

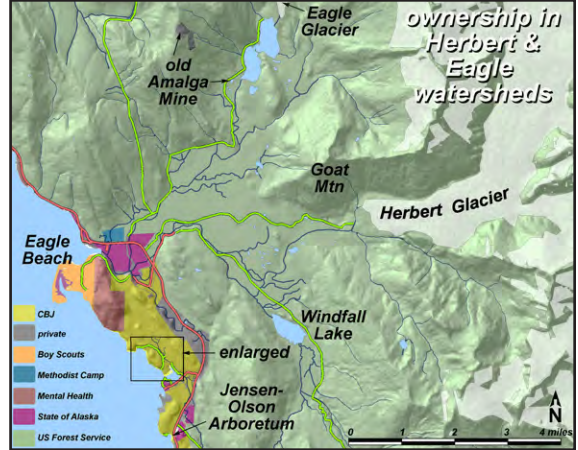
### Ask more questions!

Good naturalists constantly ask questions: What makes this soil so wet? How fast are these alders growing? Can fish winter in this creek? Is this excellent or mediocre wildlife habitat?

Here are some "starter" questions to ask yourself each time you enter a new forest type at Amalga Meadows: 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 geological forces create flat landscapes? How did the history of grazing influence the vegetation of Amalga Meadows?

For more examples of productive sleuthing questions, download *Priming the pump: Socratic method in the field and in print*, in the Fall 2006 *Discoveries* newsletter. It's on the publications page of our website: [www.discoverysoutheast.org](http://www.discoverysoutheast.org)



### Amalga animal sign

- Clockwise from left:**
- Ed Mills with red alder scratch tree.
  - Bears mark trees in areas of intense social interaction, such as prime fishing holes, or where 2 trails come together.
  - Snowshoe hare tracks can be found at Amalga Meadows but are more common on Herbert and Eagle Rivers where willow is abundant.
  - Tracks of hoary marmot in sand at Eagle River Landing. Most marmots live in subalpine meadows, but some have recently colonized beaches.
  - "Hotfoot" trail in cottonsedge meadow, created by bears repeatedly stepping in the same footprints.



This trail guide is part of a series of interpretive products created in 2010 for trails on CBJ lands by Discovery Southeast. Other creations include natural history signs, a summary guide to CBJ trails and free web products.

### Discovery Southeast

Founded in 1989, DSE is a nonprofit organization promoting direct, hands-on learning from nature through natural science and outdoor education for youth, adults, and teachers. Discovery naturalists deepen the bonds between people & nature.  
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### 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. Call Parks & Recreation at 586-5226. • [www.juneau.org/parksrec](http://www.juneau.org/parksrec)

# Natural History of Amalga Meadows

## Guide to beach access trails from Amalga Lodge

View northeast over Amalga Meadows (left center) to Eagle Glacier. September, 2004. David Waters photo

