



Prior Lake Database

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Prior Lake Database: what for?

→ Monitor temporal evolution of lakes

- ❖ *water storage, hypsometric curves, ...*

For data dissemination:

- ❖ Search by name, river basin
- ❖ Look for orbits' number covering a lake, a basin

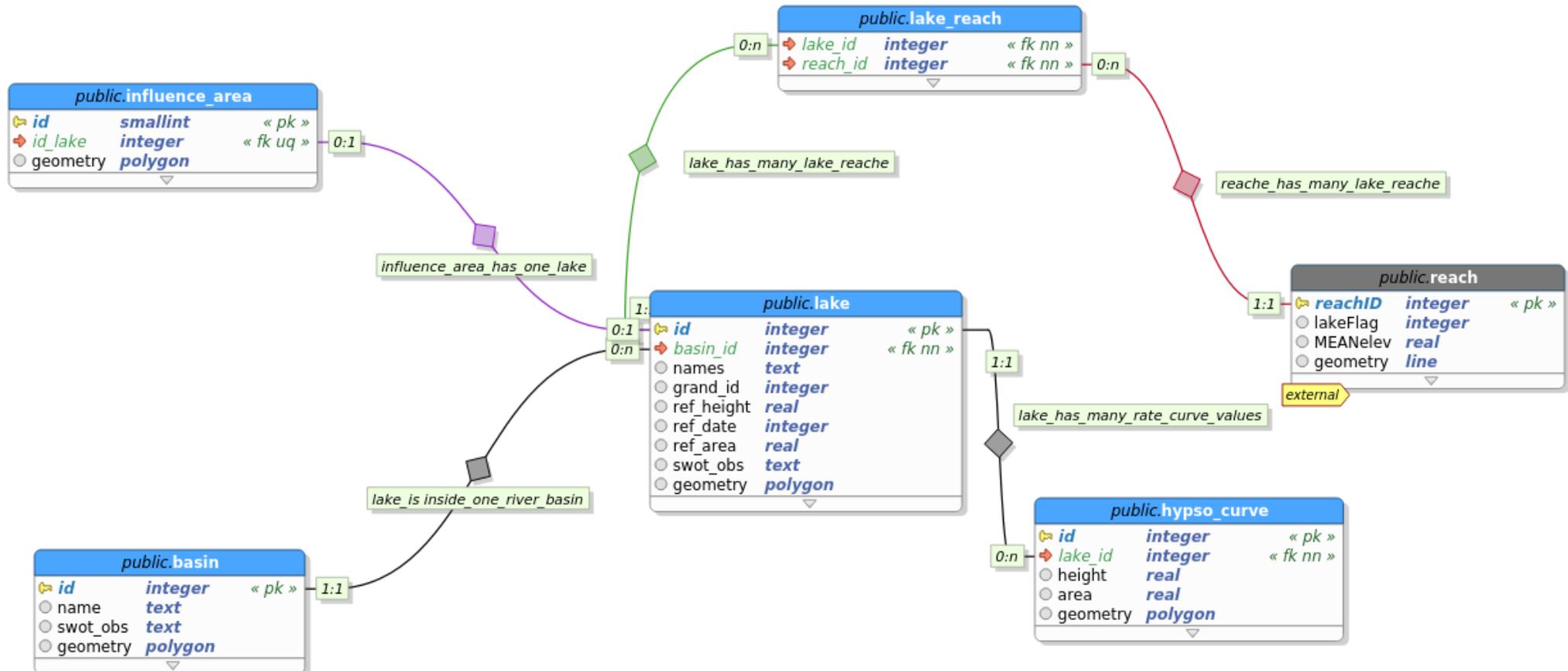
In processing:

- ❖ Pass-based products:
 - Link observed water bodies to referenced lakes (intersection of polygons)
 - Compute water storage from reference
- ❖ Cycle-based products:
 - Produced only for lakes in database

4 versions:

- ❖ Before-launch (v1) : need to have as many lakes and as much info as possible
- ❖ T0+15m (v2) and T0+27m (v3), before a L2 products reprocessing
 - To add persistent new objects
 - To record max level/size of lakes
- ❖ At the end of the mission (v4), before the global reprocessing

