

# Natural Community Surveys of State Forest Lands - 2020



Prepared by:  
Joshua G. Cohen

Michigan Natural Features Inventory  
P.O. Box 13036  
Lansing, MI 48901-3036

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Huron Grove mesic northern forest, Baraga Forest Management Unit. Photo by Joshua G. Cohen.

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**Cover Photo:** The Manistee Headwaters wetland complex in the Gaylord Forest Management Unit supports high-quality rich conifer swamp, poor conifer swamp, northern shrub thicket, and northern wet meadow. Photo by Jesse M. Lincoln.

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## Atlanta Compartment 7

Surveys targeted six known element occurrences within the compartment: coastal fen (EO ID 1936), emergent marsh (EO ID 18820), Great Lakes marsh (EO ID 18590), limestone cliff (EO ID 9208), northern fen (EO ID 16763), and rich conifer swamp (EO ID 5676). The element occurrence ranks for the El Cajon Bay and Misery Bay coastal fen (EO ID 1936, AB rank), North Point Marsh emergent marsh (EO ID 18820, BC rank), El Cajon Bay limestone cliff (EO ID 9208, B rank), El Cajon Bay and Misery Bay rich conifer swamp (EO ID 5676, B rank), and North Point Road Fen northern fen (EO ID 16763, B rank) were confirmed. The element occurrence rank for the El Cajon Bay and Misery Bay rich Great Lakes marsh (EO ID 18590) was downgraded from A to AB due to the increase in cover of the invasives reed (*Phragmites australis* subspecies *australis*) and narrow-leaved cat-tail (*Typha angustifolia*). Following the 2020 surveys, the following element occurrences were remapped with current imagery: limestone cliff (EO ID 9208), northern fen (EO ID 16763), and rich conifer swamp (EO ID 5676).



El Cajon Bay and Misery Bay coastal fen (EO ID 1936). Photo by Joshua G. Cohen.





El Cajon Bay and Misery Bay coastal fen (EO ID 1936). Photos by Joshua G. Cohen.







2018 aerial photograph of El Cajon Bay and Misery Bay coastal fen (EO ID 1936).





2018 aerial photograph of North Point Marsh emergent marsh (EO ID 18820).



North Point Marsh emergent marsh (EO ID 18820). Photo by Joshua G. Cohen.





El Cajon Bay and Misery Bay Great Lakes marsh (EO ID 18590). Photos by Joshua G. Cohen.







2018 aerial photograph of El Cajon Bay and Misery Bay Great Lakes marsh (EO ID 18590).





2018 aerial photograph of El Cajon Bay limestone cliff (EO ID 9208).



El Cajon Bay limestone cliff (EO ID 9208). Photo by Joshua G. Cohen.





2018 aerial photograph of North Point Road Fen northern fen (EO ID 16763).



North Point Road Fen northern fen (EO ID 16763). Photo by Joshua G. Cohen.

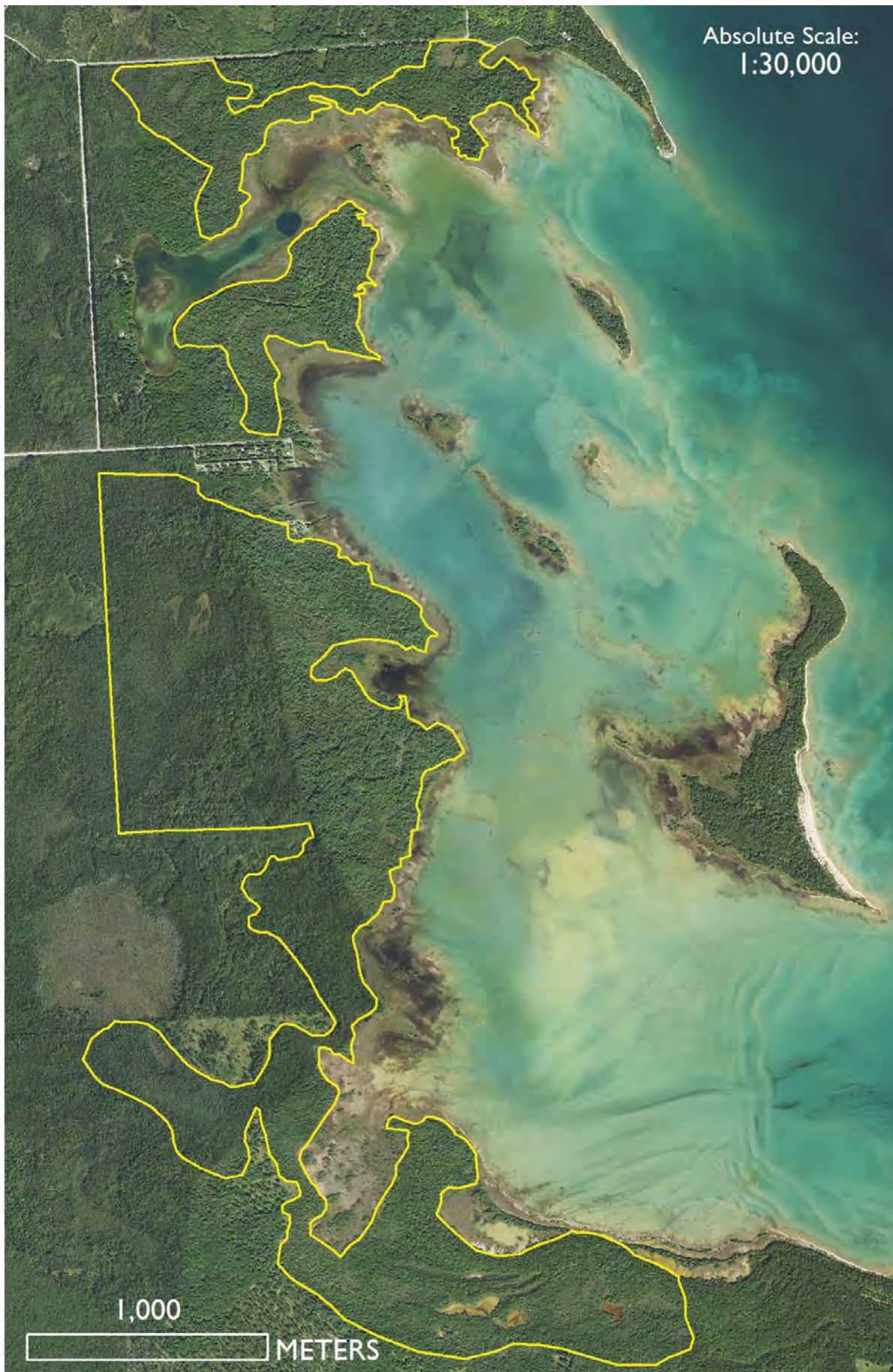




El Cajon Bay and Misery Bay rich conifer swamp (EO ID 5676). Photos by Joshua G. Cohen.







2018 aerial photograph of El Cajon Bay and Misery Bay rich conifer swamp (EO ID 5676).



### Atlanta Compartment 13

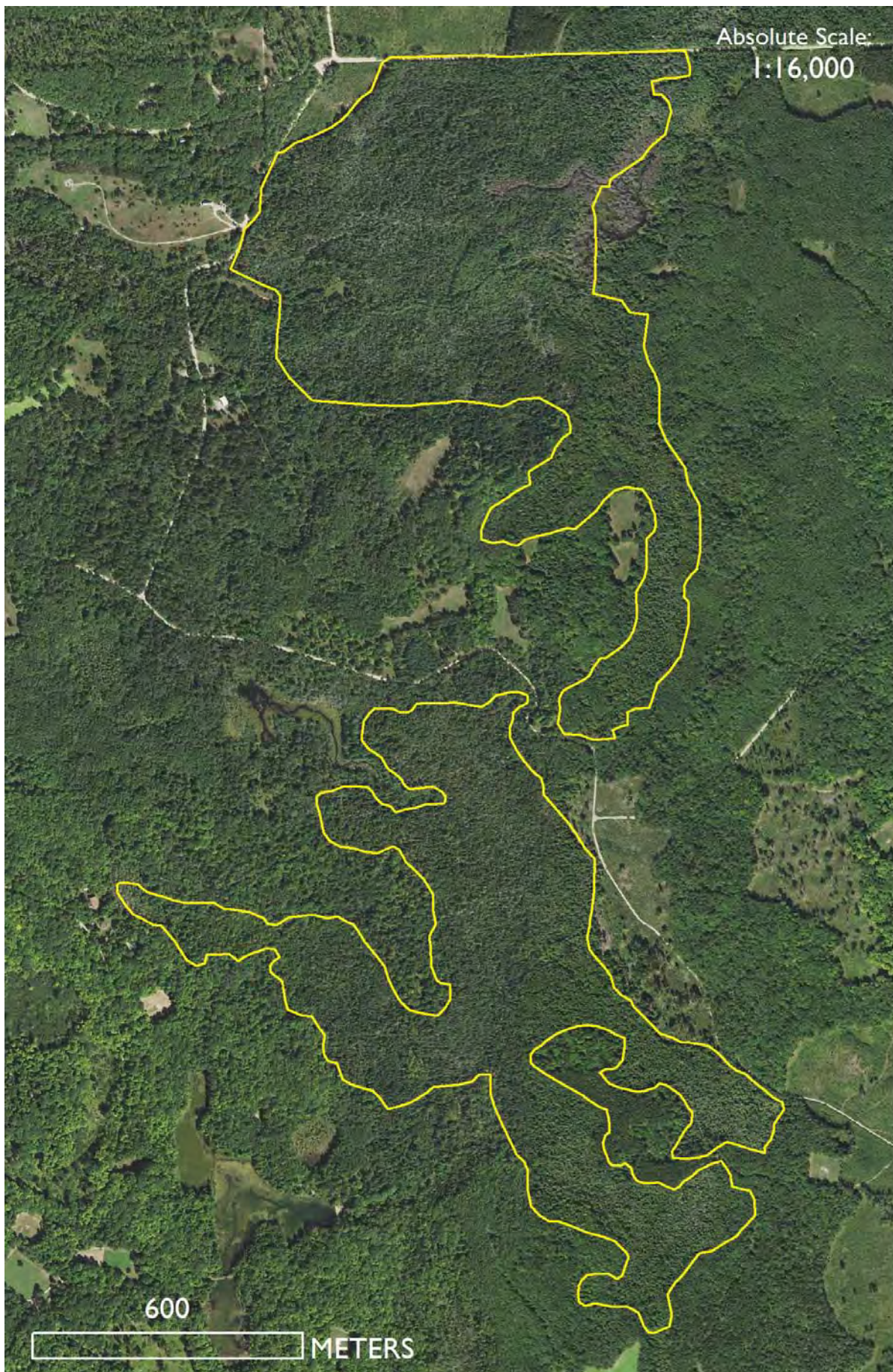
Survey targeted Bushman Swamp rich conifer swamp (EO ID 15979) in Compartment 13. Following the 2020 survey, the total acreage of the occurrence was increased from 144 acres to 337 acres and the element occurrence rank of B was confirmed.



