A first (preliminary) view of global lake changes from pre-validated SWOT Science Orbit data

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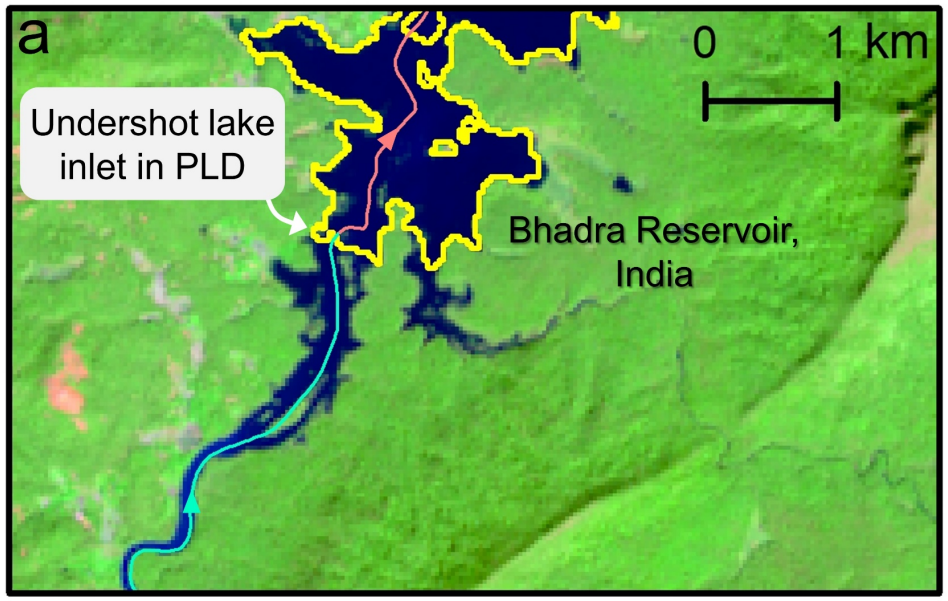
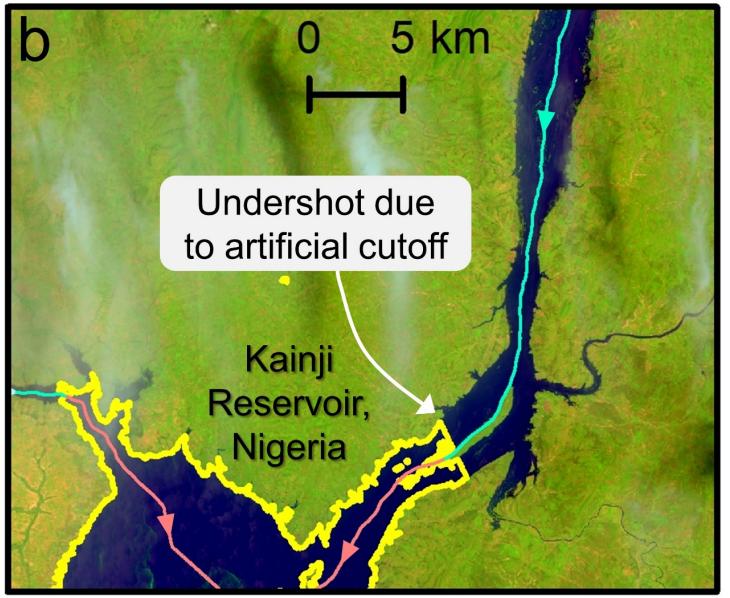
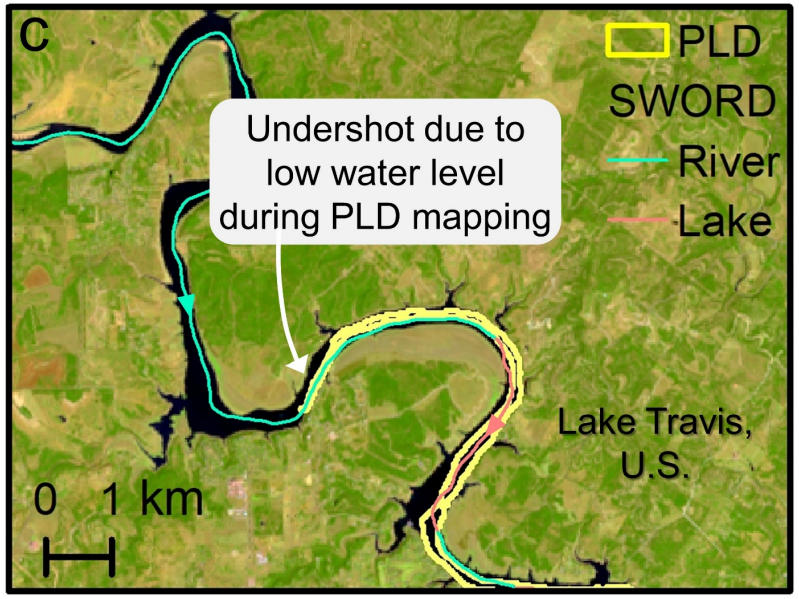
2. Virginia Tech

