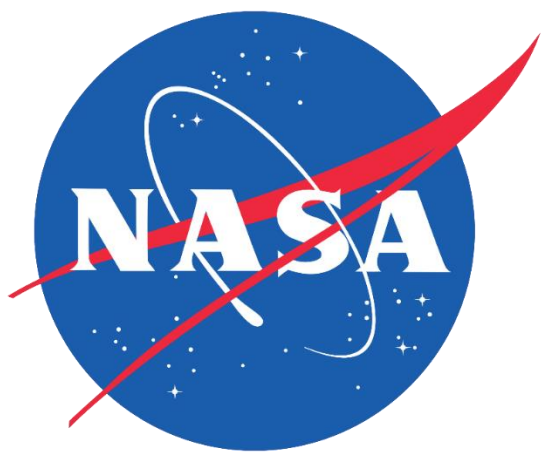
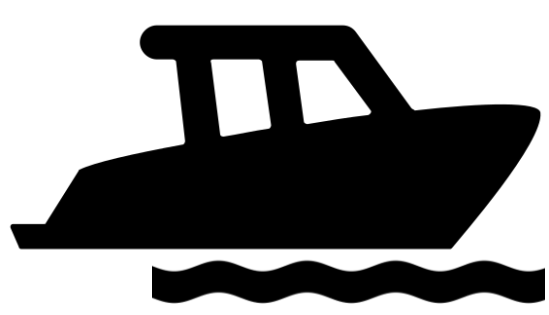




Mapping Long-Term Changes in the Hydroecology of the Slave River Delta using NASA Earth Observations

