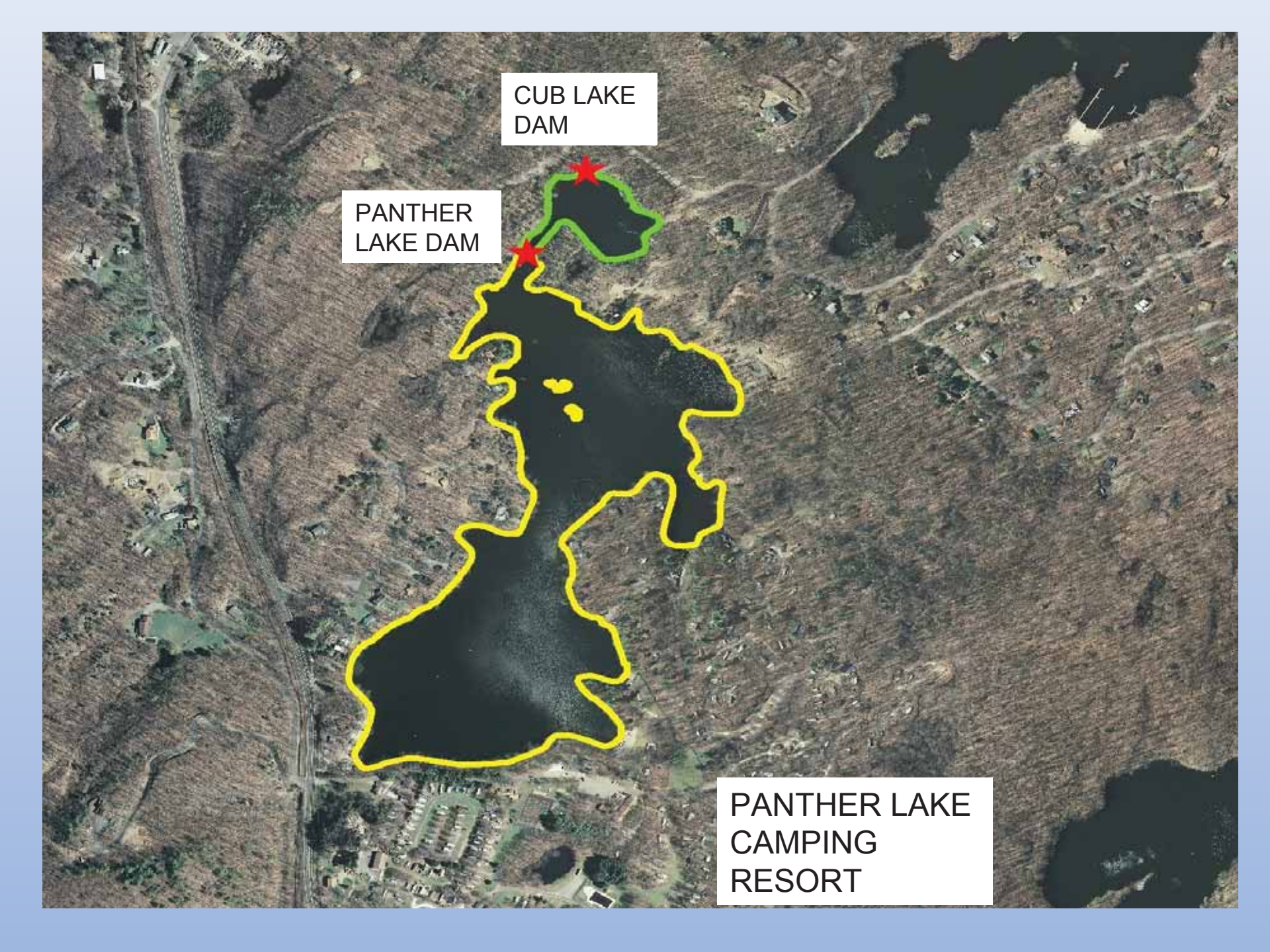


J.P. Bell, GISP
Senior Scientist
Princeton Hydro, LLC

ESRI Mid Atlantic User Conference
December 6-7, 2011

GIS and Modeling: Providing Cost Effective Solutions

An aerial photograph of a reservoir system. The main reservoir is outlined in yellow and labeled 'PANTHER LAKE CAMPING RESORT'. Two smaller reservoirs at the top are outlined in green and labeled 'CUB LAKE DAM' and 'PANTHER LAKE DAM'. Red stars mark the dam locations. The surrounding terrain is brown and hilly, with some buildings and roads visible.

