

The NPS Basecarto Program is developing high resolution (IKONOS) image based ortho products.

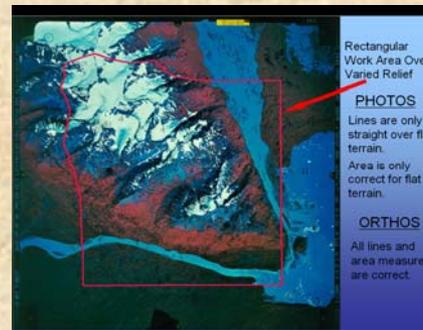
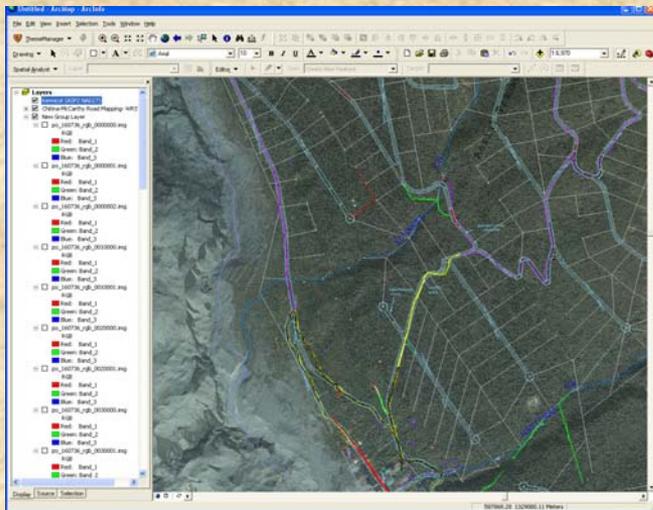
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The NPS Landcover Mapping Program is developing medium resolution (TM7) image based ortho products.

Orthos allow direct measurement and accurate orientation using imagery products. Ortho production turns images into maps.

High resolution imagery (1m Ikonos) is useful to a scale of about 1:4,000. This facilitates detailed studies.

These digital ortho images can be used with any GIS layer in ARCGIS. Below is a portion of the Kennicott ortho image overlaid with an Autocad survey drawing for this area.



Medium resolution TM7 products are important sources of data for broad areas and are useful to a scale of about 1:100,000. These digital images can be used with any GIS layer in ARCGIS. Below is an example from the GLBA area.

Lituya Bay - Glacier Bay National Park and Preserve

On August 9, 1958 an earthquake dumped millions of tons of earth into the head of Lituya Bay. The resulting tidal wave stripped vegetation up to an elevation of 1700 feet opposite the landslide. As the wave contained it cut a swath through the conifer forest surrounding the Bay and over Conatoph Island in the middle of the bay. Since then the disturbed area has regrown as alder surrounded by the unaltered conifer forest.



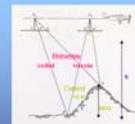
Alaska Landcover Mapping Image Plot Products

The above image is the normal TM true color image. The water sediments patterns are clearly visible.

The image on the left is TM true color enhanced with TM pseudocolors. The infrared component of the pan makes the sedimentation patterns in the water but enhances the terrestrial vegetation patterns. The alder cut line from the tidal wave can be easily distinguished from the surrounding conifer forest.



Imagery to Ortho



$$DOQ = \text{Image} + \text{GCP} + \text{DEM} + \text{SSS}$$

GCP=ground control point

DEM=digital elevation model

The costs of ortho production can be reduced if ground control points (GCP) can be minimized. Both the high and medium resolution ortho products are designed to provide the best product for the minimum cost.

High resolution ortho products are being developed for the entire Park areas of KEFJ and ANIA as well as a portion of LACL using FY2004 funds. Subsequent funding from Basecarto will be used to continue high resolution ortho production throughout Alaska's Parks.

Medium resolution ortho products have been developed for all Alaskan NPS areas and are available in the NPSGIS database. These ortho image products are updated as new imagery and products become available for Parks.