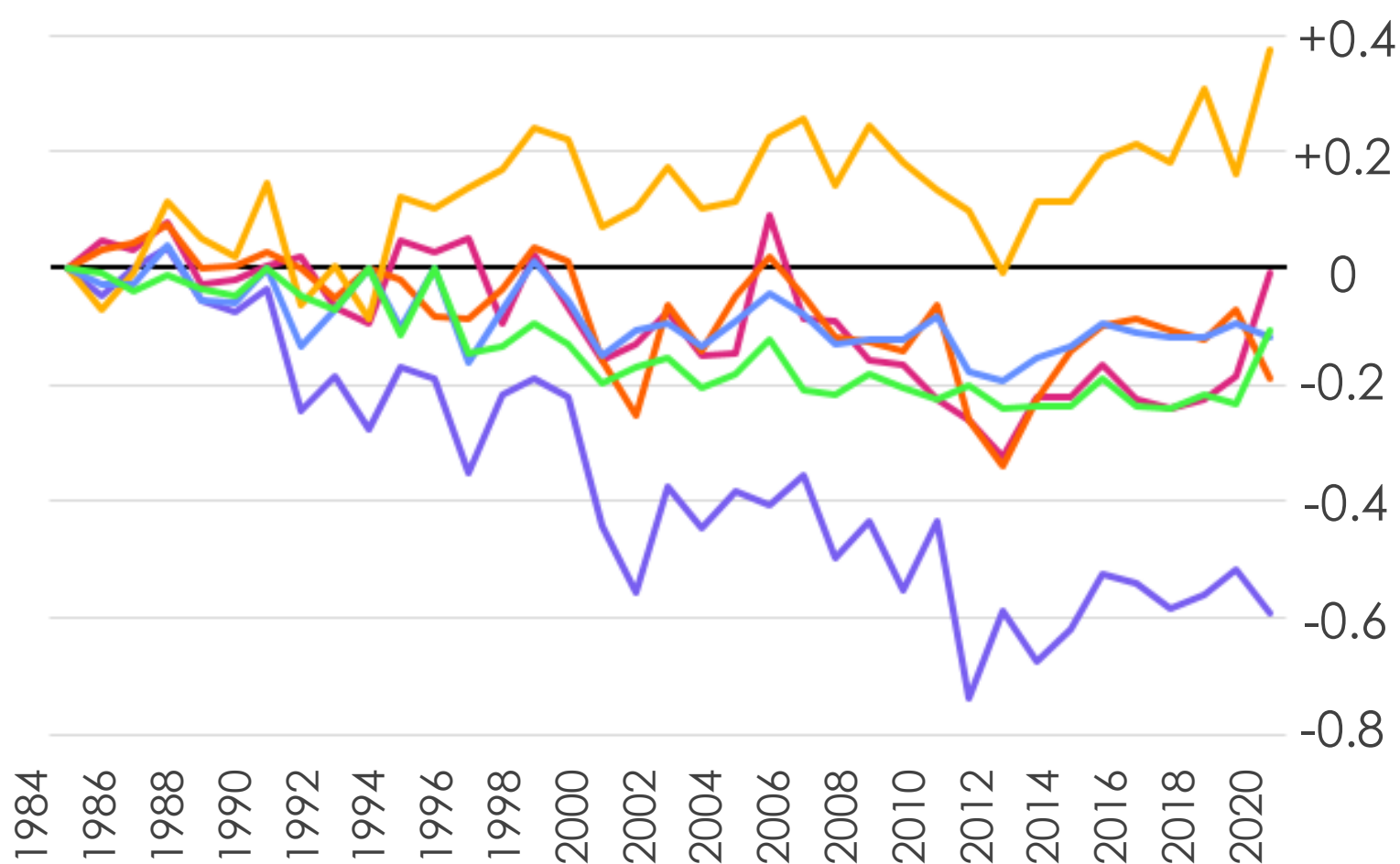
