

Status and evolution of the Aquatic Warbler wintering sites in Western Africa

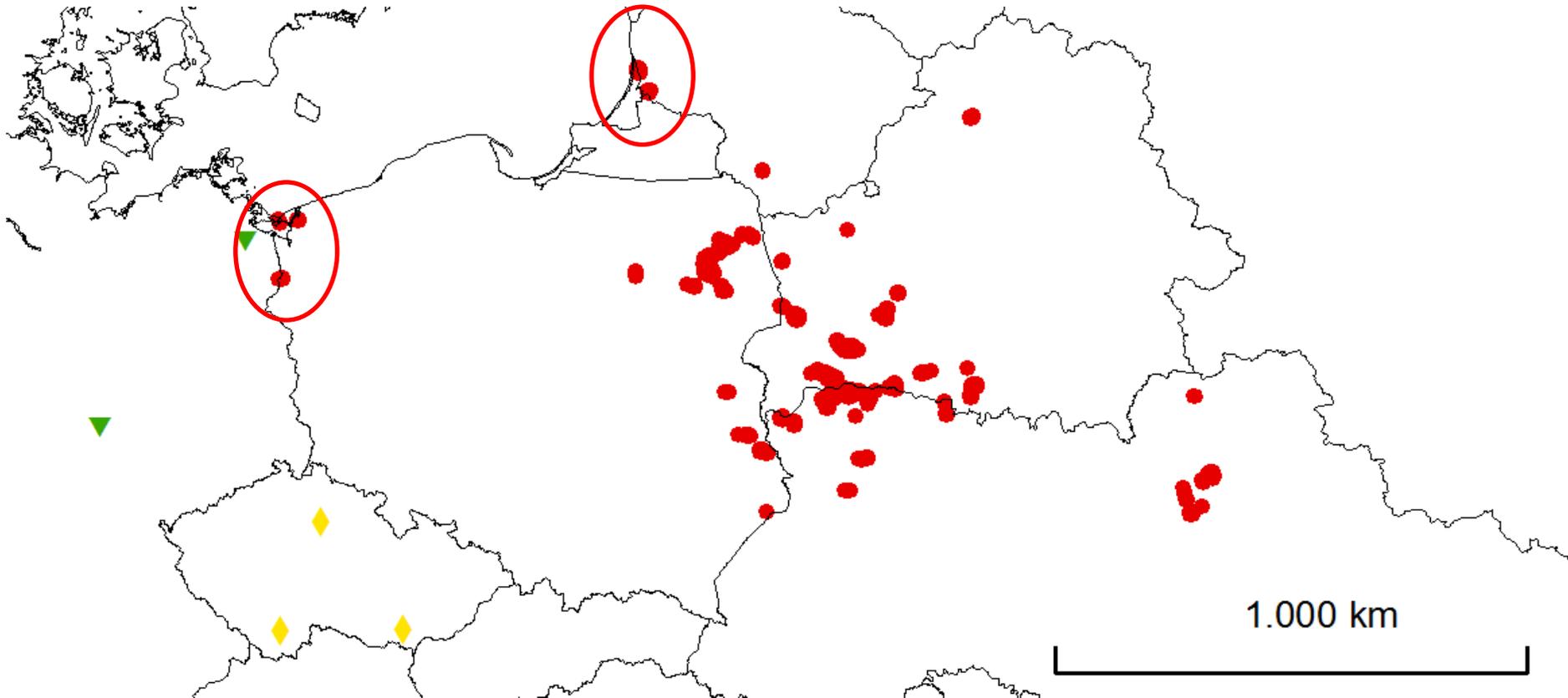
Cosima Tegetmeyer
Greifswald Mire Centre, Germany



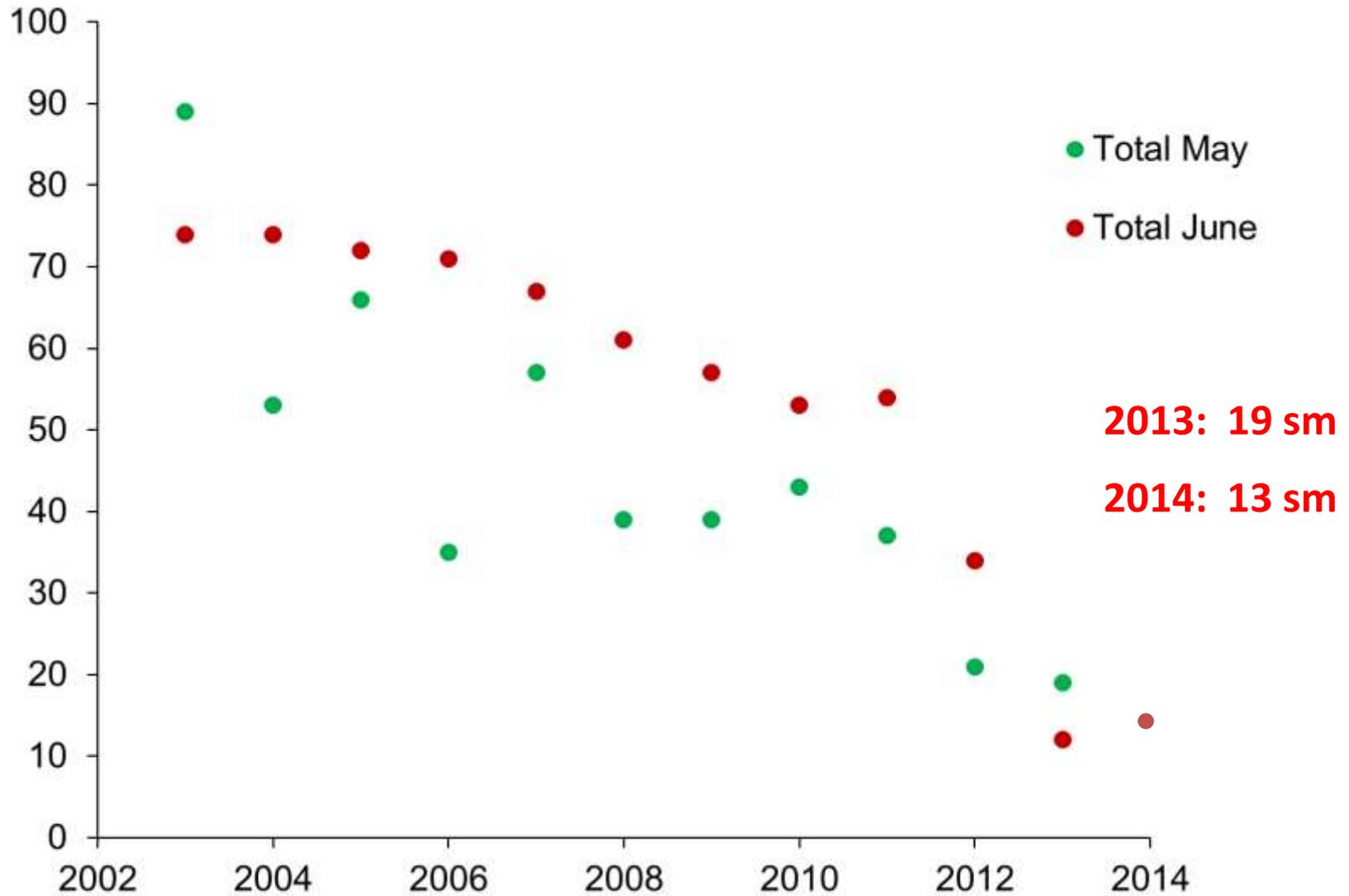
20.05.2015
International Seminar, Vente, Lithuania

Aquatic Warbler breeding sites in (2012)

- 2012/13 : strong decline of singing males in the most western breeding sites (Pomerania / Lithuania)
- 2014 : increase of the population in Lithuania