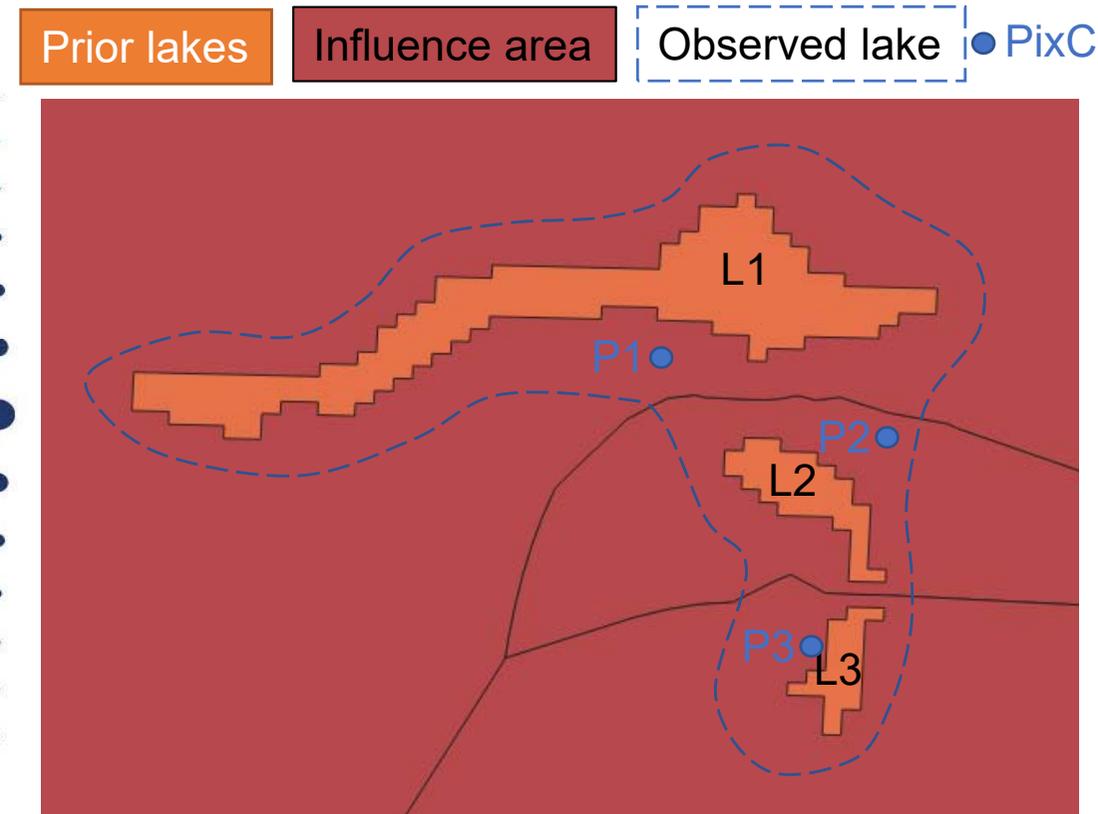
Model



Format = SpatiaLite (<https://www.gaia-gis.it/fossil/libspatialite/index>)