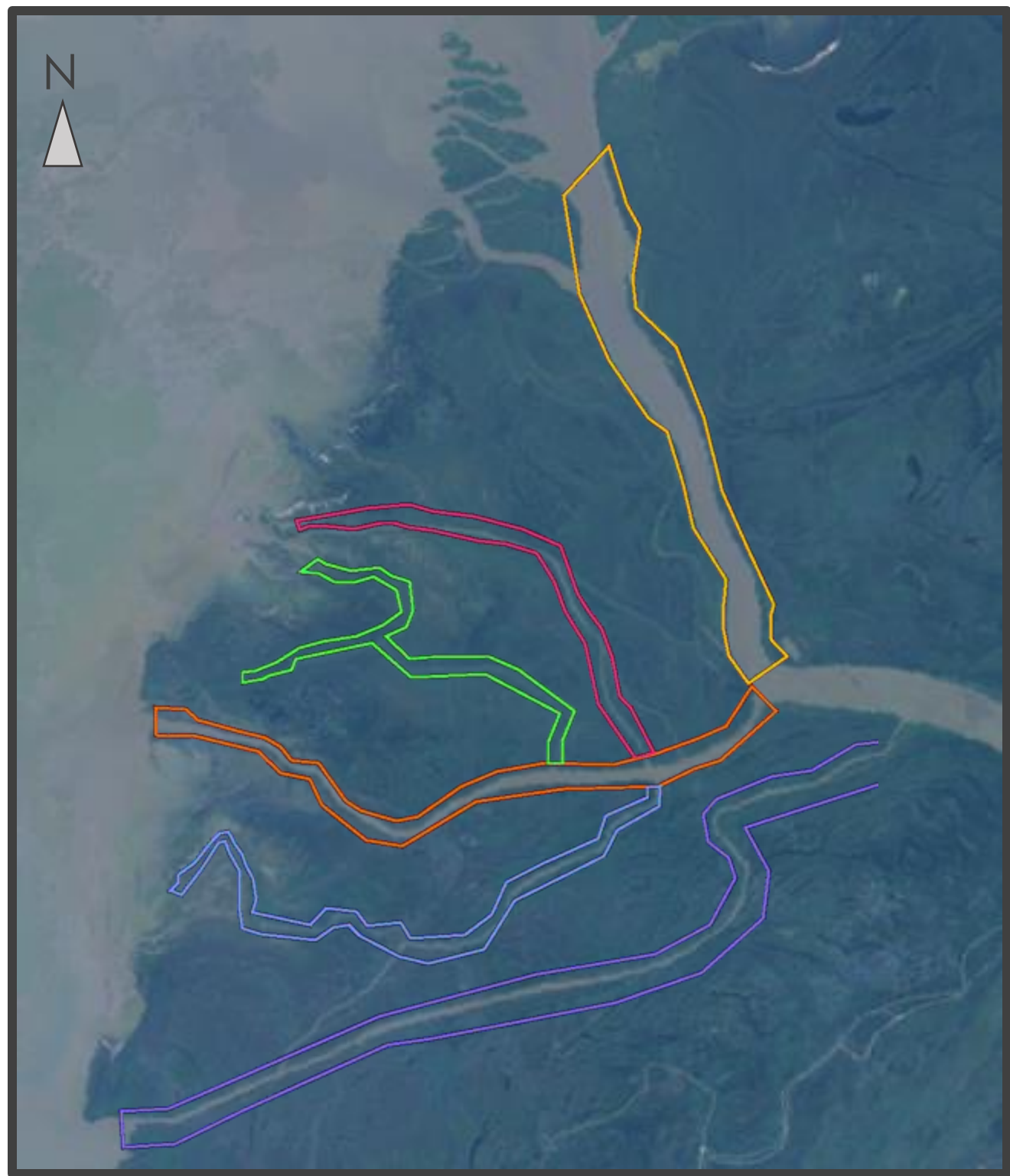


