goodies (& presumably spores the fungus 'wants' us to carry away and poop elsewhere) restricted to just the outer rind?

**14 Trophy** Most of our smiling



treehunters are in crouched, rear-of-trophy pose, lacking only rifles as proof-of-prowess. No room back there for gardener Joel, so he leaned against the front. <sup>2</sup> Although shorter than spruce #4, this one felt way older. It's probably still 3-ft in diameter at the busted off crown, up in the 180ft+

<sup>2</sup> I actually shrunk him a bit, to pump the tree back up. & btw, JB doesn't only hunt carrots. :)

class. There've gotta be a few millennium trees on this hill.

**stereo-1 Crabbing NW** 2D obliques of forest canopy can be hard to decipher, but in stereo, crowns really pop out. I'm not positive I correctly circled spruces #4 & #14 but 3D gives a helpful sense of the raggedy old-growth forest structure

# Appendices

## 1 Brochure

**20170420:** Most of the first half of this brochure was written ~2007-2009, prior to delivery of signs and brochures. For each of the 10 interpreted trail systems in the CBJ Natural History Project, I've designed and uploaded pdfs for [4-fold brochures on legal-sized paper](#).

Few of these have been printed out in quantity, and I've had no feedback on how many have been individually run off from home printers. Today, a more sensible alternative, less wasteful of paper, is to upload the pdf to cellphone for field use. Aside from paper waste, a problem with freebie guides is where to offer them: we've had trailhead brochure-dispenser boxes vandalized.)

That being the case, I may eventually reformat the brochures into a friendlier 'drill-down' presentation for phone screens. Since we are also migrating toward more interactive apps for field guides (pilot at Mendenhall Visitor Center), it makes sense to hold off on such reformatting until we have a template, and can do all 10 together.

Meanwhile—because the Eeyák'w brochure is definitely useful even in its 'digital-dark-ages configuration—you can [download it from JuneauNature](#).

### 20251203walk videoscript:

1

- **lichenpoint pan** just before earlywinter turned cold, Discovery naturalists spent 2 full days at Eagle Valley Center, in Eeyák'w, *small rapids*, the Amalga Salt Chuck area.
- **approaching** Thanks to leaders like Kristi West, the lodge at Eeyák'w is one of our public land gems, a beautiful place for retreat, reflection, and planning.
- **fly-in with labeled stops** Amalga Meadows are the wildest corner of what some of us call Risen Valleys—kindof a double-entendre involving resurrection & glacial rebound. On this terrain model, my **tan** color stops at today's high **tide** line—around 21 feet. But the **blue** continues to 32—as far as tides intruded at peak Little Ice Age. Judgin from **tree** rings, they didn't begin **subsiding** until the mid-1800s.
- **2017highview** If that's **true**, none of today's freshwater wetlands in this April flyover, 8 years ago, could be older than 200 years. Which is **wierd**, considering what **underlies** it. We'll get back to **that** in a minute.

2

- **lowpass** What Discovery's staff does **best** is **get kids outside**. Since some of those 'kids' are now **grandparents**, we've had a long—and I hope **enduring**—effect on the human

relationship to Lingit Aani

- **threading** What I do best is scratch my balding head over **nature** puzzles, and hope our **naturalists**'ll transmit that curiosity to their hundreds of students and dozens of teacher-collaborators.
  - **mergies** how did this mergie-mom end up with 17 ducklings?
  - **bear** how much of this bear's diet is that invasive dandelion?
  - **doe** Do guwakaan and her fawn graze near the lodge partly cause **wolves** don't like it so close?
- 3
- **K&R** But most of **my** questions are bigger-picture, involving landform, glacial history, community succession or all **3 intertwined**. Some of em came from poking our 4-foot peat probe into soft organic soils. **Others** came from mindblowing LiDAR we started using 12 years ago.
  - **john-andrew-daniel bouncing** In wettest pockets of Risen Valleys, almost feels like you could pop through and disappear. We call em quaking bogs, and I sometimes **wonder** if they function as pressure release valves—the nostril or blowhole of the peatland