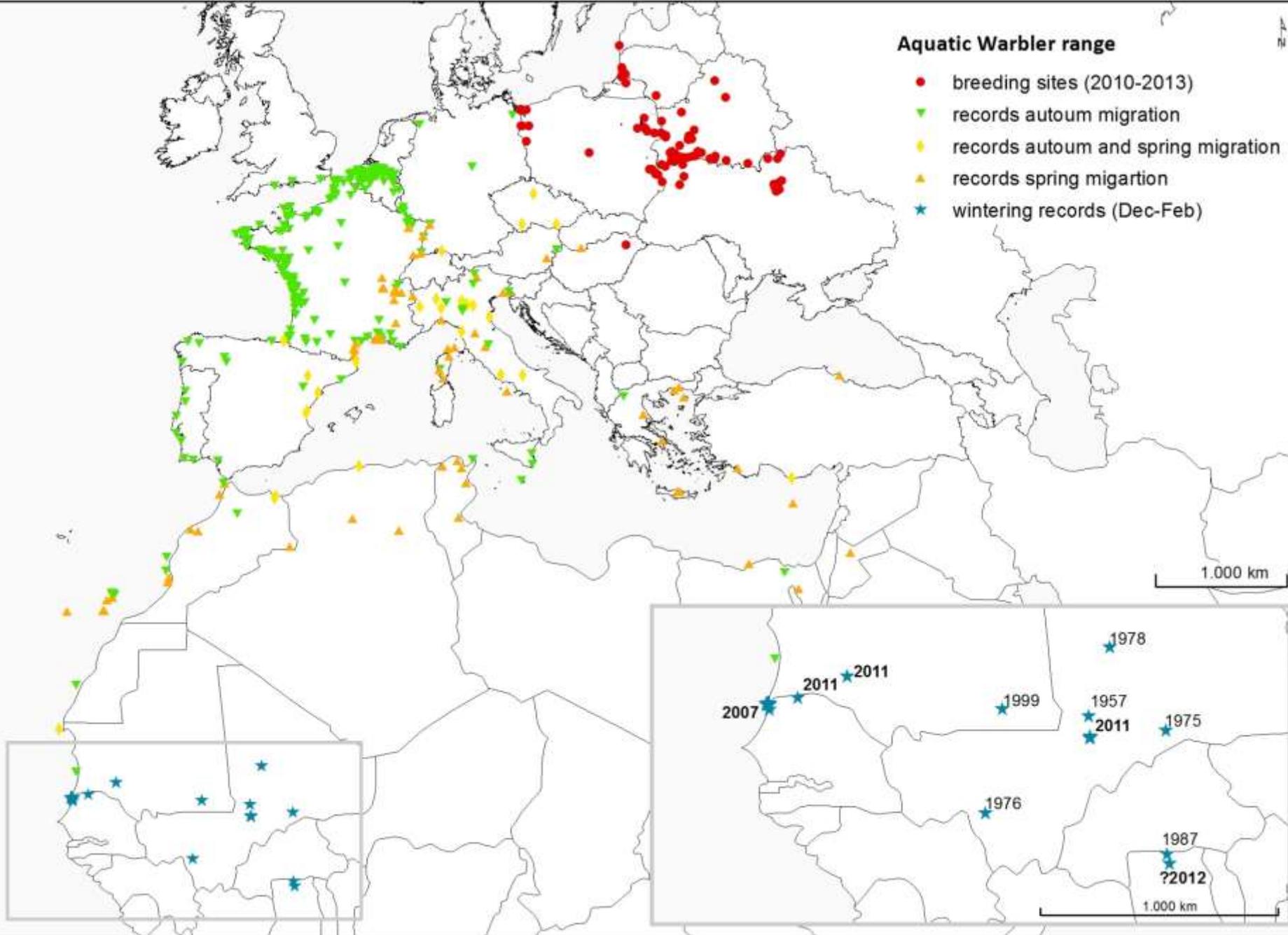


actual trend of the Pomeranian Aquatic Warbler population since 2003 (beginning of synchronous countings)

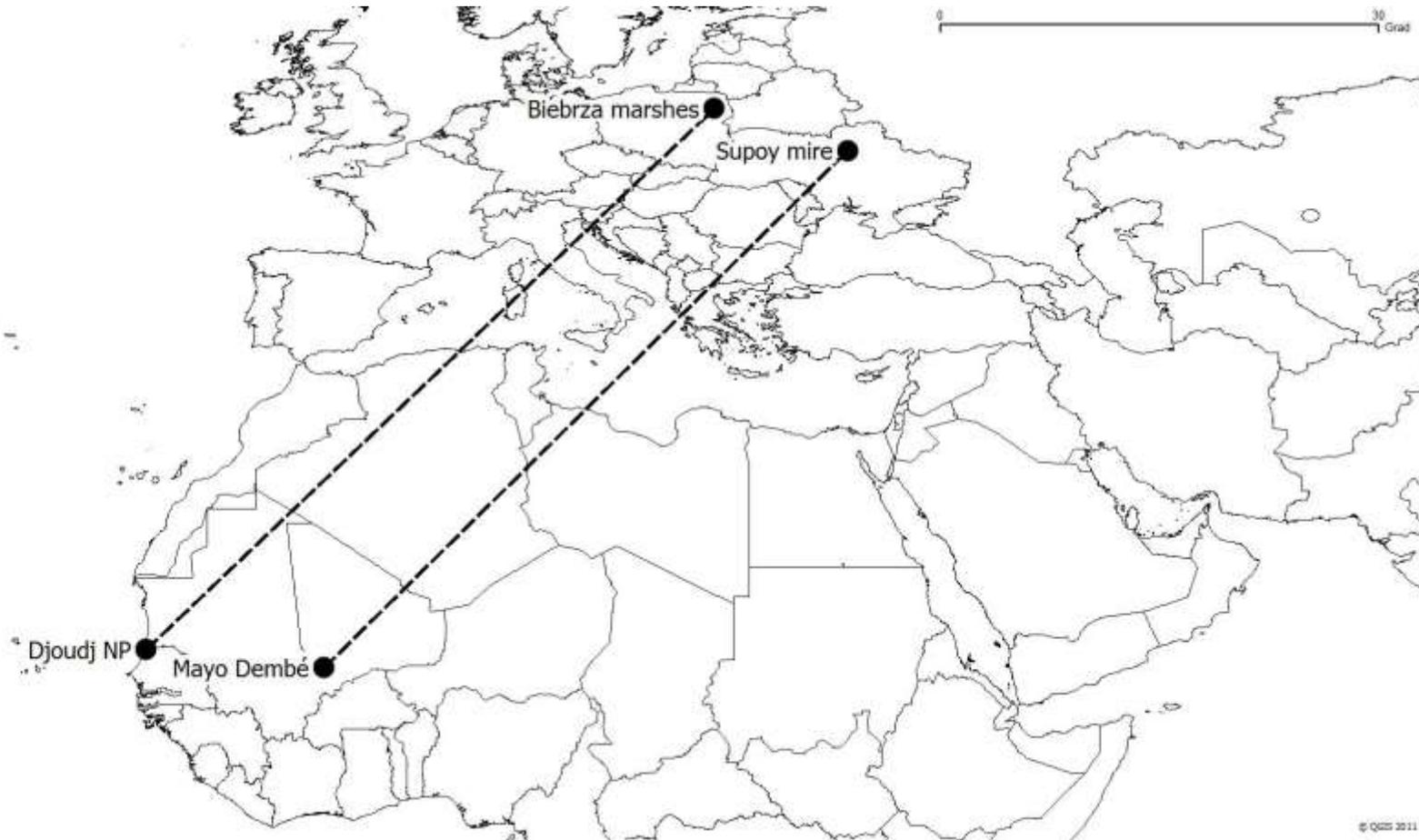


Aquatic Warbler range

- breeding sites (2010-2013)
- ▼ records autoum migration
- records autoum and spring migration
- ▲ records spring migartion
- ★ wintering records (Dec-Feb)

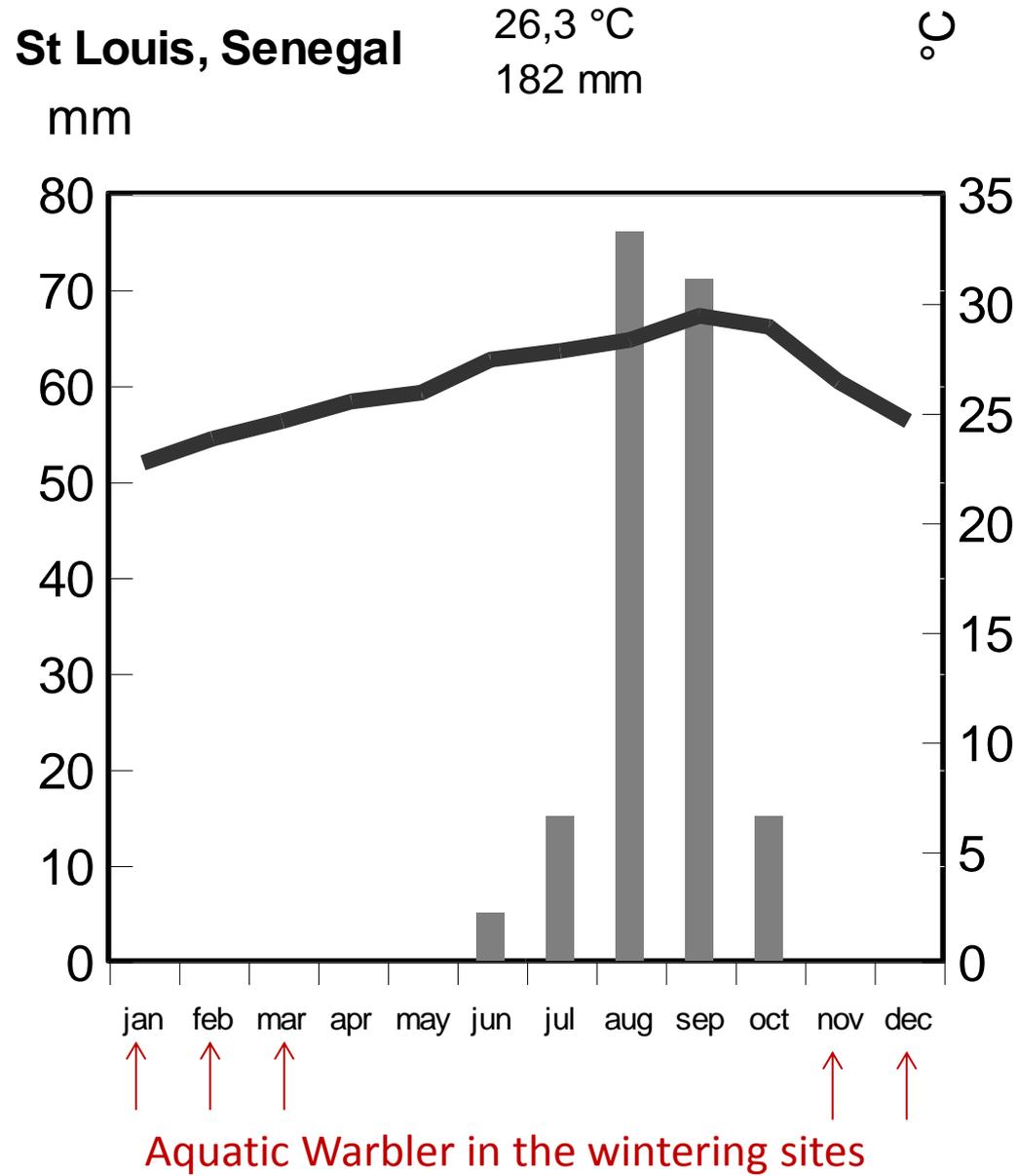


known connection between AW breeding and wintering sites (ring and color ring resightings)



Poluda Anatoliy, Flade Martin, Foucher Julien, Kiljan Grzegorz, Tegetmeyer Cosima and Volker Salewski (2012)
**First confirmed connectivity between breeding sites and wintering areas of the globally threatened
Aquatic Warbler *Acrocephalus paludicola*.** Ringing & Migration. 27 (1): 57-59.

climatic conditions in the northern Sahel



wintering habitat

- plains flooded (< 40 cm) after the raining season (June-October)
- river deltas and valleys, (temporary) lake shores
- treeless homogenous grasslike vegetation (Poaceae / Cyperaceae) approx. 80- 140 cm
- dominant stands of:
 - *Oryza longistaminata* (wild rice),
 - *Eleocharis mutata*
 - *Scirpus maritimus*,
 - *Scirpus littoralis*,
 - *Sporobolus robustus*, etc.



