Preface to 2023 update: *Natural history of Juneau trails* (2013) is now a decade old. While the nature-&-culture content has held up fairly well, technology keeps striding ahead, sometimes forsaking antiquated tools, or severing links, especially in the ephemeral world of internet offerings. For this digital update, I'm renewing download links, especially from the *References* section.

Place names We've also advanced in the world of place-naming. It now feels disrespectful to use colonial names when the Lingít is published and available. For chapter-headings below, Lingit comes first, with colonial or 'commemorative' name in parentheses.

Photo dates Images of places soon become historical resources, so it's helpful to know when they were taken. This is ***not a new edition***, and no photos taken (or maps created) since original publication of *Juneau trails* in 2013 are included in this digital update. But I've added a **bold-font** year to most place photos. For example, the banner above was taken the last year Greg Streveler & I taught a teachers' class called *Nature of SE Alaska*, in **2001**.

Print vs digital Proceeds from sales of our printed trail guide support Discovery Southeast programs, so we don't offer free digital versions of the entire 76 pages—only this 'fore-&-aft' material. But I encourage you to download and keep this ***cbjtrails-newlinks.pdf*** at hand for easiest access—next time you're heading out to, say, Eagle Valley Center, and need a useful brochure-pdf on your phone, with trail map and guide to interpretive stations. Scroll to *References*, scan for the appropriate item, and jump online with the blue-signaled hyperlink.

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Discovery Southeast is a non-profit organization promoting direct, hands-on learning from nature through natural science and outdoor education programs for youth, adults, and teachers. *Discovery* naturalists deepen the bonds between people & nature.

(907) 463-1500
www.discoverysoutheast.org

CBJ Parks & Recreation The City and Borough of Juneau/Parks & Recreation welcomes you. Parks & Recreation manages 50 miles of trails and fosters innovative stewardship of its diverse resources. Collectively, along with our partners Alaska State Parks, the U.S. Forest Service, Trail Mix and SAGA, 135 miles of trails are managed—connecting our community with Juneau's magnificent landscape. We hope you have a great experience on your trails. Take only memories, leave only footprints.

(907) 586-5226
www.juneau.org/parksrec/index.php

Geographic scope

"CBJ," as used in this guide, refers only to the road-&-trail accessible portions of the City and Borough of Juneau. The greater CBJ encompasses Berner's Bay to the north and Snettisham Peninsula to the south, but those regions aren't treated here. For example, the statement "oldest rocks in the CBJ" means those on our road-&-trail system, *not* including CBJ lands to the north or south.

Technical terms, acronyms

Most technical terms are defined in context. Others are *italicized* and defined in the *Glossary*, p 67. Acronyms are mostly defined in context but are also found at end of glossary on p 68.

Selected trails & watersheds

Nearly 100 trails are accessible from Juneau roads. Mary Lou King's *90 short walks around Juneau* (1990) describes almost all of them. In this *Discovery Guide* we complement *90 walks* by taking a watershed approach to 10 of those trail networks. This guide reviews highlights of the ***CBJ Natural History Project***, 7 years in the making—background to *Discovery Southeast's* 3-panel interpretive signs at 10 popular Juneau trailheads. Numbers below are reassignments according to the NW-to-SE listing on JuneauNature>PLACES> Áak'w & T'aakú watersheds

Mainland watersheds:

2) Ch'eet' Taayí, *murrelet fat* (Cowee Creek): largest, wildest, most productive watershed. Héen Latinee Experimental Forest.

4) Eeyák'w, *small rapids* (Amalga): uplifted valley, portal to Eagle River Mine, reversing falls at Salt Chuck.

4) Tool T'eik, *lowbush cranberries* (Peterson Cr/ Arboretum, adjacent lake trail, portal to mines.

5) Áak'w, *little lake* (Auke Lk): along with Auke Bay, the region's pre-gold cultural hub, sockeye lake gives name to Tlingit Kwáan.

