

# GULF HAGAS

Head of the Gulf Trail - 1.8 mile each way, easy

*It's a global traveler, a shape shifter, and a sculptor of Maine's landscape. Its presence alone brings life to some but takes it from others. Gulf Hagas, the "Grand Canyon of Maine," is the ultimate place to rediscover something you thought you knew: water.*

## Getting There

### From the east via Brownville:

Approach the Katahdin Iron Works Rd. on ME 11 either 26.0 mi. southbound from Millinocket or 5.5 mi. northbound from Brownville Jct. Signage for the Katahdin Ironworks Historic Site (KIW) may be missing, so check your mileage. Turn west onto Katahdin Ironworks Rd.

The checkpoint at the entrance to KI Jo-Mary Forest is 6.3 miles from ME 11. Stop and register (May – Oct.: \$10 per person, \$6 for Maine Residents).

### From the west via Greenville:

At the blinking traffic light in the center of Greenville on ME 6/15, proceed north one block and turn right onto Pleasant St. After 2.0 mi. the road becomes gravel. This road becomes the KI rd.

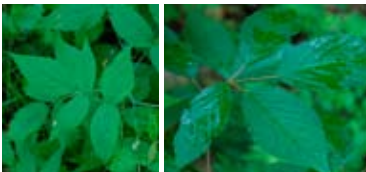
At 11.0 mi. from Greenville, stop and register at the North Maine Woods Hedgehog checkpoint (May – Oct.: \$10 per person, \$6 for Maine residents).

The trail leaves from the east side of Upper Valley Rd. at a point 0.9 miles north of the junction of Greenville Rd. and Katahdin Iron Works Rd. Trailhead parking is 50 ft. past the trailhead on the left.

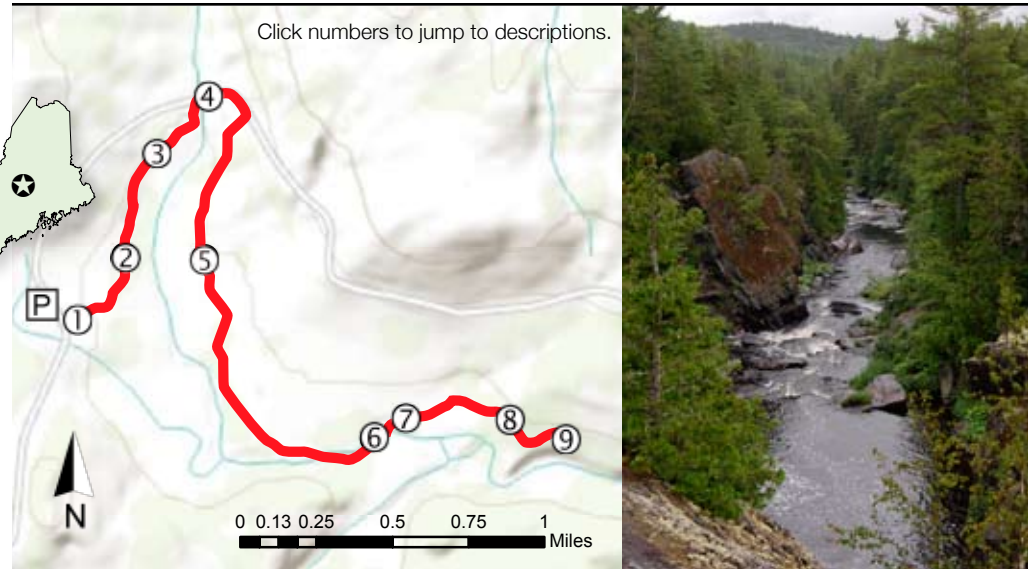
## Naturalist's Notes



Yellow birch, red maple, red spruce, and northern white cedar mingle in the canopy. In open understory areas, northern wood-sorrel, starflower, Canada mayflower, blue-bead lily, bunchberry, and stiff club moss smatter the ground.



Raspberry leaf (L) and blackberry leaf (R)



### ① Leaf or Leaflet?

[A to map](#)

*The trail enters a Spruce - Northern Hardwoods Forest just after the trailhead.*

The trail enters a mosaic of light and dark greens, of bright patches and shadows. This **Spruce - Northern Hardwoods Forest** ♀ is a blend of two forest types: evergreen and broadleaf. Evergreen forests are often found in cool places, like higher latitudes and the upper slopes of mountains, while broadleaf forests are found in relatively warmer places, like lower elevations and lower latitudes. Here, they grade together. This is a good place to search for raspberries and blackberries.

Find the part of a raspberry plant that looks like this.



