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## **Biology and Distribution of Golden Winged Warbler in The Land Between**

### **Introduction**

The first and foremost situation with the Golden Winged Warbler (GWWA) is the proper identification of the bird. Overall the male and female of the GWWA are similar in size and color but do differ in some areas. Another situation has arisen with the identification of the GWWA: Interbreeding with similar bird species [(The Blue Winged Warbler (BWWA)] can make the sighting of the bird more difficult. This report will discuss the distinguishing markings of the GWWA, male and female and the interbred bird know as “Brewster”.

Bird species have their preferred habitats and site specific locations in which to nest. The GWWA is a species requiring a very specific habitat and The Land Between (TLB) is an ecosystem containing numerous locations for nesting sites for species like the GWWA, such as alder swamps, alvars and other wetland edge communities. Point data has been provided of sightings of GWWA within TLB and this data will be used to provide answers to the questions of site preferences of GWWA. Areas known as “Alvars” are ideal locations for nesting sites of GWWA and TLB has many such alvars for these birds to thrive. The specific role that alvars play in providing nesting sites for GWWA will be illustrated through mapping showing locations of alvars and how they relate to Golden Winged Warbler sightings.

Another situation is human interference with GWWA habitat, whether it is intentional or not. Shoreline development affects many of the preferred locations for nest sites for GWWA. This will be illustrated within the report through mapping of developed shorelines in relation to nesting sites.

The last influencing factor for the GWWA is competition with other species. Unfortunately when it comes to nesting sites, it is on a first come first serve type basis. Similar species like the Blue Winged Warbler (BWWA) affect or occupy the nesting sites of GWWA. Point data has also been provided of BWWA sightings and along with the GWWA sightings, mapping will once again be used to show the possible influence of a the more aggressive species, the BWWA.

Overall the Golden Winged Warbler is a species under threat, and have recently been listed as “Threatened” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Exact reasons behind the species decline are not known. Possible reasons for the GWWA decline are discussed within this report. The intention of this report is too bring attention to the GWWA and factors that could be affecting their habitat and so proliferation. More research must be done to better understand the situation on a larger scale but this is a start.

### **Biology of the Golden Winged Warbler**

Based on the picture one can tell that the male GWWA is a small song bird. It is approximately 13cm in length and on average weighs 9g. The colors of light and dark grey are found on the tail, back and breast of the bird with an almost white on the underside. There is often a wash of tarragon to buff-yellow on the nape and



the forehead is yellow. A couple of distinguishing marks are the dark eye patch and black patch on the throat which is separated by a white malar region. The primaries feathers are black and are tipped with yellow and the greater and upper wing form a spectrum of yellow (Confer J., 1992).



The female does not differ from the male to any extreme. The female is approximately the same length and weight. One difference that could be noticed is the throat and eye patch are a lighter grey compared to the dark black on the male. Another location where the color is duller is the forehead and wing patch. Additional contrasts are that the female's wing patch is separated into two wing bars and the back feathers may be tinted with yellow more so on the female than the male (Confer J., 1992).

The Hybrid mix between the Golden Winged Warbler and the Blue Winged is known as a "Brewster Warbler". The existence of this species makes the identification of the GWWA even more difficult. These birds generally have the same markings on top and bottom but lack the same extent of black patches. They will also have patches of yellow throughout their bodies unlike the GWWA. The females differ from the males in that females may have more of a neutral grey on the chest and are paler than males (Confer J., 1992).



### **Habitat Specifics and Nesting Details**

There is a common feature when it comes to the GWWA's preferred habitat and that is the structure; low-lying or shrubby vegetation near a forested edge. Patches of shrubs, herbs or scattered trees near a forested edge are where the GWWA likes to build their nest. Other locations around swamps, marshes or bogs are also common. The preferred nesting locations for the GWWA changes for each region they occupy, however The Land Between contains the majority of the GWWA range in Ontario. Within southern Michigan competitor species occupy drier upland sites so the GWWA is only found in wet swampy locations or within tamarack swamps. This is now understood as being a common situation within Ontario.

