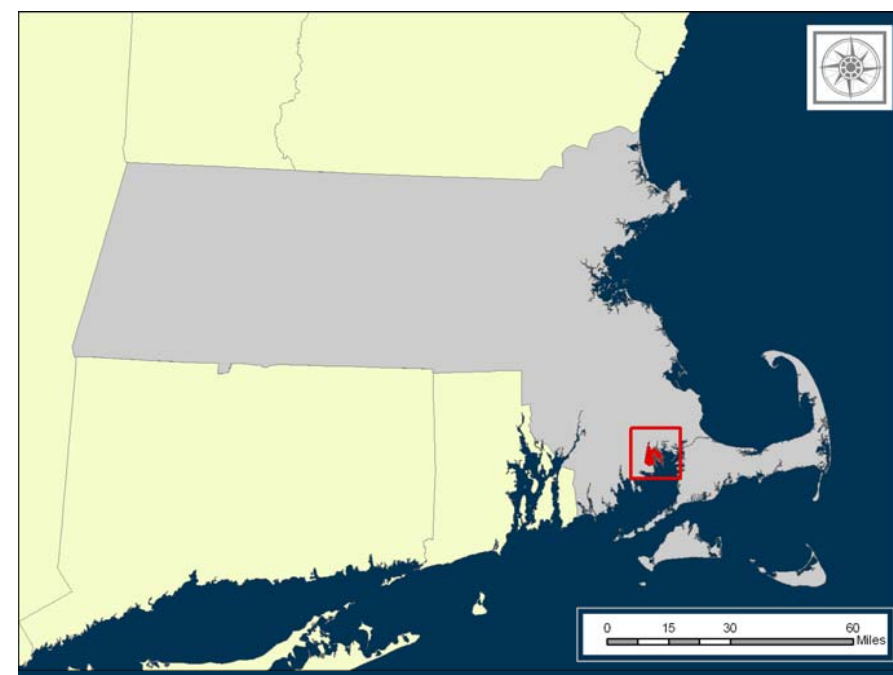