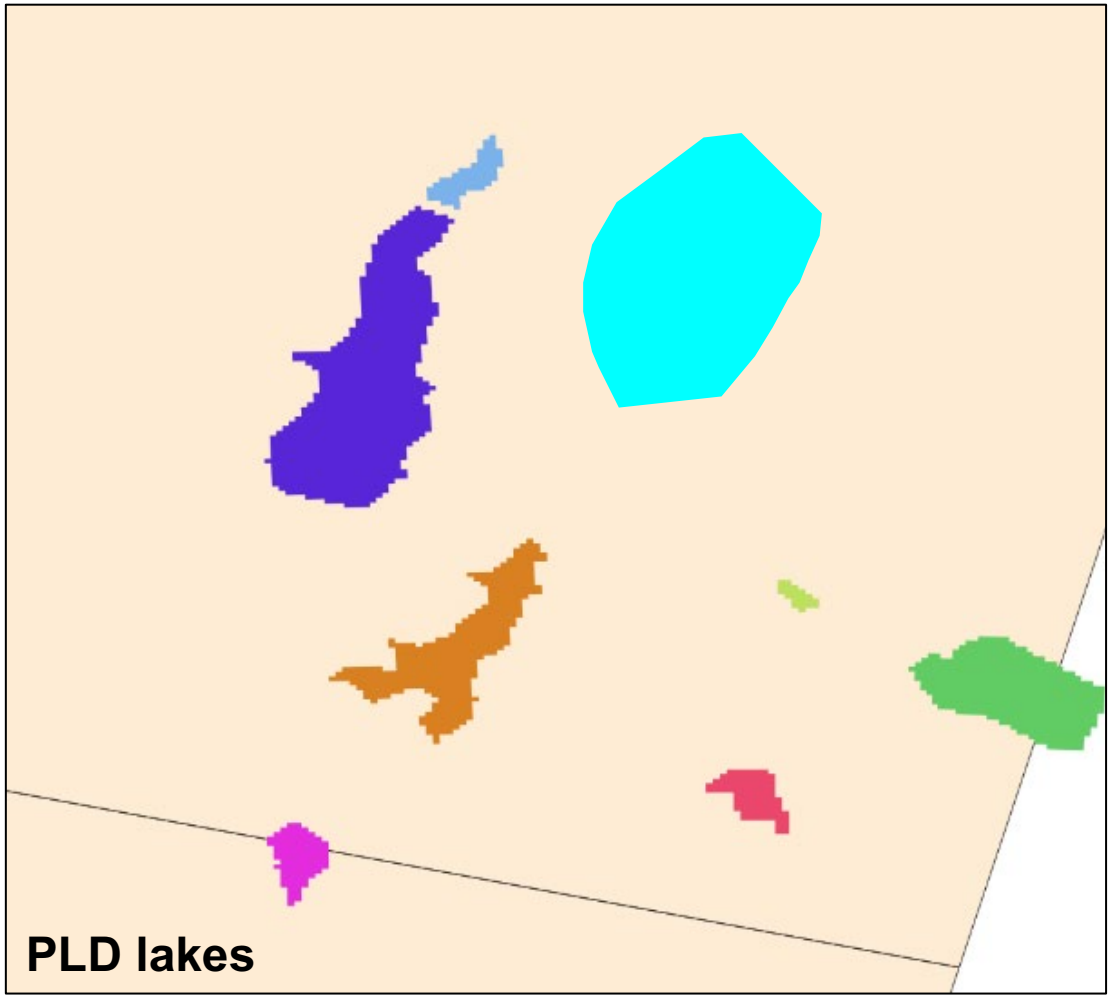
Scenario 1: Stationary PLD inlet

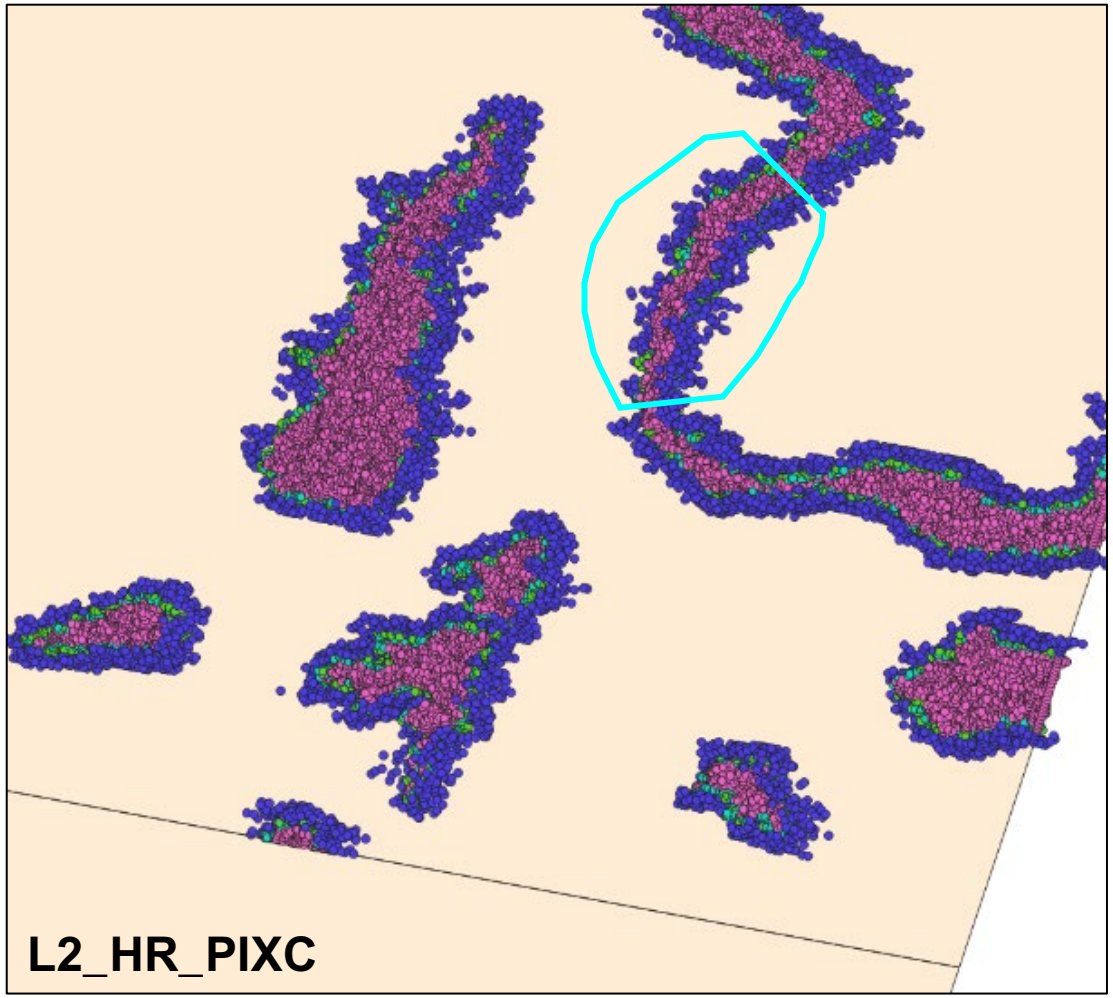






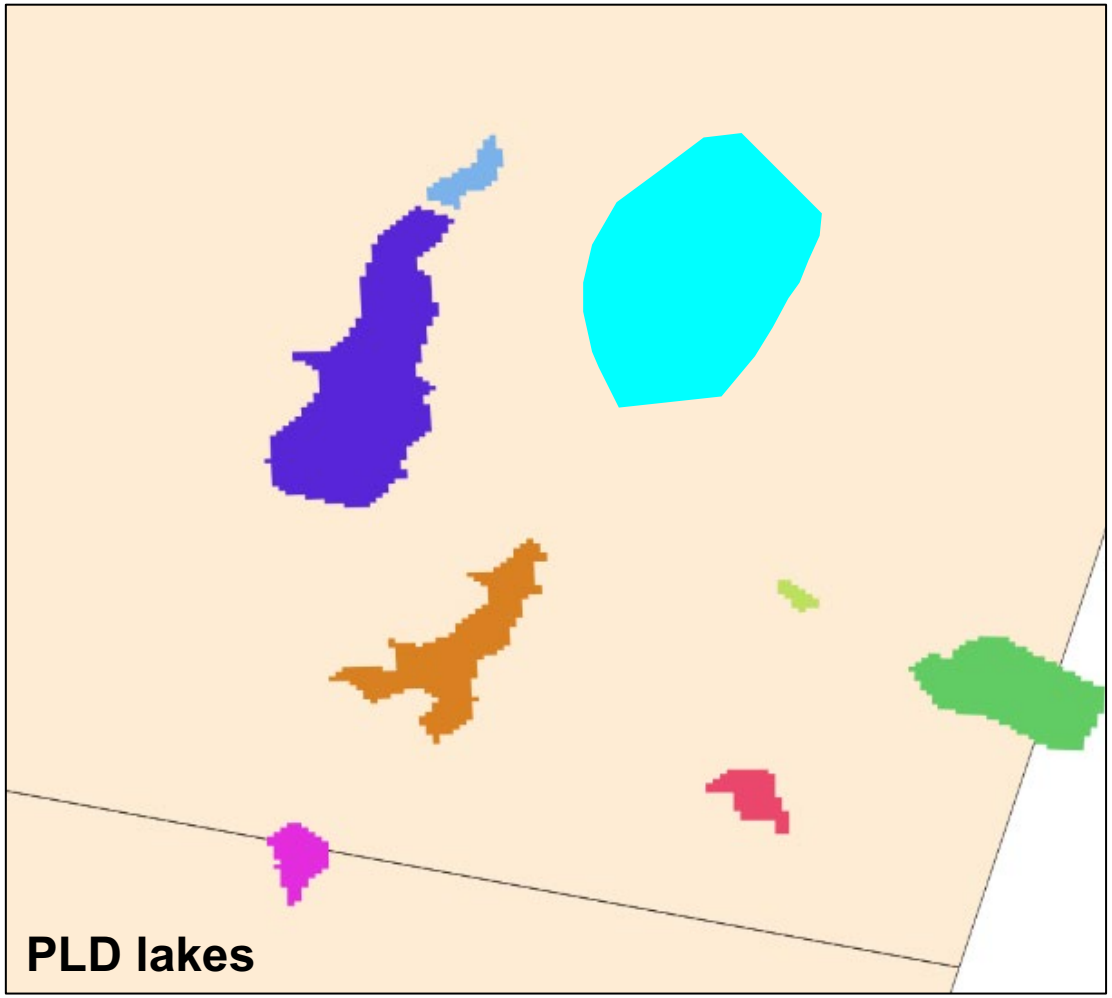
With connected lakes (i.e., PLD lake on SWORD)