The sedges or grasses of these preferred locations play an important role for the building of nests. The nests, built by the females, are usually built near the ground, and to allow for some protection, the emergent vegetation surrounding the nests provides cover and allows for perching material to aid in feeding young or to use as a lookout. The height of the nest is what helps distinguish the GWWA nests from other species like the BWWA or Brewster. It was stated in the report by Confer J., 1992 that the nests of other similar species are 0-30cm higher off the ground. An additional fact that would also make sightings of GWWA difficult is that females may build up to four partial nests

until one is completed. Reasons for this are that they are disrupted during the building process and so they stop nest production.

## **Habitat Assessment**

A large influencing factor on the nesting sites of the GWWA is human interference. A lot of environmental issue can be traced back to human interaction with the land. Shoreline development within TLB is one issue with animal species and especially the GWWA. Referring to the Figures (Figure 1, Figure 2) below you are able to see the point data that was provided of the GWWA related to wetlands, shoreline development and landcover. The first point to note is how the GWWA are located along the southern edge of TLB. Shoreline development based on 10 hectares is mainly located along the northern edge of TLB; therefore we can conclude that the GWWA has lost opportunities to nest within the developed shorelines. The other half of the map is showing the type of landcover that the GWWA were sighted in. Based on the larger figure of the landcover data you are able to notice that wetland areas and thin vegetated areas are where the sightings took place. This information coincides with the preferred habitat for the GWWA.

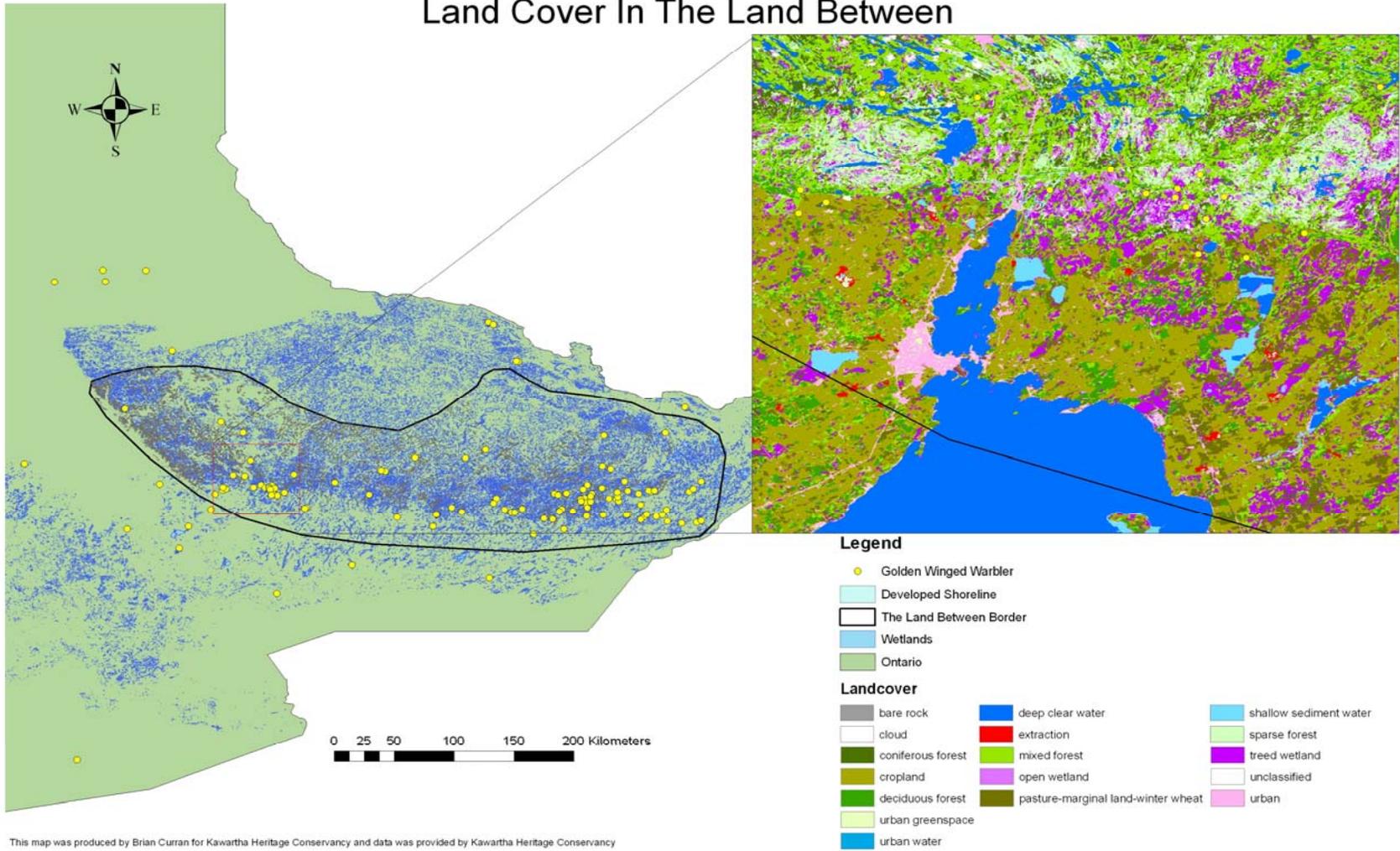
With the landcover data we are able to notice how the GWWA likes wetlands and sparse vegetation. Another relationship that can be determined based on the landcover data is how important a role alvars play with the GWWA habitat. Alvars are essentially limestone barrens with thin soil on top of the limestone producing sparse vegetation. If you refer to figure 3, you are able to see that the sightings of the GWWA are related to the location of limestone and bedrock within TLB. Considering alvars are made up of limestone it is safe to conclude that GWWA would prefer regions like alvars for nest building.