Oryza longistaminata, *Eleocharis mutata*, *Typha australis*



Oryza longistaminata



Scirpus maritimus, Scirpus littoralis



Scirpus littoralis

AW records from wintering sites (published or ringing data) (December-February)



Aquatic Warbler (AW) wintering sites

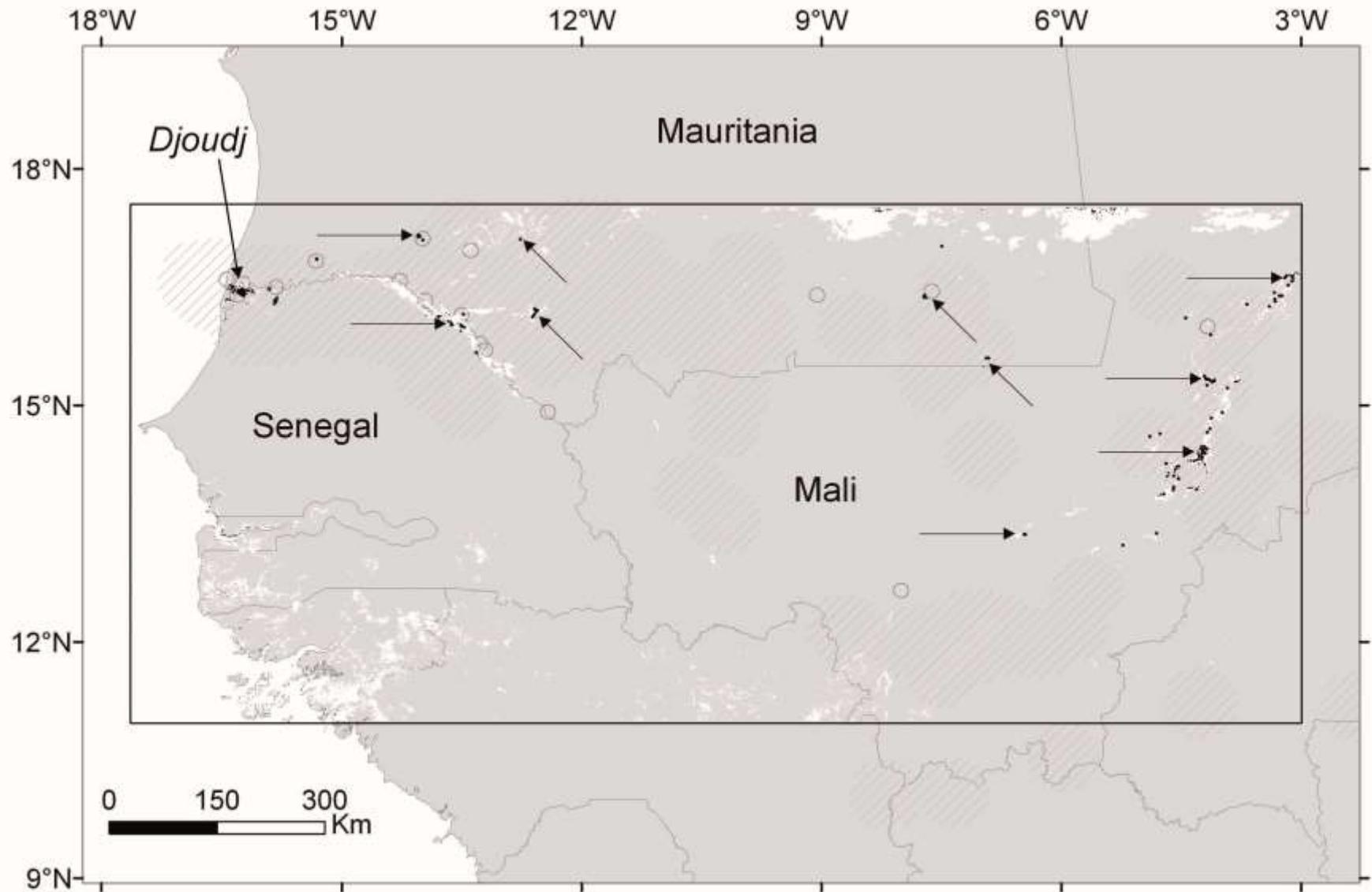
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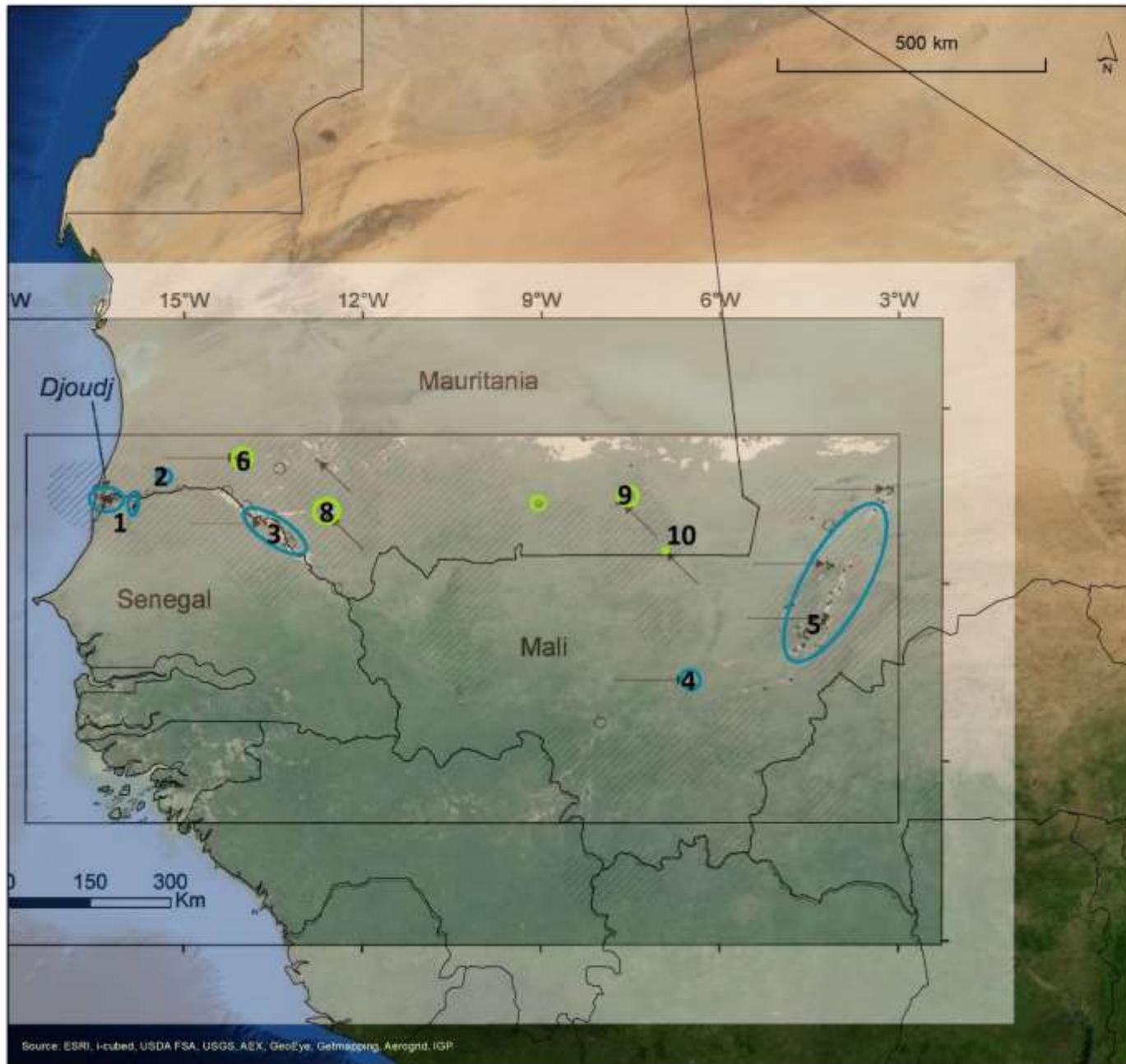
- habitat depending on
- ★ flooding
 - ★ local precipitation
 - ★ unknown

- 1 Senegal Delta
- 2 Bassin de R'Kiz
- 4 upper Niger river valley
- 5 Inner Niger Delta
- 7 Guimi
- 9 Lak Mahmouda

Research about potential Aquatic Warbler wintering habitats with regard to past and ongoing changes - Report 04/2014, C. Tegetmeyer

potential wintering sites modelled using rainfall and NDVI 2007/2008 Landsat pictures