6) Kaxdigoowu Héen, *going back clear water* (Montana Cr): richest fish and wildlife of Mendenhall watershed. Fault-controlled valley lines up with Cowee.

8) Eix'gul'héen, *warm springs stream* (Switzer Cr): Middle School educational trails, post-logging succession.

9) Dzantik'i Héeni, *little flounder stream* (Gold Cr): Mount Roberts high country, slide-prone slopes, seat of state government.

Sayéik (Douglas Is) watersheds:

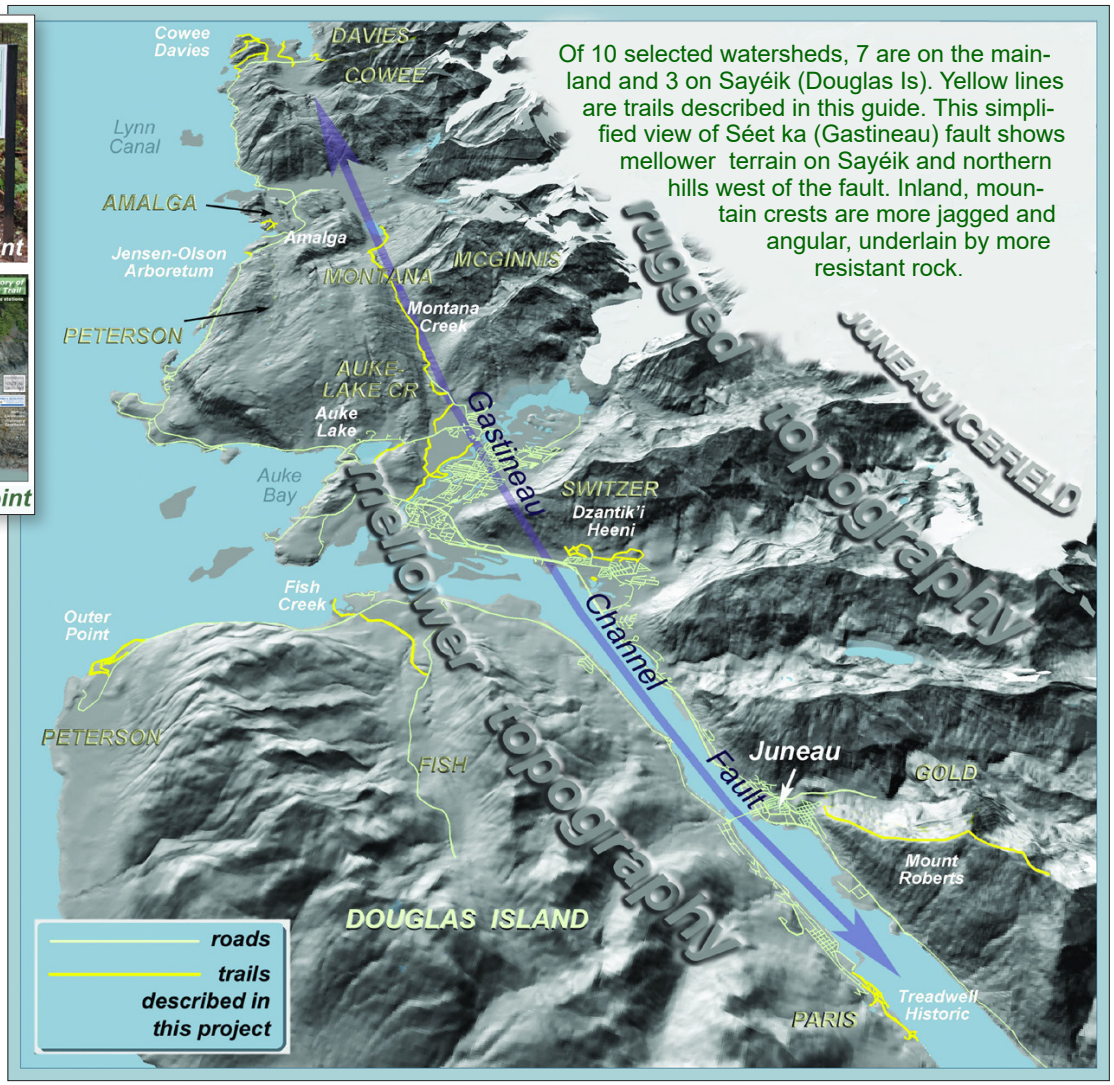
11) Anax Yaa Andagan Yé, *where sun's rays hit first* (boat harbor/Paris Cr): source waters to Glory Hole. Once Alaska's largest mine; today, Treadwell ghost town.