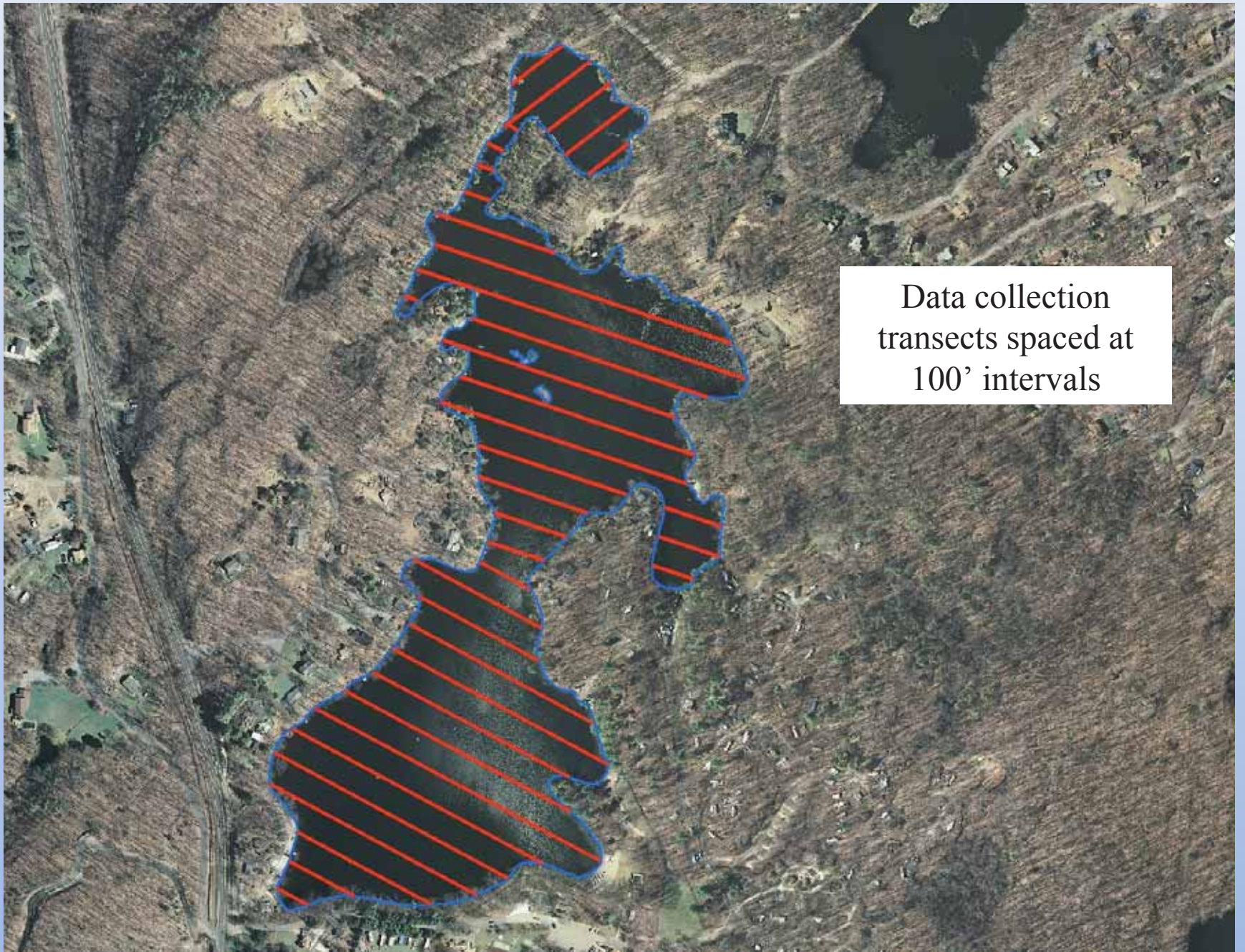
CUB LAKE
DAM

PANTHER
LAKE DAM

PANTHER LAKE
CAMPING