Aquatic Warbler (AW) wintering sites

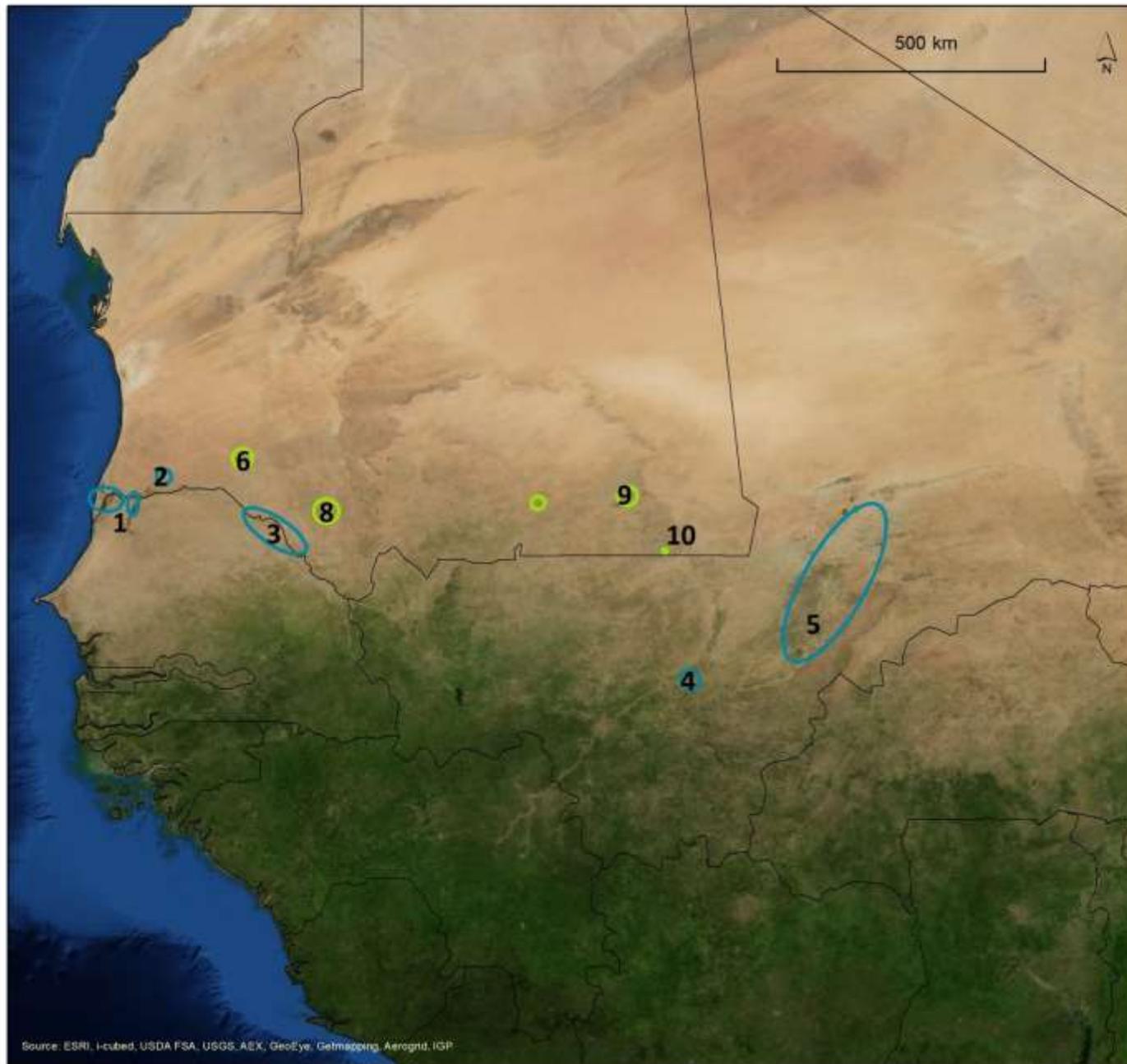
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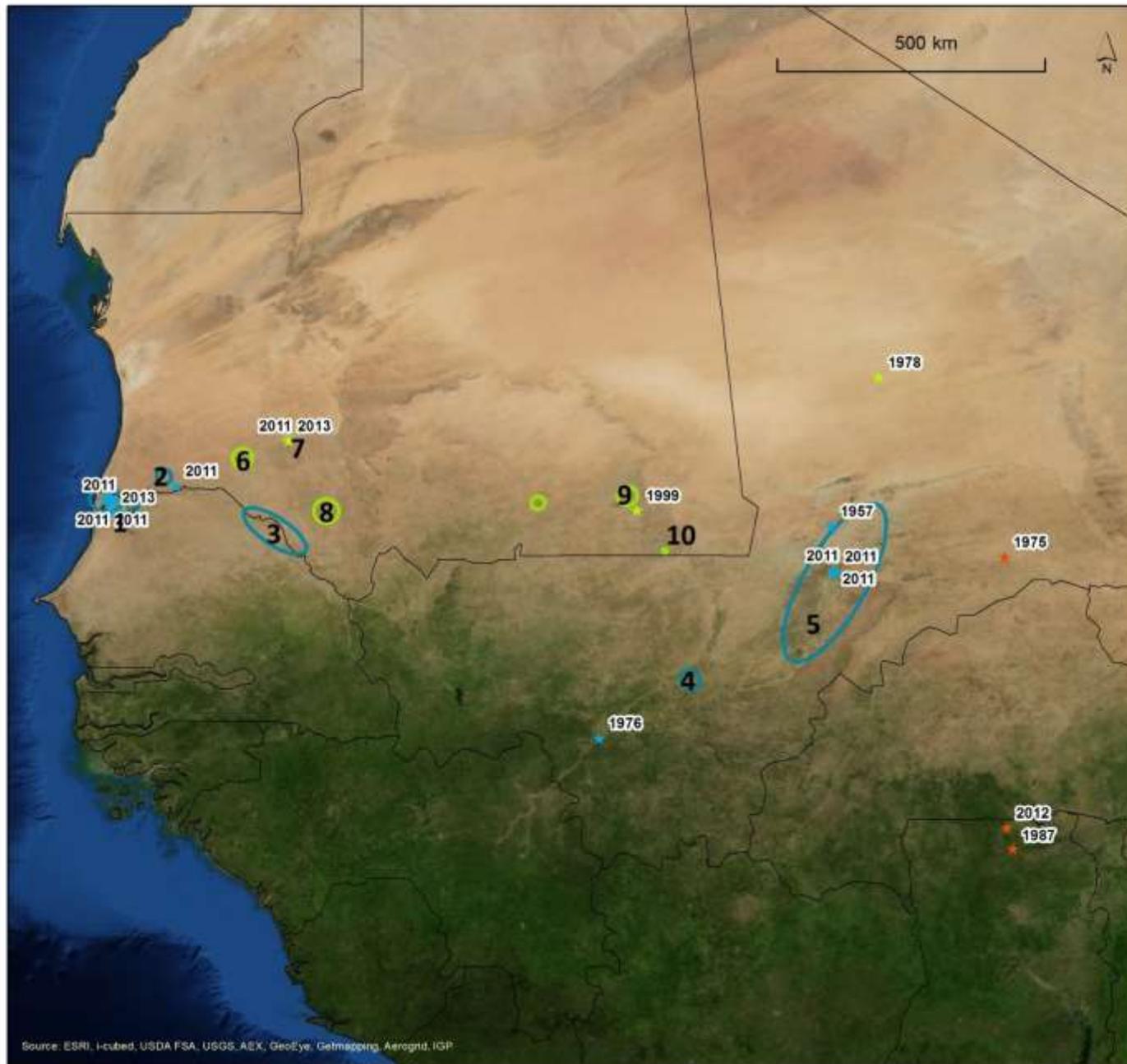
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Source: ESRI, I-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP



map 1

Aquatic Warbler (AW) wintering sites

known AW records (Dec-Feb)

