

# Belgrade Esker and Kettle Complex

Belgrade, Augusta

## Description

The Belgrade Esker and Kettle Complex extends from Great Pond's Foster Point in Belgrade to Tyler Pond in North Augusta. Geologists have long considered it one of the very best esker systems in Maine, and biologists' attention has focused on the fine examples of kettlehole ponds and wetlands that are associated with the esker system. Most of the esker itself has now been removed from the landscape due to sand and gravel extraction. However, a few portions that are worth conservation attention remain. The largest are the Colby – Marston Bog and environs at the north end of the system, and the Penney Pond to Tyler Pond area at the south end of the system.

## Colby – Marston Bog and environs

The Colby – Marston Bog is a classic example of a glacial kettlehole filled with “kettlehole bog” vegetation. (Technically, it is actually a fen since the vegetation is in contact with the groundwater.) The floating mat includes Leatherleaf Boggy Fen, Sedge – Leatherleaf Fen Lawn, and Mountain Holly – Alder Woodland Fen communities, and small areas of Spruce – Larch Wooded Bog near the upland edge. The gradations from one vegetation type to another are clear. Adjacent to Colby – Marston Bog itself are other kettles (on which little on-the-ground information is available), including one deep dry one. Portions of the esker are well preserved here because the Foster Point Road runs along it.



Hamilton Pond, across Rt. 27 from the Colby – Marston Bog, is a deep kettlehole pond with little development of bog vegetation, except for some areas in the southern lobes. The rare alga-like pondweed (*Potamogeton confervoides*), an aquatic plant, has been found here.

The kettleholes east of Stuart Pond are also considered an exemplary Kettlehole Bog – Pond Ecosystem. The vegetation types are similar to those in the Colby – Marston Bog, but the setting is somewhat different: this is a chain of small kettleholes strung together alongside the esker. While the wetlands themselves are relatively undisturbed here, the adjacent uplands have been severely degraded, and for this reason these kettleholes should be considered somewhat lower in quality than the Colby – Marston and Penney Pond – Tyler Pond kettleholes.

### Penney Pond to Tyler Pond

An impressive array of steep-sloped eskers, kettlehole bogs and ponds, and forested/shrubby peatlands covers this area straddling the Belgrade – Manchester line. North of the Summerhaven Road, the Penney Pond – Joe Pond area is a virtually undeveloped 500+ acre tract. Much of the upland forest has been selectively logged at various intervals over the years; logging has been relatively light, and remaining forest is comparatively intact. Some areas of steep slope are intact, mature hemlock slopes with trees up to 24 inches in diameter. Chamberlain, Wellman, Bean and Emery Ponds are entirely undeveloped; Penney Pond has a single (seasonal) house on it; and Gould Pond has a few houses at the south end. Most of the ponds have shrubby/boggy borders and mucky substrate. Many have evidence of beaver activity. Small (a few acres) but undisturbed kettlehole bog pockets exist throughout the area. East of Bean Pond is a wooded peatland with scattered red pine (*Pinus resinosa*), along with the more typical larch (*Larix laricina*) and white pine (*Pinus strobus*). The intact array of hemlock slopes, mixed forests, pristine ponds and undisturbed peatlands is noteworthy for Central Maine.

South of the Summerhaven Road, the ponds are more developed, except for Tyler Pond and its environs which is in state ownership. The Tyler Pond area (126 acres) is mostly ecologically similar to the Penney Pond – Joe Pond area, although with less diversity of wetland vegetation. Tyler Pond itself differs somewhat in that it has no peat development and the sandy shores support different aquatic species than are found at the other ponds here. Two rare pondshore species that are typically associated with sandy rather than mucky substrates have been found here, the dwarf bulrush (*Lipocarpus micrantha*) and fall fimbry (*Fimbristylis autumnalis*).

Like all of the Belgrade Esker Complex, the Penney Pond to Tyler Pond area is considered geologically as well as biologically important.

Rare Species and Natural Communities Summary Table

Common Name	Latin Name	EO Rank	Global Rank	State Rank
Kettlehole Bog – Pond Ecosystem (Colby-Marston)	--	B	--	S4
Kettlehole Bog – Pond Ecosystem (east of Stuart Pond)	--	B	--	S4
Kettlehole Bog – Pond Ecosystem (Penney Pond area)	--	B	--	S4
Alga-like Pondweed	<i>Potamogeton confervoides</i>	E	G3G4	S3
Dwarf Bulrush	<i>Lipocarpa micrantha</i>	E	G4	S1
Fall fimbry	<i>Fimbristylis autumnalis</i>	E	G5	S2

**Other Resources Mapped by MDIFW**

The kettleholes east of Stuart Pond, Penney Pond, Lily Bay (south of Joe Pond), and Lily Pond (north of Tyler Pond) are mapped as Wading Bird / Waterfowl Habitat.

**Protection Status**

The wetland portion of Colby – Marston Bog and most (but not all) of the kettlehole’s sloping sides is owned by Colby College and used as a wetland laboratory for its classes. The 126-acre Tyler Pond area is in state ownership (Bureau of Parks and Lands, Dept. of Conservation). The remainder of the area is privately owned, with the 500-acre Penney Pond – Joe Pond area held by one owner.

Gravel mining has accelerated in recent years, encroaching further into the Colby – Marston environs and the chain of small kettles east of Stuart Pond.

**Conservation Considerations**

Sand and gravel mining pose the greatest threat to these ecosystems, and have already degraded portions of them. Sand and gravel extraction in the Belgrade area has accelerated in recent years.

Less pervasive is degradation from incidental uses related to the increasing residential development in the area. Buffers can play a major role in protection here. ORV use of the area is locally heavy, and care needs to be taken that ORVs stay on existing trails and remain out of all wetlands when the ground is not frozen.

An adequate buffer should be retained between developed lots or timber harvest areas and the kettleholes, including their sloping sides and any wetlands within them. The state minimum shoreland zoning standards restrict harvest and clearing within 250’ of the wetland border. Because different species can have different buffering requirements, larger buffers will afford better protection to the whole suite of plants and animals that make up these systems. Any timber harvesting within and adjacent to the wetland should

be implemented with strict adherence to state or local Shoreland Zoning guidelines and Maine Forest Service Best Management Practices.

Appropriate conservation strategies include tree growth and open space treatments, conservation easements, and fee ownership. Monitoring recreational use will be an important component of conservation as well.