One trend that some researchers suggest is that the GWWA needs to change its habitat preference based on encroachment of other bird species (BWWA). Point data was provided of BWWA sightings along with the GWWA sightings. The last figure (Figure 4) illustrates that encroachment of the BWWA should not be an influencing factor in the GWWA changing its preferred habitat. The sightings of the BWWA are much more north of the GWWA sightings. If encroachment was more of a factor then one would expect the point data to have some overlap which is not apparent in figure 4.

## **Conclusion**

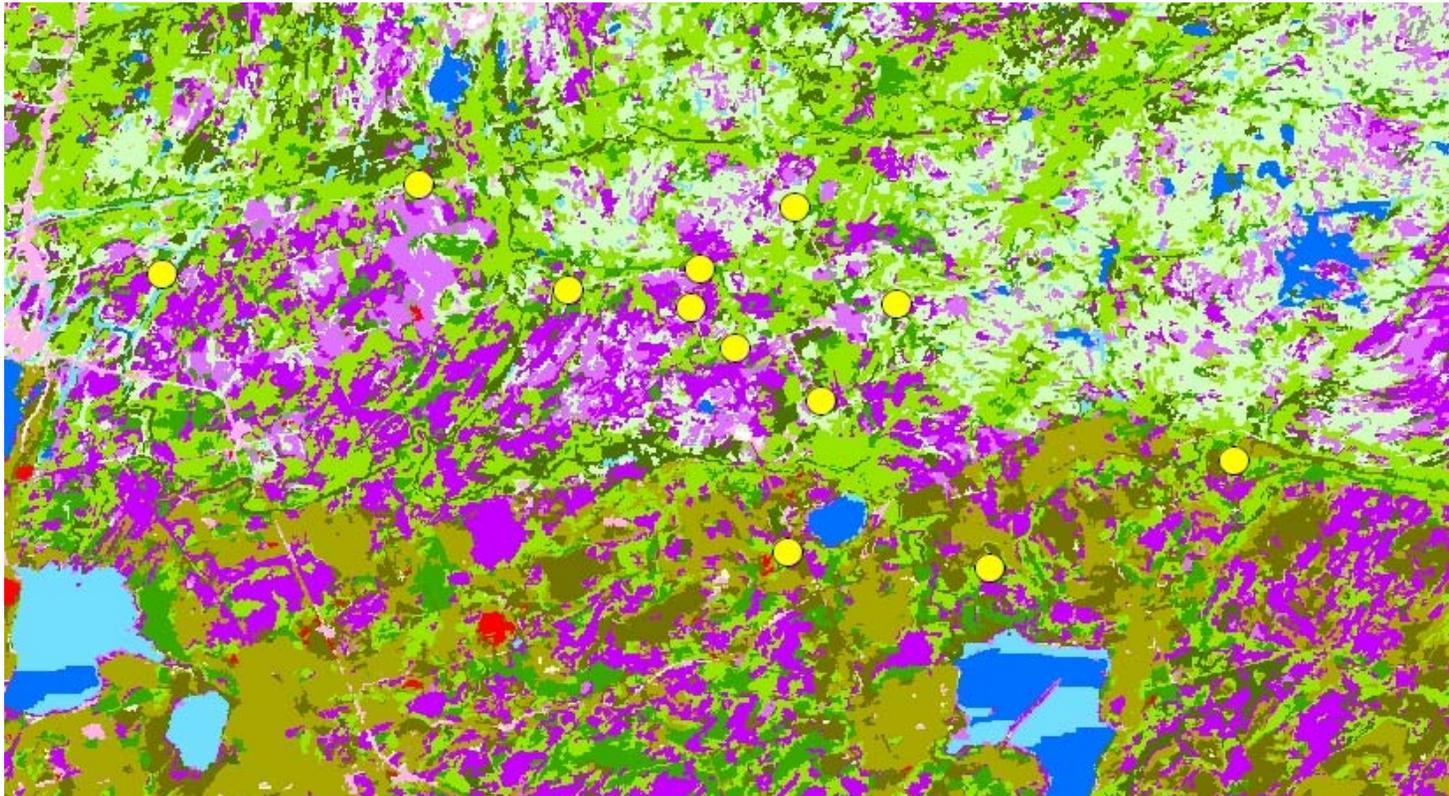
The Land Between is a unique and special environment. The Golden Winged Warbler is one of many species that rely on its land. If the GWWA is truly starting to decline