Bushman Swamp rich conifer swamp (EO ID 15979). Photos by Joshua G. Cohen.







2018 aerial photograph of Bushman Swamp rich conifer swamp (EO ID 15979).



### Atlanta Compartment 169

Survey targeted two intermittent wetlands, Duck Lake (EO ID 3851, AB rank) and Mud Lake (EO ID 7652, B rank). Following the 2020 survey, the intermittent wetlands were remapped with current imagery and the element occurrence ranks were reconfirmed.



Duck Lake intermittent wetland (EO ID 3851). Photos by Joshua G. Cohen.







Duck Lake intermittent wetland (EO ID 3851) in a low water year (2007, above) and a high water year (2020, below). Photos by Joshua G. Cohen.







2018 aerial photograph of Duck Lake intermittent wetland (EO ID 3851, left) and Mud Lake intermittent wetland (EO ID 7652, right).



Mud Lake intermittent wetland (EO ID 7652). Photo by Joshua G. Cohen.





Mud Lake intermittent wetland (EO ID 7652). Photos by Joshua G. Cohen.





### **Baraga Compartments 4 and 58**

Surveys targeted two Great Lakes marsh, Pequaming Marsh (EO ID 6629, B rank) and Portage River Marsh (EO ID 8882, B rank). Following the 2020 surveys, the element occurrence ranks were reconfirmed and the Pequaming Marsh was remapped with current imagery.



Pequaming Marsh Great Lakes marsh (EO ID 6629). Photos by Joshua G. Cohen.







2018 aerial photograph of Pequaming Marsh Great Lakes marsh (EO ID 6629).



Pequaming Marsh Great Lakes marsh (EO ID 6629). Photo by Joshua G. Cohen.





2018 aerial photograph of Portage River Marsh (EO ID 8882).





Portage River Marsh Great Lakes marsh (EO ID 8882). Photos by Joshua G. Cohen.





## Baraga Compartment 80

Survey targeted high-quality natural communities associated within granite outcropping in Compartment 80. Documented two high-quality natural communities: Huron Glades granite bedrock glade (EO ID 23801, A rank) and Huron Grove mesic northern forest (EO ID 23800, AB rank).



Huron Glades granite bedrock glade (EO ID 23801). Photos by Joshua G. Cohen.





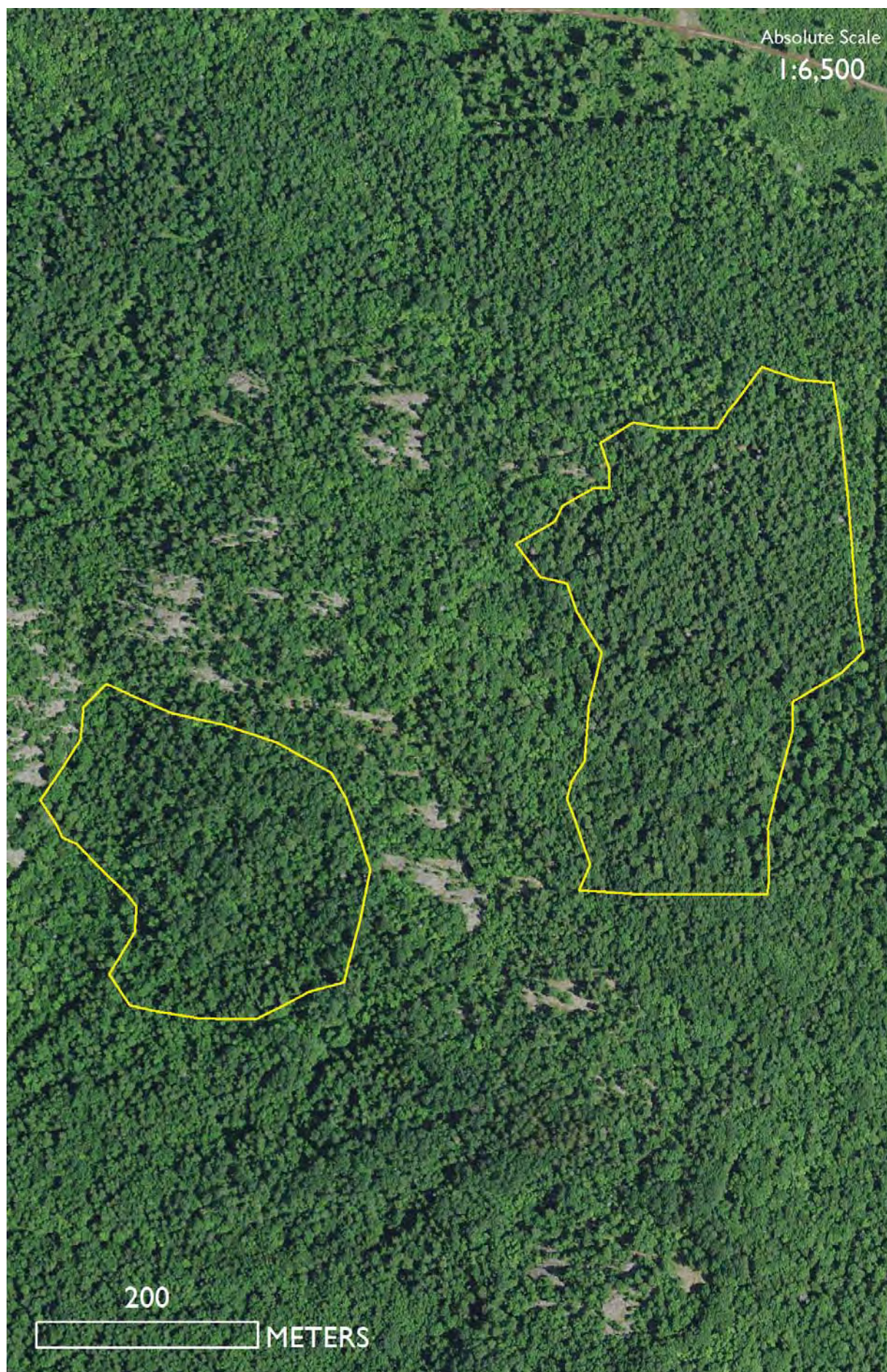


2018 aerial photograph of Huron Glades granite bedrock glade (EO ID 23801).



Huron Grove mesic northern forest (EO ID 23800). Photo by Joshua G. Cohen.





2018 aerial photograph of Huron Grove mesic northern forest (EO ID 23800).





Huron Grove mesic northern forest (EO ID 23800). Photo by Mark Salo.



### Crystal Falls Compartment 83

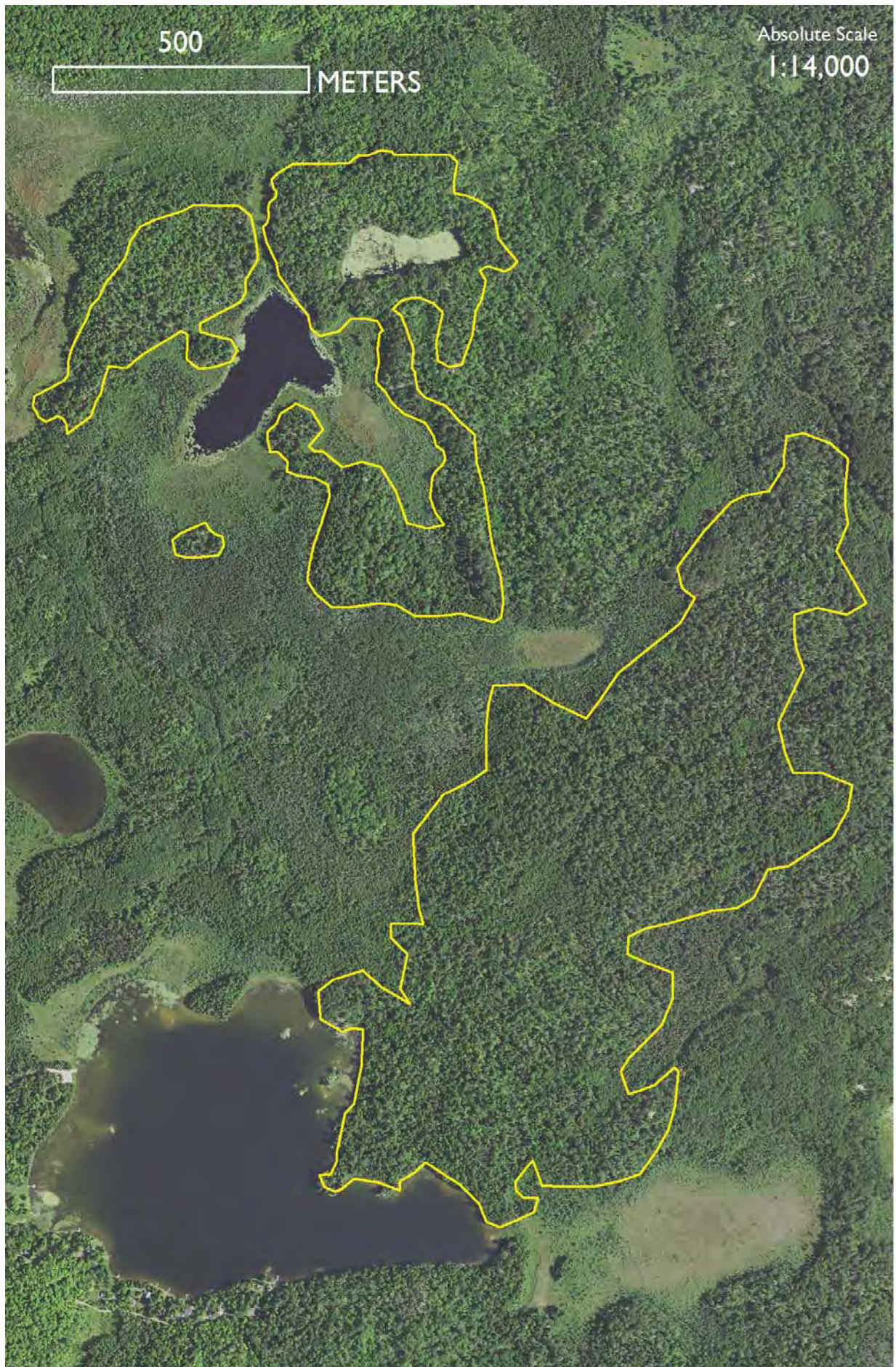
Surveys targeted two known element occurrences within the compartment: Lost Lake dry-mesic northern forest (EO ID 17313, B rank) and Lost Lake Outcrops granite bedrock glade (EO ID 17316, B rank). Following the 2020 surveys, both element occurrences were remapped with current imagery and their element occurrence ranks were reconfirmed. In addition, two new element occurrences were documented: granite cliff (Lost Lake Cliffs, EO ID 23802, A Rank) and northern hardwood swamp (Lost Lake Swamp, EO ID 23803, B Rank).