How many leaves are shown here? The answer is one. This is a compound leaf, or a single leaf made out of five leaflets. Leaflet arrangement is an easy way to tell blackberry from raspberry. Common blackberry has palmate leaves, meaning that each leaflet is connected to the leaf stem (petiole) in the same place. The result is leaves that are shaped like the distinct leaves of a palm tree. Wild red raspberry has pinnate leaves, usually with three or five leaflets. Leaflets are connected to the leaf stem in pairs opposite one another, rather than at a single point.

### ② Every Stream Leads to the Sea -69.354501, 45.500012

[A to map](#)

*At 0.2 miles, a wide bridge provides dry passage across the first stream.*

Like Maine's landscape, an ice cube tray is full of ridges and basins. When you fill the tray, water that falls on a ridge flows into the nearest basin. The same principle



Your location (star) inside the Penobscot River watershed (yellow)  
Map by Karl Musser

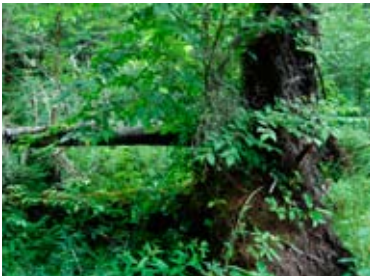
works for water that lands on one of Maine’s ridges – it flows downhill to meet the nearest river. Eventually, it reaches the lowest point: the ocean.

This stream is a tributary, or one of many streams that feed water into the West Branch of the Pleasant River. It belongs to the Pleasant River watershed, which is one of the many drainage basins in the larger Penobscot River watershed. If you emptied your water bottle into the stream here, that water would eventually travel to the Penobscot River and then into the ocean at Penobscot Bay. On the same note, if your car is leaking oil in the parking lot, rain will help that oil travel the same route.

### ③ Too Much of a Good Thing

[A to map](#)

*At 0.4 miles, the canopy opens at the entrance to a boardwalk.*



Fallen tree beside the boardwalk

To thrive, plants need sunlight, water, and nutrients, but it is possible to have too much of a good thing. In this alder thicket, the problem is too much water.

If submerged in water, the roots of many tree species can’t absorb nutrients. Like a person tiptoeing through puddles, these trees will go to great lengths to keep their roots at least partially dry. They have adapted to wet sites by growing roots above the surface of the ground water (water table) so that they are only submerged during flooding. The trees that grow near this alder thicket have shallow roots for this reason, which also makes them vulnerable to strong wind that can knock them over. This was the fate of a spruce and a cedar, which have fallen over at the entrance to the boardwalk, exposing their broad, flat root systems.

### ④ Pioneering Plants -69.35199, 45.50381

[A to map](#)

*At 0.5 miles, the trail merges with a dirt road and crosses the West Branch of the Pleasant River. On the other side of the river, early successional tree species colonize an area of recent disturbance.*



Bigtooth aspen leaf (top), gray birch trunk (right)



Pioneer species, as their name implies, are the first organisms to colonize bare soil after a disturbance like logging, fire, or a landslide. The tiny seeds of paper birch and gray birch, carried long distances by wind, arrive on the scene faster than the seeds of other trees. As they grow, the birches provide shade and leaf litter, making the environment more suitable for other species. [Paper birch](#), [bigtooth aspen](#), and [gray birch](#) – all pioneer species – form stands beside the road here. Birch and aspen are easy to tell apart; aspen bark is darker near the ground and paler near the top of the tree, while birch bark is white along the entire length of the tree.

One reason bigtooth aspen dominates in disturbed areas is its ability to clone itself. After one aspen is cut down, the root system sends up suckers, which grow into seemingly individual trees that are genetically identical and can share a massive root system.

*At 0.6 miles, the trail departs the road and dips back into a mixed-canopy Spruce - Northern Hardwoods Forest, which will be the dominant natural community for the next mile.*

## Kid's Corner

To make your own tiny kettle hole, fill a bowl with sand. Press an ice cube into the sand and wait for it to melt. What shape is left in the sand?



Male Common Yellowthroat


## Naturalist's Notes

Leatherleaf, meadowsweet, arrowhead, and several species of sedge conceal a green carpet of sphagnum moss here. Sweetgale fens, a type of wetland community, are typically found in places like this, as a thick border around open water.




Male Belted Kingfisher


### ⑤ **Gouging Glaciers** -69.351147, 45.500032

 to map


*At 0.9 miles, an angler's path to the left leads hikers to Lloyd Pond.*

Ice is responsible for Maine's abundance of lakes and ponds. Until approximately 17,000 years ago, the entire state was beneath a sheet of ice so thick that it covered even Mt. Katahdin. We think of ice as a solid, but the tremendous pressure ice experiences within a glacier causes it to flow, albeit very slowly. As the Laurentide Ice Sheet, as it is known, moved, it scoured shallow basins into the landscape while accumulating sand, rocks, boulders, and other debris. When the climate warmed and the ice sheet began to melt and retreat, it began releasing its load, leaving behind a thick jumble of debris called till. Chunks of the glacier also broke off into the till, and as they melted they left behind deep water-filled holes called kettle ponds .

