SUMMARY OF LAKE PRODUCT FEATURES AND ISSUES

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on behalf of the ADT and Cal/Val Team

SWOT VALIDATION MEETING, CHAPEL HILL, NC
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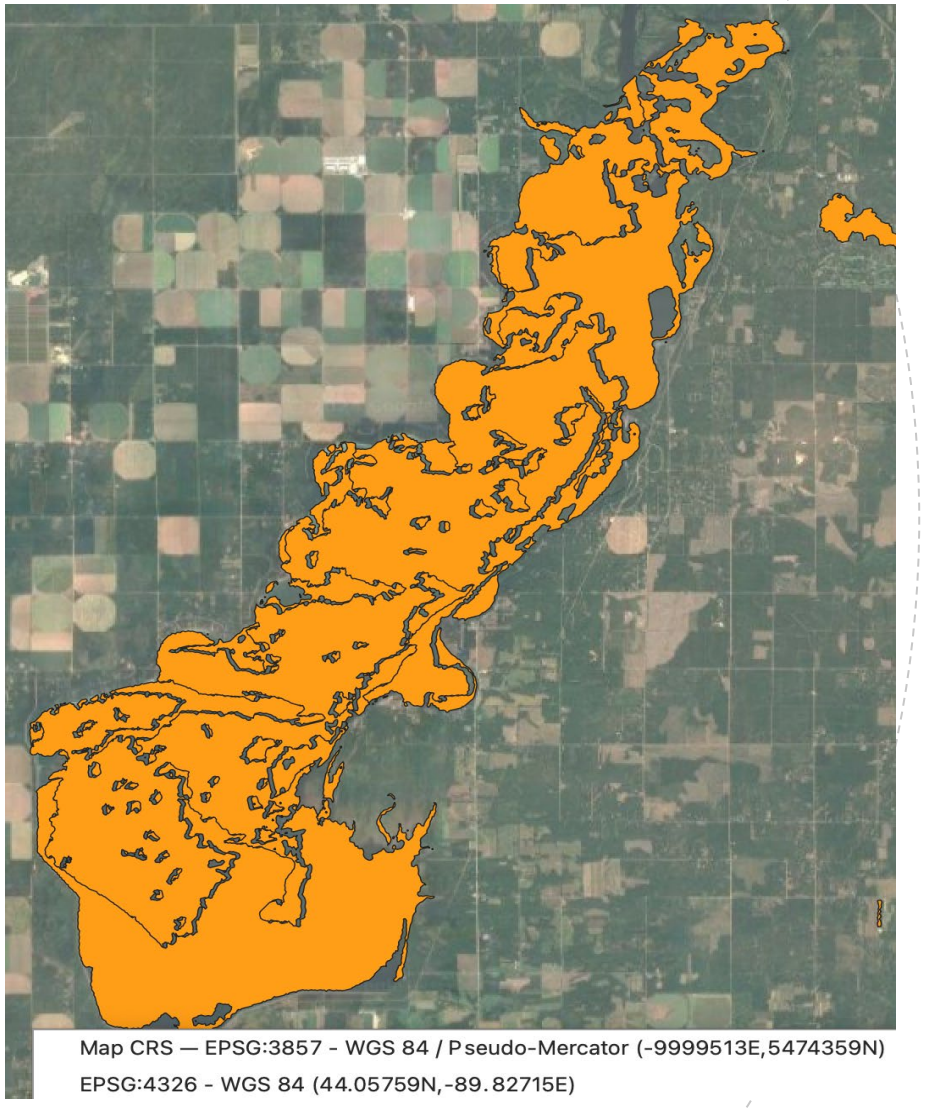
AZIMUTH SMEARING

- Lake extent systematically over-estimated
  - Larger impact on relative area error of small lakes
  - Can be improved through algorithm modifications (better handling of edge pixels, water fraction estimates…)