Lost Lake dry-mesic northern forest (EO ID 17309). Photo by Joshua G. Cohen.

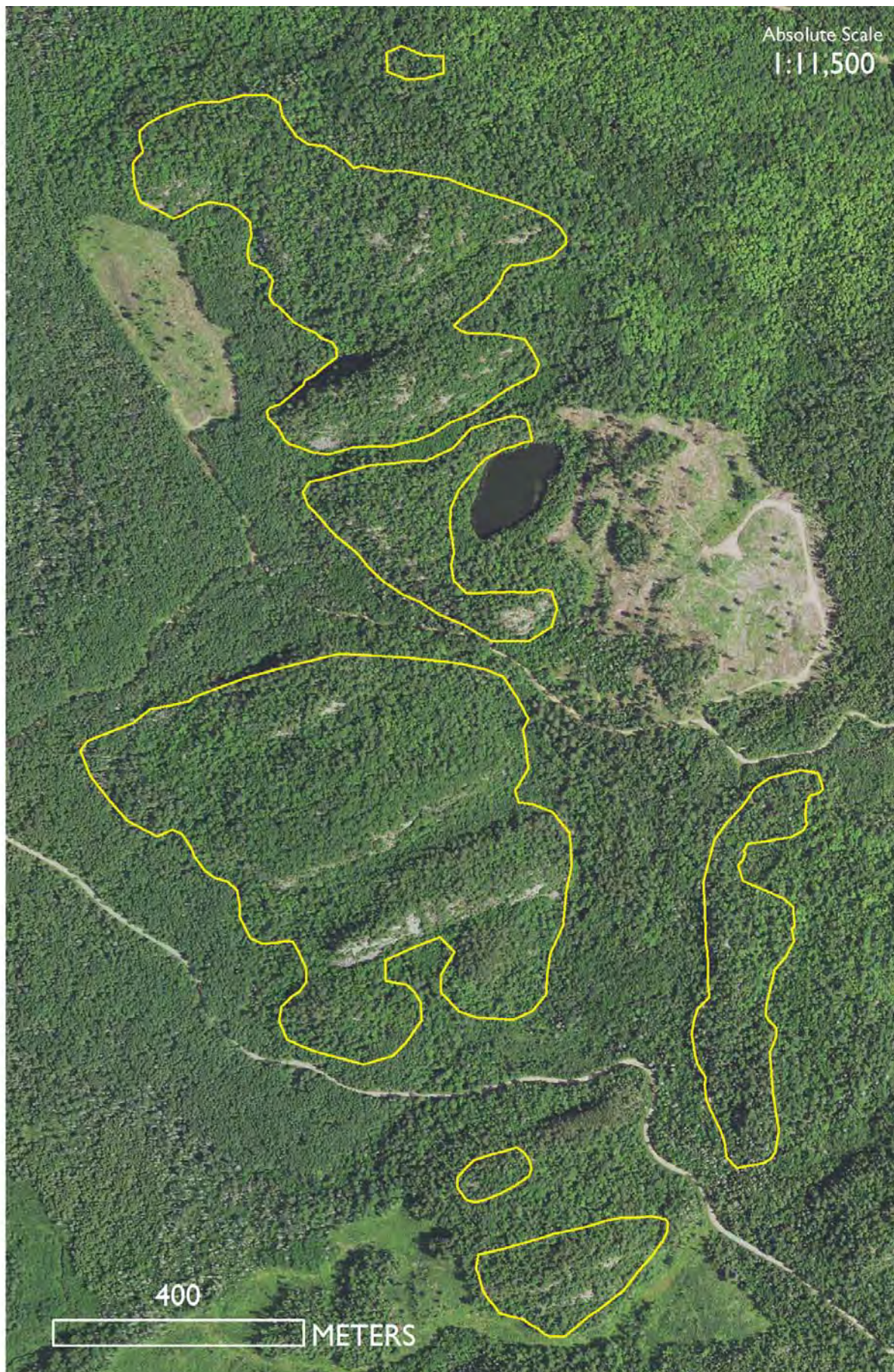






2018 aerial photograph of Lost Lake dry-mesic northern forest (EO ID 17309).





2018 aerial photograph of Lost Lake Outcrops granite bedrock glade (EO ID 2328).





Lost Lake Outcrops granite bedrock glade (EO ID 2328). Photos by Joshua G. Cohen.







2018 aerial photograph of Lost Lake Cliffs granite cliff (EO ID 23802, left) and Lost Lake Swamp northern hardwood swamp (EO ID 23803, right).



Lost Lake Cliffs granite cliff (EO ID 23802). Photo by Joshua G. Cohen.





Lost Lake Cliffs granite cliff (EO ID 23802). Photos by Joshua G. Cohen.







Lost Lake Swamp northern hardwood swamp (EO ID 23803). Photos by Joshua G. Cohen.





### **Escanaba Compartment 55**

Survey targeted Jean Worth Tract mesic northern forest (EO ID 14559). Following the 2020 survey, the mesic northern forest element occurrence was remapped and the element occurrence rank was downgraded from BC to C.



2018 aerial photograph of Jean Worth Tract mesic northern forest (EO ID 14559).



Jean Worth Tract mesic northern forest (EO ID 14559). Photo by Joshua G. Cohen.



#### Gaylord Compartment 4

Surveyed recently harvested stands for Hill's thistle (*Cirsium hillii*, state special concern) and rough fescue (*Festuca altaica*, state threatened). Documented rough fescue in Stands 18 and 79 and documented Hill's thistle in Stand 69. Updated element occurrences for Hill's thistle (EO ID 2660) and rough rescue (EO ID 79). Modified boundaries of element occurrences and confirmed element occurrence ranks (B for Hill's thistle and AB for rough fescue).



Hill's thistle documented in Stand 69, Compartment 4. Photo by Joshua G. Cohen.



2018 aerial photograph with Hill's thistle (EO ID 2660) polygon documented in Compartment 4.





Rough fescue documented in Compartment 4. Photos by Joshua G. Cohen.



2018 aerial photograph with rough fescue (EO ID 79) polygons documented in Compartment 4.



### Gaylord Compartment 48

Survey targeted two known element occurrences within Compartment 48: Deadman's Fen northern fen (EO ID 18795, B rank) and Deadman's Swamp rich conifer swamp (EO ID 18796, C rank). Following the 2020 survey, the element occurrence rank of Deadman's Swamp rich conifer swamp was reconfirmed and the Deadman's Fen northern fen was remapped with current imagery and downgraded from a B rank to a BC rank due to the decrease in size.



Deadman's Fen northern fen (EO ID 18795). Photo by Joshua G. Cohen.



2018 aerial photograph of Deadman's Fen northern fen (EO ID 18795).





Deadman's Fen northern fen (EO ID 18795). Photos by Joshua G. Cohen.







2018 aerial photograph of Deadman's Swamp rich conifer swamp (EO ID 18796).



Deadman's Swamp rich conifer swamp (EO ID 18796). Photo by Joshua G. Cohen.





Deadman's Swamp rich conifer swamp (EO ID 18796). Photos by Joshua G. Cohen.





### Gaylord Compartment 60

Survey targeted high-quality wetlands associated within the headwaters of the Manistee River. Documented four high-quality natural communities within the wetland complex: Manistee Headwaters northern shrub thicket (EO ID 23821, B rank), Manistee Headwaters northern wet meadow (EO ID 23820, BC rank), Manistee Headwaters poor conifer swamp (EO ID 23818, C rank), and Manistee Headwaters rich conifer swamp (EO ID 23819, C rank).



Manistee Headwaters northern shrub thicket (EO ID 23821). Photo by Joshua G. Cohen.



2018 aerial photograph of Manistee Headwaters northern shrub thicket (EO ID 23821).





2018 aerial photograph of Manistee Headwaters northern wet meadow (EO ID 23820).



Manistee Headwaters northern wet meadow (EO ID 23820). Photo by Joshua G. Cohen.





Manistee Headwaters northern wet meadow (EO ID 23820) and northern shrub thicket (EO ID 23821). Photos by Jesse M. Lincoln.







2018 aerial photograph of Manistee Headwaters poor conifer swamp (EO ID 23818).





Manistee Headwaters poor conifer swamp (EO ID 23818). Photos by Jesse M. Lincoln.







The Manistee Headwaters wetland complex includes high-quality northern wet meadow (EO ID 23820), northern shrub thicket (EO ID 23821), poor conifer swamp (EO ID 23818), and rich conifer swamp (EO ID 23819). Photos by Jesse M. Lincoln.







2018 aerial photograph of Manistee Headwaters rich conifer swamp (EO ID 23819).



Manistee Headwaters rich conifer swamp (EO ID 23819). Photo by Joshua G. Cohen.



### **Gaylord Compartments 66, 68, and 69**

Surveys on Beaver Island targeted two known element occurrences within Compartment 66 and new element occurrences in Compartments 68 and 69. Within Compartment 66, surveyed Egg Lake poor fen (EO ID 2988, B rank) and Martin's Bluff mesic northern forest (EO ID 626, B rank). Following the 2020 surveys, both element occurrence ranks were reconfirmed and the Martin's Bluff mesic northern forest was remapped with current imagery. Within Compartment 68 two new element occurrences were documented: Bonner's Woods mesic northern forest (EO ID 23816, BC rank) and Bonner's Swamp hardwood-conifer swamp (EO ID 23817, BC rank). In addition, a high-quality mesic northern forest, Fraxinus Remnant Forest (EO ID 23815, BC rank) was documented in Compartment 69.



Egg Lake poor fen (EO ID 2988). Photo by Joshua G. Cohen.



2018 aerial photograph of Egg Lake poor fen (EO ID 2988).





Egg Lake poor fen (EO ID 2988). Photos by Joshua G. Cohen.







2018 aerial photograph of Martin's Bluff mesic northern forest (EO ID 626).



Martin's Bluff mesic northern forest (EO ID 626). Photo by Joshua G. Cohen.





Martin's Bluff mesic northern forest (EO ID 626). Photo by Joshua G. Cohen.





2018 aerial photograph of Bonner's Woods mesic northern forest (EO ID 23816, right) and Bonner's Swamp hardwood-conifer swamp (EO ID 23817).



Bonner's Woods mesic northern forest (EO ID 23816). Photo by Joshua G. Cohen.