Across Lloyd Pond, the skeleton-like remains of trees are still standing, even though they died years ago. This is evidence that the water level of the pond rose, drowning the root systems of these trees. In ponds like this, beaver dams are usually the cause of fluctuating water levels.

Lloyd Pond and the [Sweetgale Fen](#)  surrounding it are good places to look for bullfrogs, [common yellowthroat](#), and the rare [rusty blackbird](#).

### ⑥ **Where Water meets Land** -69.345526, 45.495476

 to map

*At 1.4 miles, there is a second spur, this time to the right.*

A riparian zone, or a place where water meets land, is one of the best places to spot wildlife. Dense shrubs often thrive here because sunlight is abundant at the forest edge. The vegetation provides shelter for small mammals, amphibians, and insects, which in turn are a buffet of tasty snacks for predators like fox and coyote. Other terrestrial wildlife, like deer and moose, use riparian zones as travel corridors and to access water. Muskrat and river otter den in the banks. Periodic flooding drops nutrients here, resulting in a diversity of plants that provide food and nesting habitat for birds. This is a good place to listen for the [veery's](#) descending, fluty song or to look for the [belted kingfisher's](#) blue mohawk.


### ⑦ **Mud Fit for a Moose** -69.344533, 45.496307

 to map

*At 1.5 miles, the trail crosses the first of a series of rough-hewn log boardwalks over persistent mud.*

The mixed [boreal](#) forest surrounding Head of the Gulf Trail is prime real estate for moose. In the summer, moose seek out wetlands and ponds, like Lloyd Pond. Here, they find shelter from biting insects and feed on aquatic vegetation. It's a little-known fact that moose are excellent swimmers and can dive completely beneath the surface of the water to gather food. Look for moose tracks in the mud near the boardwalk.

### ⑧ **Cold-climate Chickadees** -69.338924, 45.495874


 to map

*At 1.7 miles, turn right at the trail junction to head into the Gulf.*

The remaining tenth of a mile travels downhill through a classic example of [Mon-](#)

**tane Spruce - Fir Forest.** Here, a lush carpet of green sphagnum moss is smattered with blue-bead lily and bunchberry; young balsam firs squat in the understory. This is a good place to listen for **boreal chickadees**; they have a brown cap and a raspier, nasal “*tsik-a-day*” call compared to their warmer-climate (temperate) counterpart, the **black-capped chickadee**.


© **The Gulf is Growing!** -70.390168, 43.478715

 to map

*At 1.8 miles, the trail reaches the Gulf.*

### Naturalist's Notes

The bedrock here is a type of metamorphic rock that originated as shale. It's part of the Carabassett Formation, which surfaces as a diagonal SW-to-NE ribbon across the state. Its northernmost exposure is just east of Mt. Katahdin.

Gulf Hags is perhaps Maine's most dramatic example of the power of water, but the story begins with the rock beneath it. These layers of rock began in the ocean when sediment gathered on, and at the bottom of, an unstable submarine slope approximately 400 million years ago (the Devonian Period). A mountain building event (the Acadian Orogeny) was taking place at the same time, thrusting up great mountains that shed sediment into the nearby ocean basin. Earthquakes associated with mountain building caused huge underwater mudslides. As the layers of sediment were buried, they were gradually compressed into solid rock . These layers were deformed and fractured by the heat and pressure of continued mountain building events over the millions of years that followed. Ultimately, these layers of metamorphosed rock that were formed horizontally became vertical.

Hundreds of millions of years later, water flowing beneath the melting Laurentide Ice Sheet near the end of the last ice age carved a shallow channel in the upturned rock, creating a stair-step pattern. Gulf Hags's iconic waterfalls are upheld by more resistant layers of rock, while the pools at the bases of the waterfalls are carved into softer layers.

Now, over 10,000 years after the Laurentide Ice Sheet has retreated, water continues to pour through this narrow channel in the form of the West Branch of the Pleasant River. A tight squeeze only makes water move faster and carve away more rock. The gorge is getting deeper, even today.

### Naturalist's Glossary

**Boreal:** Living in northern climates.

*Natural Heritage Hikes is a project of the **Maine Natural Areas Program** in partnership with the **Maine Trail Finder website**. For more **Natural Heritage Hikes**, please visit [www.mainetrailfinder.com](http://www.mainetrailfinder.com).*

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*Map sources: Esri, DeLorme, HERE, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community*