RESORT

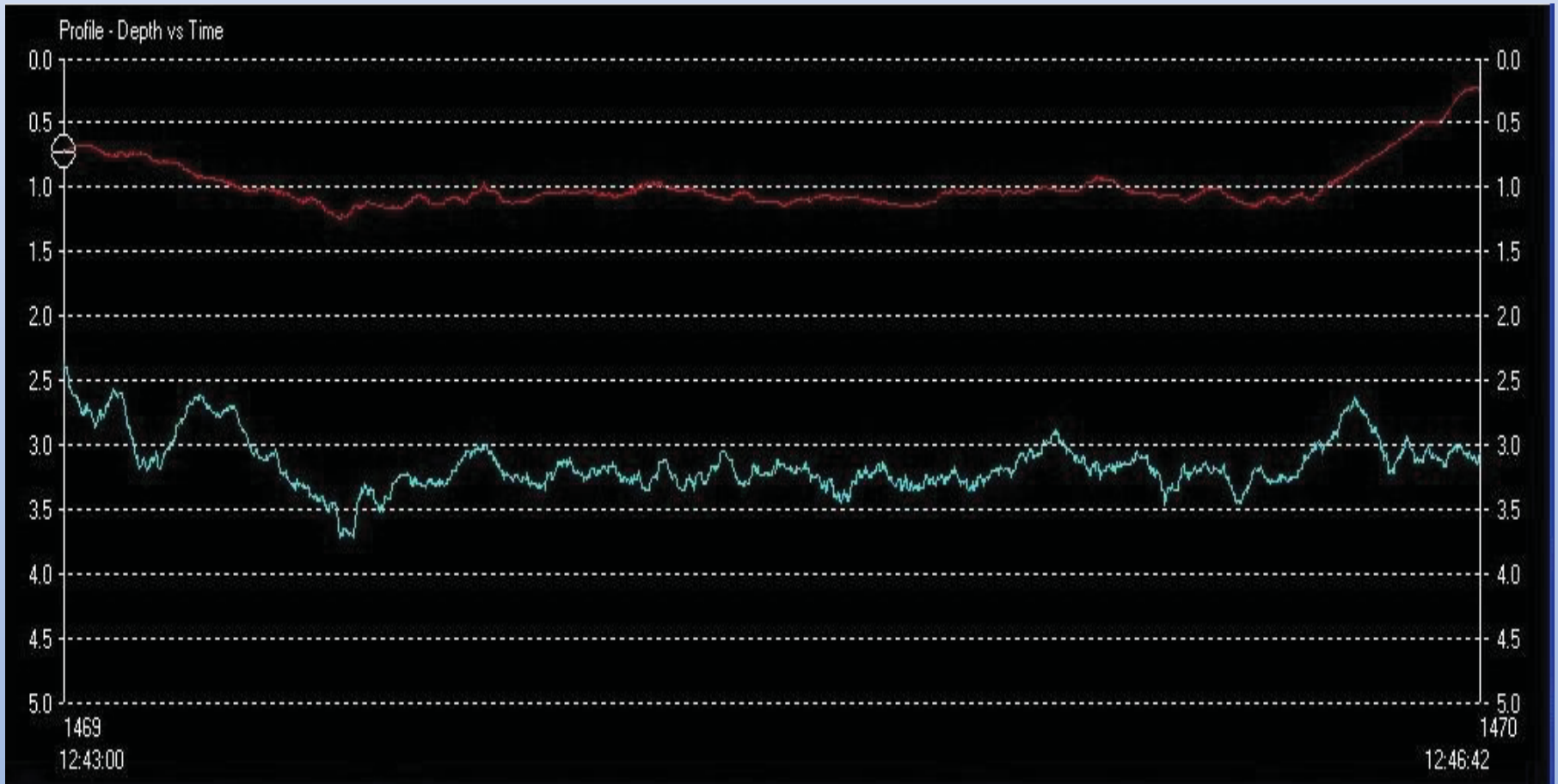
Our Knudsen Engineering 1612 Echosounder