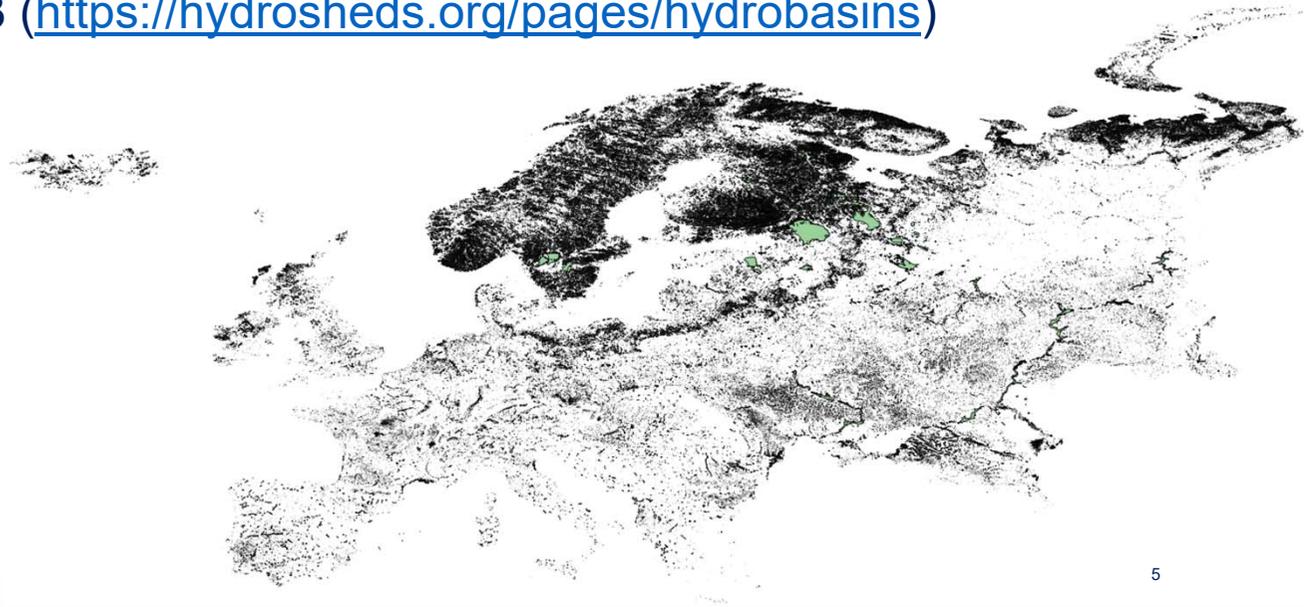
Use of « influence_area » table

- ❖ In the lake product:
 - Prior IDs = L1;L2;L3
- ❖ In the PIXCVec product:
 - P1→L1
 - P2→L2
 - P3→L3
- ❖ Before: distance from pixel to L1/L2/L3 was computed each time to identify the nearest
- ❖ Now: just get the ID of the colocated influence polygon (pre-computed automatically using Voronoï polygons)