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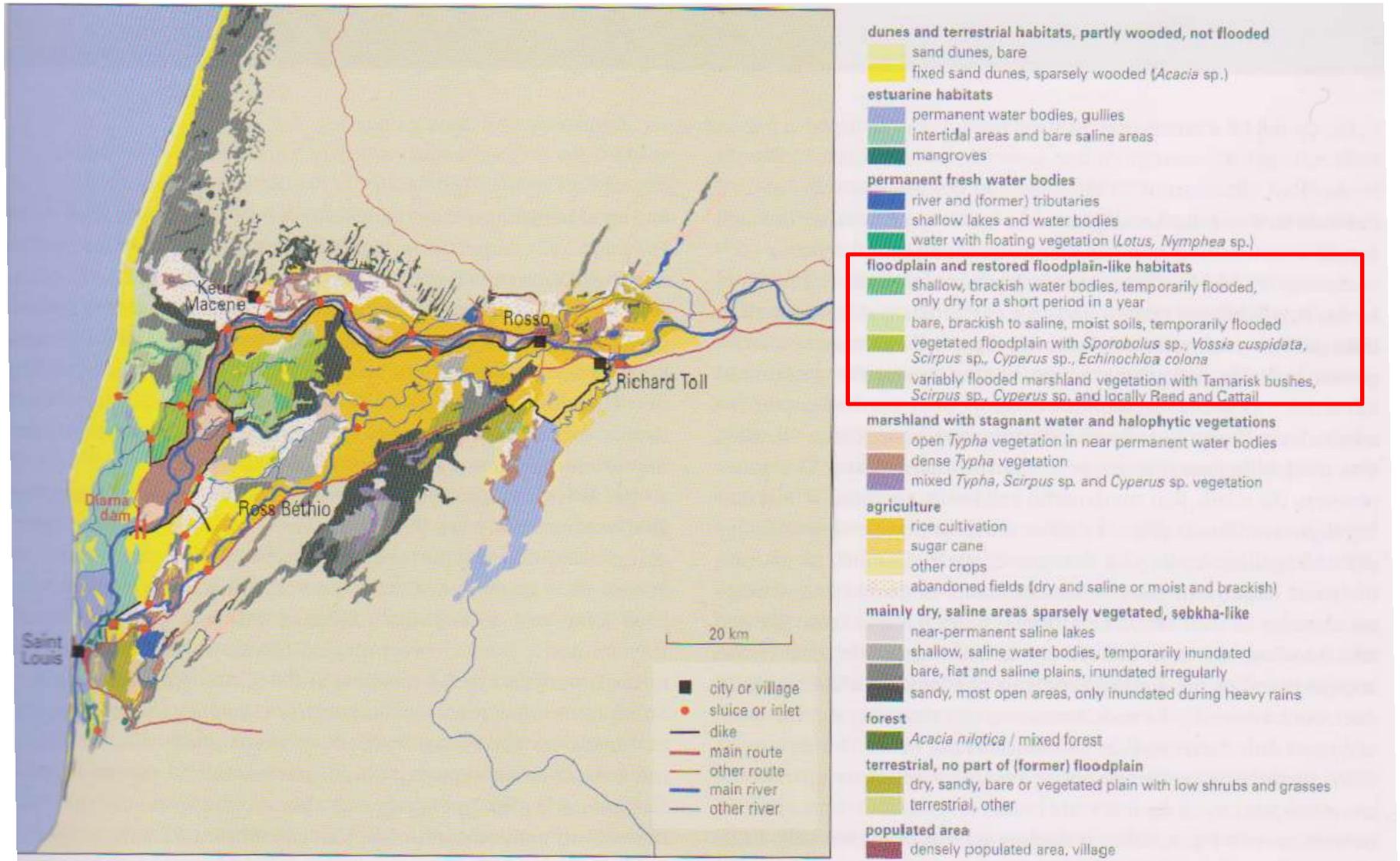
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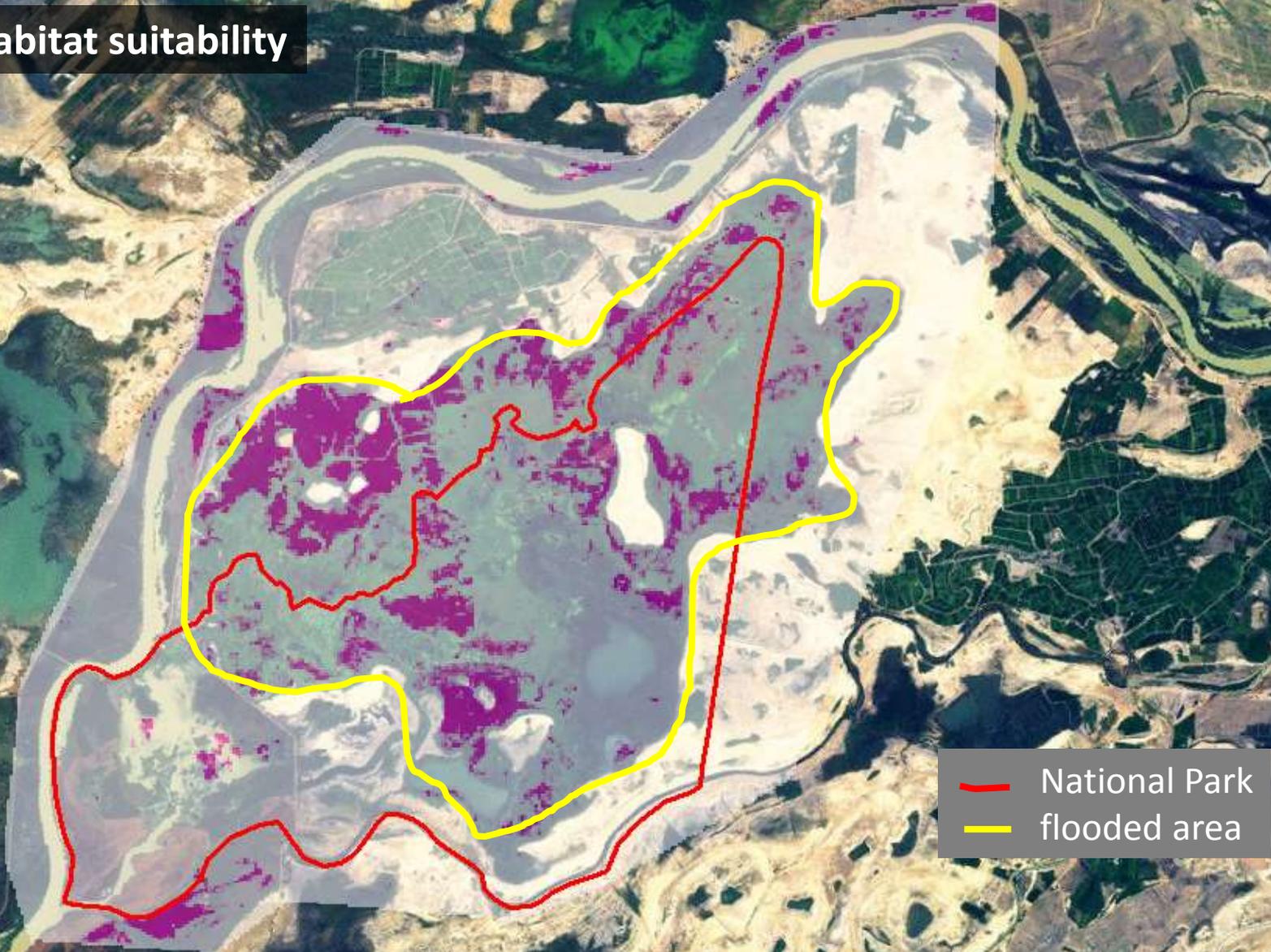
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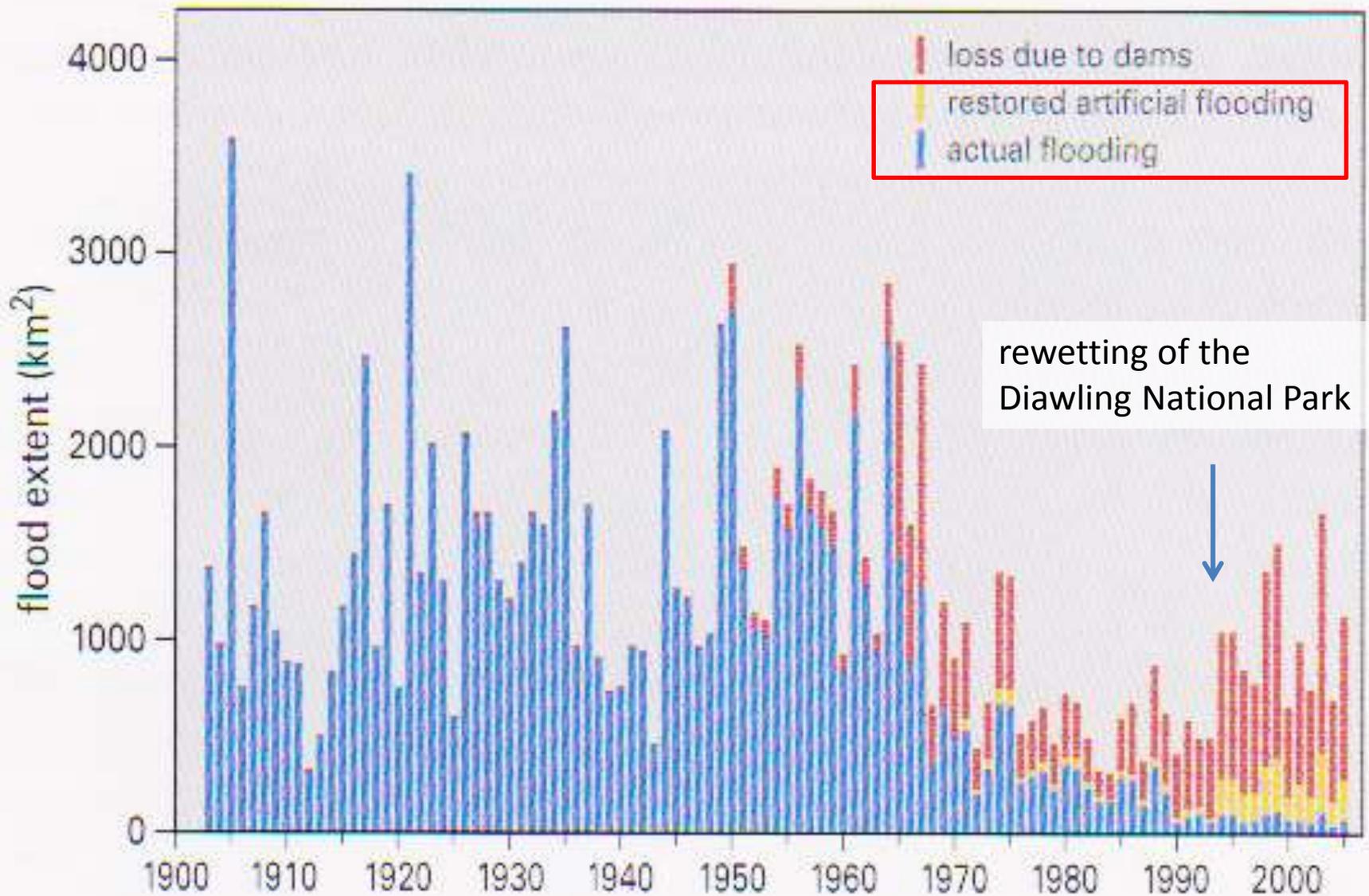
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the Senegal Delta