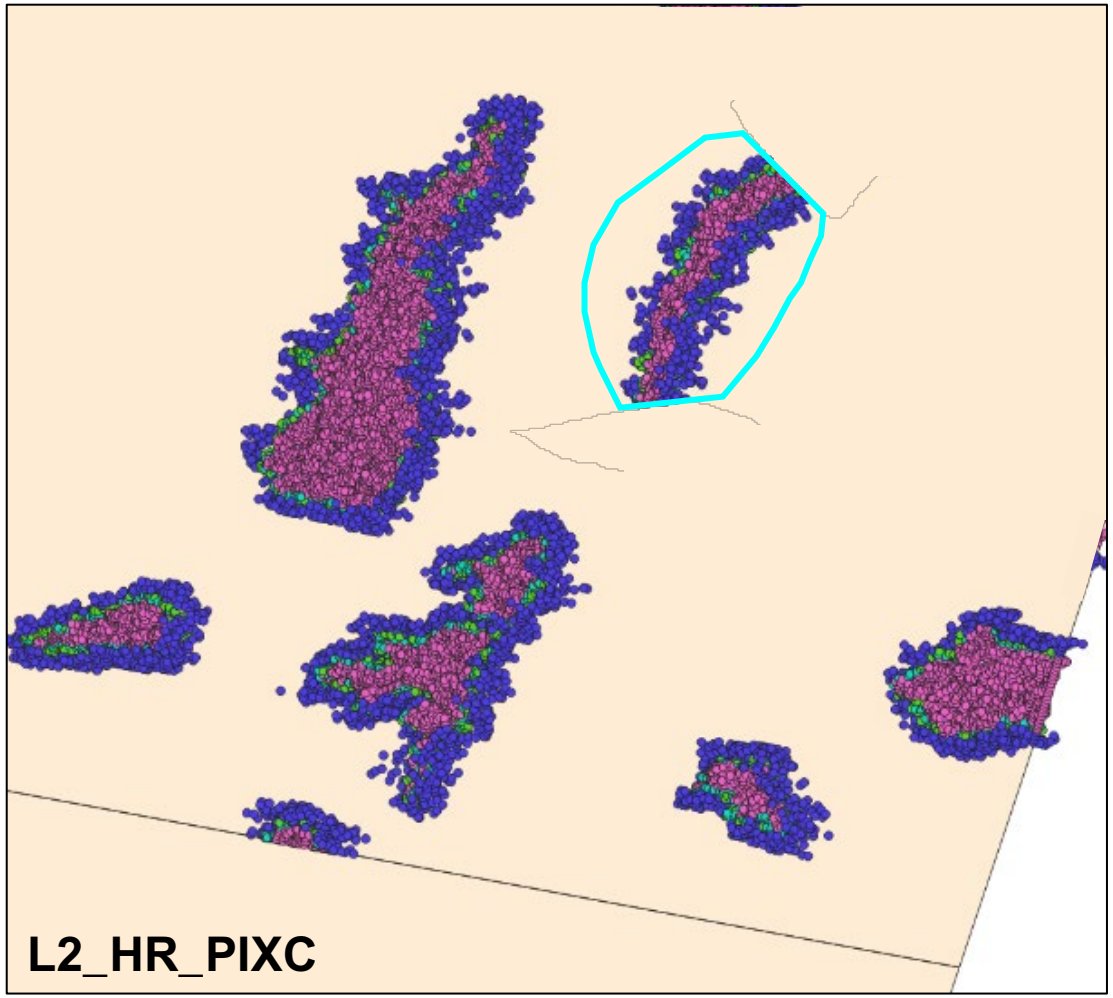




Scenario 1: low water level
Lake longitudinal extent < PLD longitudinal extent

With connected lakes (i.e., PLD lake on SWORD)





