

# Map Limitations

Any data captured by a Geographic Information System has limitations. For the Islands Trust Ecosystem Maps these limitations are in three major areas:

## 1. Year of the Air photo

It is important to remember that the Islands Trust Ecosystem Maps are only a snap shot in time. The information is gathered from the date that the air photos were taken.

## 2. Quality of the air photo

When using air photos to create maps there are three characteristics that affect the quality—scale, resolution, and accuracy.

### Scale

The air photos used for the Islands Trust Ecosystem Maps were at various scales. A smaller scale means that a plane is flying closer to the earth when the photo is taken. A smaller scale means more detail and more information because geographic features can be seen more clearly.

By zooming in on this data, the ecosystem mapper can get more data but there is always a limit to how far you can zoom in before the detail is lost. This limit is determined by the quality of the resolution of the air photo.

### Resolution

Resolution is how you measure the quality of digital images. All the photos used for the Islands Trust Ecosystem Maps were converted into orthographic rectified digital air photos before we drew the ecosystem boundaries. An orthographic rectified air photo is a digital image of the air photo with all the distortions caused by camera angle and ground contour removed.

How much detail you can see in a digital air photo when you are zoomed in very close depends on the resolution. Smaller resolution means better quality.

### Accuracy

The accuracy of a digital air photo is affected by a combination of scale, the orthographic rectification process and the resolution of the final digital image. To a certain extent, an air photo captured at a larger scale (1:42,000) with a small resolution of 0.5 meters can be just as helpful for regional level planning as an air photo captured at a smaller scale (1:20,000) with a larger resolution of 1.0 meters.

The accuracy of ecosystem mapping from digital air photos is improved when an ecosystem mapper references a stereo pair of hard copy air photos for further detail. This traditional air photo interpretation method was used to clarify certain parts of the landscape during the Islands Trust Ecosystem Mapping initiative.

It is important to remember that this information is taken from a bird's eye view of the landscape. The ecosystem mapper could not determine what could not be seen. For example, if there is a house under the tree canopy it may not have been picked up by the mapper because it could not be seen on the air photo.

### **3. Ground Truthing**

There is a high cost involved in checking the accuracy of this mapping by actually going out to the properties on the maps. It is expected that there will be a small degree of error in some of the classifications.

We hope that users of the maps will help identify problem areas by sending in their comments.