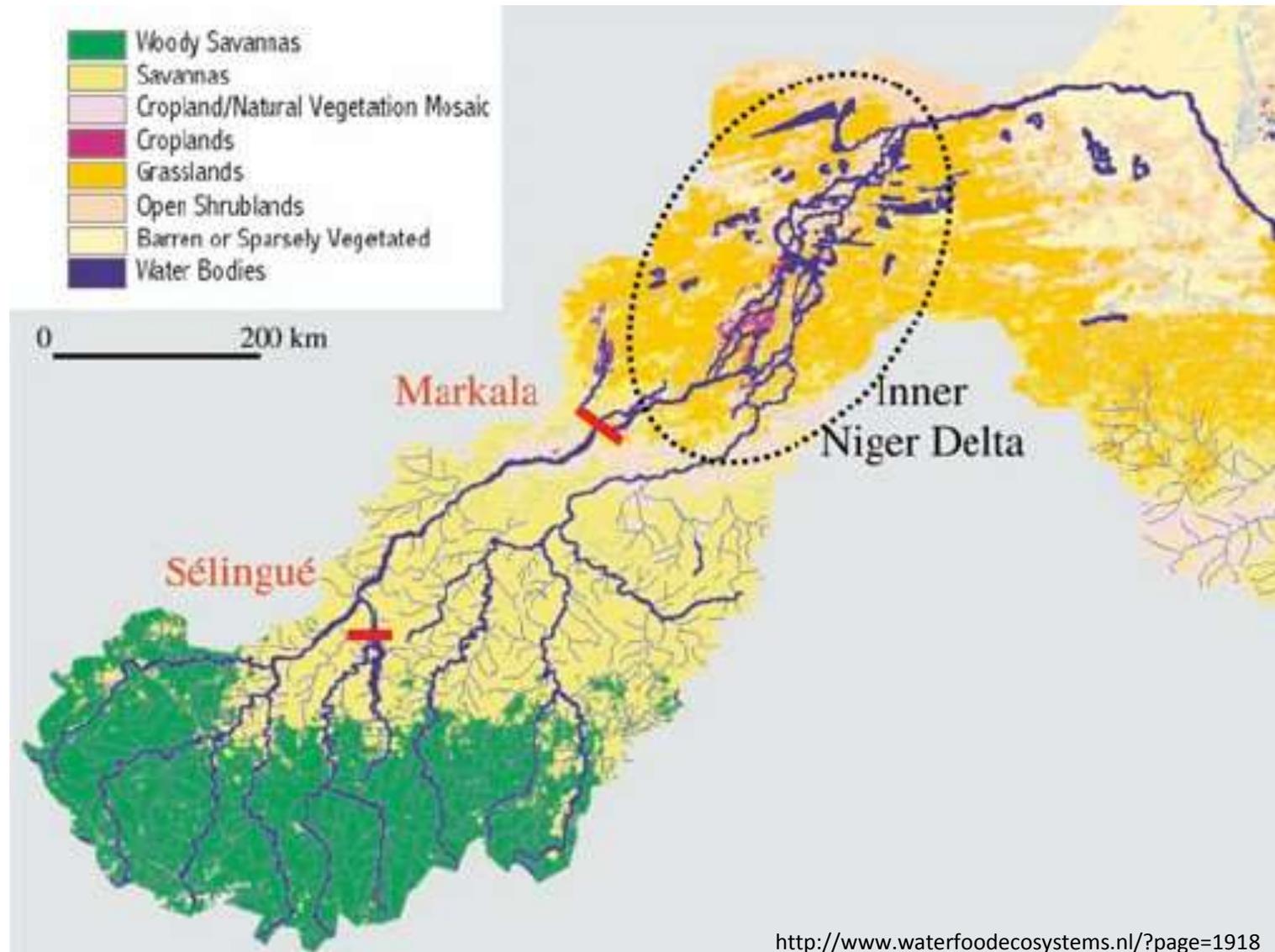


Model habitat suitability

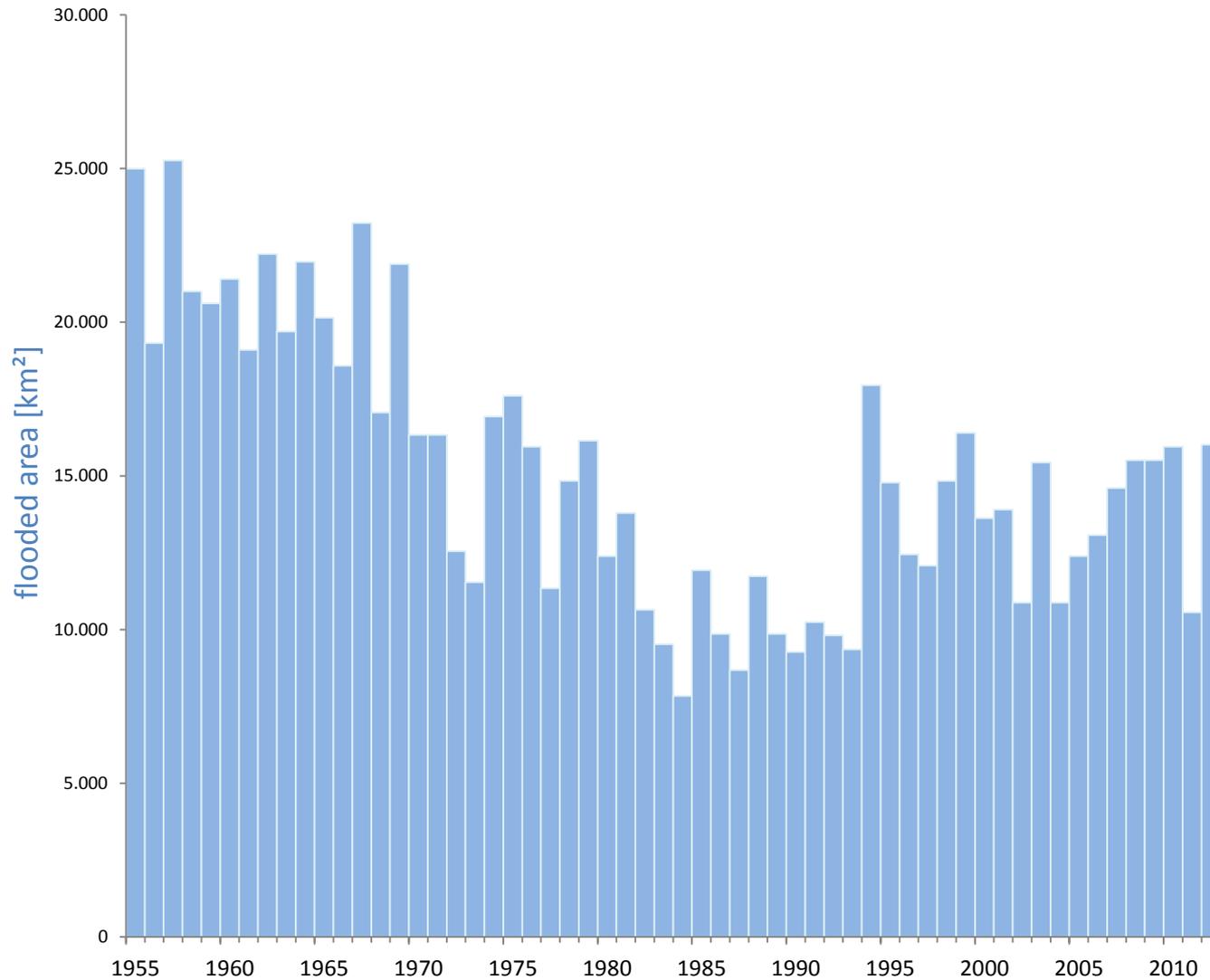




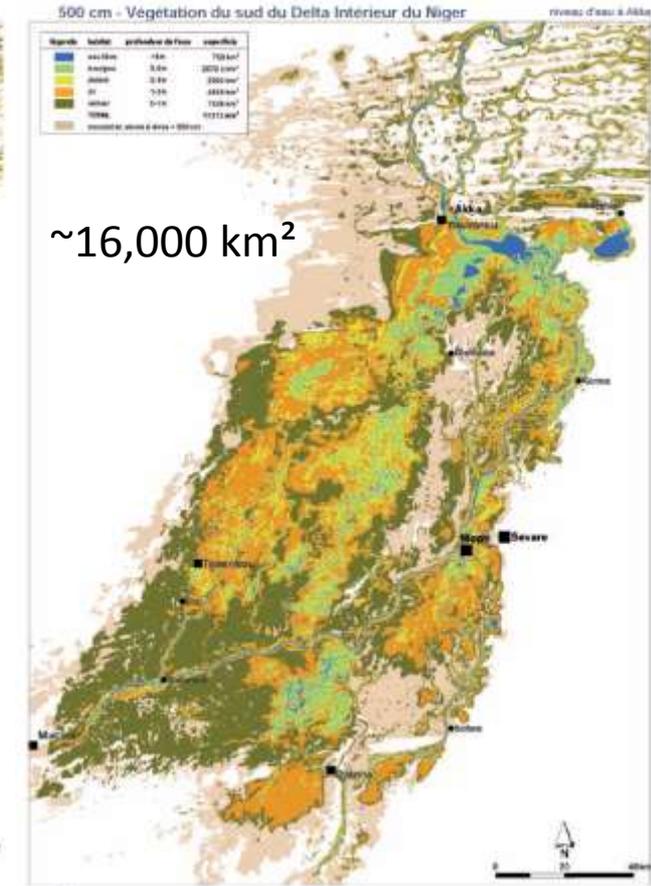
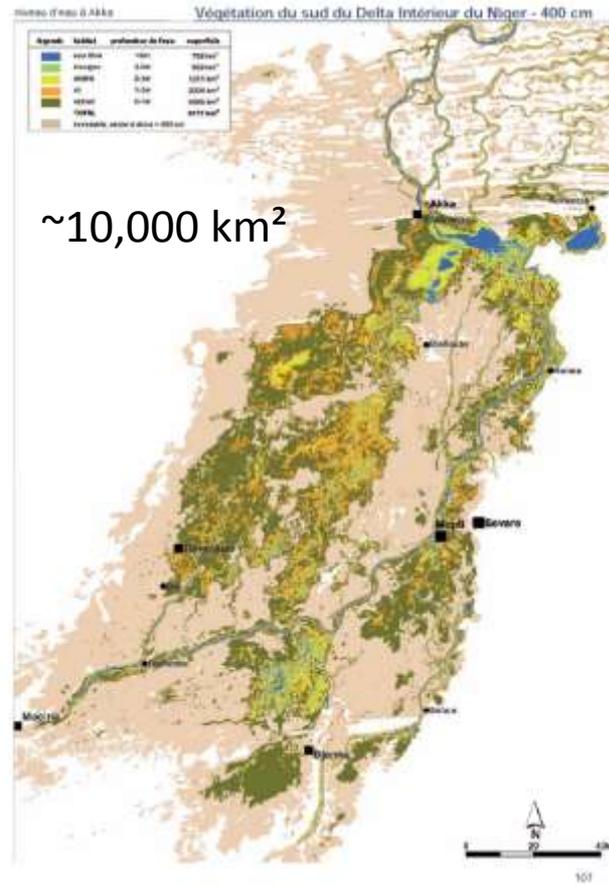
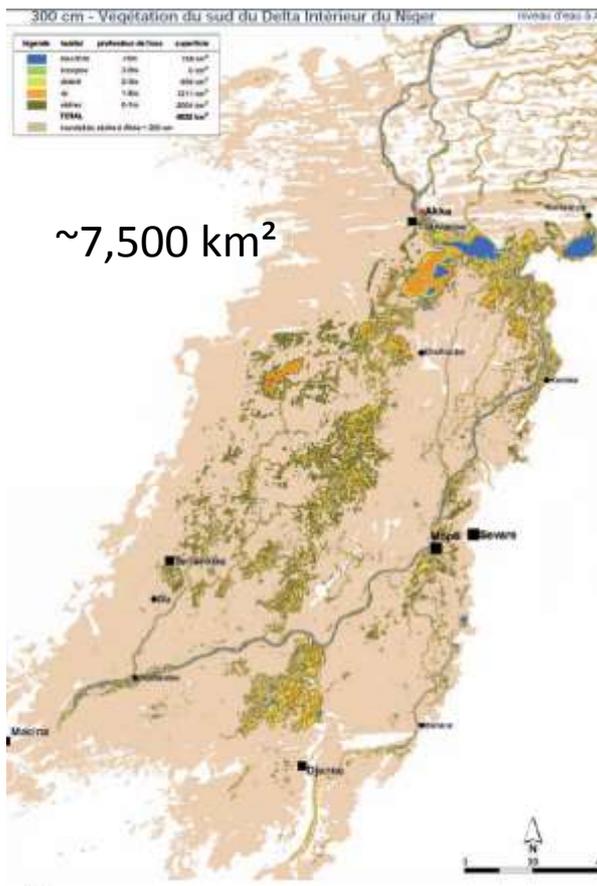
the Inner Niger Delta