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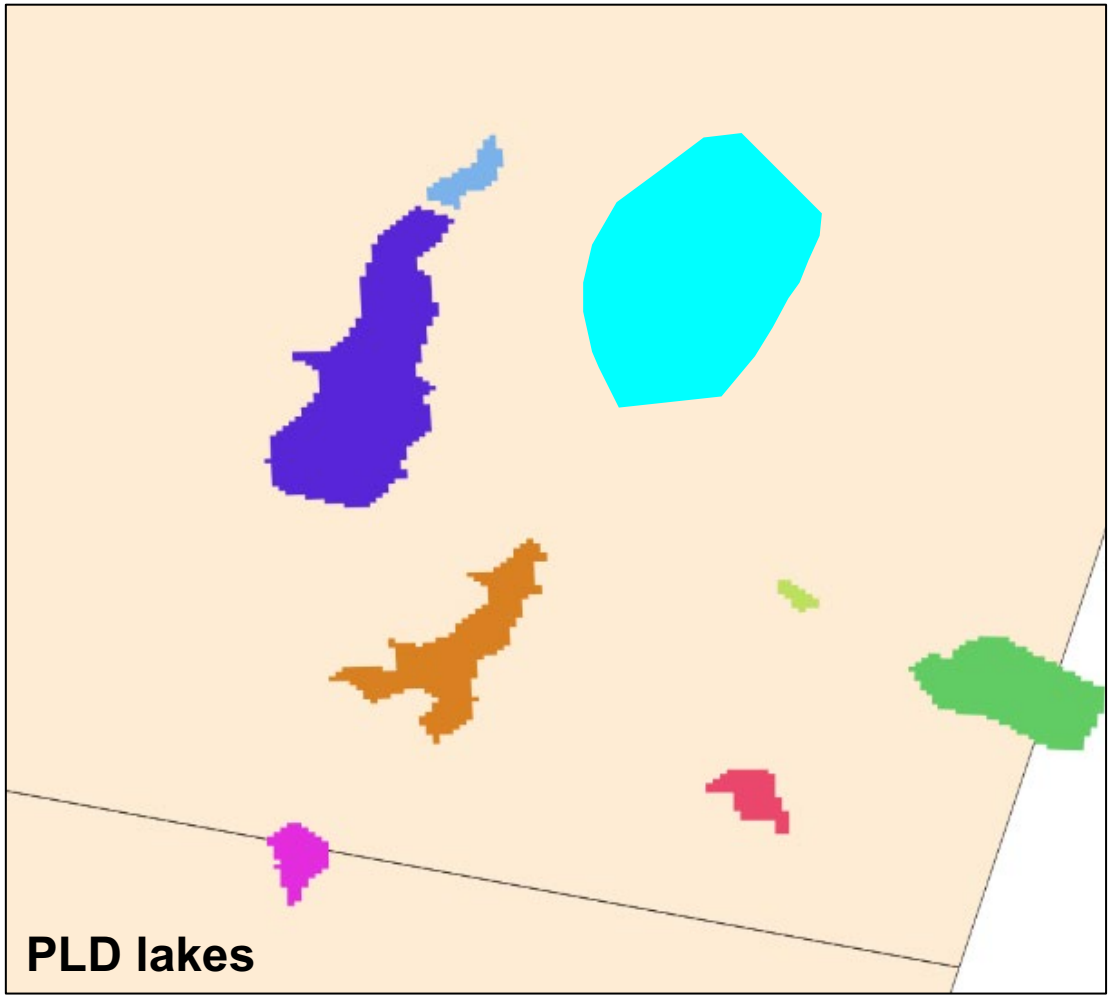