Bonner's Swamp hardwood-conifer swamp (EO ID 23817). Photos by Joshua G. Cohen.







2018 aerial photograph of Fraxinus Remnant Forest mesic northern forest (EO ID 23815).



Fraxinus Remnant Forest mesic northern forest (EO ID 23815). Photo by Joshua G. Cohen.



### Gaylord Compartment 108

Survey targeted Wycamp Pines dry-mesic northern forest (EO ID 18860) in Compartment 8. Following the 2020 survey, the element occurrence rank of BC was confirmed.



2018 aerial photograph of Wycamp Pines dry-mesic northern forest (EO ID 18860).



Wycamp Pines dry-mesic northern forest (EO ID 18860). Photo by Joshua G. Cohen.



### Gaylord Compartment 163

Confirmed population of Ram's head lady's slipper (*Cypripedium arietinum*, state special concern) in Compartment 163 and delineated new element occurrence (EO ID 23707, C rank).



Ram's head lady's slipper in Compartment 163. Photo by Joshua G. Cohen.



2018 aerial photograph of Ram's head lady's slipper in Compartment 163 (EO ID 23707).



## Gaylord Compartment 182

Survey targeted Lake Sixteen Bog (EO ID 15963, BC rank). The northern portion of this peatland was reclassified as poor fen and a new element occurrence poor fen was delineated (Lake Sixteen Fen poor fen, EO ID 23788, BC rank). Due to the decrease in size of the Lake Sixteen Bog, this element occurrence was downgraded from a B rank to a BC rank.



Lake Sixteen Bog (EO ID 15963). Photo by Joshua G. Cohen.



2018 aerial photograph of Lake Sixteen Bog (EO ID 15963).





2018 aerial photograph of Lake Sixteen Fen poor fen (EO ID 23788).



Lake Sixteen Fen poor fen (EO ID 23788). Photo by Joshua G. Cohen.

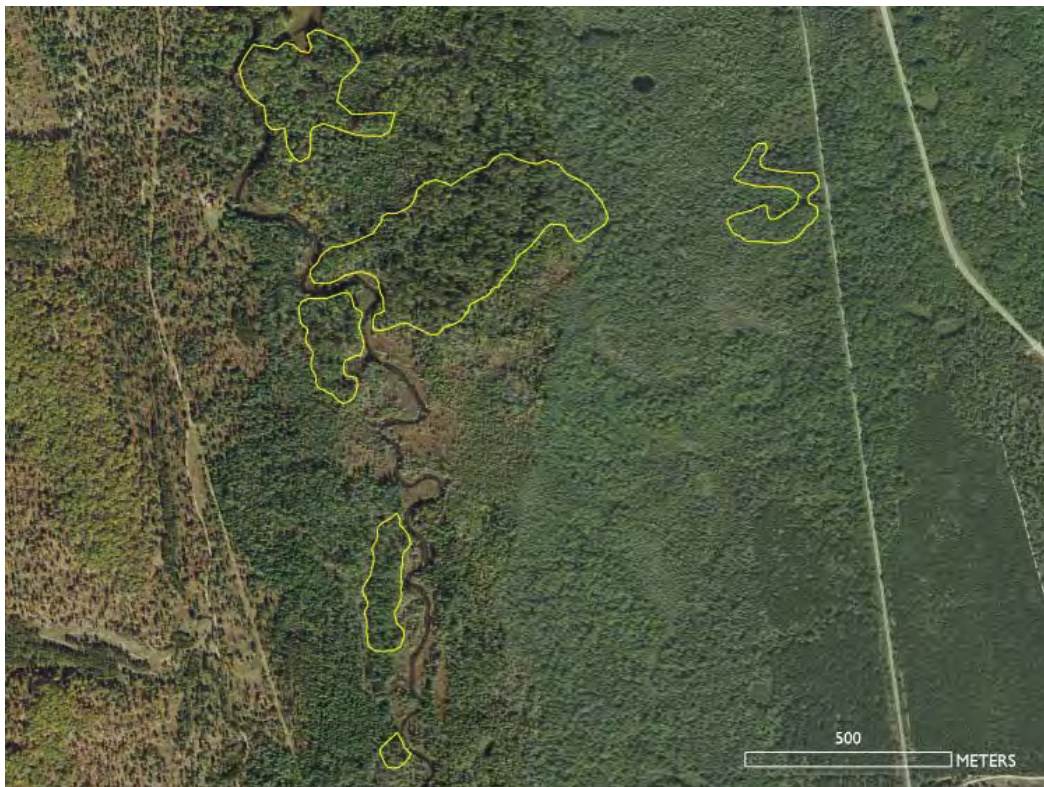


### Grayling Maghielse Acquisition

Survey within the Maghielse Acquisition targeted high-quality natural communities along the Au Sable River. Documented high-quality dry-mesic northern forest, which was added to the existing Au Sable Pines dry-mesic northern forest (EO ID 18778, BC rank) that had been documented in Grayling Compartment 168 to the north of the acquisition. Upgraded the EO rank of the Au Sable Pines dry-mesic northern forest from C to BC and increased the acreage of the element occurrence. Also documented a high-quality northern shrub thicket, the Au Sable Shrub Swamp (EO ID 23796, BC rank).



Au Sable Pines dry-mesic northern forest (EO ID 18778). Photo by Joshua G. Cohen.



2018 aerial photograph of Au Sable Pines dry-mesic northern forest (EO ID 18778).





2018 aerial photograph of Au Sable Shrub Swamp (EO ID 23796).



Au Sable Shrub Swamp (EO ID 23796). Photo by Joshua G. Cohen.



### Grayling Compartments 180, 181, and 182 and Traverse City Compartment 129

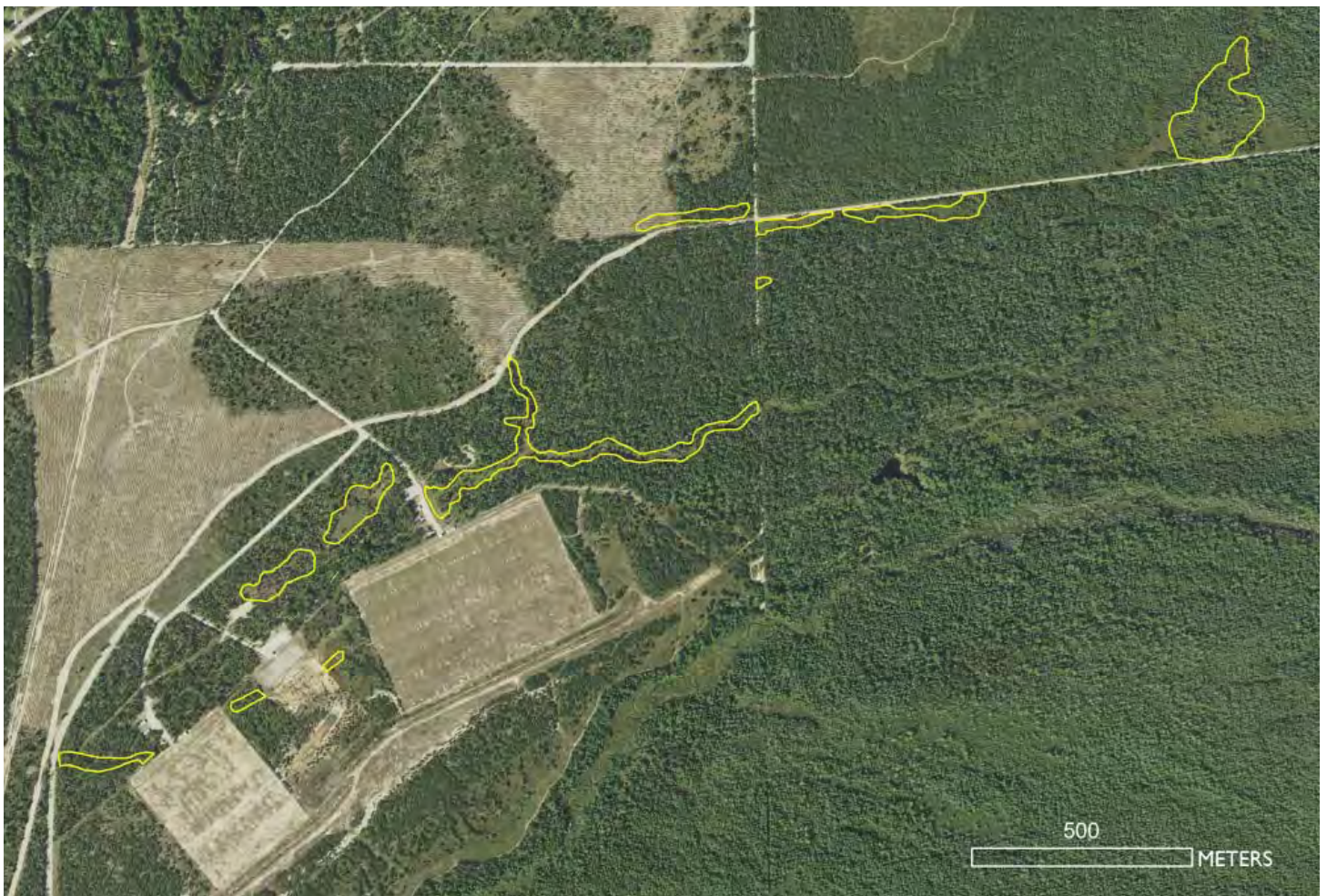
Surveyed Portage Creek Complex wet-mesic sand prairie (EO ID 2078, BC rank). Following the 2020 surveys, remapped the element occurrence boundary with current imagery and reconfirmed the element occurrence rank. The wet-mesic sand prairie continues to be threatened by fire suppression and invasive species. In addition, an apparent plow line was established within one of the southwestern prairie polygons and passes directly through populations of Voss's goldenrod (*Solidago vossii*) and prairie dropseed (*Sporobolus heterolepis*, state special concern). The Voss's goldenrod population is globally significant in that the Portage Creek Complex is the only location in the world where this species occurs. In terms of listing, Voss's goldenrod is currently lumped in with Houghton's goldenrod (*Solidago houghtonii*), which is state and federally threatened.



Portage Creek Complex wet-mesic sand prairie (EO ID 2078). Photos by Joshua G. Cohen.







2018 aerial photograph of Portage Creek Complex wet-mesic sand prairie (EO ID 2078).



Portage Creek Complex wet-mesic sand prairie (EO ID 2078). Photo by Joshua G. Cohen.





Portage Creek Complex wet-mesic sand prairie (EO ID 2078). Photo by Jesse M. Lincoln.



Portage Creek Complex wet-mesic sand prairie (EO ID 2078). Photo by Joshua G. Cohen.