within Ontario, perhaps one should look at the factors influencing the habitat of the GWWA. Human interference by developing shorelines within TLB is one aspect researchers should pay attention to. Confer suggest a 40 year burning of 10-20 hectare of the habitat or perhaps removal of other bird species within the habitat of the GWWA. It is known that there is no quick fix to resolving any animal species problem but with more research and more educated people about the situation of the GWWA is a fine start.

# Golden Winged Warbler Sightings Related to Shorelines, Shoreline Development and Land Cover In The Land Between

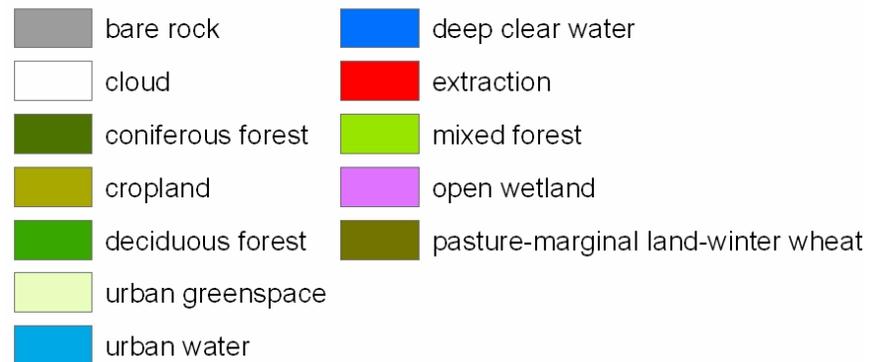


This map was produced by Brian Curran for Kawartha Heritage Conservancy and data was provided by Kawartha Heritage Conservancy