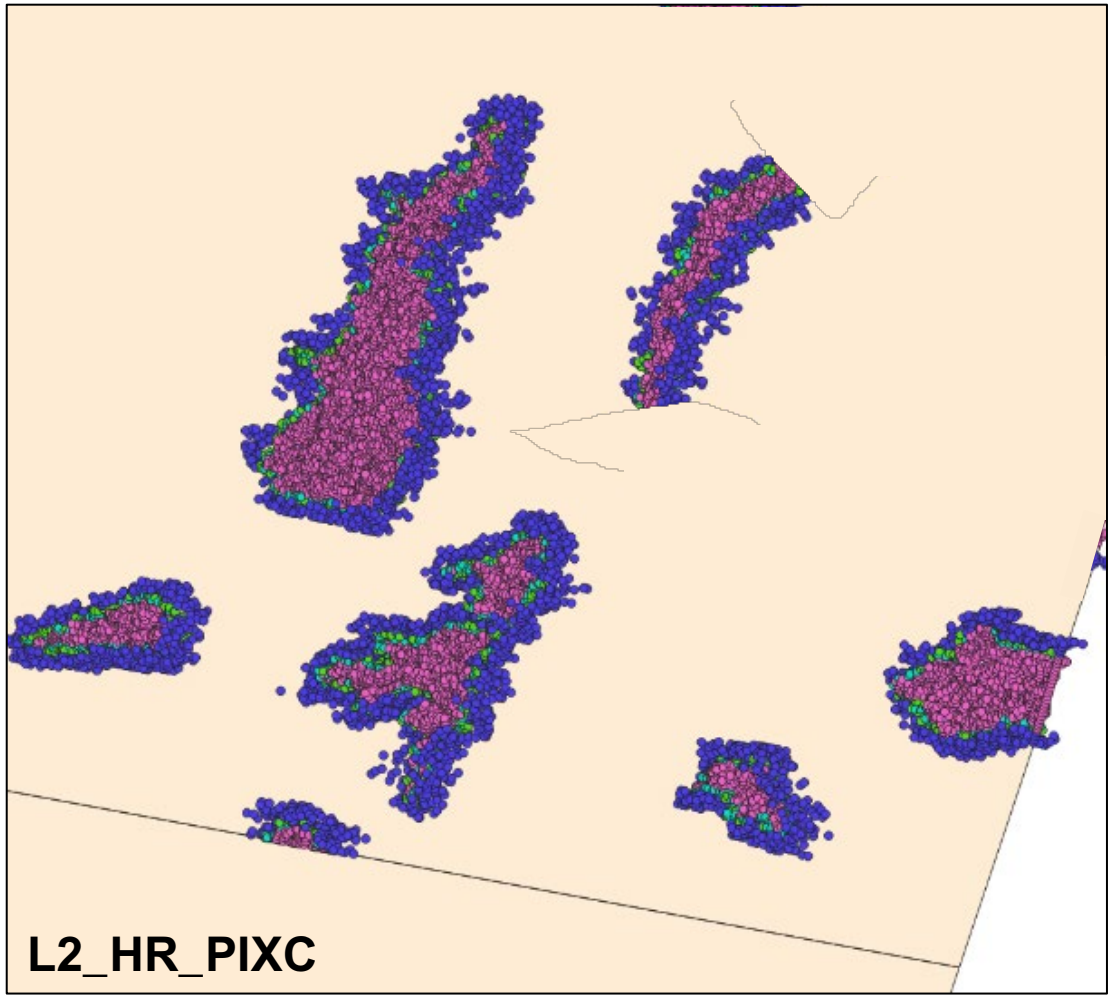

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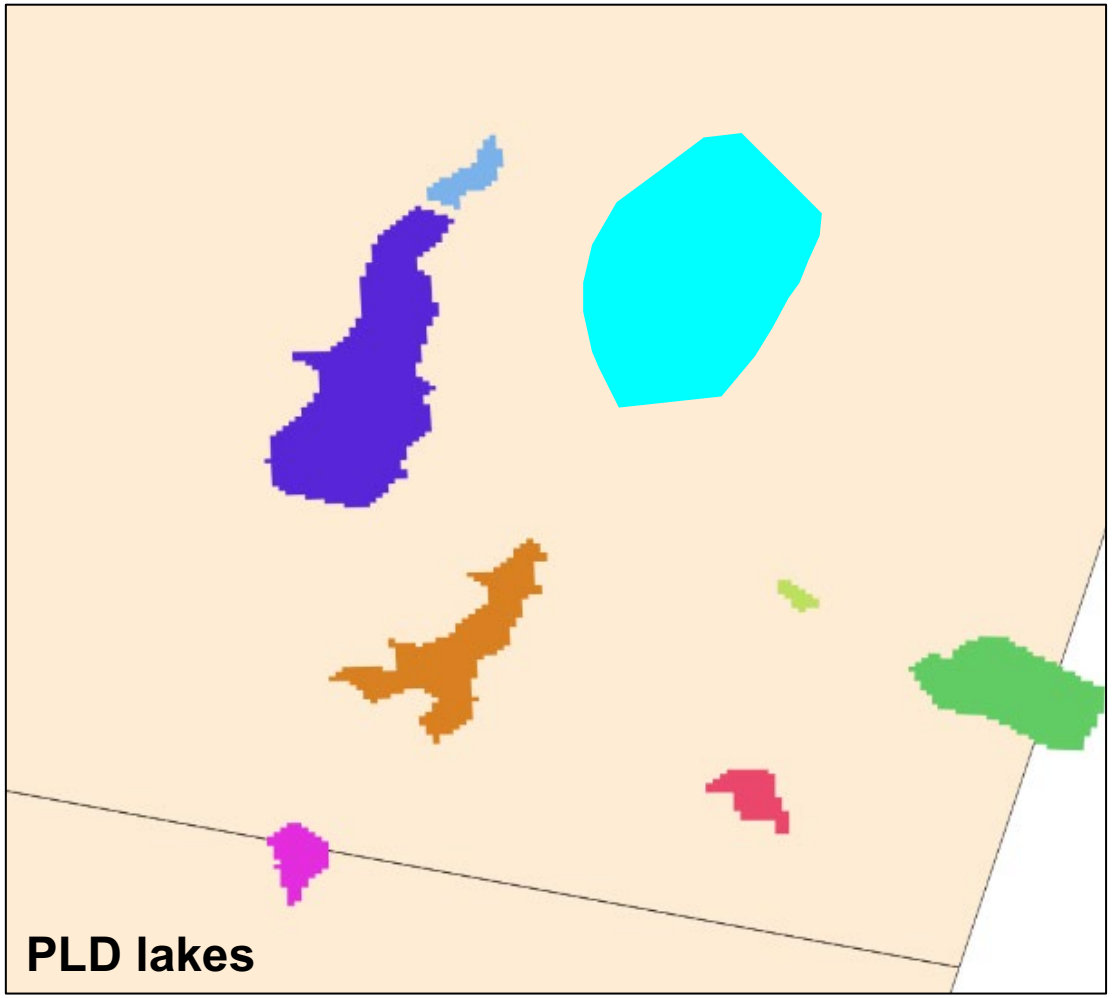
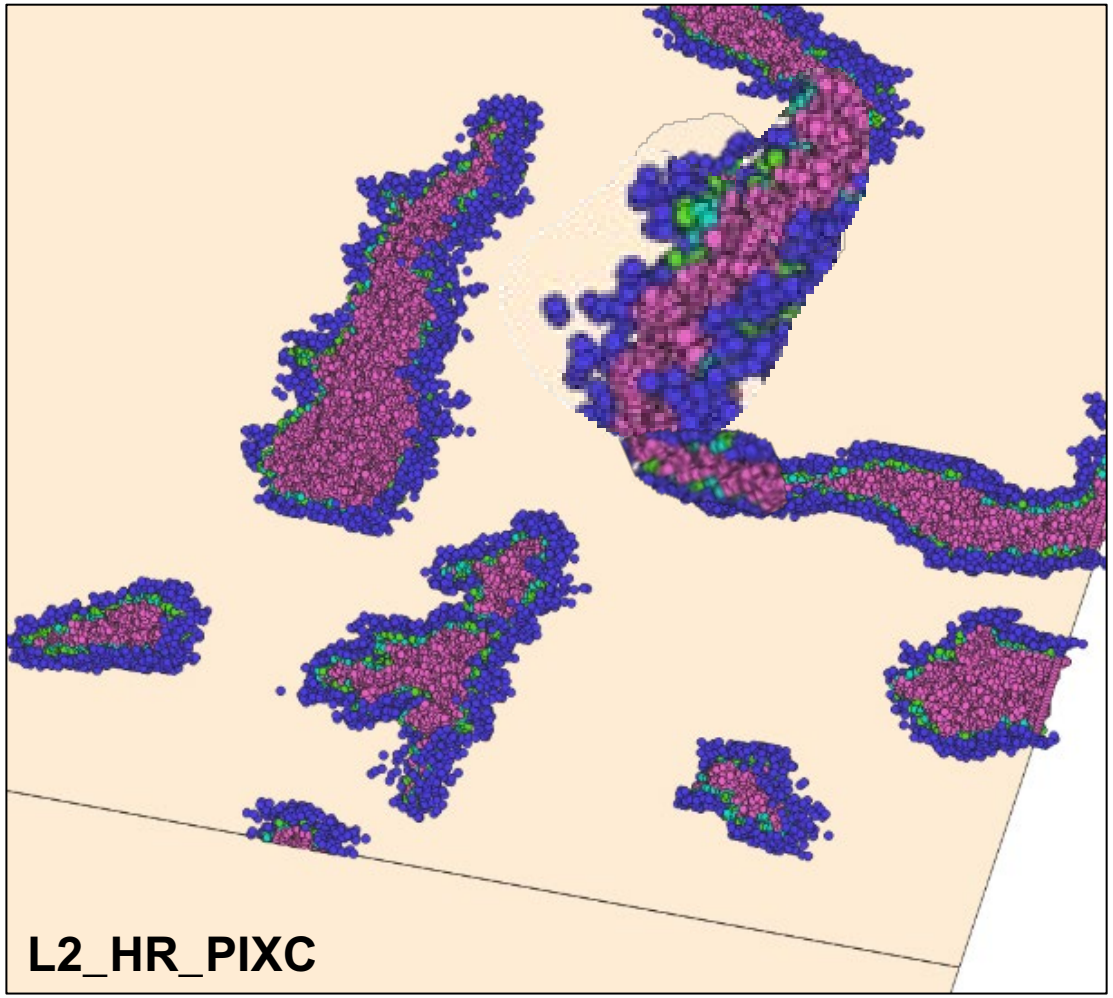
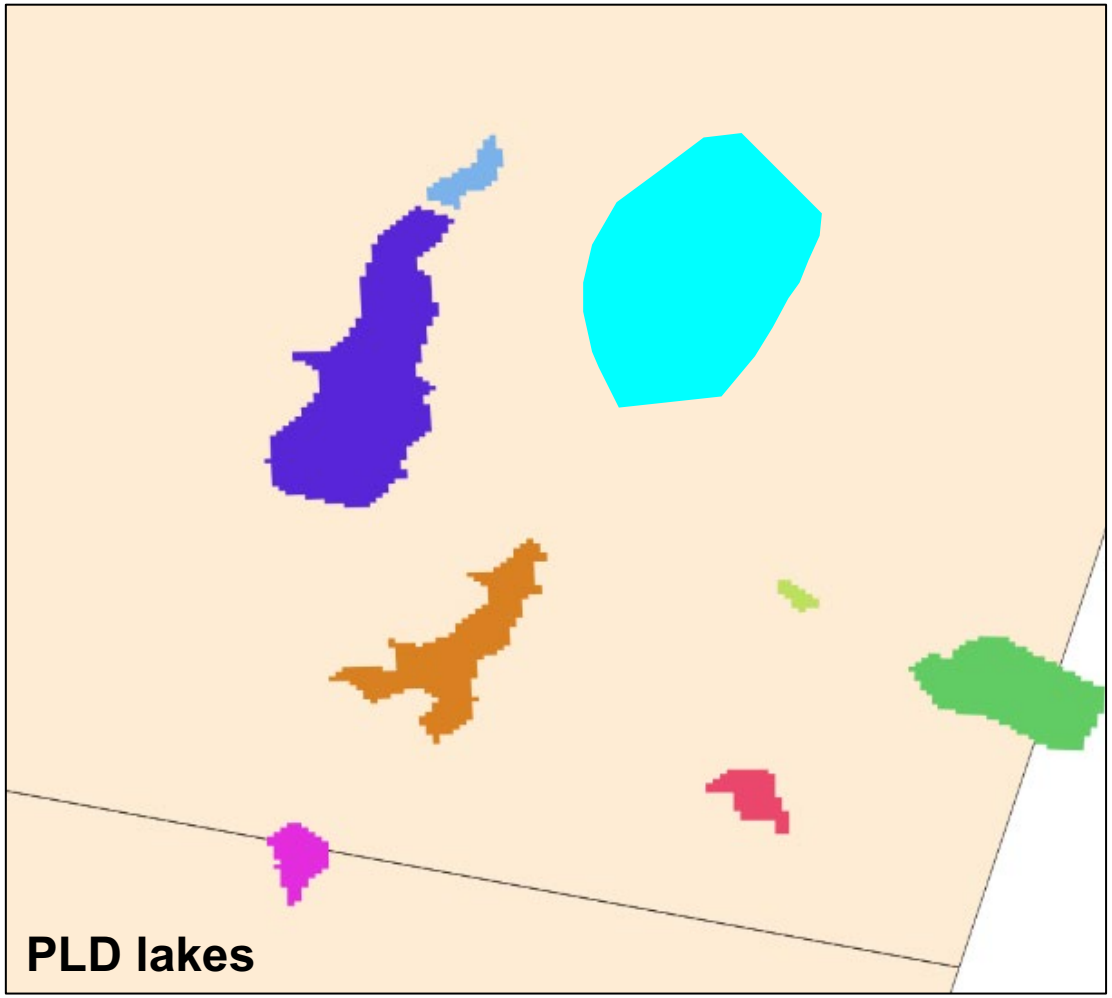