The only documented population of Voss's goldenrod occurs within the Portage Creek Complex wet-mesic sand prairie (EO ID 2078) (above and below). An apparent plow line passes directly through a cluster of Voss's goldenrod (below). Photos by Joshua G. Cohen.





### **Grayling Compartment 217**

Survey targeted Lewiston Grade Swamp rich conifer swamp (EO ID 18779, C rank) in Compartment 217. The survey confirmed the element occurrence rank.



2018 aerial photograph of Lewiston Grade Swamp rich conifer swamp (EO ID 18779).



Lewiston Grade Swamp rich conifer swamp (EO ID 18779). Photo by Joshua G. Cohen.



### Grayling Compartment 253

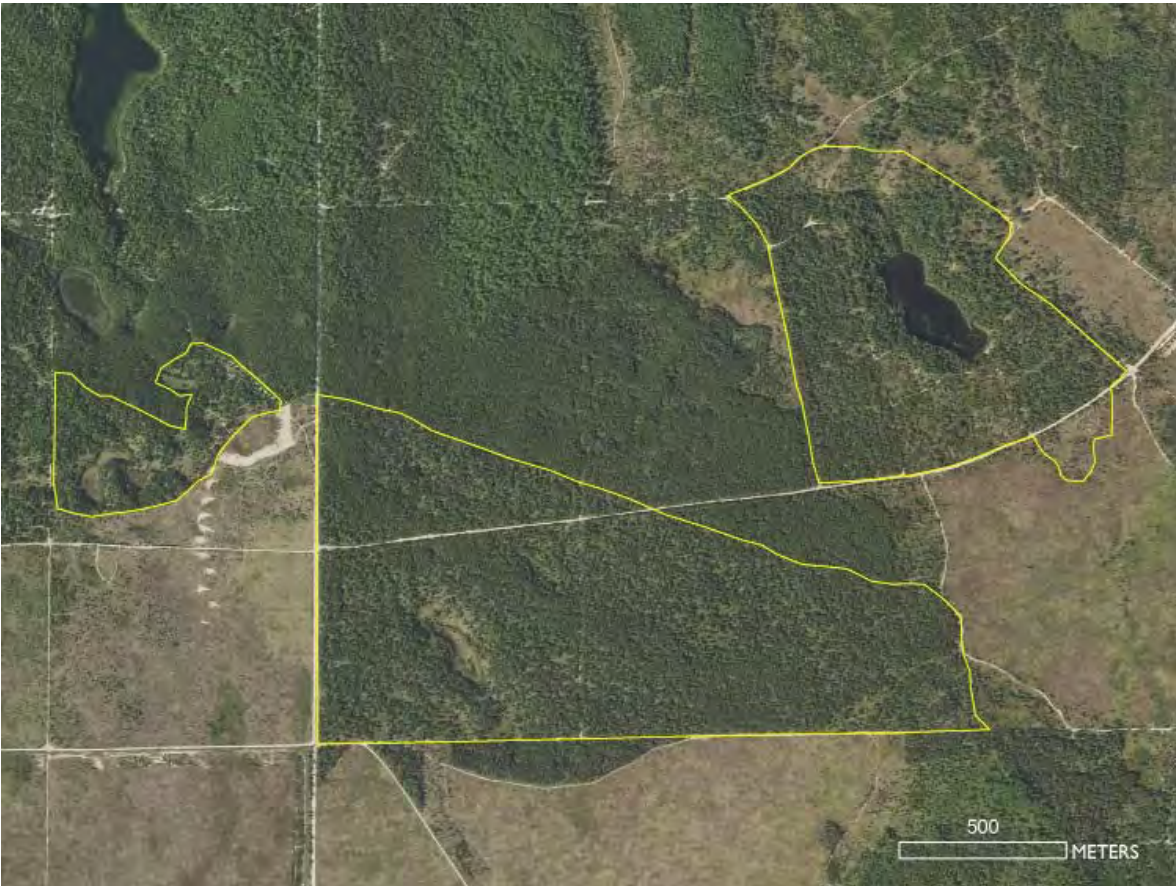
Surveys targeted two element occurrences, Frog Lake Barrens pine barrens (EO ID 16049, BC rank) and Frog Lakes Complex intermittent wetland (EO ID 9538, B rank). Following the 2020 survey, the pine barrens and intermittent wetlands were remapped with current imagery and the element occurrence rank of the intermittent wetland was confirmed. A significant portion of the pine barrens ecological reference area was degraded by the establishment of a machine gun alley by Camp Grayling; 122 acres of pine barrens were clearcut and have been subsequently removed from the mapped area of pine barrens. Following 2020 surveys, a significant area of pine barrens (185 acres) associated with Duck Lake was added to the element occurrence. The pine barrens continues to close in due to fire suppression and the site was downgraded from AB to BC due to fire suppression and the loss of acreage.



Frog Lake Barrens pine barrens (EO ID 16049). Photos by Joshua G. Cohen.







2018 aerial photograph of Frog Lake Barrens pine barrens (EO ID 16049).



Frog Lake Barrens pine barrens (EO ID 16049). Photo by Joshua G. Cohen.





Frog Lake Barrens pine barrens (EO ID 16049). Photos by Jesse M. Lincoln.







2018 aerial photograph of Frog Lakes Complex intermittent wetland (EO ID 9538).



Frog Lakes Complex intermittent wetland (EO ID 9538). Photo by Joshua G. Cohen.





Frog Lakes Complex intermittent wetland (EO ID 9538). Photos by Joshua G. Cohen.







Frog Lakes Complex intermittent wetland (EO ID 9538). Photos by Jesse M. Lincoln.





### **Gwinn Compartment 56**

Survey targeted Bryan Creek dry-mesic northern forest (EO ID 993, C rank) in Compartment 56. The dry-mesic northern forest was remapped with current imagery and downgraded from a B to a BC rank due to fire suppression and continued mesophication.



2018 aerial photograph of Bryan Creek dry-mesic northern forest (EO ID 993).



Bryan Creek dry-mesic northern forest (EO ID 993). Photo by Joshua G. Cohen.



## Gwinn Compartment 211

Survey targeted high-quality natural communities associated within granite outcropping in Compartment 211.

Documented three high-quality natural communities: Bonzai Burma Pines dry northern forest (EO ID 23799, B rank), Bonzai Burma Glade granite bedrock glade (EO ID 23798, B rank), and Bonzai Burma Escarpment granite cliff (EO ID 23797, B rank).



Bonzai Burma Pines dry northern forest (EO ID 23799). Photo by Joshua G. Cohen.



2018 aerial photograph of Bonzai Burma Pines dry northern forest (EO ID 23799).



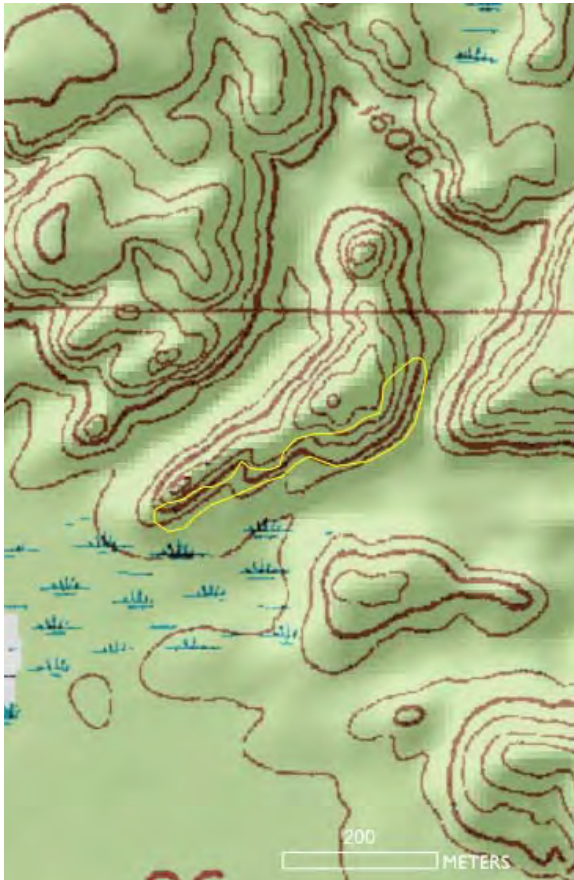


2018 aerial photograph and topographic map of Bonzai Burma Glade granite bedrock glade (EO ID 23798).



Bonzai Burma Glade granite bedrock glade (EO ID 23798). Photo by Joshua G. Cohen.





2018 aerial photograph and topographic map of Bonzai Burma Escarpment granite cliff (EO ID 23797).



Bonzai Burma Escarpment granite cliff (EO ID 23797). Photo by Joshua G. Cohen.