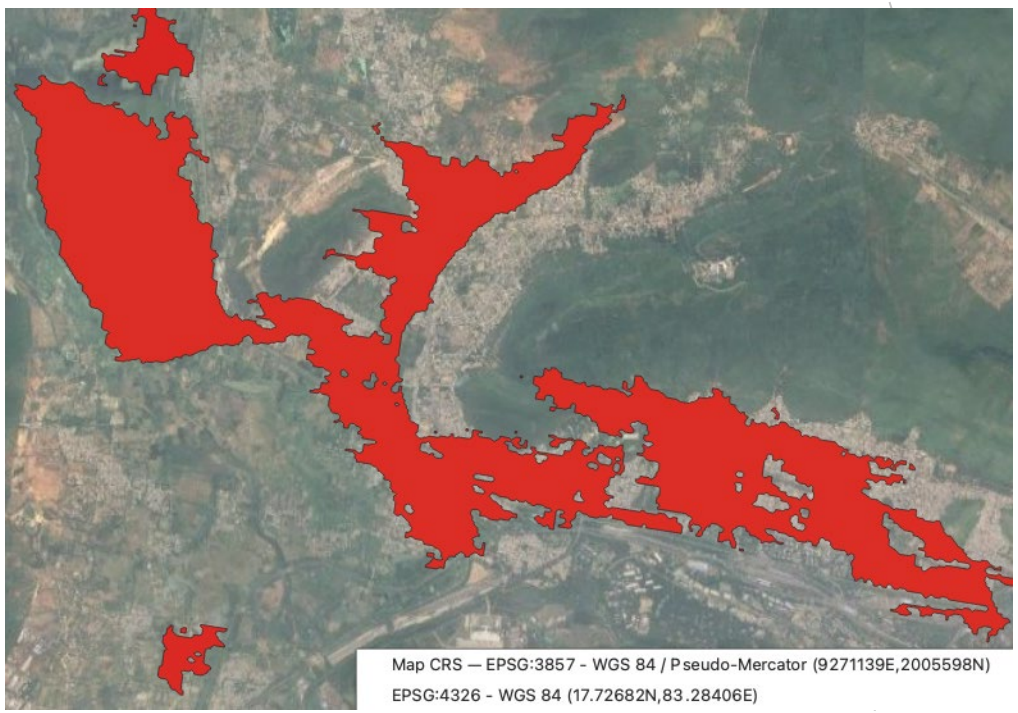
DARK WATER

- Area errors because of imperfect dark water flagging (estimation of extent or projection)
  - Can be improved through improved prior water occurrence masks , reference DEM and projection algorithm



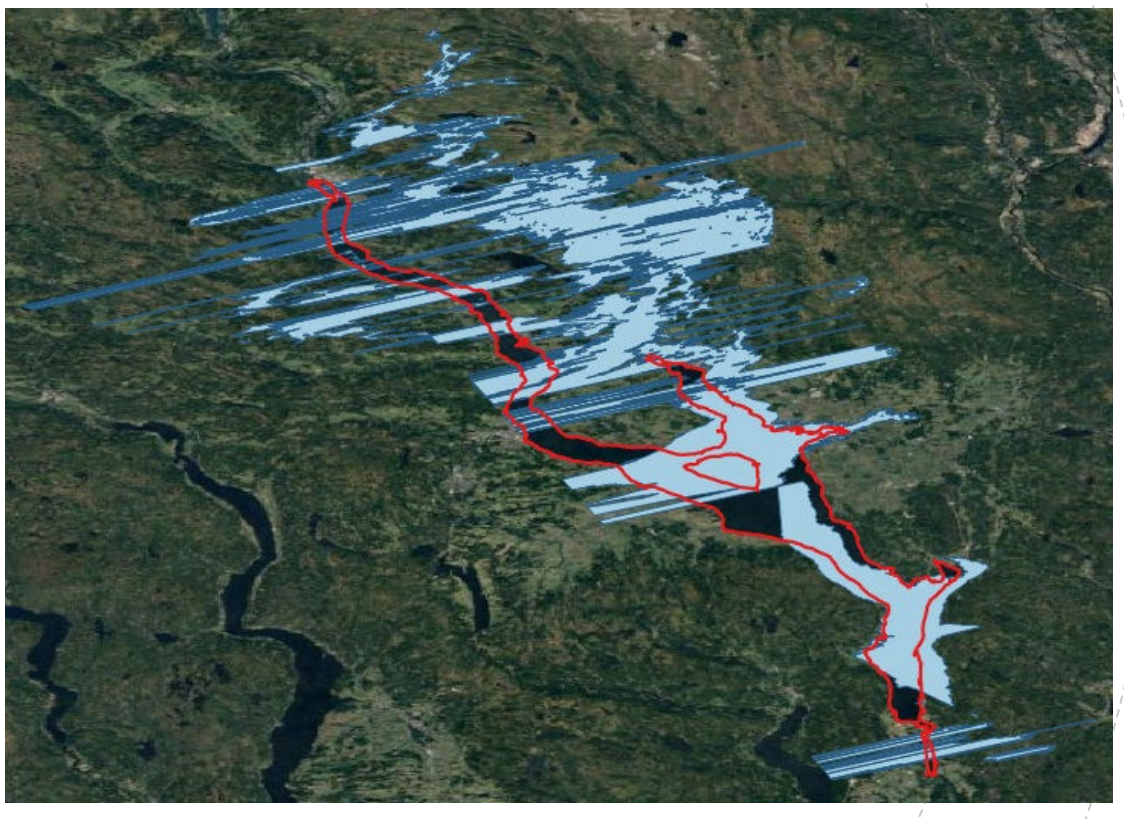
BRIGHT LAND
HUMID SOIL, URBAN AREAS…

- Bright land detected as water adjacent to PLD lakes may cause important overestimation of lake area.
  - Can be partially mitigated through active use of bright land flag