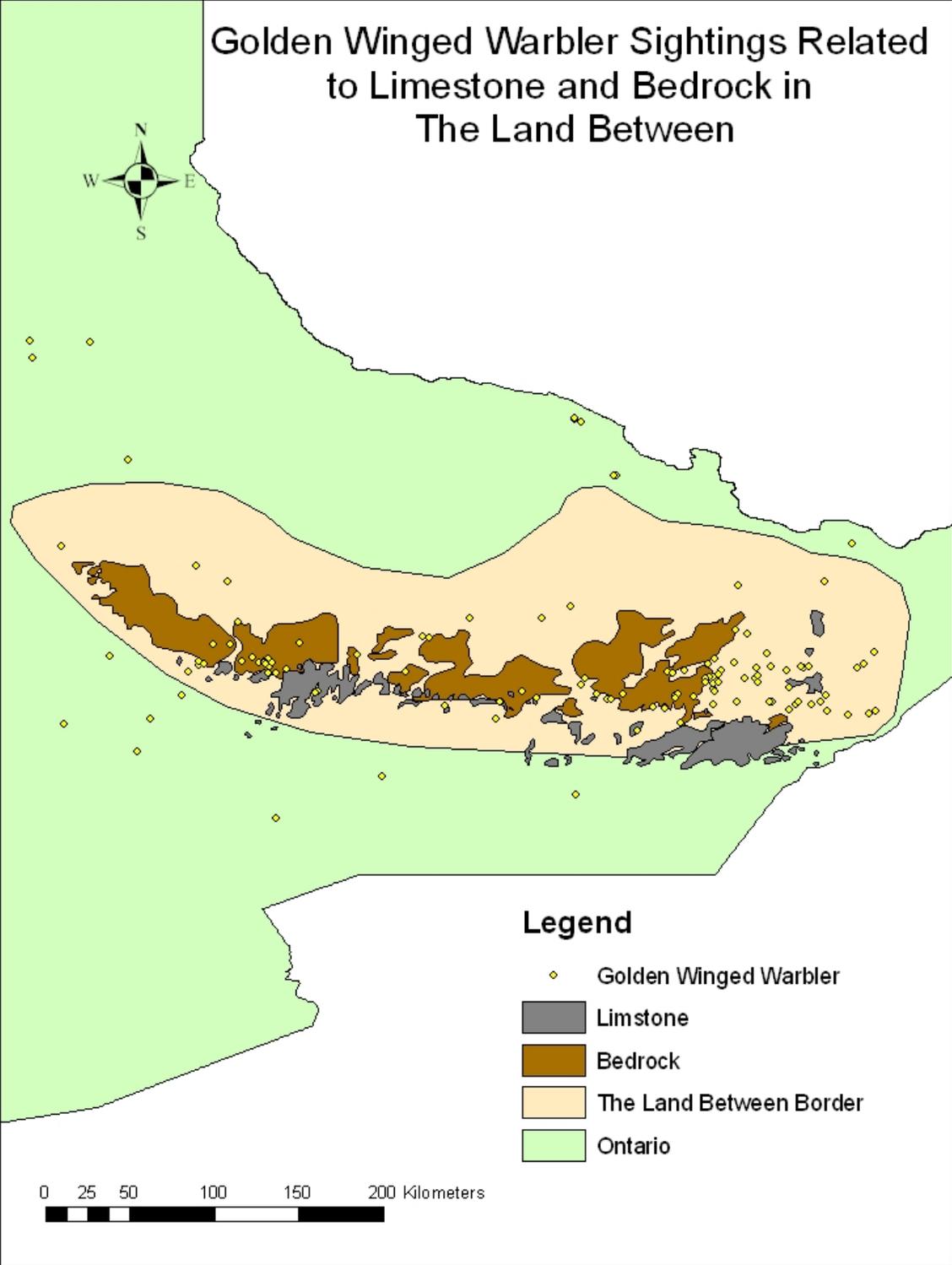
**Figure 1 Shoreline Development and Landcover Related to GWWA**