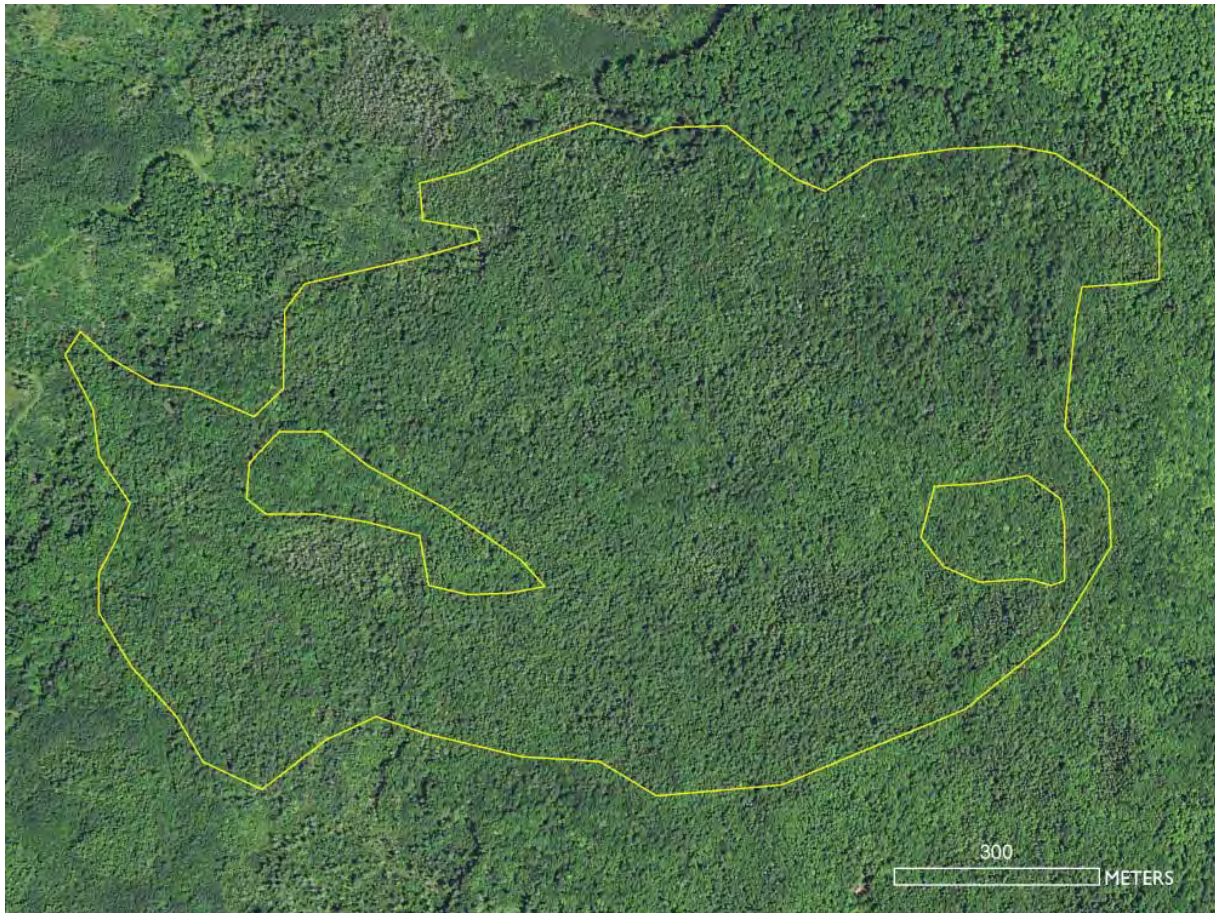
### **Gwinn Compartment 289**

Surveys targeted four known element occurrences within the compartment: Sand River Swamp – West hardwood-conifer swamp (EO ID 18139, B rank), Sand River Swamp – East hardwood-conifer swamp (EO ID 18894, BC rank), Sand River Forest – West mesic northern forest (EO ID 18140, B rank), and Sand River Forest – East mesic northern forest (EO ID 18893, B rank). The element occurrence ranks for Sand River Swamp – West hardwood-conifer swamp, Sand River Forest – West mesic northern forest, and Sand River Forest – East mesic northern forest were upgraded from BC to B and the element occurrence rank of the Sand River Swamp – East hardwood-conifer swamp was confirmed. Following the 2020 surveys, the Sand River Forest – East mesic northern forest was remapped with current imagery.



Sand River Swamp – West hardwood-conifer swamp (EO ID 18139). Photo by Joshua G. Cohen.





2018 aerial photograph of Sand River Swamp – West hardwood-conifer swamp (EO ID 18139).



Sand River Swamp – West hardwood-conifer swamp (EO ID 18139). Photo by Joshua G. Cohen.





Sand River Swamp – West hardwood-conifer swamp (EO ID 18139). Photos by Joshua G. Cohen.







2018 aerial photograph of Sand River Swamp – East hardwood-conifer swamp (EO ID 18894).



Sand River Swamp – East hardwood-conifer swamp (EO ID 18894). Photo by Joshua G. Cohen.





Sand River Swamp – East hardwood-conifer swamp (EO ID 18894). Photos by Joshua G. Cohen.







2018 aerial photograph of Sand River Forest – West mesic northern forest (EO ID 18140).



Sand River Forest – West mesic northern forest (EO ID 18140). Photo by Joshua G. Cohen.





2018 aerial photograph of Sand River Forest – East mesic northern forest (EO ID 18893).





Sand River Forest – East mesic northern forest (EO ID 18893). Photo by Joshua G. Cohen.







Sand River Forest – East mesic northern forest (EO ID 18893). Photo by Joshua G. Cohen.





### **Newberry Compartment 39**

Survey targeted two known element occurrences within Compartment 39: Barclay Lake Bogs (EO ID 3580, B rank) and Barclay Lake Jack Pines dry northern forest (EO ID 12024, B rank). Following the 2020 survey, the element occurrence rank of Barclay Lake Bogs was reconfirmed and the Barclay Lake Jack Pines dry northern forest was upgraded from BC to B. The dry northern forest recently burned during the Duck Lake Wildfire of 2012 and additional acreage was added to the element occurrence following the 2020 survey.



Barclay Lake Bogs (EO ID 3580). Photo by Joshua G. Cohen.



2018 aerial photograph of Barclay Lake Bogs (EO ID 3580).

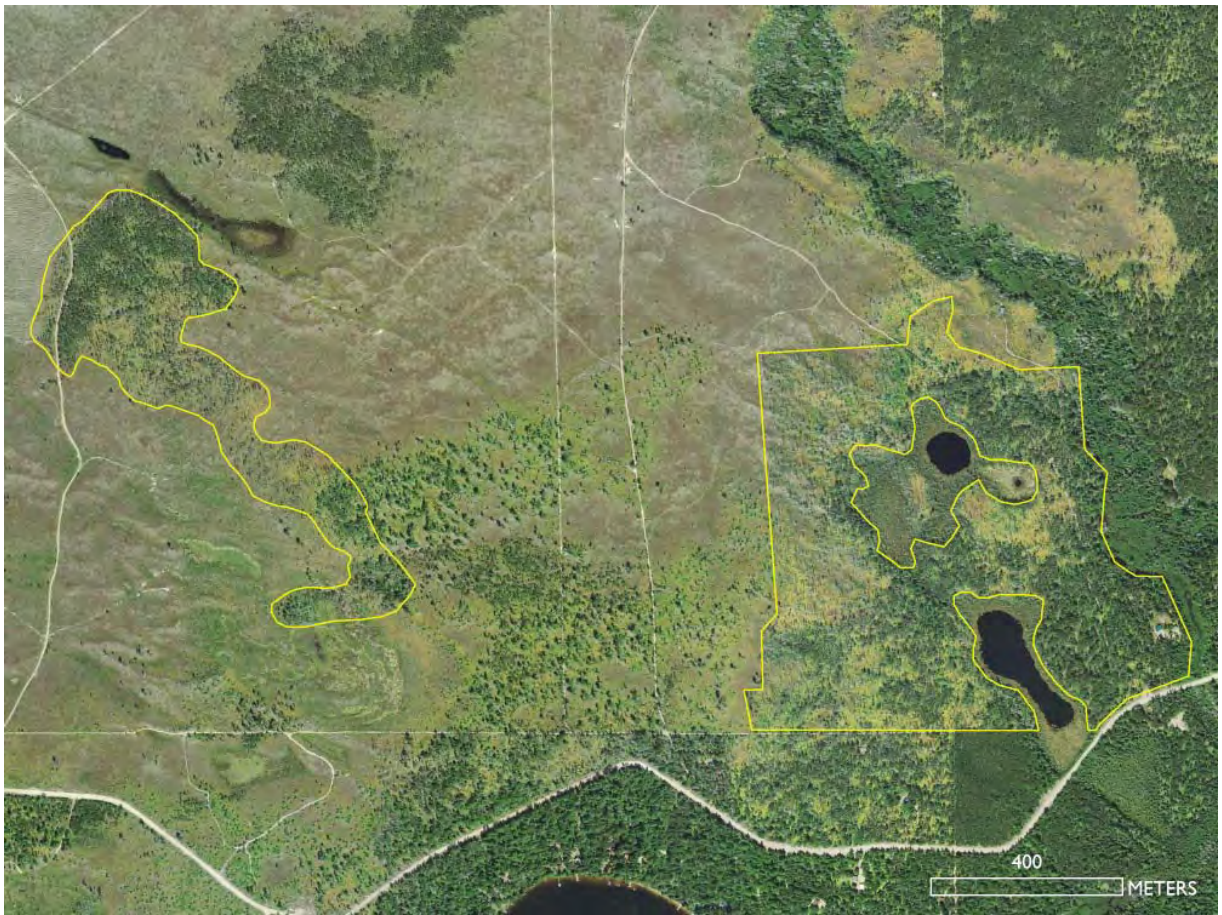




Barclay Lake Bogs (EO ID 3580). Photos by Joshua G. Cohen.







2018 aerial photograph of Barclay Lake Jack Pines dry northern forest (EO ID 12024).



Barclay Lake Jack Pines dry northern forest (EO ID 12024). Photo by Joshua G. Cohen.





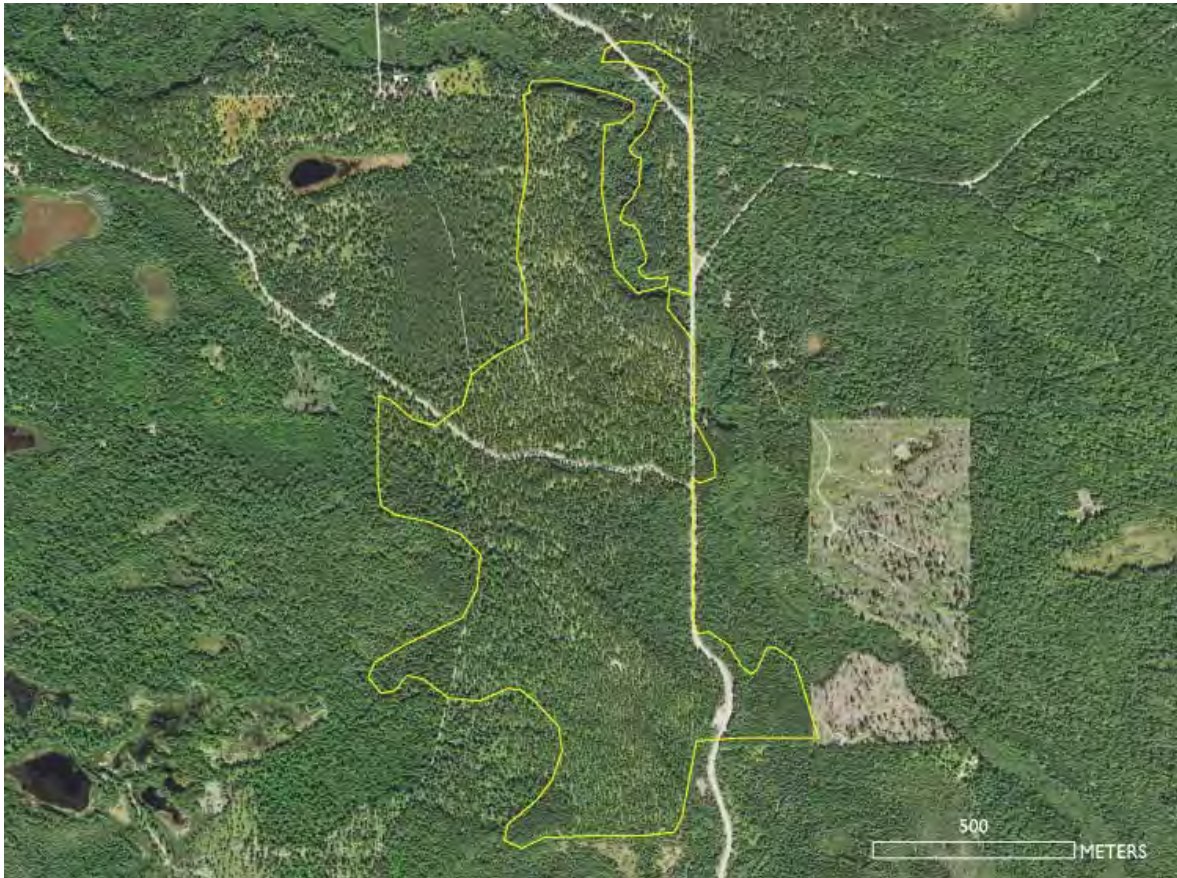
Barclay Lake Jack Pines dry northern forest (EO ID 12024). Photos by Joshua G. Cohen.