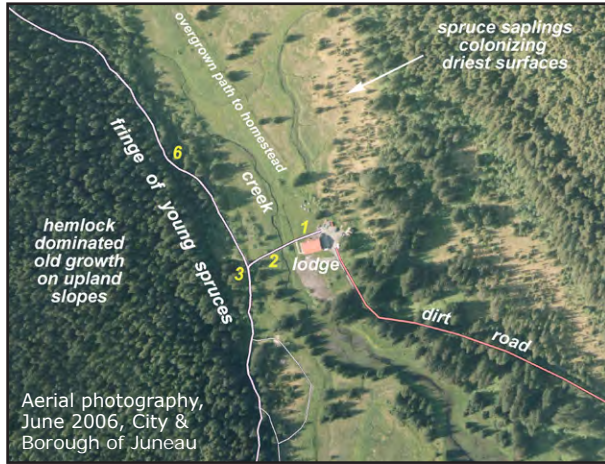
DISCOVERY SOUTHEAST

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## Numbered stations

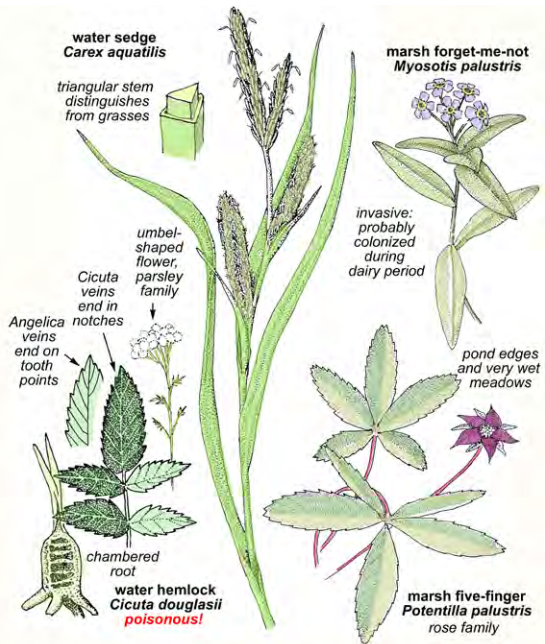
Interpretive stations are marked by numbered posts along trails to Eagle River Landing and Kayak Beach, and are shown in yellow on both aerial photos in this brochure.



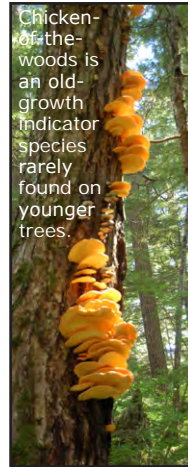
Aerial photography, June 2006, City & Borough of Juneau

**1 Trailhead sign.** Good place to get oriented to local geology, natural communities, wildlife, and the importance of glacial rebound. Land here is rising at about 0.8 inches/year.

**2 Stream.** This small creek is a former tidal slough. The broad swale it now occupies has grasses (round stems), sedges (triangular stems), and small herbs adapted to damp environments. Fine marine silt may keep much of Amalga Meadows in wetland habitats indefinitely, even as land rises.



**3 Intersection.** Turn left (south) here to Kayak Beach, to visit stations 4 and 5.



Chicken-of-the-woods is an old-growth indicator species rarely found on younger trees.

**4 Old growth.** It only takes a short walk up the trail south of the Challenge Course to leave behind the surfaces exposed to tides during the Little Ice Age. Soon, you're in an all-aged forest with hemlocks many centuries old. The complex canopy intercepts snow, but is gappy enough to admit light to understory plants like ground dogwood that feed deer in winter. Snags and fallen logs provide micro-habitat for wrens and red-backed voles. Diverse fungi both attack and nourish forest trees.



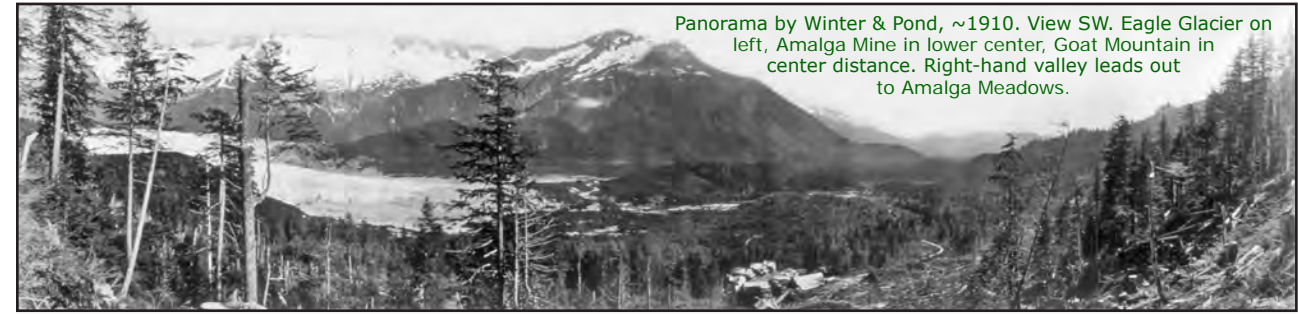
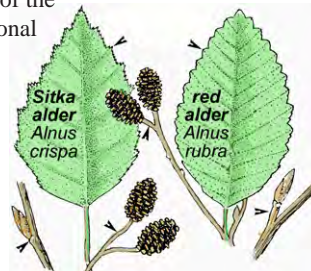
**5 Kayak Beach.** Most of the beaches north of Amalga Harbor are steep bedrock outcroppings of metamorphosed volcanic greenstone. Good picnic beaches and kayak-launching places are scarce. Exceptions like this little cove are also good places to look for tracks in sand. DIPAC chum salmon often wash up here, attracting black bear, river otter, mink, raven and gulls.