Changing water levels in the Slave River Delta have blocked off waterways from **boat travel** and led to uncertainty among residents about the future of **wetland habitat** in the region.



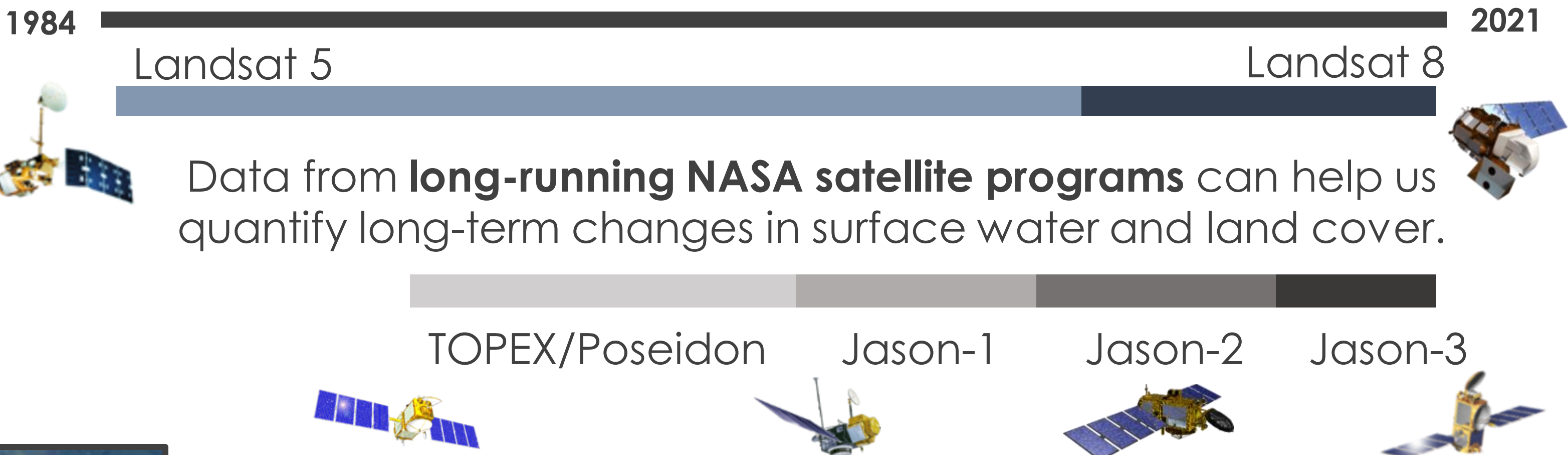
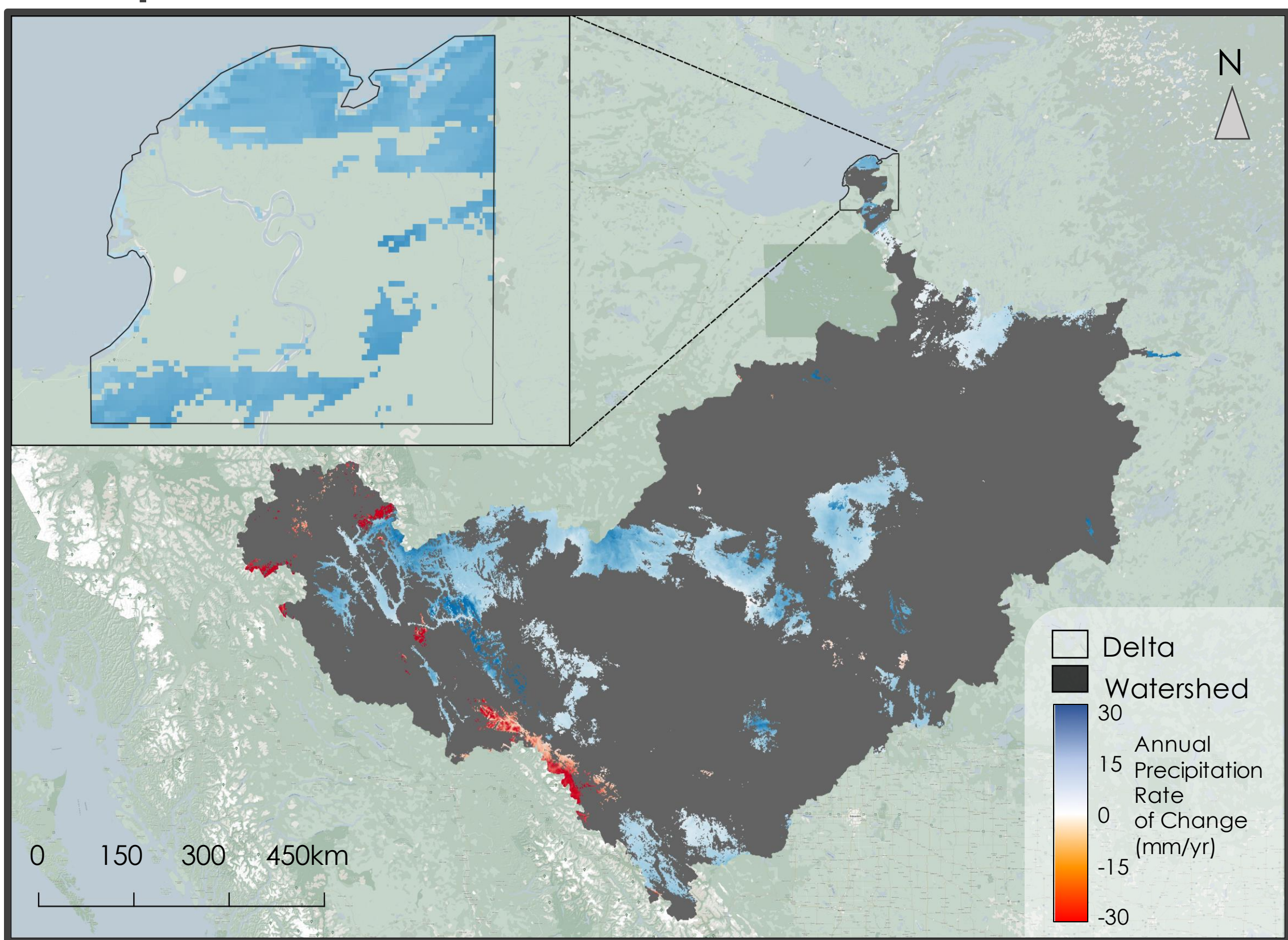
- Channel Names:
- ResDelta (Slave River)
 - East Channel
 - Middle Channel West
 - Middle Channel
 - Middle Channel South
 - Old Steamboat