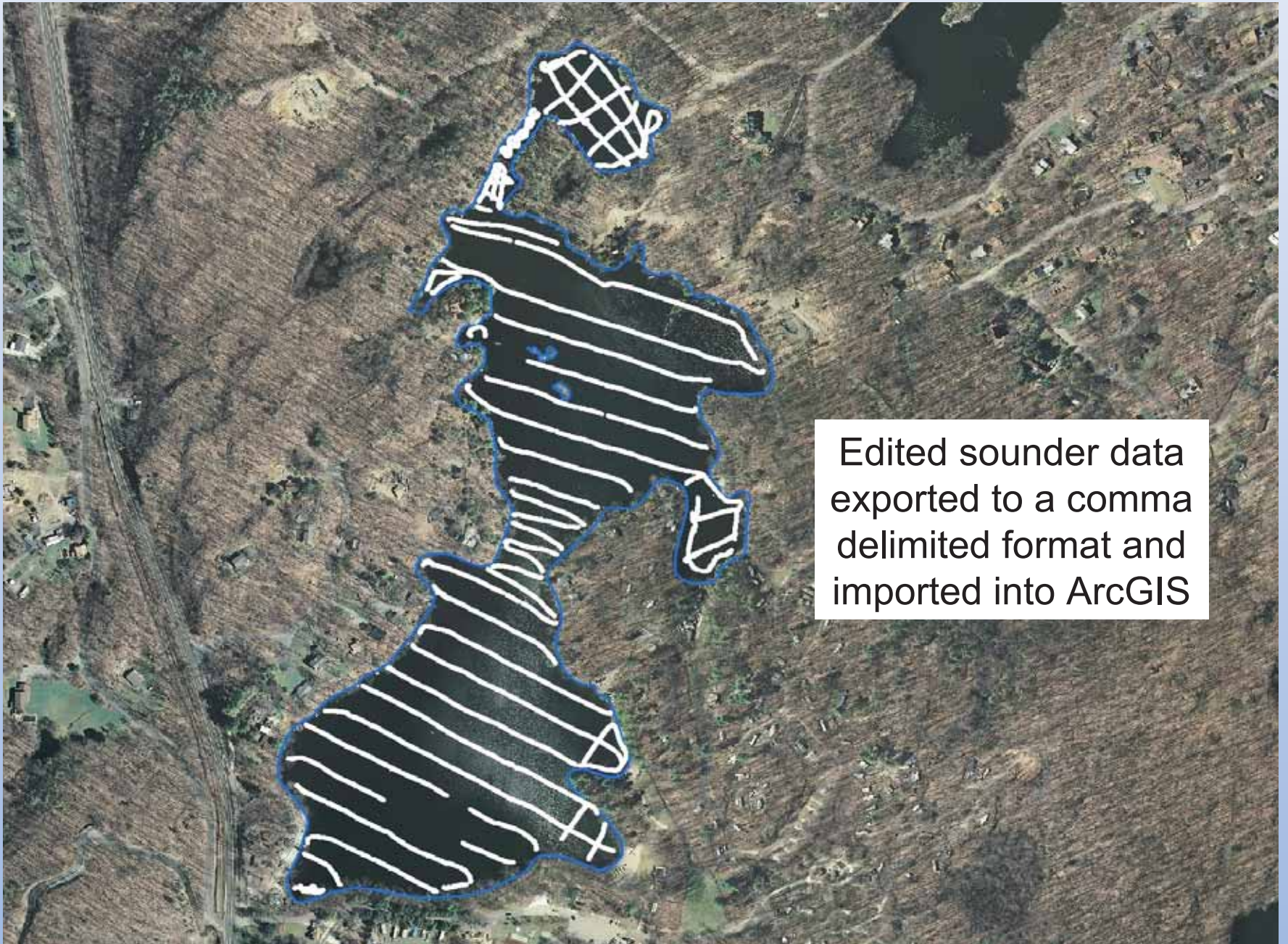




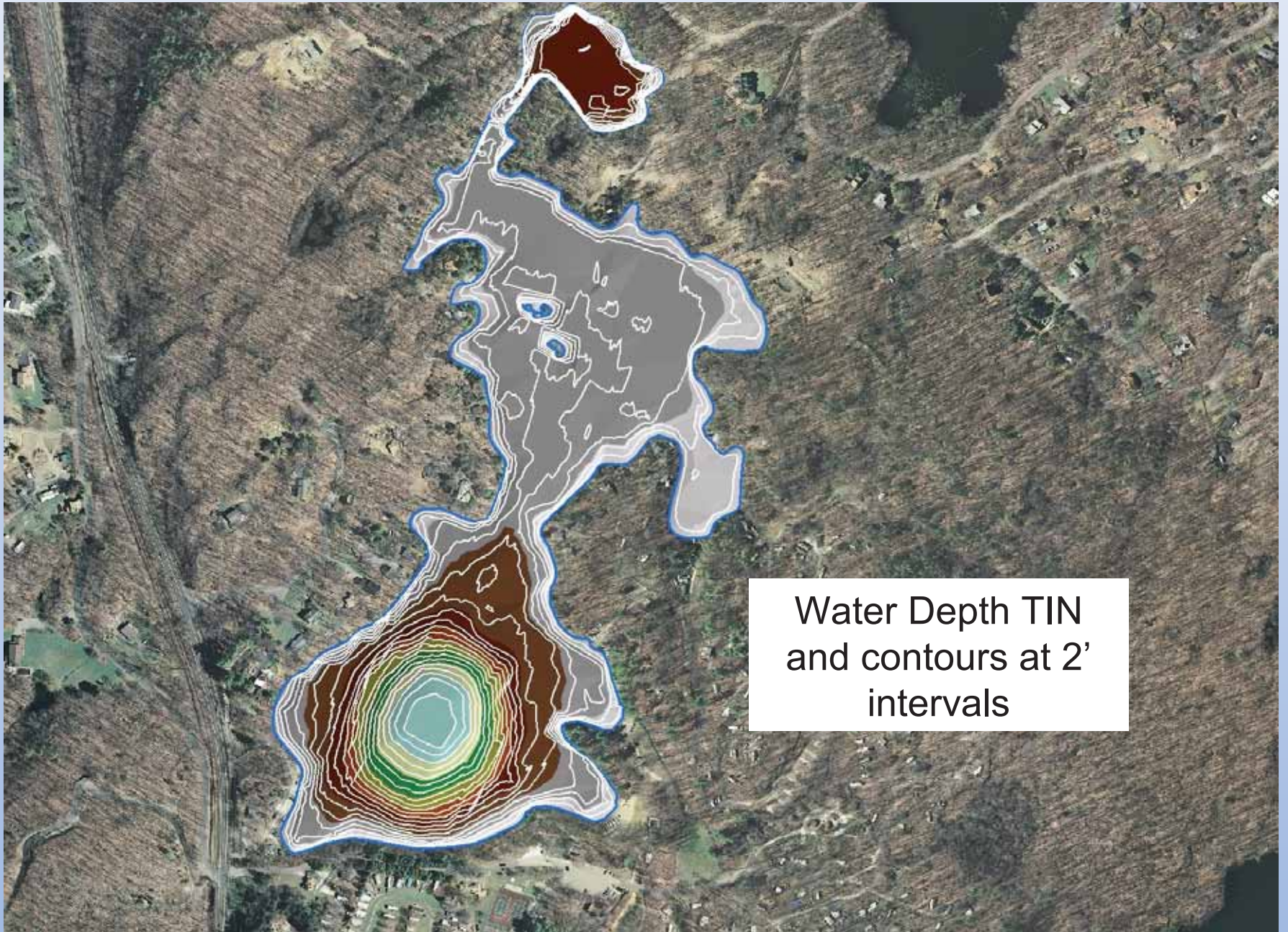
Data collection
transects spaced at
100' intervals