### **Newberry Compartments 41 and 44**

Survey targeted Fisher Bridge Red Pines dry northern forest (EO ID 708, D rank). The survey confirmed the element occurrence rank.



2018 aerial photograph of Fisher Bridge Red Pines dry northern forest (EO ID 708).



Fisher Bridge Red Pines dry northern forest (EO ID 708). Photo by Joshua G. Cohen.



### **Newberry Compartments 54, 59, and 67**

Survey targeted Whitefish Point wooded dune and swale complex (EO ID 16872, B rank). The survey confirmed the element occurrence rank.



2018 aerial photograph of Whitefish Point wooded dune and swale complex (EO ID 16872).



Whitefish Point wooded dune and swale complex (EO ID 16872). Photo by Joshua G. Cohen.





Whitefish Point wooded dune and swale complex (EO ID 16872). Photos by Joshua G. Cohen.





### **Pigeon River Country Storey Lake Acquisition**

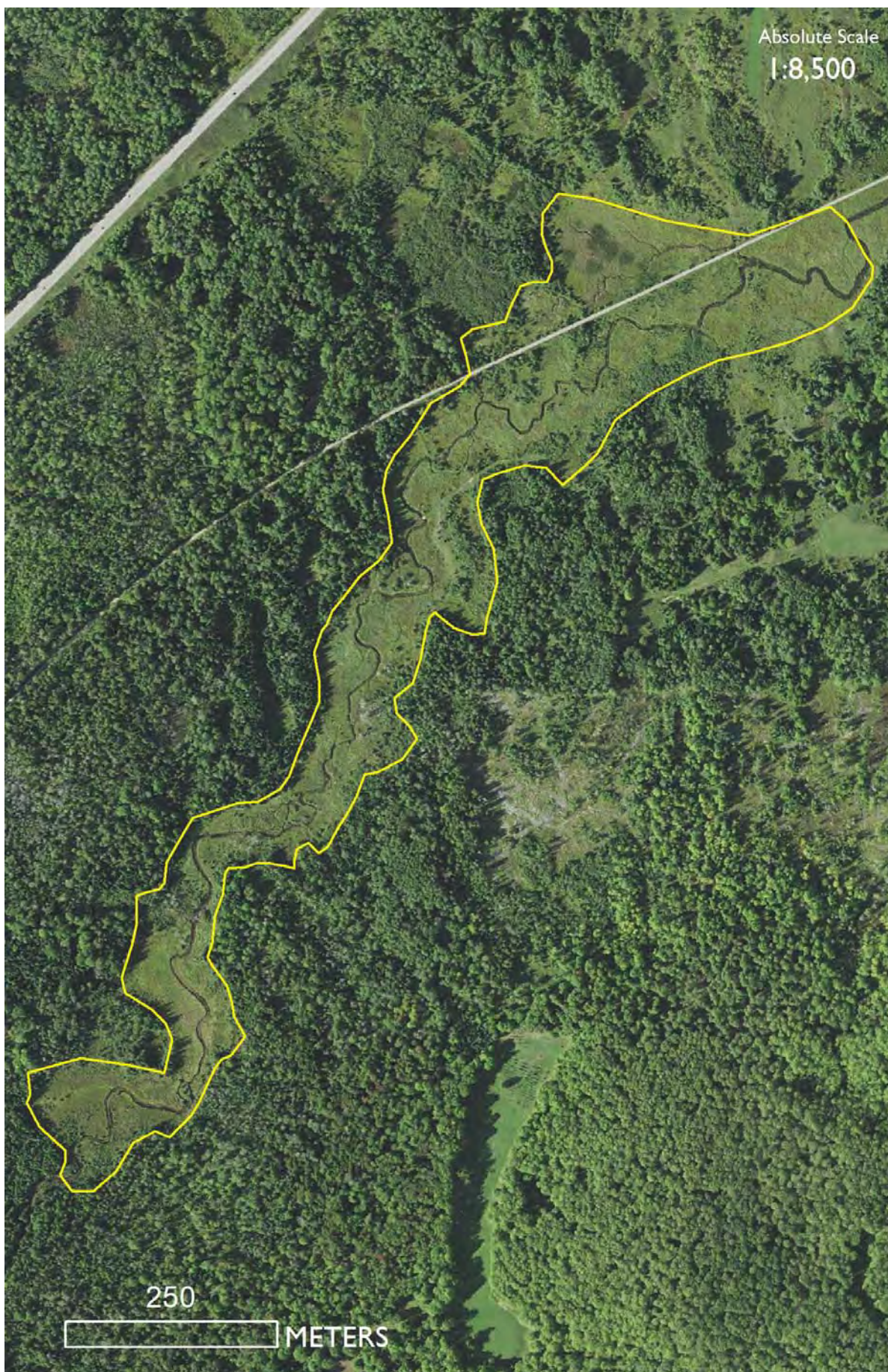
Survey within the Storey Lake Acquisition targeted high-quality natural communities associated with Storey Lake and Stewart Creek and documented two high-quality natural communities: Stewart Creek northern wet meadow (EO ID 23794, C rank) and Storey Lake Swamp rich conifer swamp (EO ID 23793, BC rank).



Stewart Creek northern wet meadow (EO ID 23794). Photos by Joshua G. Cohen.







2018 aerial photograph of Stewart Creek northern wet meadow (EO ID 23794).



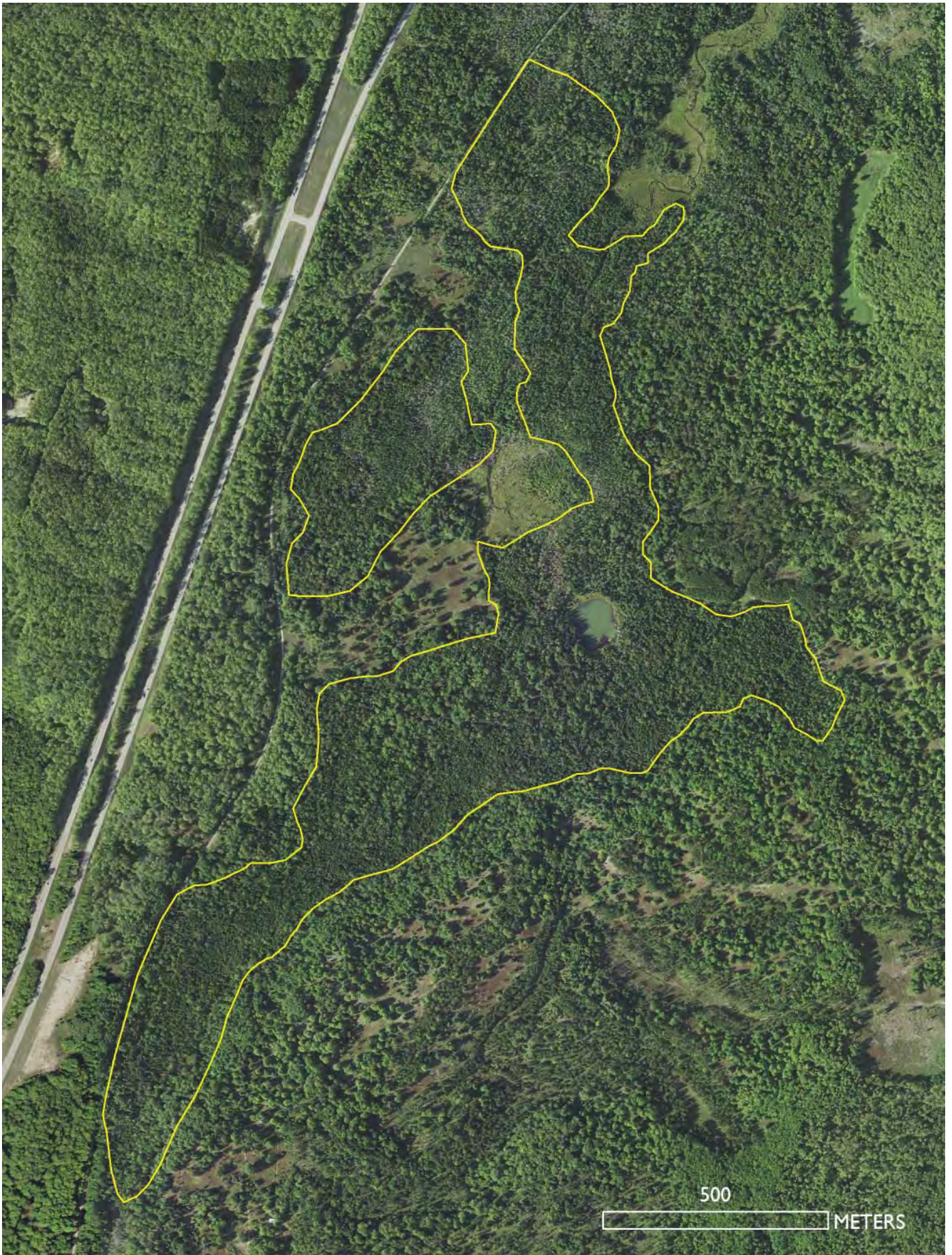


Stewart Creek northern wet meadow (EO ID 23794). Photo by Joshua G. Cohen.



Storey Lake Swamp rich conifer swamp (EO ID 23793). Photo by Joshua G. Cohen.





2018 aerial photograph of Storey Lake Swamp rich conifer swamp (EO ID 23793).





Storey Lake Swamp rich conifer swamp (EO ID 23793). Photos by Joshua G. Cohen.