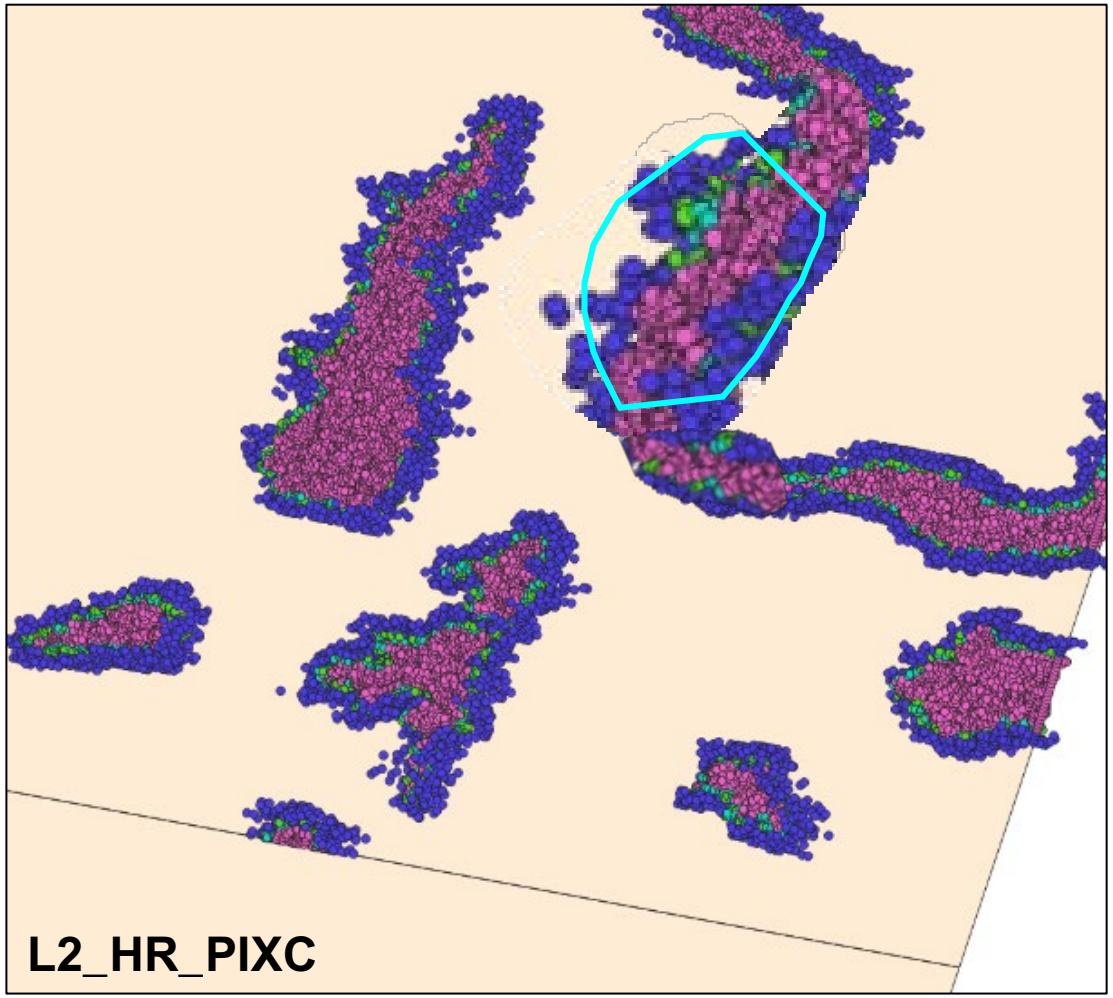


Scenario 2: high water level

Lake longitudinal extent > PLD longitudinal extent

With connected lakes (i.e., PLD lake on SWORD)