4

- **cartoons** Usually, takes more shoving on the **probe** handle, but we almost never hit a firm, inorganic bottom. Dome bogs actually **drop off toward** the forest, where peat depth **decreases** until you're clinking on glacial **boulders** and tree roots, only a **foot** or so into the soil.
- **pleasant core** when palynologists pull up a meter or two of peat from **sphagnum** bogs, they typically get dates older than 10,000 **years**. Last couple **hundred** have only laid down a few **inches**.
- **2017approach** So what's going on? If you **expected** an answer, sorry. But I've **got** some **hypotheses**, especially in a recent journal for a walk we did with the Land Trust and SEAGLA. Download link is on this page.

5.

- **treecruise** okay, here's another one. Trees are amazing in their **own** right, but they're also **markers**, of the **intersection** of **place-& time**—the **landform** and **history**—**underneath** them.
- **geopdf** Before bushwhacking, making a navigational **pdf**, the canopy **height** model showed 2 brick-colored pixels (half a square meter) **barely** entering the 200-foot-class. **Surprising!** So we climbed up for a look
- **profile** It's **not like** the whole **hillside** was covered with redwood-sized spruces. In fact, halfway up I thought my calibration of the model might be **wrong**.
- **200ftr** But it's **there**. And another **beauty**, slightly shorter but thicker **diameter**, that **asterisk** off in center **distance**.
- **crabbing** On a sideways-drifting drone pass, I searched for exceptional crowns. Some stand way above their **neighbors!** Motion helps detection, but you can also freeze adjacent **frames** from these **crabbing** flights for 3D **stereo**, making individual spires pop out.

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- **las1** And the LiDAR **point** cloud is **more** revealing, in a way, cause discoveries **there** can be measured, or to the nearest foot. LiDAR revolutionized the search for Landmark Trees, with clues to **landforms**, **hydrologies**, **rocktypes**, and landscape positions where spruces reach full potential.
- **las2** As with the depth-of-**peat**-puzler, I won't conjecture **here** about where, when, how or why the northern rainforest grows giant **trees**. There's **lots** of that on Juneau**Nature**. Under **TOOLS**, pull down Landmark Trees. Or just type it in the **search** box.
- **treepose** The slightly **shorter** spruce, up and left from that 200-footer, felt way **older**. More corrugated **bark** signals slower **growth** in recent **centuries**. Even at 180 feet her top was **3 feet across!**—crown loss is typical of our **really** ancient matriarchs.
- **staffgather** I'm finishing this in mid **December**, bottom of the year! It's snowy **now**—single **digits!** Best **wishes** to you in the **coming** one. May every day bring a tasty **puzzler**, and if you're **diligent**, conflicting **answers!**

### New workflow for PowerDirector

Making this video I ran into tech blockages, due on the one hand to abandonment of my old slideshow program Photopia, and also by Audacity's inability to process m4a files coming off my samsung phone. Fortunately, PowerDirector365 does everything I need, in one app. It's been a long and sometimes frustrating learning curve, but I'm now pretty satisfied.

In the process, found a [tutorial](#) from Jeff Sibellius that I should watch again. Explains how dronefolks synchronize their FPV with screenview, etc.

to clip audio in one track without clipping the mp4 or jpg above, select only the audio and use the razor tool. To synchronize the clips across all tracks, select everything

## 2 Dog day thoughts

*RC: The Risen Valleys study got us thinking about how valuable it was to Discovery's mission to have places away from popular trails where the full complement of animal sign could be shared with students and teachers. Kathy Hocker's feature article in our [summer 2003 newsletter](#) summarized the project, and in this shorter piece, she added some thoughts on dogs.*