Raw, unedited sounder data as viewed in Hypack Max software



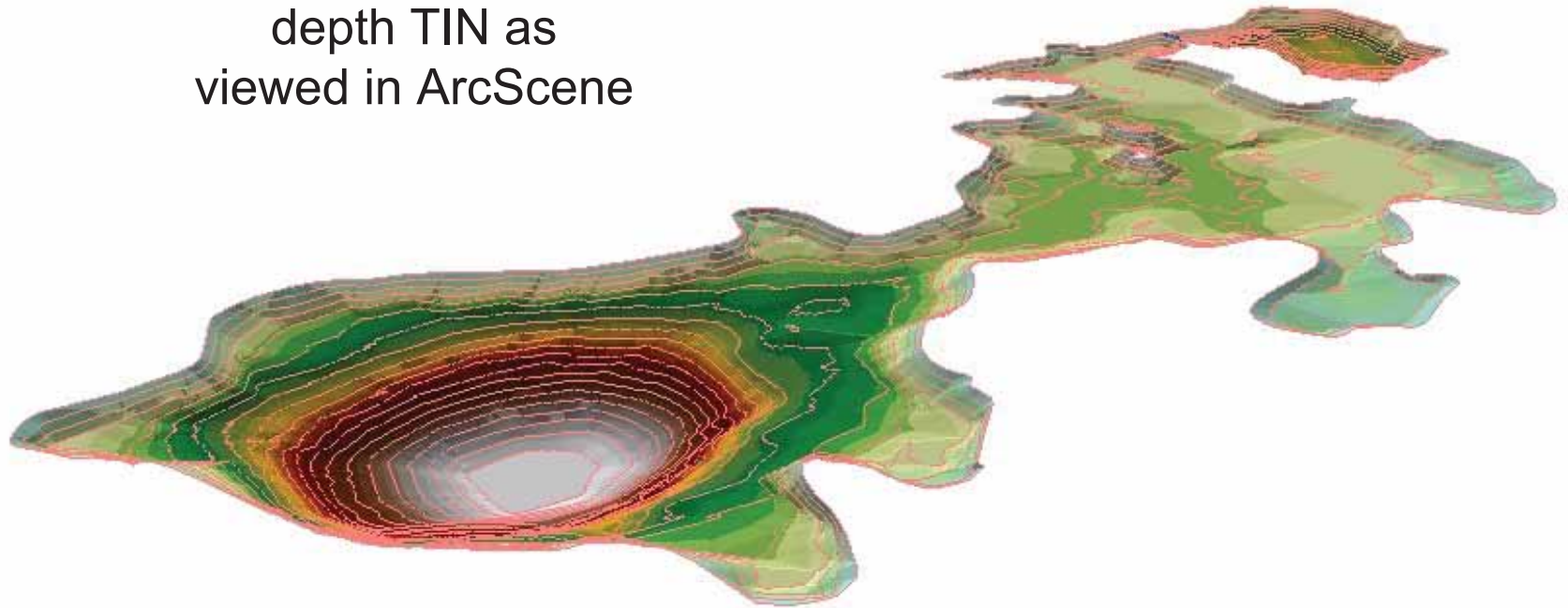


Edited sounder data
exported to a comma
delimited format and
imported into ArcGIS