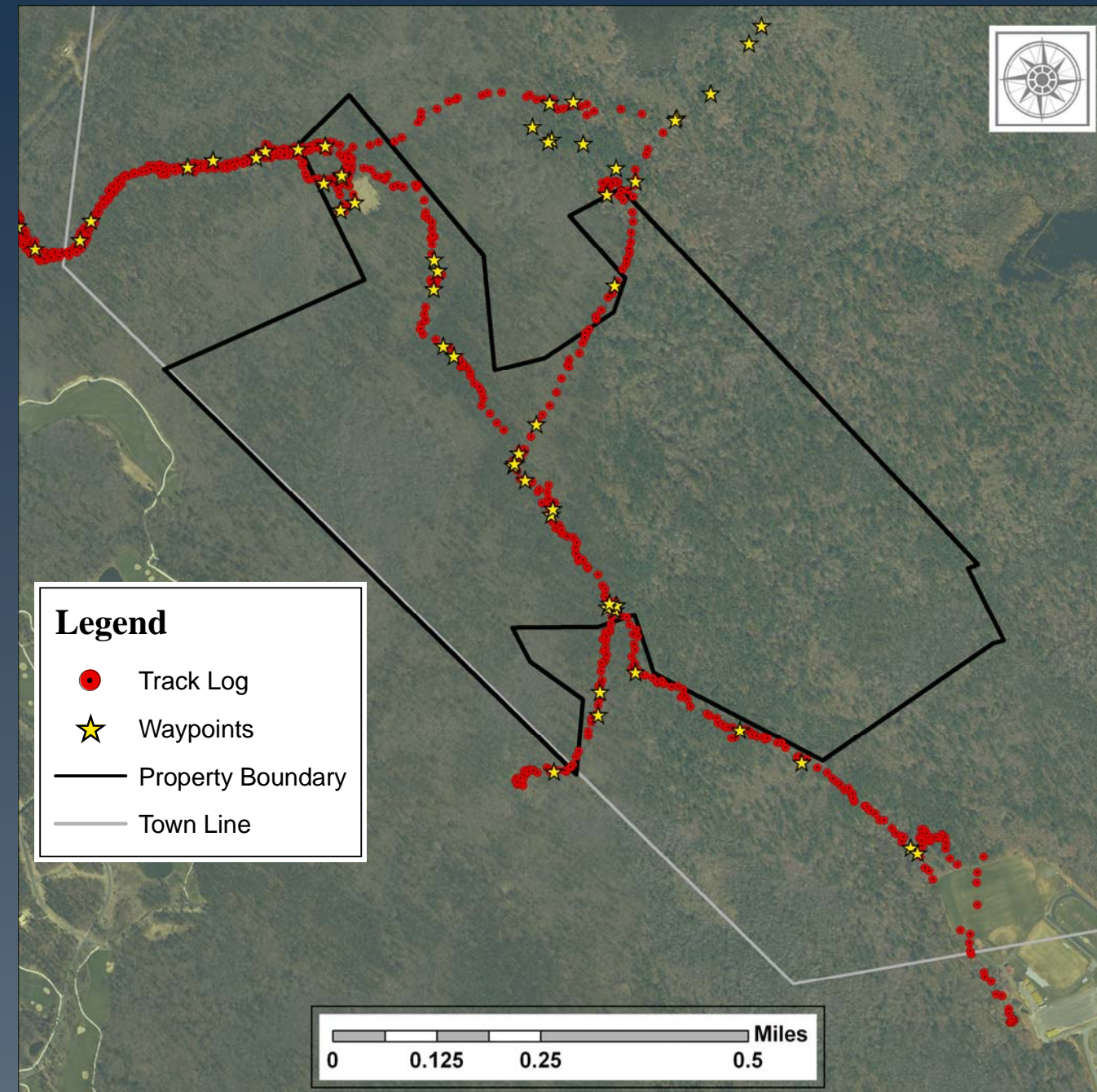