*In retrospect, we were naive to think logic or observation could change people's attitudes about dogs on (or off) trails. Discovery's feeble attempt at impacts-education flopped. We even lost members. Reactions crossed party lines. Ultimately we surrendered, and today largely keep our opinions on dogs to ourselves.*

*But to honor the still-flourishing parkland that gave rise to Kathy's essay, please give this an open-hearted, open-minded read . . .*

Kathy Hocker, 2003

I am a dog owner; one of my great pleasures is taking my border collie mix, Magpie, on long rambles through the backcountry. But recent work tracking wildlife in the Risen Valleys, and ongoing discussions of the impacts of dogs on wildlife, have made me much more circumspect about where I hike with her, and where I leave her behind. This article stemmed from a tracking expedition to Amalga Meadows.

Magpie would love this place. The cool edge of woods, hemmed by on-again, off-again game trails ... the lush sun-warmed sedges of the meadow, laced with pad foot bear paths and sheltering pools of intense and intriguing scent... everywhere there are things for an inquisitive young dog to toy with, to follow, to investigate. If she were here with me today, my compact mutt would explode with joy: she'd gallop under the hemlocks, flinging herself over fallen logs, or leap across meadow-edge creeklets to spring in great exuberant leaps through the tall sedges.

Problem is, this place probably would not love Magpie. Even I—a lone human, carefully exploring off-trail at the edge of the rich meadow—can't help but leave behind crushed violets and flattened sedge stalks, fear-struck young savannah sparrows and great drifts of human scent.



My dog would leave more.

It's not that Magpie is a particularly predatory beast. In fact, thinking to make her a proper 'naturalist's dog,' I trained her from puppyhood not to give in to her urges to chase wildlife. She stays within sight, obeys commands to 'leave it,' and will, when called to 'come,' spin toward me so quickly I'm amazed she doesn't sprain her back. I have never known her to harm a wild creature.

But that just may not be enough—not for this place. If she were here, she'd be taking seventeen leaps for each pace of mine, blasting through the meadow in curving paths that would decorate my straight-stitched trail with fancywork. Unlike me, she wouldn't wrench herself to a stop to avoid smashing into the life of another being. She's a dog ... why would she?

Add more dogs—more or less gently-disposed towards wild critters—and this rich world of bear, deer, mink, and ermine could eventually become the province of small rodents, hardy birds,

porcupines, ... and dogs and people. It's already happened, at least in part, to plenty of similar local meadows: Brotherhood Bridge, Switzer Creek, Fish Creek.

Perhaps we could leash our canine friends, and have them follow us on the trail? Perhaps ... but there's evidence that their scent alone could deter wildlife. To species such as mink, marten, wolverine, otter, weasel, and hare, the dog tribe represents danger of a sort more ancient and potent than humans. Repeated trails of pungent dogginess could lace this meadow with scents as forbidding to them as the stench of spilled chemicals might be to us.

People have been hiking, skiing, and exploring here for decades, and use of these meadows is only going to grow in the future. Trail-planning is still in process here. Maybe this is a place, then, to test the effectiveness of no-dog zoning on wildlife use.

This isn't "anti-dog" sentiment at all. There's no malice in our dogs—only instinct, drive, and pleasure at being free to roam and sniff and run and leap and be with the people they adore. They are as exuberant, clumsy, and guileless as toddlers in the way that they greet the world. It's just that there are so many of them, and so many of us—and the more we bring ourselves into new, wild areas, the more we push the wildness out. It would be good to keep some of that wildness close.

Magpie would love this place. But she would also love a good gallop up Salmon Creek Road, where she can snuffle in the roadside alders; she'd like a trot down to Sandy Beach at low tide and a chance to careen across the wet sand after a flung tennis ball; she'd appreciate an afternoon spent nosing around in a relatively wildlife-poor second growth forest.

If a couple of carefully-chosen sensitive areas such as this are closed to dogs, there are still plenty of other places for us to take them—and there will be one place where we ourselves can come to find out whether their absence could benefit wildlife.

It's worth a try.

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