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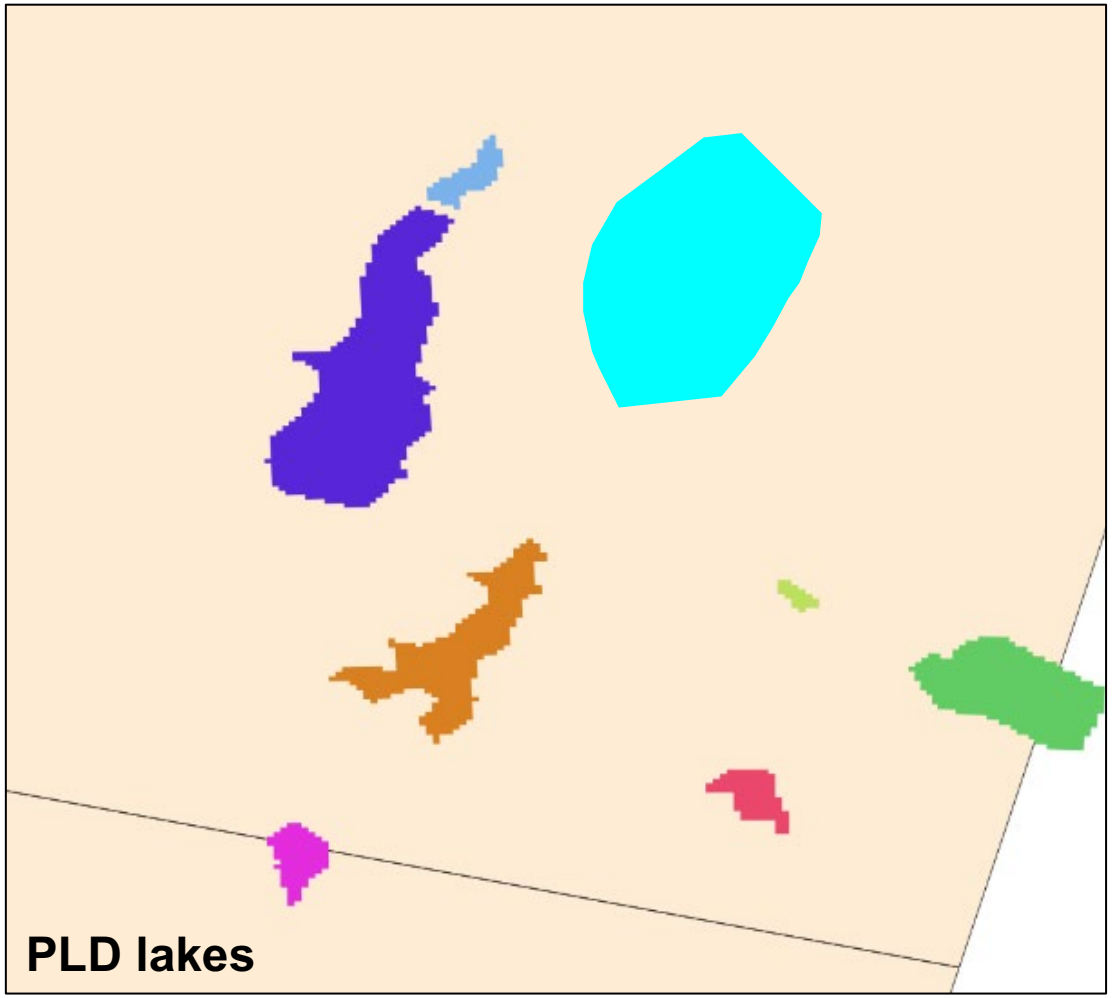
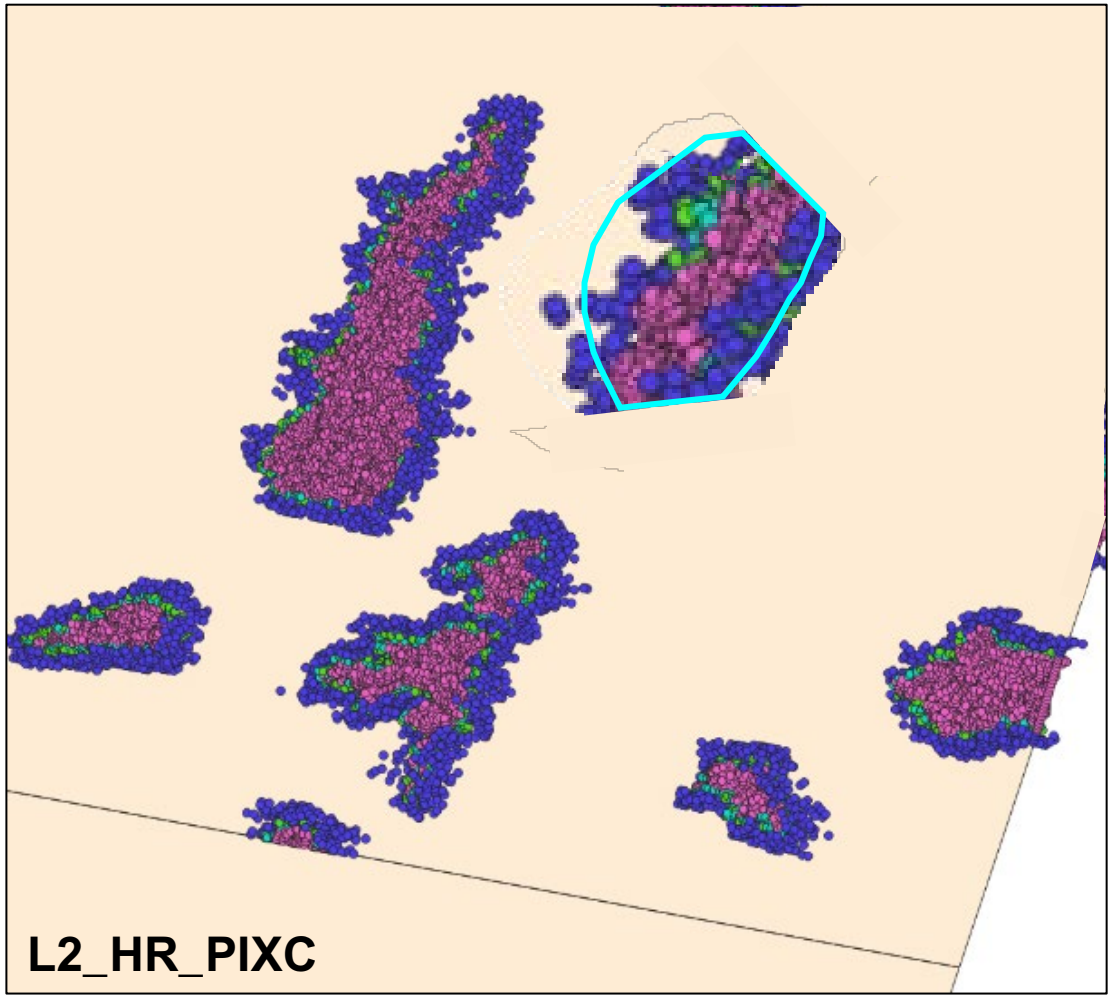
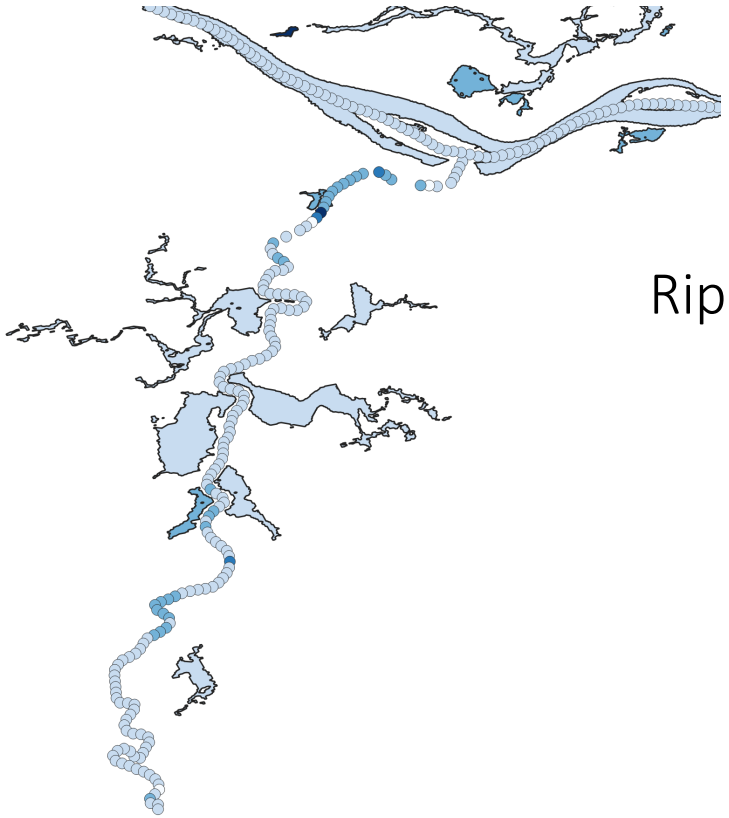