Siting Walking Trails for a Land Trust: A Methodology Comparison

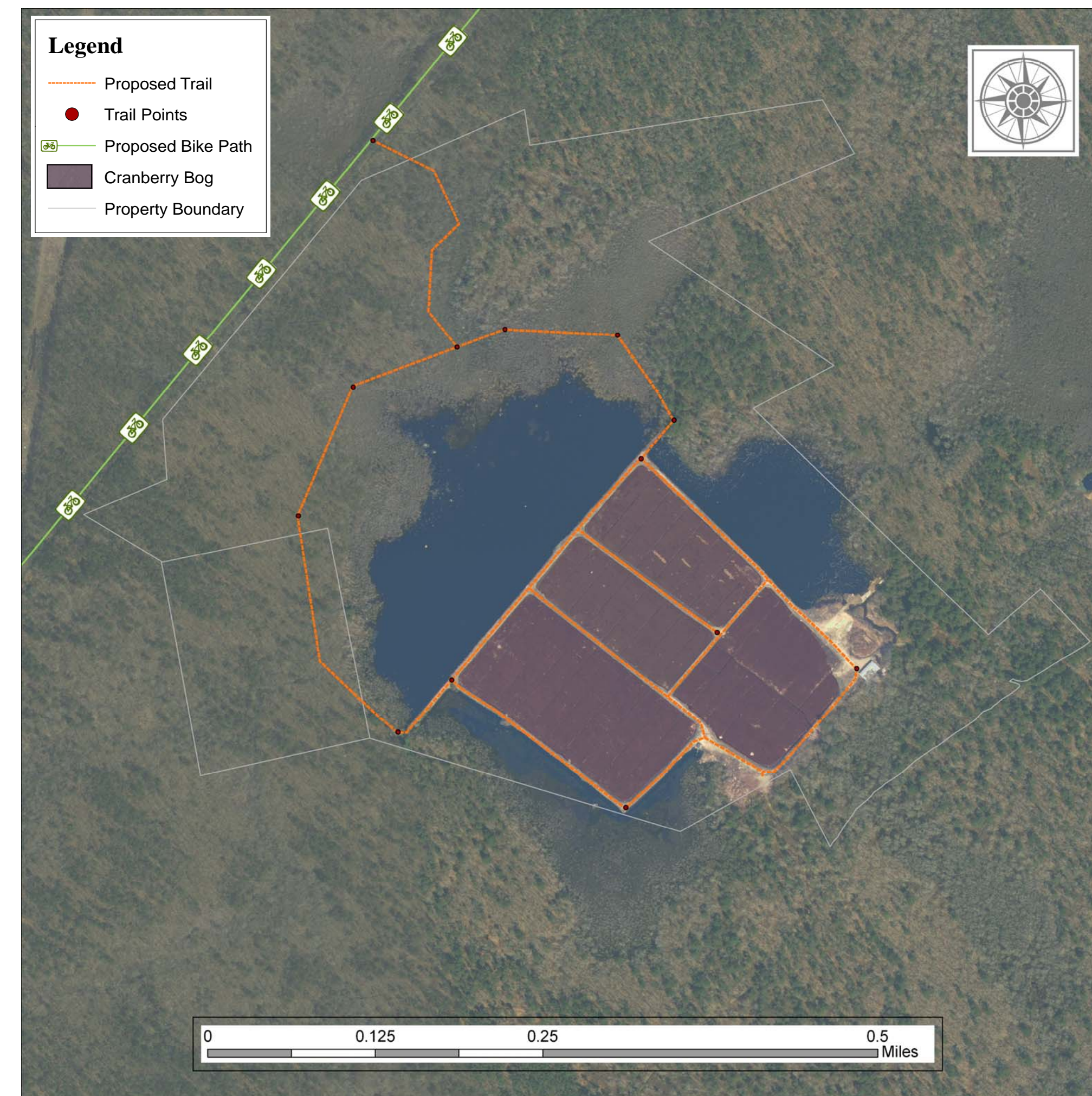
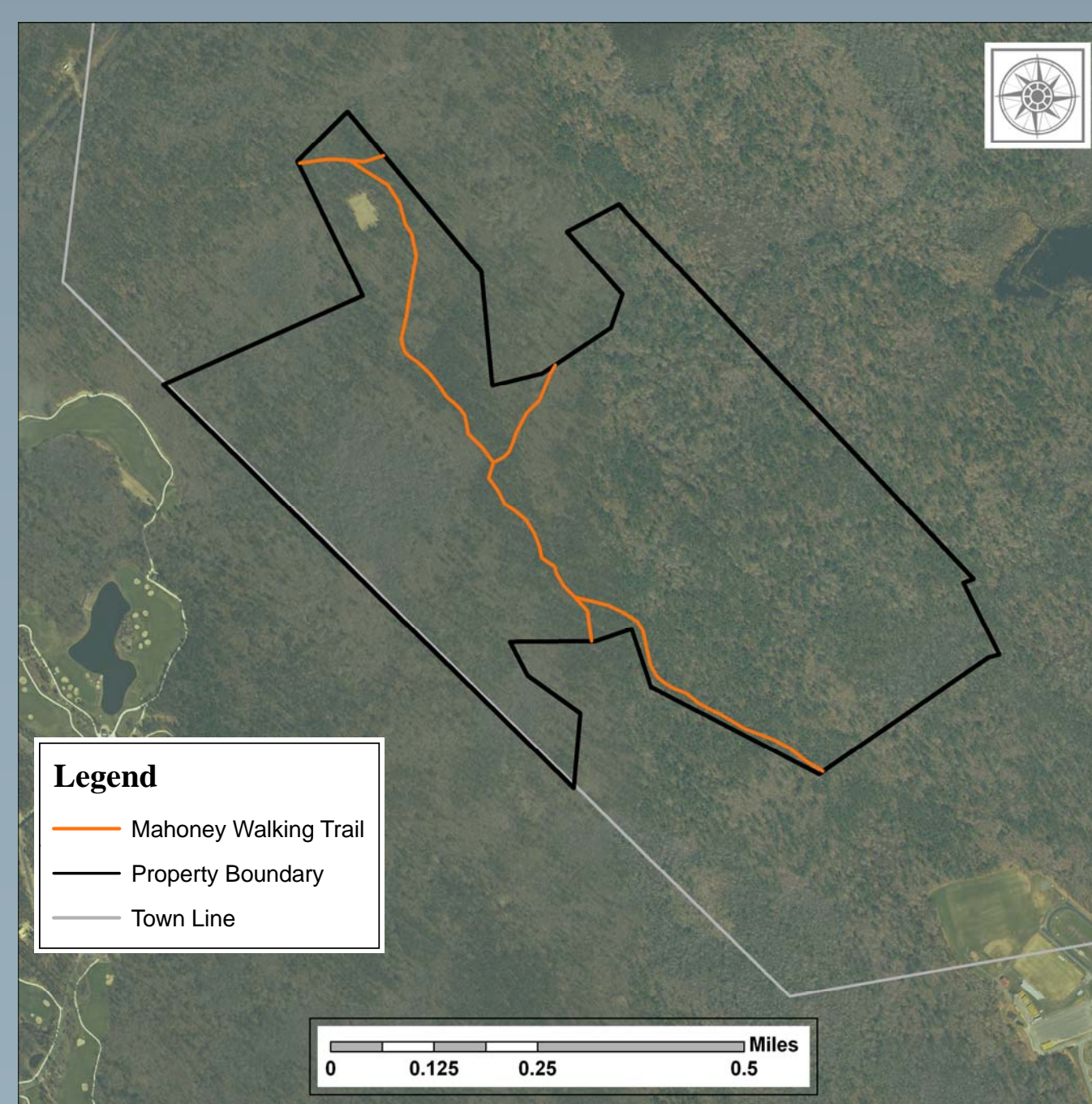