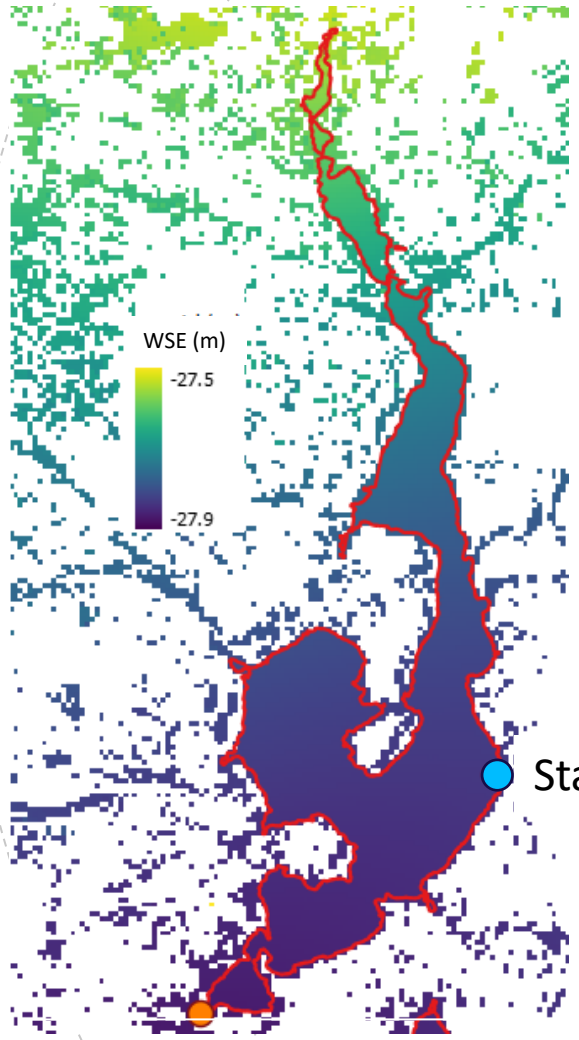


SPECULAR RINGING

- Ringing of very bright, specular features near nadir can contaminate the measurements areas far from nadir.
- Specular ringing may seriously deteriorate lake polygon and degrade lake area and wse.
  - Handling of specular ringing will be improved in future versions