Scenario 2: high water level
Lake longitudinal extent > PLD longitudinal extent

Scenario 2: Lake processing algorithm

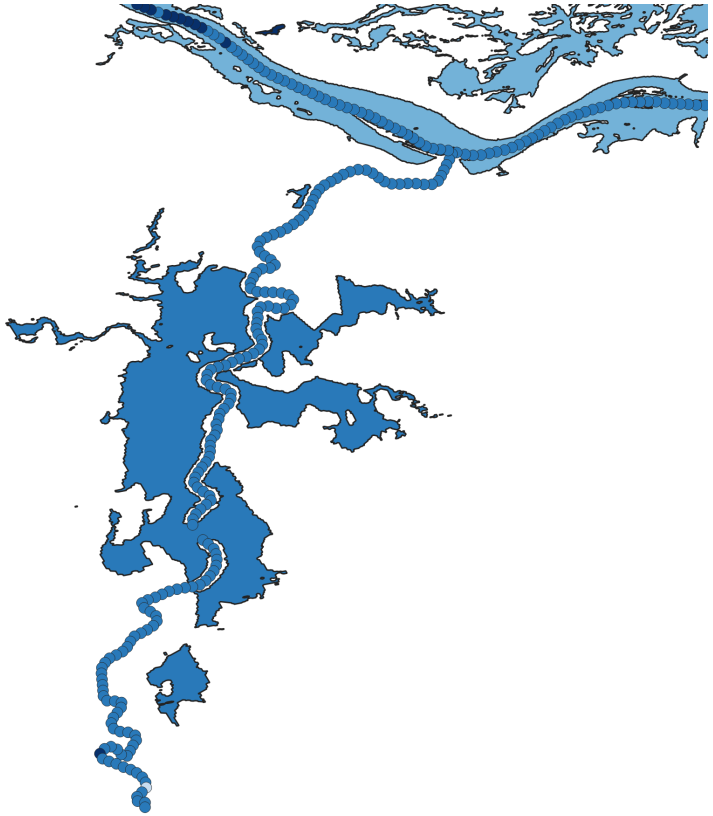


Riparian Wetland - Oromocto

WSE (m)

5

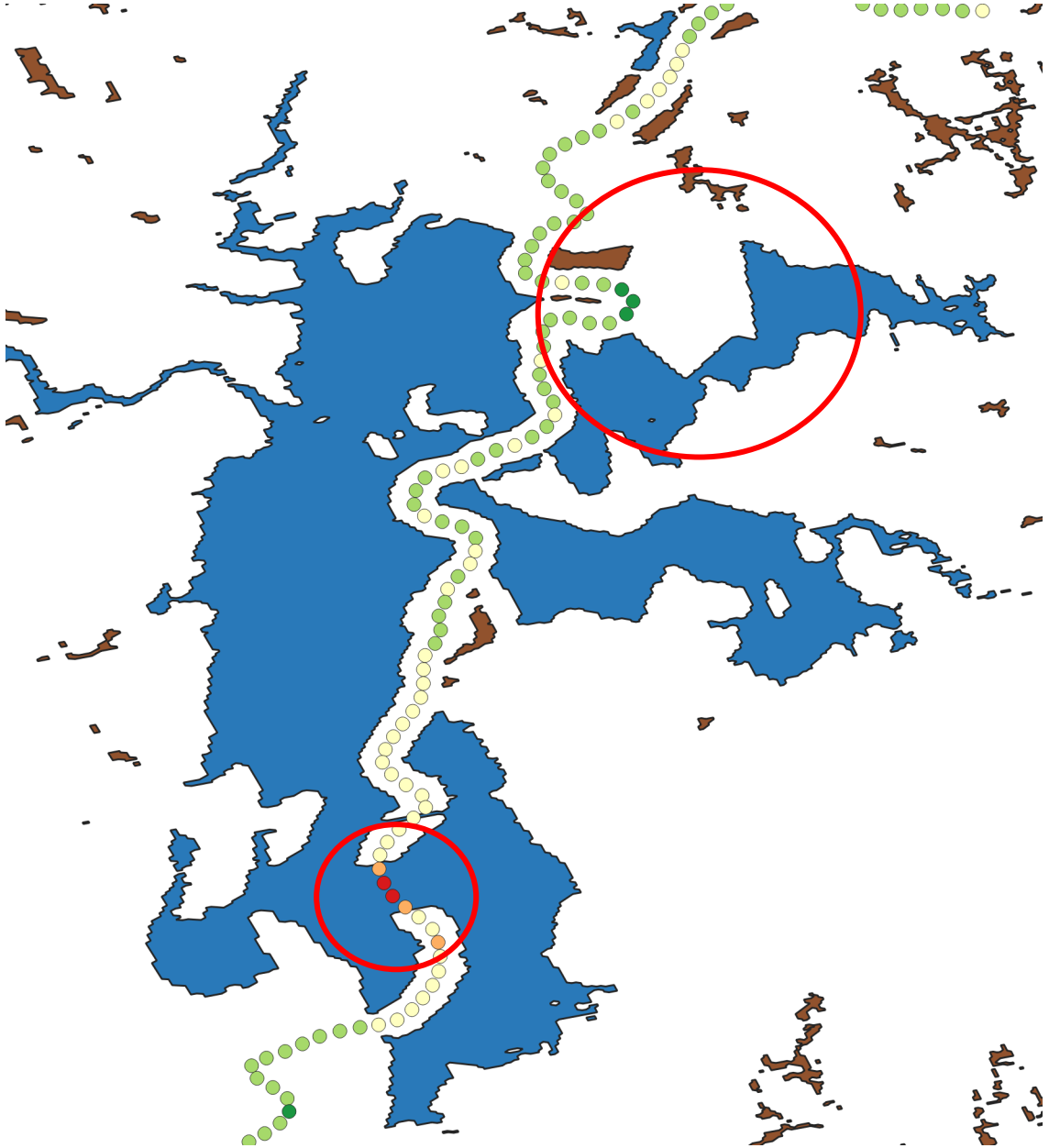
0



SWOT – RiverSP et LakeSP
December 1st 2023

SWOT – RiverSP et LakeSP
December 21st 2023

Riparian Wetland - Oromocto



SWOT_L2_HR_LakeSP_Obs_008_214_NA_20231221T213438_20231221T214027_PIC0_01

SWOT – RiverSP et LakeSP
December 21st 2023

Suggestions

1. Improve SWORD and PLD interface
2. Improve lake processing algorithm
   - More cautions before discarding river pixels.
   - Check connectivity along river nodes
3. Develop an ST L4 product for SWORD-connected lakes