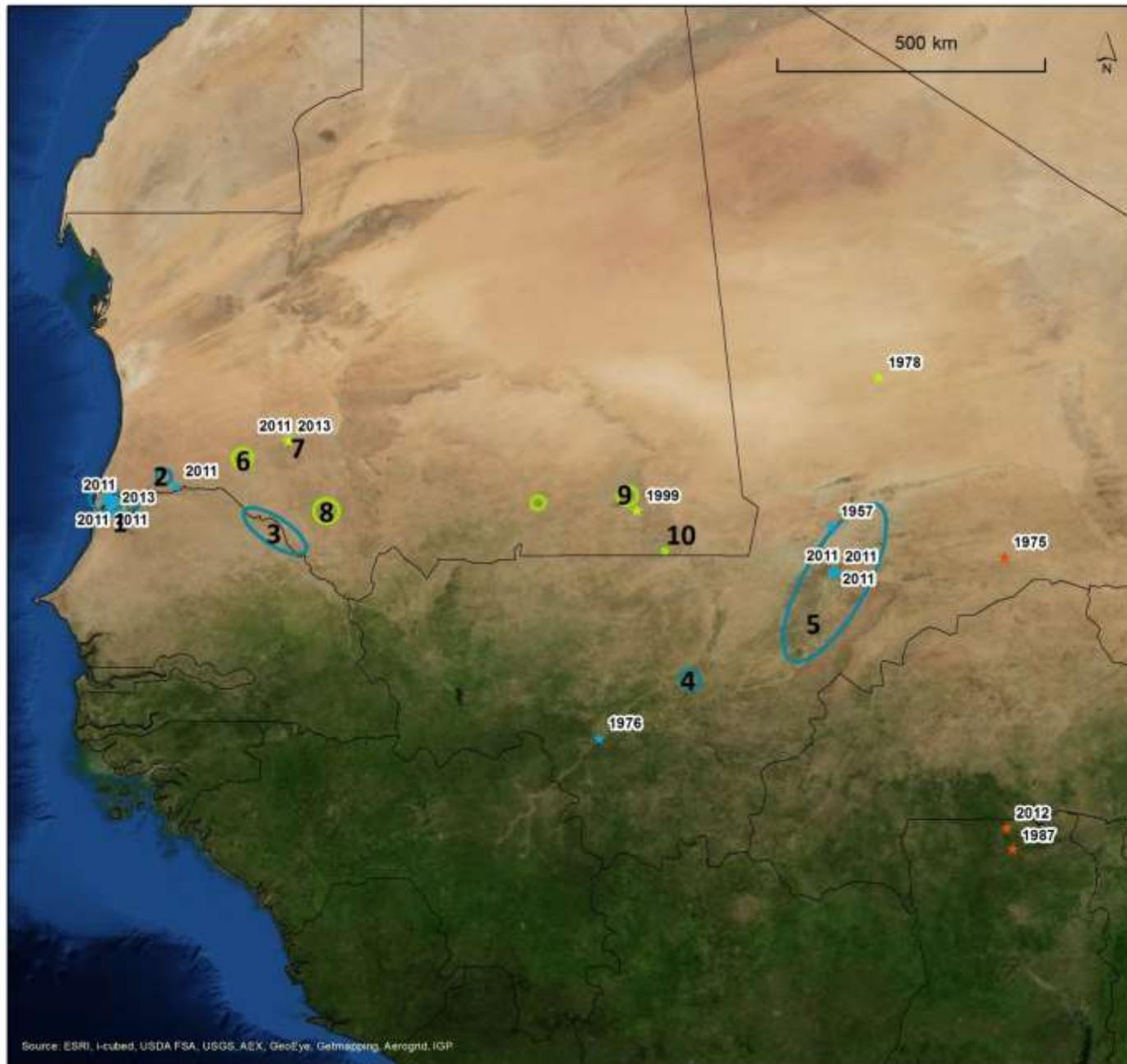
flooded area in the Inner Niger Delta



range of *Oryza longistaminata*-vegetation (orange) according to different flooding levels in the Inner Niger Delta (IND)



- area with *Oryza longistaminata*-vegetation Inner Niger Delta is proportional to the maximum flood level
- the more water the more potential AW habitat



Source: ESRI, I-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP



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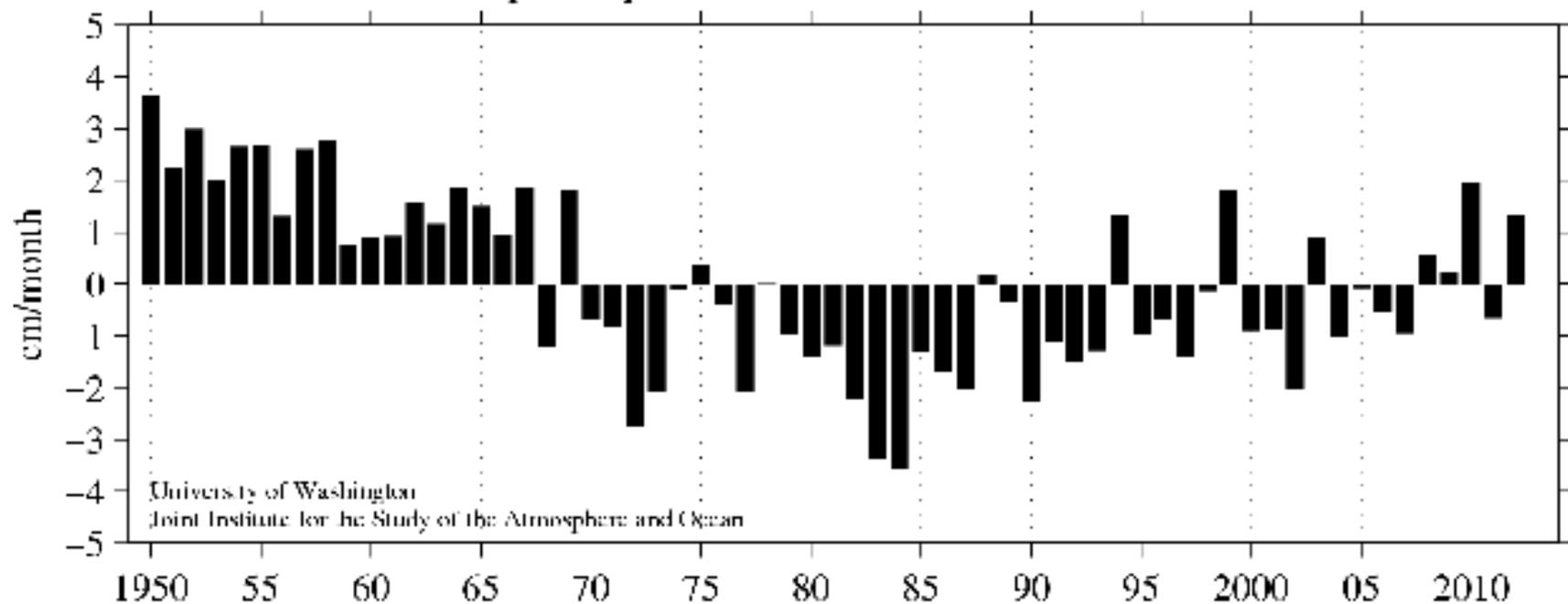
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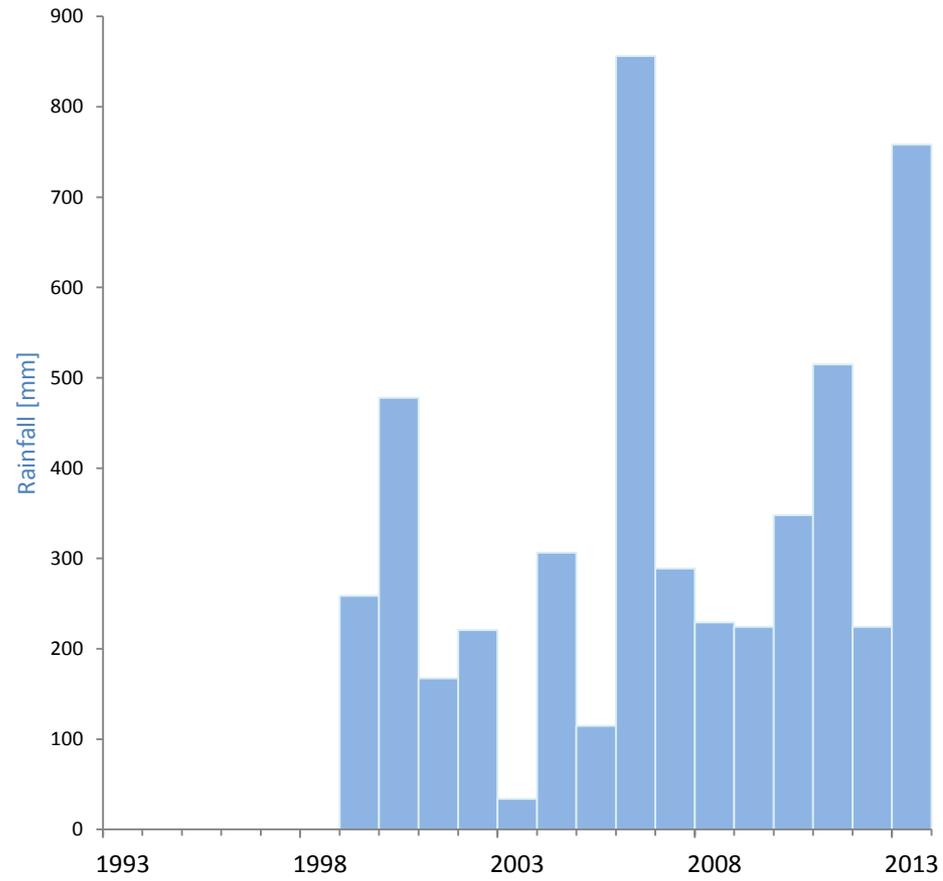
Sahel precipitation anomalies 1950–2013