Cartographer: Abey Hardy | Data Source: Mass GIS, 2005 | National Land Cover Data, 2001 | Sippican Lands Trust, 2007 | Projection: NAD 1983 State Plane Massachusetts Mainland, Meters

Using GPS Data: Mahoney CR



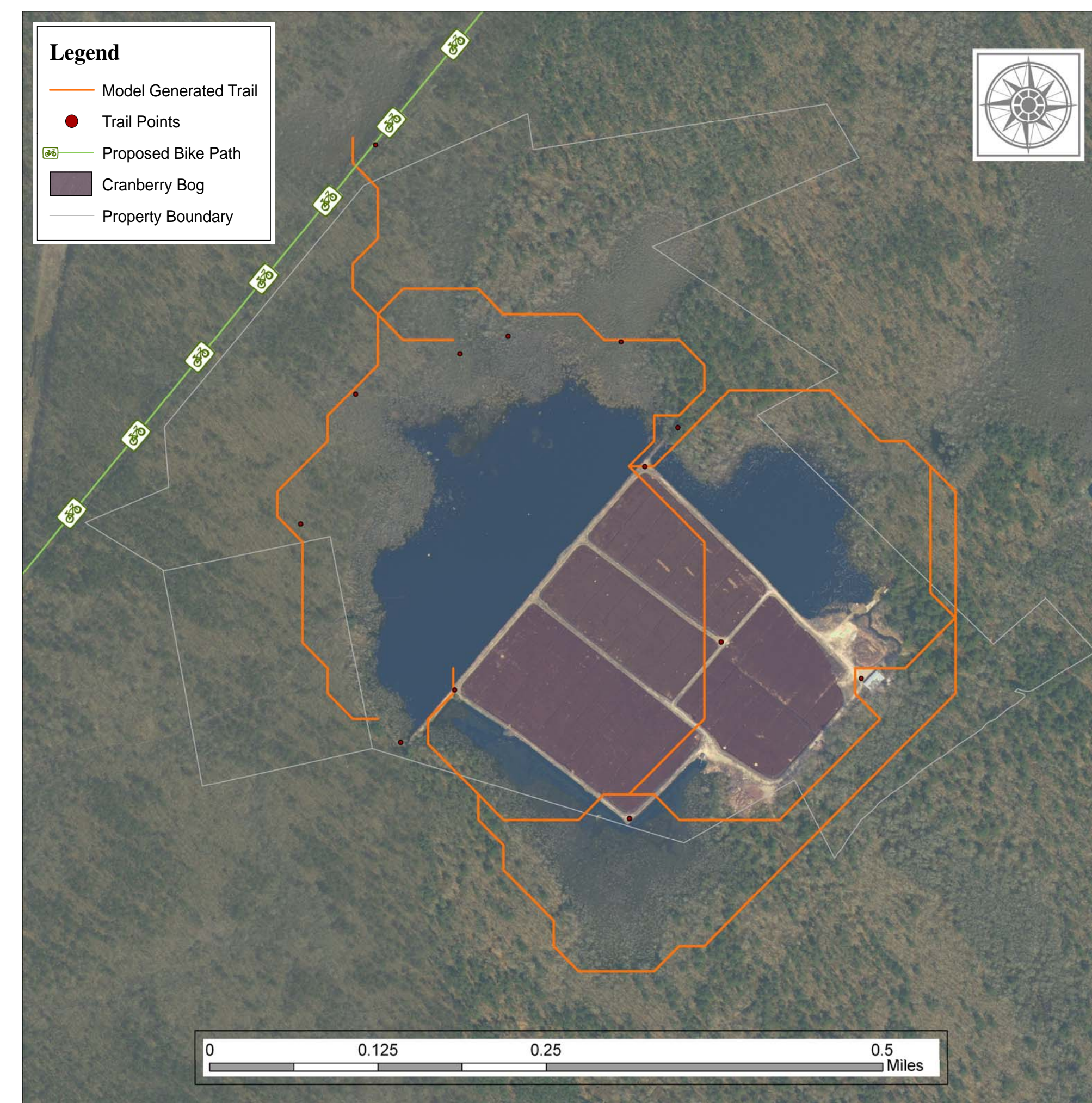
The goal of this phase of the project was to use GPS data supplied by the Sippican Lands Trust to map out existing walking trails. The map above shows the track logs and waypoints for the Mahoney Conservation Easement. While using GPS information can be an affordable way to collect data, there are some limitations. The rectangular bare area at the very northern tip of the property is restricted for turtle habitat, which is marked by four waypoints at each corner (shown by the four yellow stars to the left of the bare area). By comparing the discrepancy between the waypoints and the borders of the turtle habitat, I was able to determine that the GPS data was approximately 155 ft to the west of the trail (see resulting trail below). By using this information I was able to move the trail the appropriate distance to the west, the accuracy of this method is limited, however.



Step 2: The second phase of the methodology analysis sited the trail using a suitability model. The model was run between the points created in step 1, using the same four criteria listed above.

Results: The two methods proved to both have strengths and limitations. Siting the trail by eye was more efficient at mapping the trail through the cranberry bog. The model was superior at evaluating the variation in canopy cover, however. This was shown at the north of the property, where the trail done by eye chose to branch off to the east to meet up with the bicycle trail. The model generated trail ended up branching off to the west, due to lesser tree density.

The model was also valuable in identifying a suitable trail area south of the cranberry bog, which was not identified when locating the trail by eye. This unexpected result could prove to be a useful addition when the trail is developed.