12) Aangooxa Yé, *beside town slaves* (Fish Cr) Áak'w fort at Hut Point: the island's dominant, central watershed, waterbird hotspot estuary, Eaglecrest high country access.

13) Kaalahéenak'u, *inside a person's mouth* (Peterson-Outer Pt): Outer Point trails, uplift landforms, large-tree alluvial fans.

Above: Other products of *Discovery Southeast's* **CBJ Natural History Project** include 3-panel signs at 10 Juneau trailheads, and 4-fold guides to interpretive stations along the trails. To download the guides, visit *JuneauNature>Media types> Pamphlets & laminates*. Or download directly from links in *References* .

Right: View NNW over roaded portion of the City and Borough of Juneau (CBJ)—the area covered by this guide.



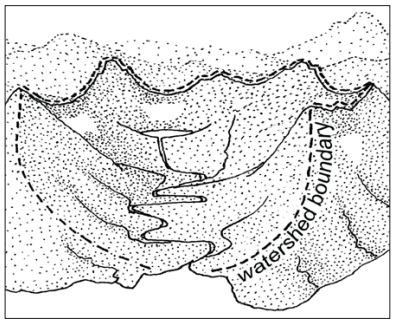
It's hard to imagine a town or city in North America with better access to nearby wild land—or a populace that makes more use of it—than Juneau, Alaska. Wildlands are accessed by more than 150 miles of trails serving all tastes, incomes and physical abilities, from paved, wheelchair-accessible promenades to dizzying alpine scrambles. If you add the 'routes'—beloved but unmarked ridge walks, ski traverses, semi-secret fishing or hunter paths, and off-trail shoreline bushwacks—mileage doubles.

In 2007, *Discovery Southeast* (DSE) began to assemble information, maps and images for trail systems in 10 watersheds throughout the greater Juneau area. For me—a resident naturalist since 1977—this was an opportunity to assimilate what I already knew about these places, and learn a ton of new stuff along the way.

The selected trails transect a wide range of habitats, from sand beaches to towering forests. The common denominator is *ownership*; the City and Borough of Juneau (CBJ) owns and manages at least a portion of all 10 trails (in most cases trail networks).

But thanks in part to the non-profit organization Trail Mix, the multiple ownerships of Juneau's trails are no obstacle to trail users, most of whom are unaware when passing between federal, state, borough and private land. Trail Mix services them all, and in the public mind, they're all just *our Juneau trail system*. My interpretation for these trails follows suit, collaboratively spanning jurisdictions. After all, the bedrock belts, fish streams and game trails pay scant attention to property lines, and neither should a holistic natural history.

Boundaries that *are* relevant—to critters, habitats, and trail users—are watersheds. In the 'taxonomy of landscape,' a watershed is analogous to species. Larger and more inclusive categories—biogeographic provinces, ecoregions, bioregions, outlined in the following section—are the genera, families, orders, etc. of topography.



Watersheds have personalities, deriving from their distinctive geology, microclimate, hydrology, aspect, vegetation, wildlife community, and human development. It's easy to quibble over boundaries of ecoregions, but watershed units, at least in mountainous topography like Áak'w & T'aaḵú Aaní, are indisputable.