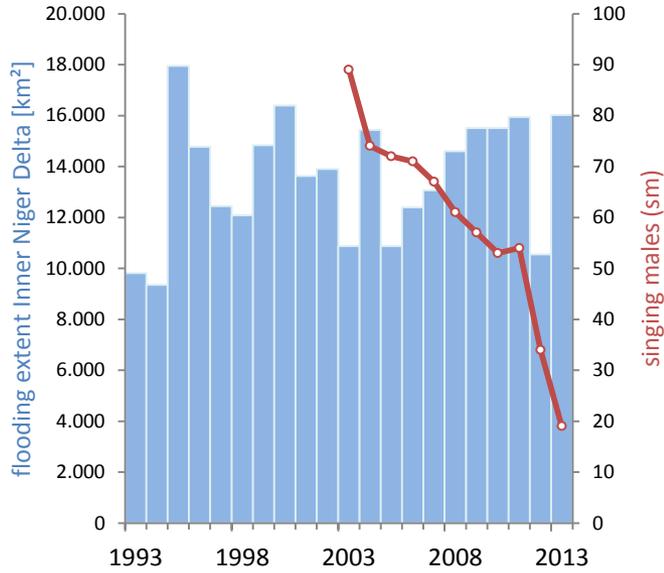
The 2013 value is -0.01 cm/month

June through October averages over 20–10N, 20W–10E, 1950–2013 climatology.
NOAA NCDC Global Historical Climatology Network data

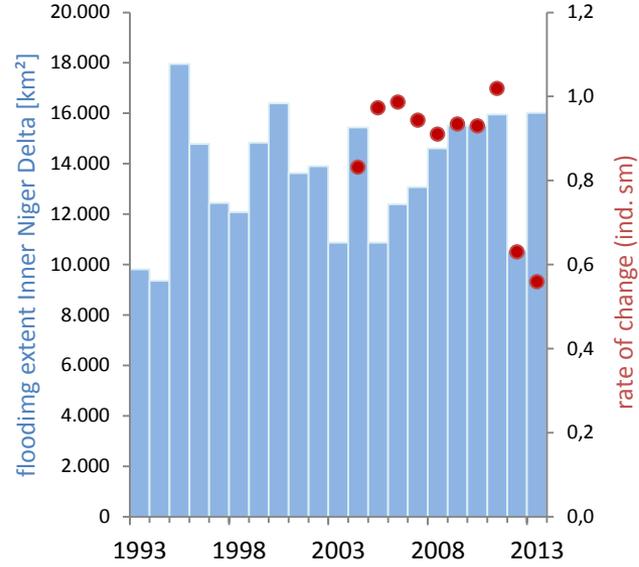
local precipitation
June - October (St Louis, Podor)



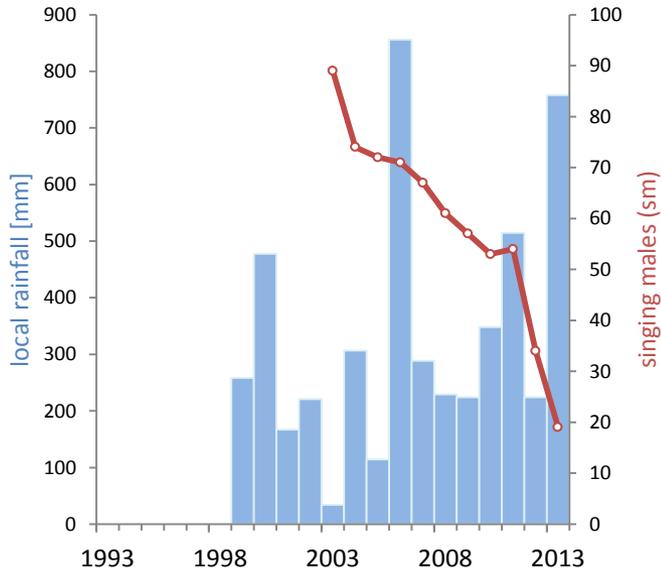
Pomeranian AW pop - Inner Niger Delta



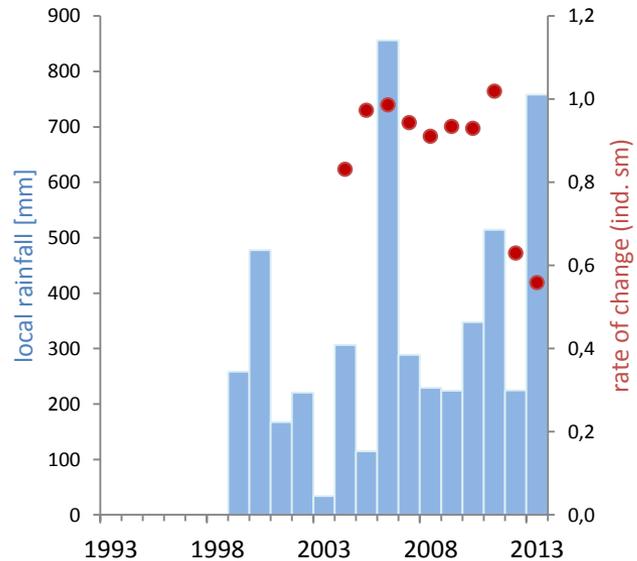
Pomeranian AW pop – rate of change – Inner Niger Delta



Pomeranian AW pop - local rainfall (North Senegal)



Pomeranian AW pop – rate of change – local rainfall (North Senegal)



future challenges

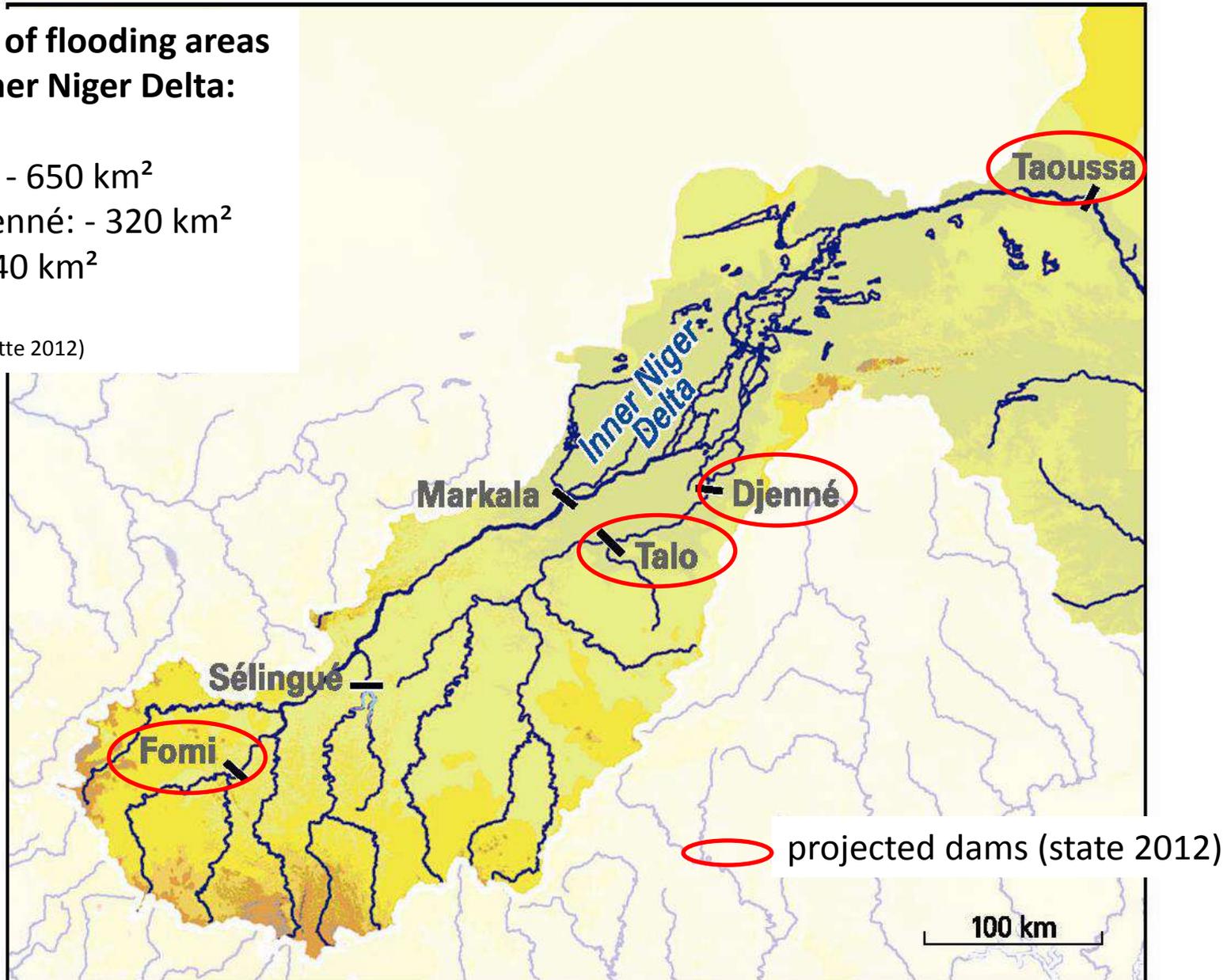
decrease of flooding areas
in the Inner Niger Delta:

Sélingué: - 650 km²

Talo + Djenné: - 320 km²

Fomi: - 740 km²

(Zwarts& Frerotte 2012)





Thank you!

thanks to:

Altenburg & Wymenga Ecological consultancy

Eddy Wymenga

Daan Bos

Leo Zwarts