Changes in Channel Surface Water Areas Relative to 1984 (km²)



Many channels in the outer delta are **steadily losing surface water**, with some shrinking faster than others.

Precipitation Trends in the Slave River Basin, 2010-2020

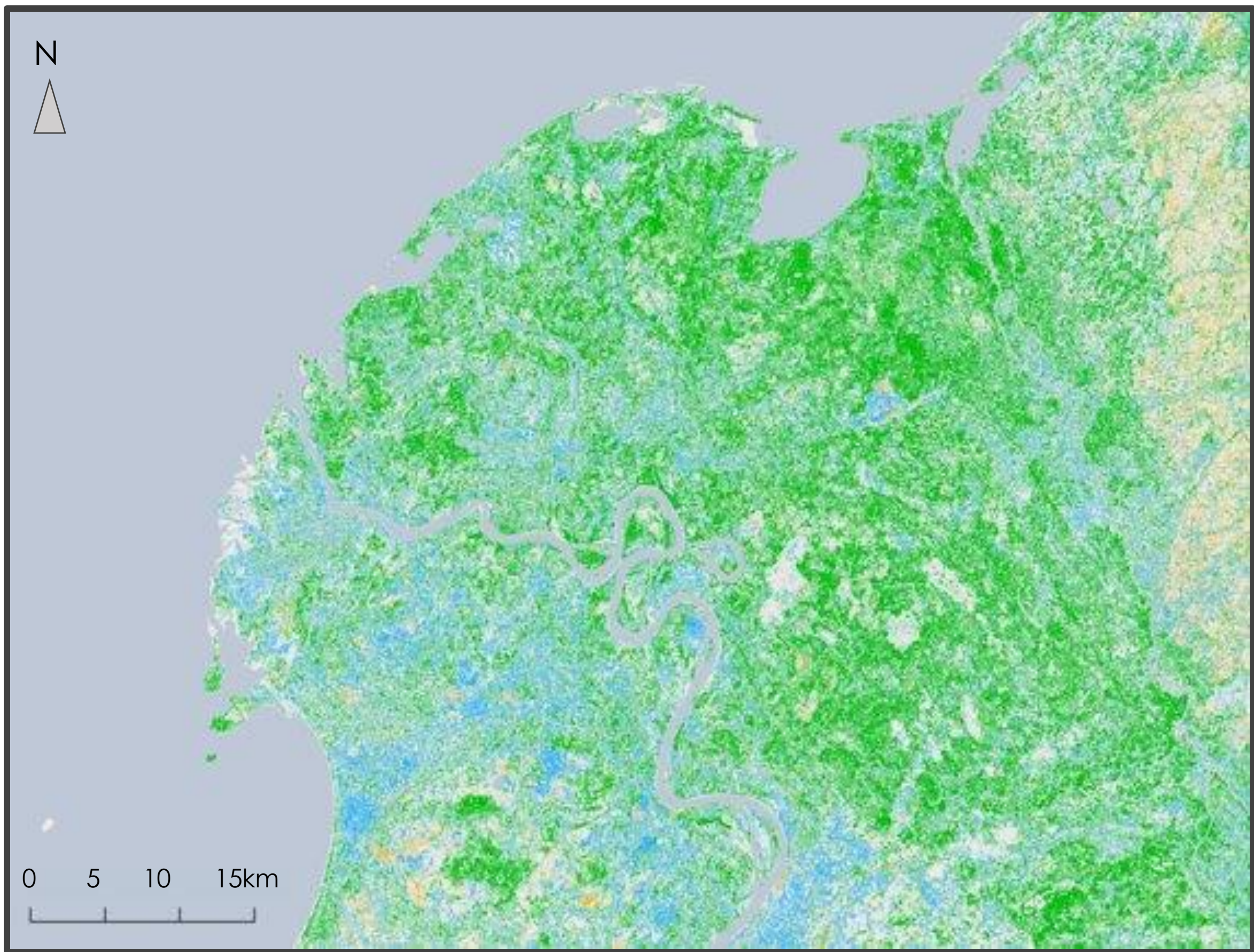


Data from **long-running NASA satellite programs** can help us quantify long-term changes in surface water and land cover.

↓ 32% Estimated change in wetland surface area in 2021 compared to 1984

Land cover in many parts of the delta has shifted from wetland vegetation to dryer forest or shrubs.

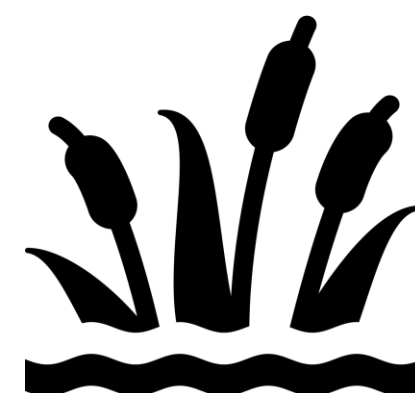
Change in Wetland Land Cover Presence, 1984 vs. 2021



- Wetlands to Forest
- Wetlands to Shrub
- All Other Classes to Wetlands

Water levels in the delta are strongly influenced by precipitation in the Slave River drainage basin. However, some waterways and wetlands **have remained relatively dry despite a recent increase in precipitation** from 2010 to 2020.

The analysis can help decision-makers identify **areas of the delta which would benefit the most from human interventions like dredging** in future efforts to preserve boat transportation channels and wetland habitats in the delta.



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