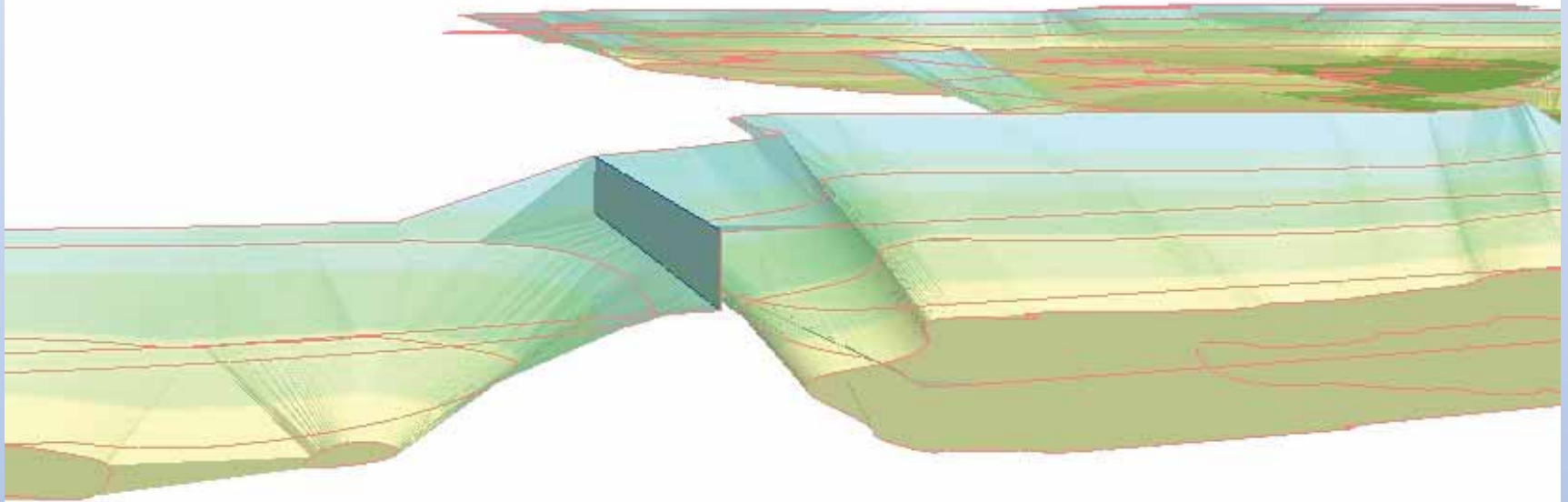


Water Depth TIN
and contours at 2'
intervals

3D view of water
depth TIN as
viewed in ArcScene



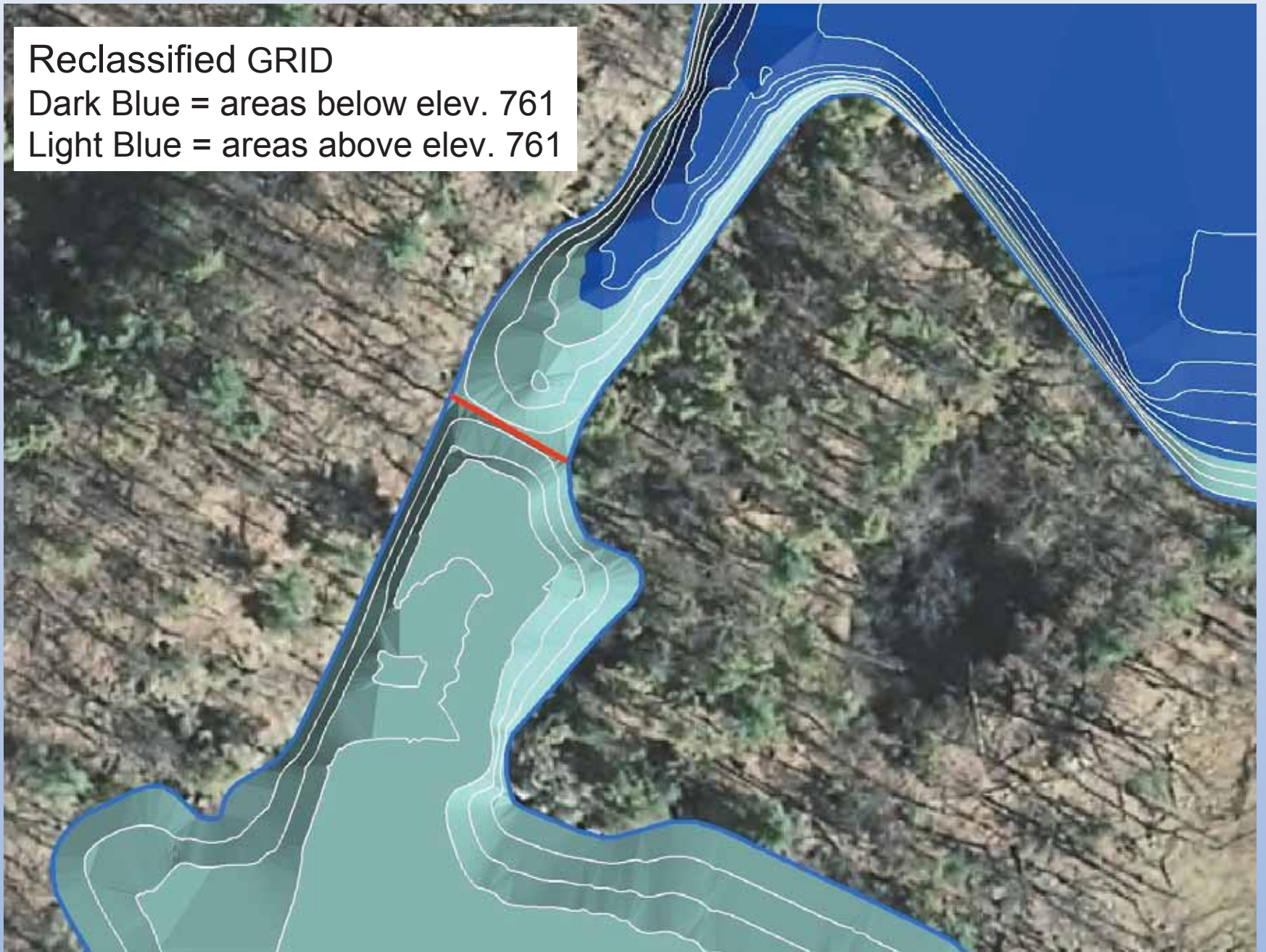
Hydraulically connected –
modeling both lakes as
one system utilizing
breaklines