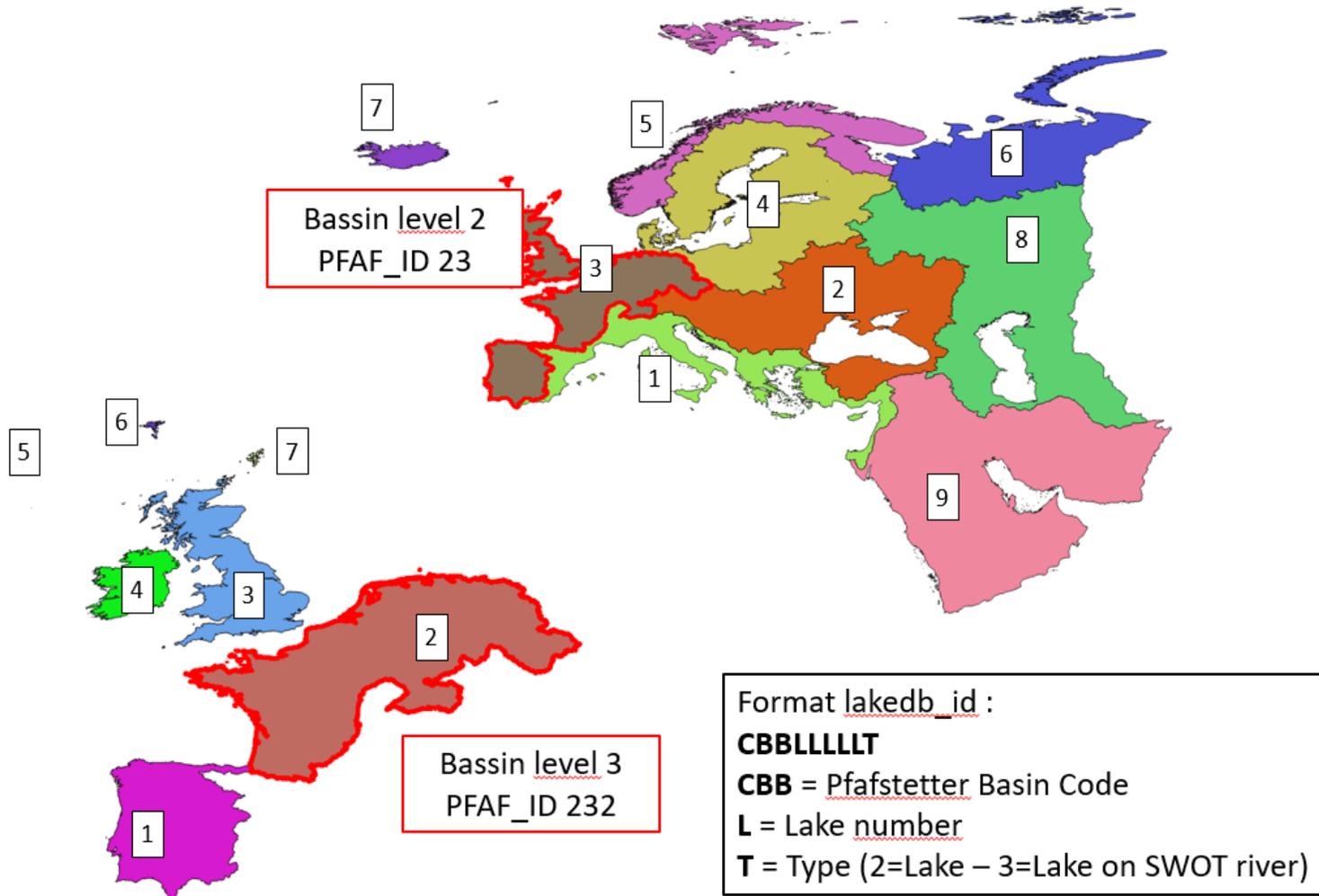


Current version

- ❖ Polygons from CIRCA-2015 [Sheng *et al.*] over Europe (~487000 lakes; 3% never observed by SWOT)
- ❖ Names from IGN Carthage DB, GLWD, vMap0, Open Street Map (20% of lakes with a name)
- ❖ Reference height and date from CIRCA-2015
- ❖ Link with Prior River DB (version of march 2017)
- ❖ Basin database = HydroBASINS level 3 (<https://hydrosheds.org/pages/hydrobasins>)
- ❖ No hypsometric curve



Prior lake identifier using the Pfafstetter basin coding system



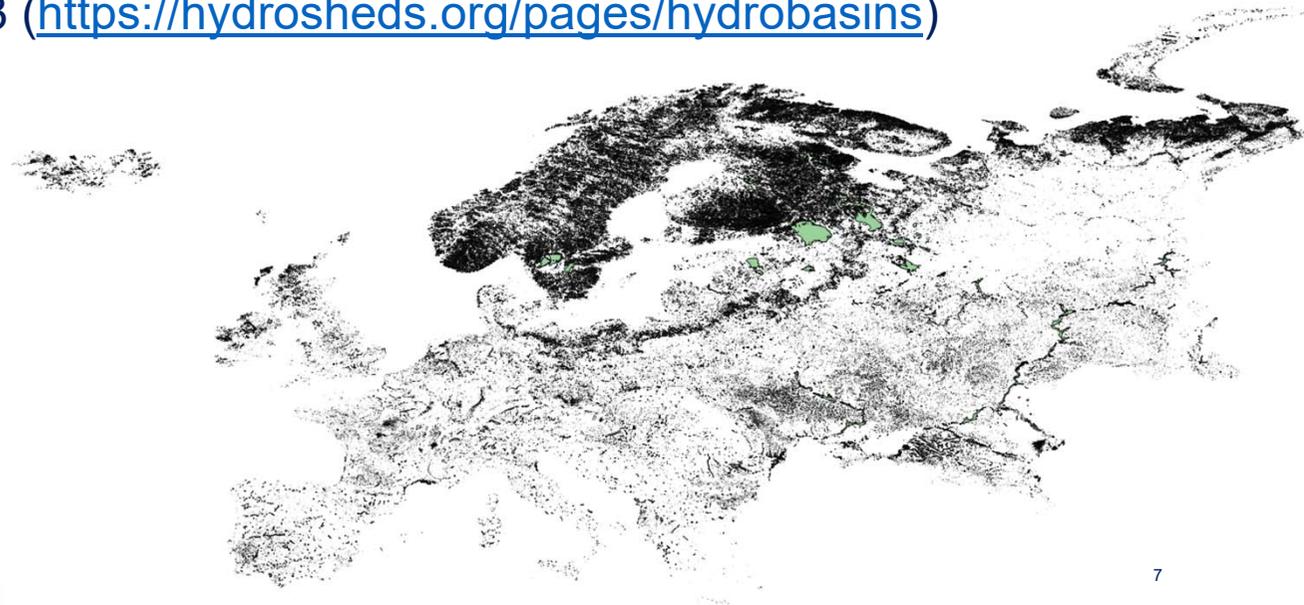
Integrate other continents
when available

Ongoing work

- ❖ Polygons from CIRCA-2015 [Sheng *et al.*] over Europe (~487000 lakes; 3% never observed by SWOT)
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- ❖ Reference height and date from CIRCA-2015
- ❖ Link with Prior River DB (version of march 2017)
- ❖ Basin database = HydroBASINS level 3 (<https://hydrosheds.org/pages/hydrobasins>)
- ❖ No hypsometric curve

Associate new version of PRD

Try to have some first values



+ identifiers to be homogeneous
with Prior River Database



Questions ?