**Landcover**



**Figure 2 Landcover Related to GWWA Sightings**



**Figure 3** Alvar possibilities Related to GWWA Sightings

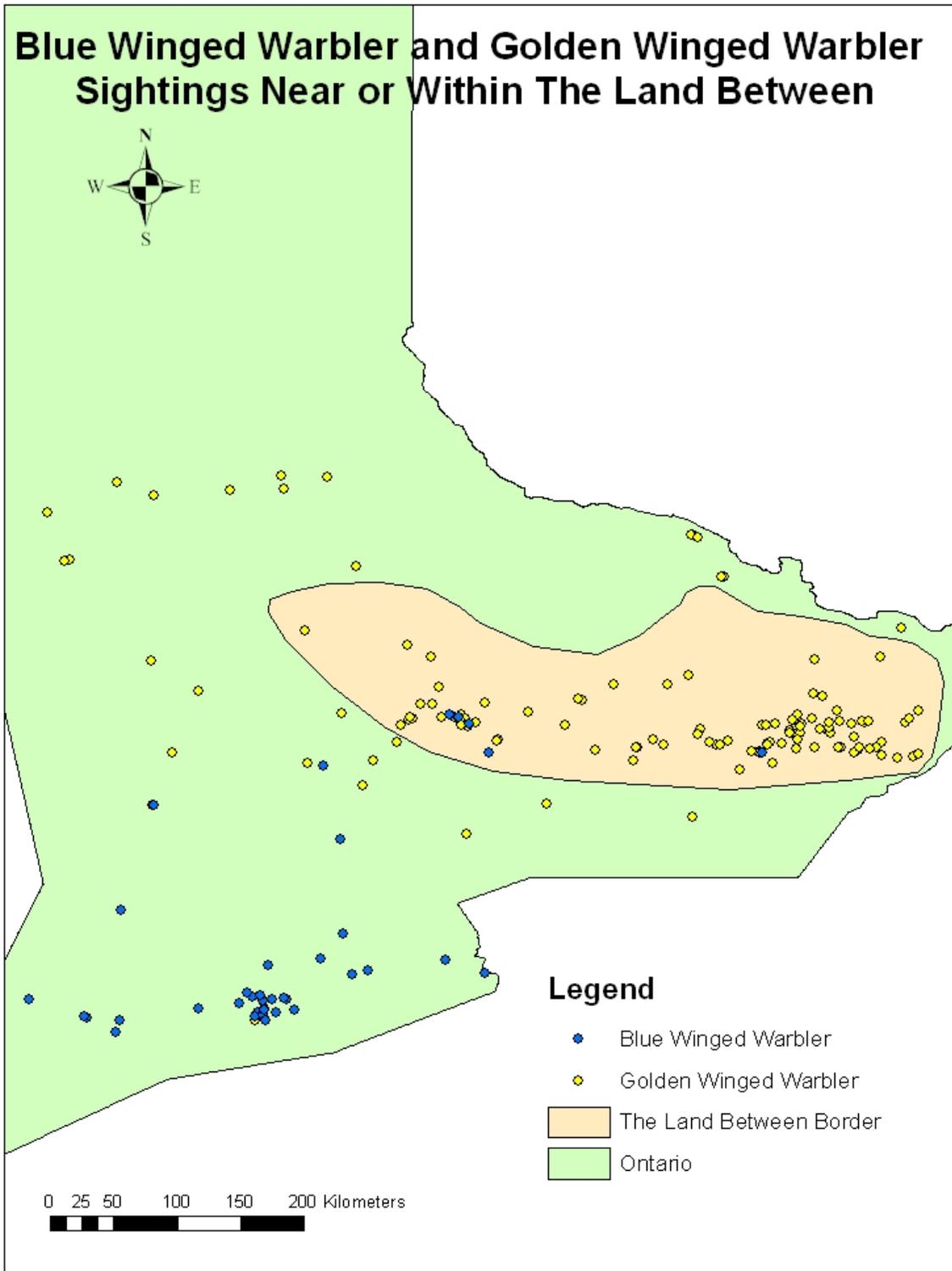


Figure 4 BWWA and GWWA Sightings in Ontario