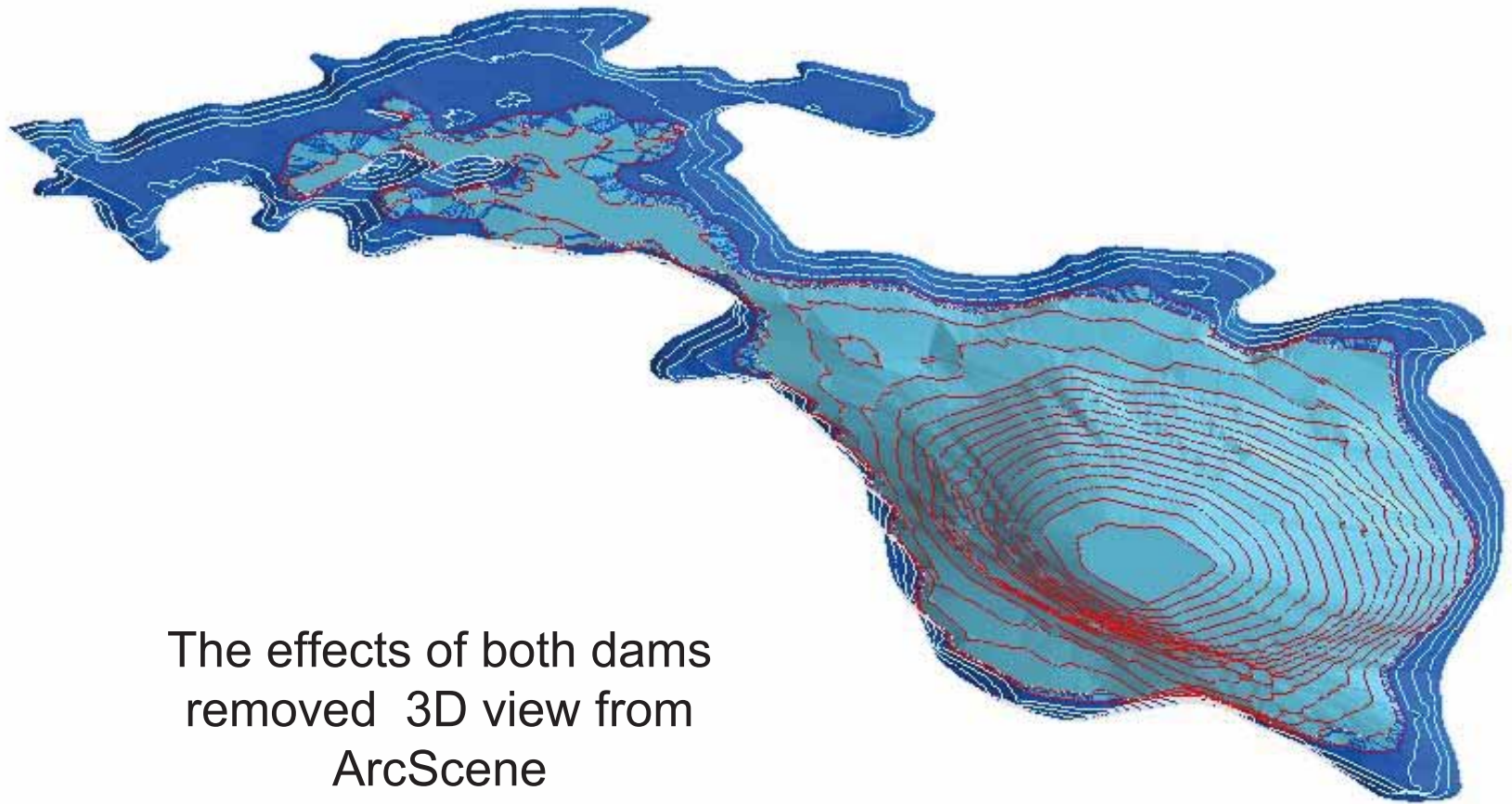


Reclassified GRID

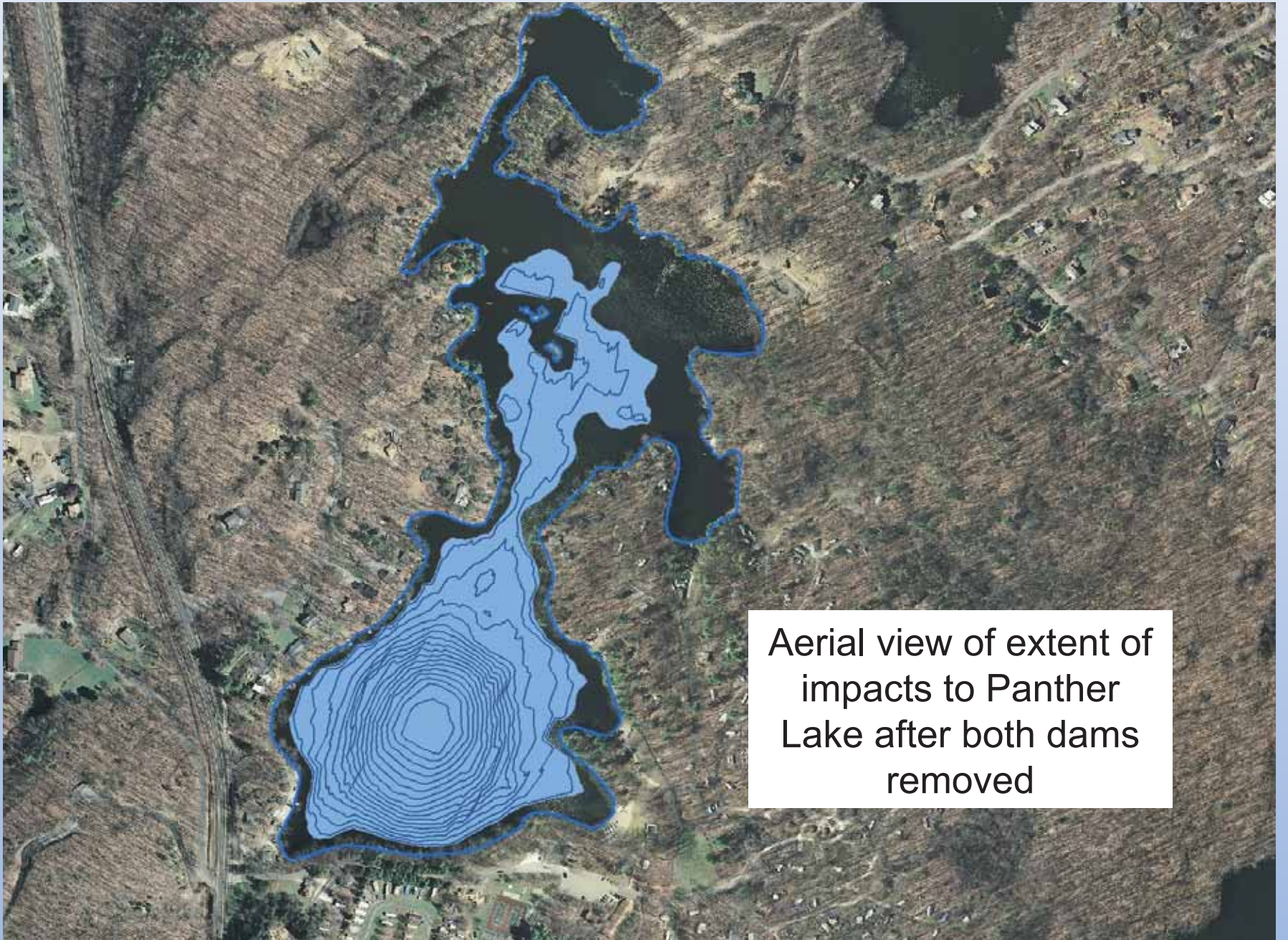
Dark Blue = areas below elev. 761

Light Blue = areas above elev. 761





The effects of both dams
removed 3D view from
ArcScene



Aerial view of extent of impacts to Panther Lake after both dams removed