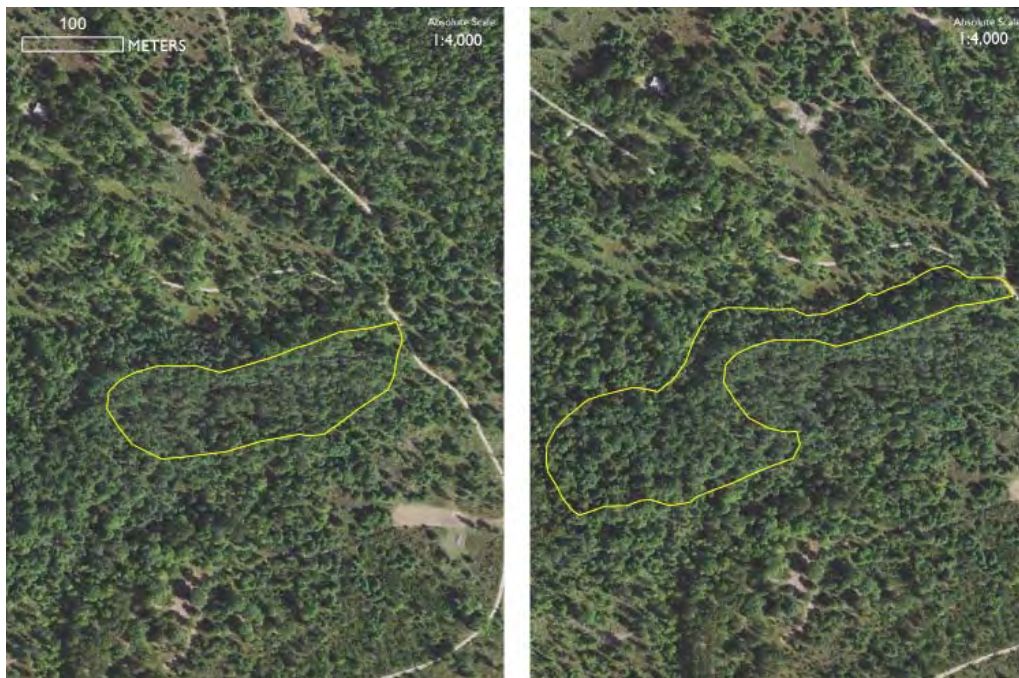


### **Pigeon River Country Walled Lake Acquisition**

Survey within the Walled Lake Acquisition targeted high-quality natural communities associated with Walled Lake and Black River and documented three high-quality natural communities: Walled Lake Pines dry-mesic northern forest (EO ID 23791, C rank), Walled Lake Swamp poor conifer swamp (EO ID 23790, C rank), and Black River swamp rich conifer swamp (EO ID 23792, C rank).



Walled Lake Pines dry-mesic northern forest (EO ID 23791). Photo by Joshua G. Cohen.



2018 aerial photograph of Walled Lake Swamp poor conifer swamp (EO ID 23790, left) and Walled Lake Pines dry-mesic northern forest (EO ID 23791, right).





Walled Lake Swamp poor conifer swamp (EO ID 23790). Photos by Joshua G. Cohen.







2018 aerial photograph of Black River swamp rich conifer swamp (EO ID 23792).





Black River swamp rich conifer swamp (EO ID 23792). Photo by Joshua G. Cohen.







Black River swamp rich conifer swamp (EO ID 23792). Photo by Joshua G. Cohen.





### **Pigeon River Country Compartment 7**

Survey targeted Pigeon River Pines dry-mesic northern forest (EO ID 4499, BC rank). The survey confirmed the element occurrence rank and the element occurrence was remapped with current imagery.



2018 aerial photograph of Pigeon River Pines dry-mesic northern forest (EO ID 4499).

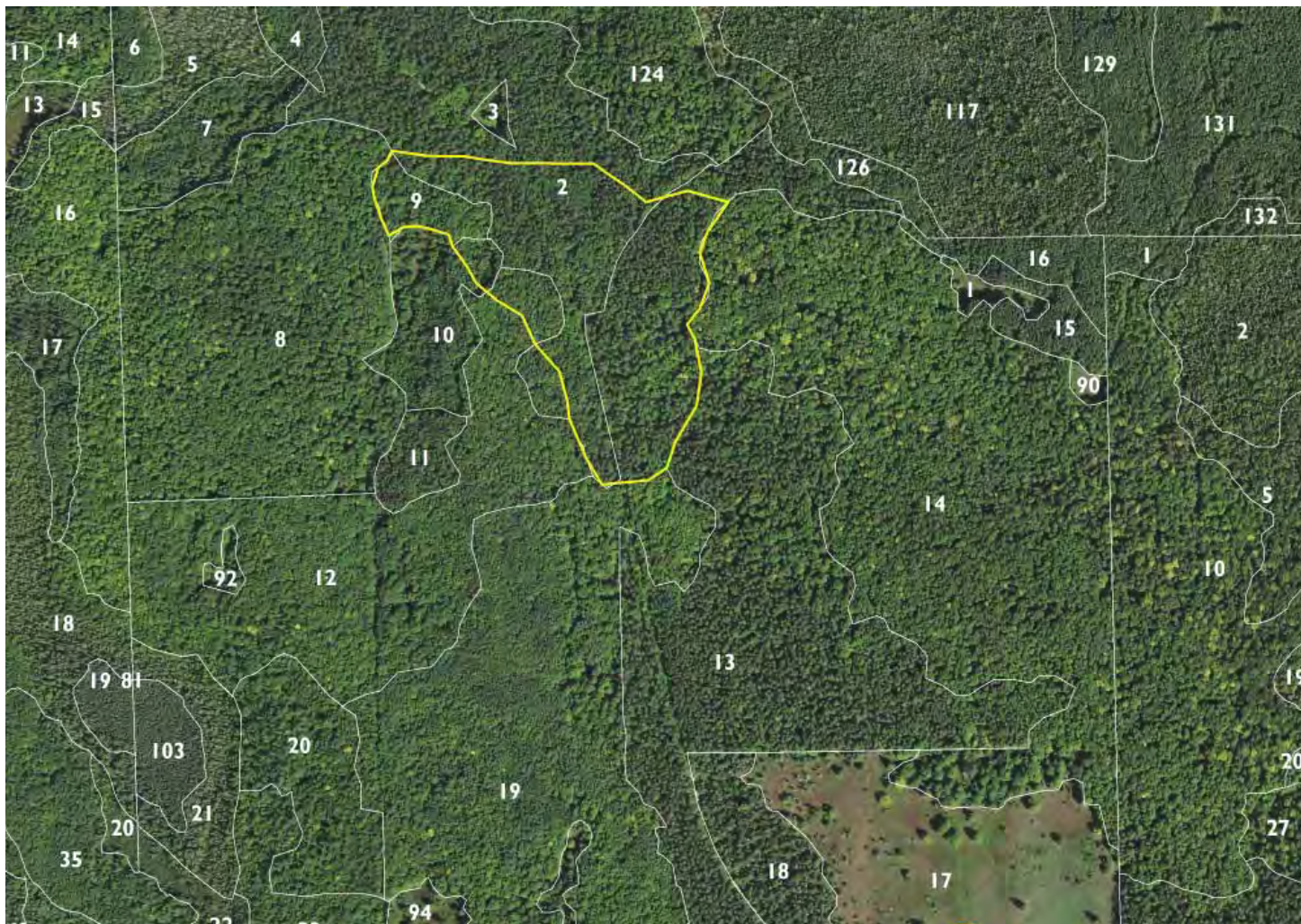


Pigeon River Pines dry-mesic northern forest (EO ID 4499). Photo by Joshua G. Cohen.



### Pigeon River Country Compartment 17

Confirmed population of putty-root (*Aplectrum hyemale*) in Compartment 17 and delineated a polygon showing the projected extent of the population of this orchid within the compartment. Putty-root is not listed as a rare plant but this populations represents the only known location of this orchid in Cheboygan County.



2018 aerial photograph of putty-root within Compartment 17.



Putty-root (*Aplectrum hyemale*). Photos by Joshua G. Cohen.



## Sault Sainte Marie Compartment 20

Survey targeted St. Vital Bay wooded dune and swale complex (EO ID 2834, B rank). The survey confirmed the element occurrence rank.



2018 aerial photograph of St. Vital Bay wooded dune and swale complex (EO ID 2834).



St. Vital Bay wooded dune and swale complex (EO ID 2834). Photo by Joshua G. Cohen.





St. Vital Bay wooded dune and swale complex (EO ID 2834). Photos by Joshua G. Cohen.





### **Sault Sainte Marie Compartments 23 and 24**

Survey targeted Scotty Bay mesic northern forest (EO ID 13253, D rank). This site has been virtually extirpated by recent logging. One miniscule closed-canopy forest remnant persists. A significant portion of the forest was recently intensively cut. Extensive canopy gaps with 0% canopy closure occur throughout what was once closed-canopy forest. Little advanced regeneration was noted within these gaps and invasive species are locally common in these gaps and include mullein, common burdock, and Canada thistle. Raspberries are also prevalent within these gaps along with logging slash. Significant deer browse on seedling and sapling sugar maple was noted. As a result of the decrease in size and integrity of this forest, the element occurrence rank was downgraded from C to D.



Scotty Bay mesic northern forest (EO ID 13253). Photo by Joshua G. Cohen.



2018 aerial photograph of Scotty Bay mesic northern forest (EO ID 13253).





Scotty Bay mesic northern forest (EO ID 13253) has been degraded by recent intensive logging and one small patch of closed-canopy mesic northern forest remains. Photos by Joshua G. Cohen.





### **Sault Sainte Marie Compartment 32**

Survey targeted Mismar Bay Great Lakes marsh (EO ID 1297, C rank). Following 2020 survey, the element occurrence was remapped using current imagery and the element occurrence rank was confirmed.



2018 aerial photograph of Mismar Bay Great Lakes marsh (EO ID 1297).



Mismar Bay Great Lakes marsh (EO ID 1297). Photo by Joshua G. Cohen.



### **Sault Sainte Marie Compartment 114**

Survey targeted Brevoort River Headwaters poor fen (EO ID 2363, C rank). Following 2020 survey, the element occurrence was remapped using current imagery and the element occurrence rank was confirmed.



2018 aerial photograph of Brevoort River Headwaters poor fen (EO ID 2363).



Brevoort River Headwaters poor fen (EO ID 2363). Photo by Joshua G. Cohen.



### **Sault Sainte Marie Compartment 120**

Survey targeted Cut River Gorge mesic northern forest (EO ID 10987, BC rank). Significant areas of the forest dominated by beech have been impacted by beech bark disease. Canopy mortality of beech has locally altered the species composition, vegetative composition, and function. In addition, garlic mustard is locally common along trails within the forest. The element occurrence rank was downgraded from BC to C and the element occurrence was remapped using current imagery.



2018 aerial photograph of Cut River Gorge mesic northern forest (EO ID 10987).



Cut River Gorge mesic northern forest (EO ID 10987). Photo by Joshua G. Cohen.





Cut River Gorge mesic northern forest (EO ID 10987). Photos by Joshua G. Cohen.