In GIS, [1] we can perform exciting analyses of watershed attributes. Cartographers, biologists, geologists and demographers from many agencies and NGOs have contributed to the exponentially growing, public-domain library of spatial data. It's now possible to sit at a home computer and explore relationships between bedrock fault alignment and fish habitat, or hillside sun exposure and forage availability for wintering deer.

GIS also interfaces smoothly with the field experience. To gather new information, I hiked each trail in several seasons with a GPS and camera, taking photos, recording voice notes, coring trees, etc. At home, a program compared the time on camera and GPS, automatically dropping each spatially-linked photo and observation into its proper place on the GPS track, allowing me to relive almost every step of the hike months or years later.

Juneau already has fine trail guides, available in all book stores and nature centers. Best known is Mary Lou King's *90 short walks around Juneau*, which was always at arm's reach as I worked on this trails project.

My interpretive products for the CBJ—trailhead signs, trail brochures, and this summary guide—are not meant to compete with existing guides that collectively cover the broad array of Juneau trails. Instead, the *Discovery* watershed studies delve more deeply into a *selected subset* of trails and trail networks, interweaving many scientific disciplines to offer unique perspectives on our favorite hiking destinations.

As I wrapped up the CBJ Natural History Project, it felt as though I was working on a 250-square-mile jigsaw puzzle. The nearer to completion, the more rewarding it was to insert each piece, discovering colorful, unanticipated patterns—hand-in-glove connections. Of course, in natural history, the puzzle, thankfully, is never finished. [2]

1 *Geographic Information Systems. GIS is more than a high-tech way to make maps. It interfaces between maps, imagery, and databases, allowing quantitative analysis of spatial patterns. Since the late 1990s, GIS has revolutionized the way we assess and portray landscapes.*

2 *Discovery Southeast continues to expand upon the CBJ Natural History Project through our website JuneauNature.*

At press time for *Natural history of Juneau trails*, Discovery Southeast is building a website at https://juneaunature.discoverysoutheast.org/ a portal for downloadable guides, reports, brochures and newsletters, as well as seasonal posts.

Deliverables from the CBJ-trails project include 4-fold guides to each of our selected trails/watersheds. Printed out (8.5x14 doublesided) or loaded to your phone for field use, these brochures complement *Natural history of Juneau trails* with step-by-step, station-oriented descriptions. Complete contents of the 10 trailhead signs can also be downloaded as pdfs. Links to signs & brochures are listed below under Carstensen (2013). ● **Update 2023:** As noted back on the Contents page, many links fell away over the decade since publication. For this digital update I've tried to renew them. Please let me know if you have any problems connecting to these documents. *RC*

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4 Eeyák'w ● Amalga signs ● Amalga brochure
4 Tool T'eik ● Arboretum signs ● Arboretum brochure
5 Áak'w ● Auke Lake signs ● Auke Lake brochure
6 Kaxdigoowu Héen ● Montana signs ● Montana brochure
8 Eix̲'gul'héen ● DZ-Switzer signs ● DZ-Switzer brochure
9 Dzantik'i Héeni ● Gold Cr signs ● Gold Cr brochure
11 X'áat' T'áak ● Treadwell signs ● Treadwell brochure
12 Aangooxa Yé ● Fish Creek signs ● Fish Creek brochure
13 Kaalahéenak'u ● Outer Pt signs ● Outer Pt brochure

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1 *Carstensen chapters in Schoen & Dovichin (2007) were deleted from Audubon-TNC's* Ecological atlas of Southeast Alaska *(Smith, ed, 2016, cited below), which superceded their much lengthier* Conservation assessment *(Schoen & Dovichin, eds, 2007). As of 2023, I am maintaining drafts of more encyclopedic versions of* ***Provinces*** *&* ***Habitats*** *chapters—multi-hundred-page works in progress. Introductory sections of these documents can be downloaded from JuneauNature: see Carstensen 2018 and 2020, cited below.*

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