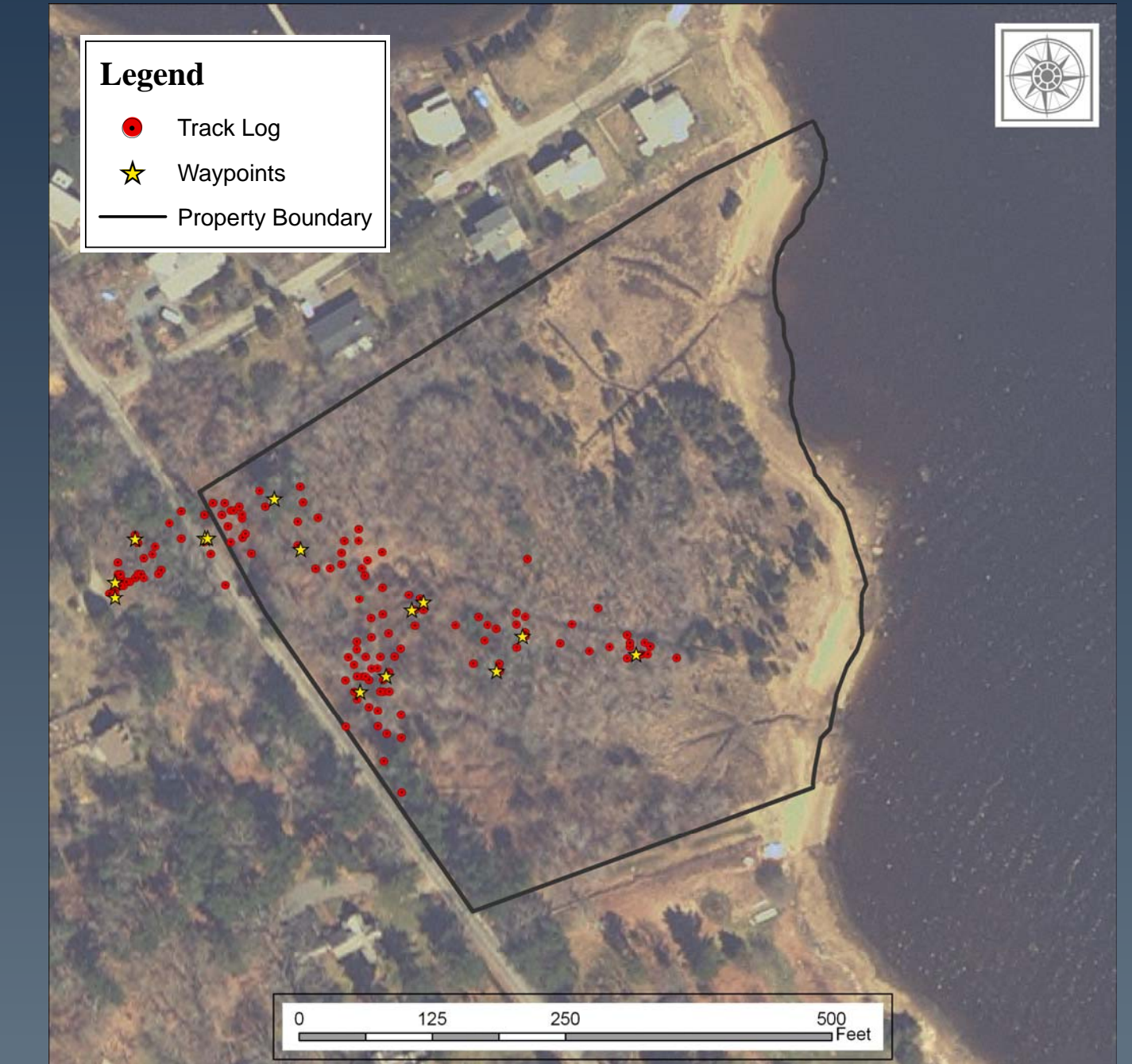


Objective: The goal of this project was to compare methodologies for mapping potential walking trails for the Sippican Lands Trust. The two methods chosen for comparison were siting the trail by eye and mapping the trail using a suitability model.

Methodology: Four criteria were used in both steps of the methodology. Densely forested areas (over 93% canopy cover) and water were rated negatively, as dense forest makes establishing trails difficult, and walking trails can not go through water. Views and proximity to the cranberry bog on the site, and access to the proposed bike path to the north of the property were rated positively.

Step 1: The trail was sited by eye first, considering the four criteria listed above. When that step was completed, points were placed at the major intersections of the trail.

Using GPS Data: Brainard Marsh



The goal of this phase of the project was to use GPS data supplied by the Sippican Lands Trust to map out existing walking trails. In this example, the GPS data was too far to the west by about 100 ft. Additionally, the GPS points indicate that the trail has two entrances from the road that meet and continue on to the ocean. According to the Sippican Lands Trust, who supplied the data, there is only one entrance to the trail. The incongruity between the supplied data and the situation on the ground makes it difficult to map the trail accurately. This is especially difficult if the cartographer is not able to visit the site.