GEOID ERRORS



North : -27.6054

Raster product WSE
PLD lake polygon

Station 030296 : -27.8346

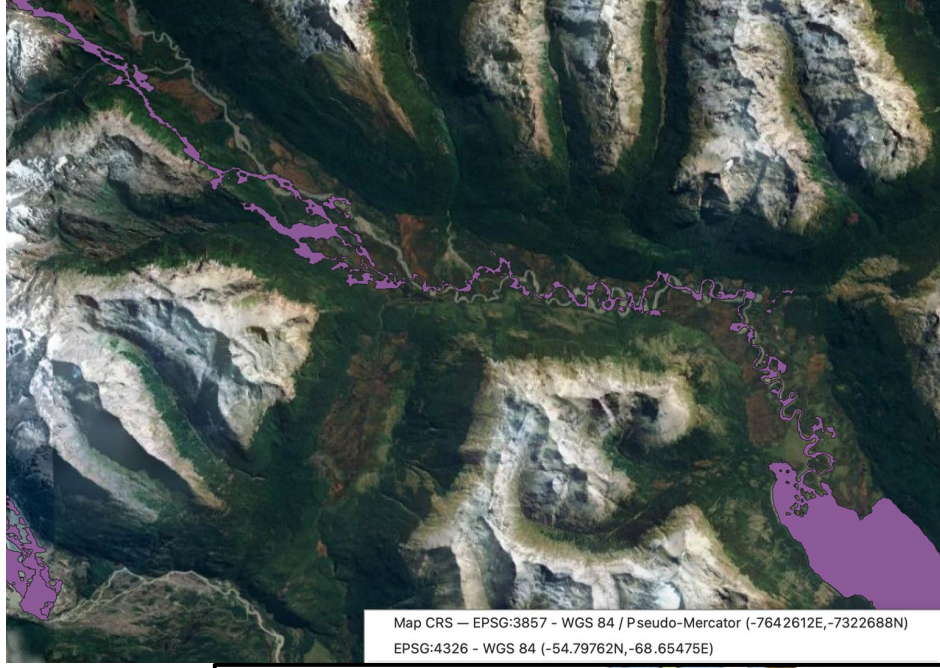
South : -27.8709

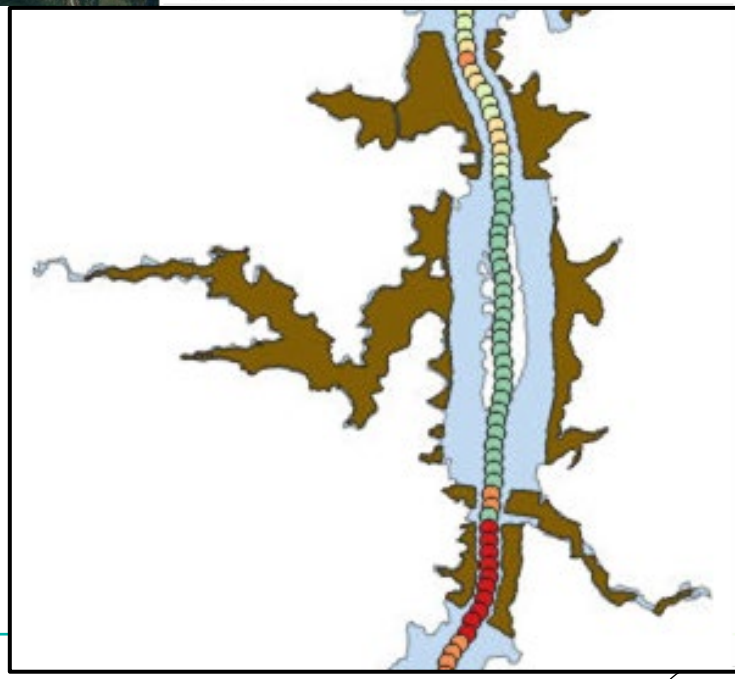
Station 030202 : -27.8705

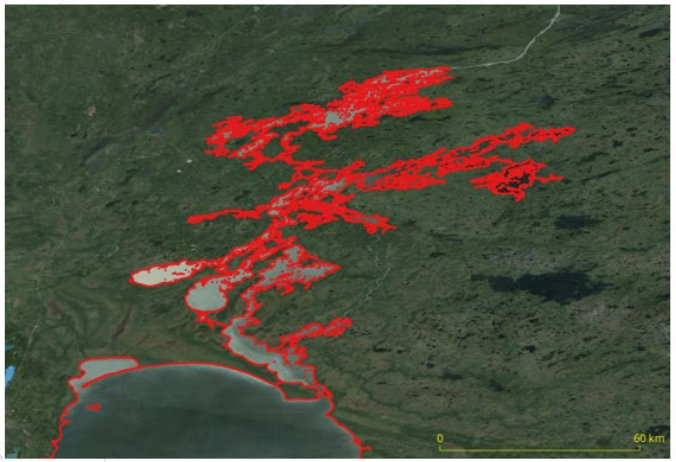
- Significant differences between the EGM2008 geoid and the actual lake water surface topography may lead to errors average lake WSE, especially for large lakes and partial observations.
  - Ongoing investigations to handle this better in future versions

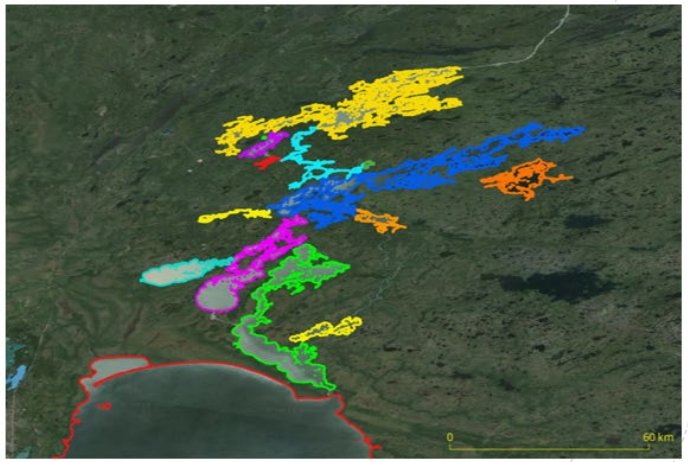
ASSIGNMENT ERRORS

- Missing connected rivers in SWORD and missing nearby lakes in PLD may cause assignment and area errors.
  - Improved versions of SWORD and PLD will reduce the assignments errors, likewise improved assignment algorithms.









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