View south along the launch-path at Kayak Beach where SAGA moved boulders for easier access. Salt Chuck tidal gut in center distance.



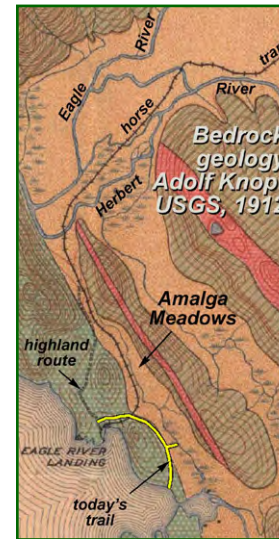
To complete the tour, return to station 3 and follow the trail north to Eagle River Landing

**6 Alders on forest edge.** Our trail leaves the raised tidal surface and climbs onto upland slopes. Look for black bear claw marks in mature red alders at the edge of the forest. Alders are early successional trees, not found in old growth. Bear trails just inside the forest envelope Amalga Meadows, giving quick access to one of Juneau's richest foraging sites for herbivores. This new beach access trail follows the old game routes.



Panorama by Winter & Pond, ~1910. View SW. Eagle Glacier on left, Amalga Mine in lower center, Goat Mountain in center distance. Right-hand valley leads out to Amalga Meadows.

**7 Forested wetland.** As the trail turns westward into the saddle, it enters scrubby old growth with widely spaced, sparse-crowned trees and many snags. Skunk cabbage indicates poor drainage. This type of forest is common on the ridge separating Amalga Meadows from the ocean. In fact, the largest trees on the trail are not old growth, but younger "uplift spruces" at station 10.



**8 Amalga Mine horse tram.** Notice how small the trees are here. At this point, starting down from the saddle, the new beach access trail runs exactly along the old horse tram route between Eagle River Landing and the Mining town of Amalga, 6 miles up-valley. Original old growth was felled along the tram route; the second growth is now a century old. Few stumps from the logging remain. Most rotted long ago.

**9 Eagle River Landing.** Near the point enclosing the western end of this cove, a deepwater wharf accommodated Juneau-Skagway steamships stopping at the tram terminus.

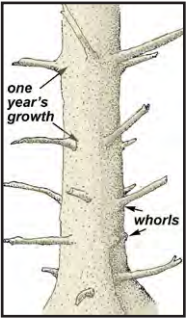
This is one of the finest south-facing beaches on Juneau's coastline. Otters and even hoary marmots romp here. Note the composition of the beach gravel before moving on to station 10.

Winter hikers can find even more tracks on snow.



**10 Uplift spruces.** If you were to dig where these big, limby spruces are rooted you'd find the same well-drained gravel composing the beach downslope. Glacial rebound—see Amalga Meadows trailhead sign—has raised this beach about 8 feet since the peak of the Little Ice Age, about 250 years ago.

Young spruces growing in open, sunny locations put out thick branches right at ground level. A century later, after shade from the upper-crown canopy has caused these branches to die and fall, you can still tell the trees were open-grown by the whorls of branch stubs. Knowing that the inter-whorl distance represents one year's growth, step back until you can see almost to the tree top. Holding your fingers about 10 whorls apart, "step up" the tree and estimate its age. Then, estimate how far above extreme high water they are growing. From these observations, you can make your own rough calculation of the local rate of glacial rebound.



**11 Highland route.** The 1912 USGS bedrock geology map shows alternate routes to Amalga Mine. A narrow-gauge horse tram ran up the meadow, while a more meandering trail followed the coastal ridge. This was probably for hikers only, as horses would have bogged down in the soft peat.

