



A FIRST ASSESSMENT OF THE POTENTIAL DISTRIBUTION OF PEATLANDS IN UZBEKISTAN

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Study regions and research questions addressed in the thesis

Distributed over large geographical area.
Covering diversity of altitudes & climates



► Do peatlands occur in Uzbekistan?

- Torf erlari O'zbekistonda uchraydimi?

► Where are these peatlands potentially located?

- Ushbu peatlands potentsial qaerda joylashgan?

► What are their characteristics, status and the services they provide?

- Ularning xususiyatlari, holati va ko'rsatadigan xizmatlari qanday?

HIGHLAND:

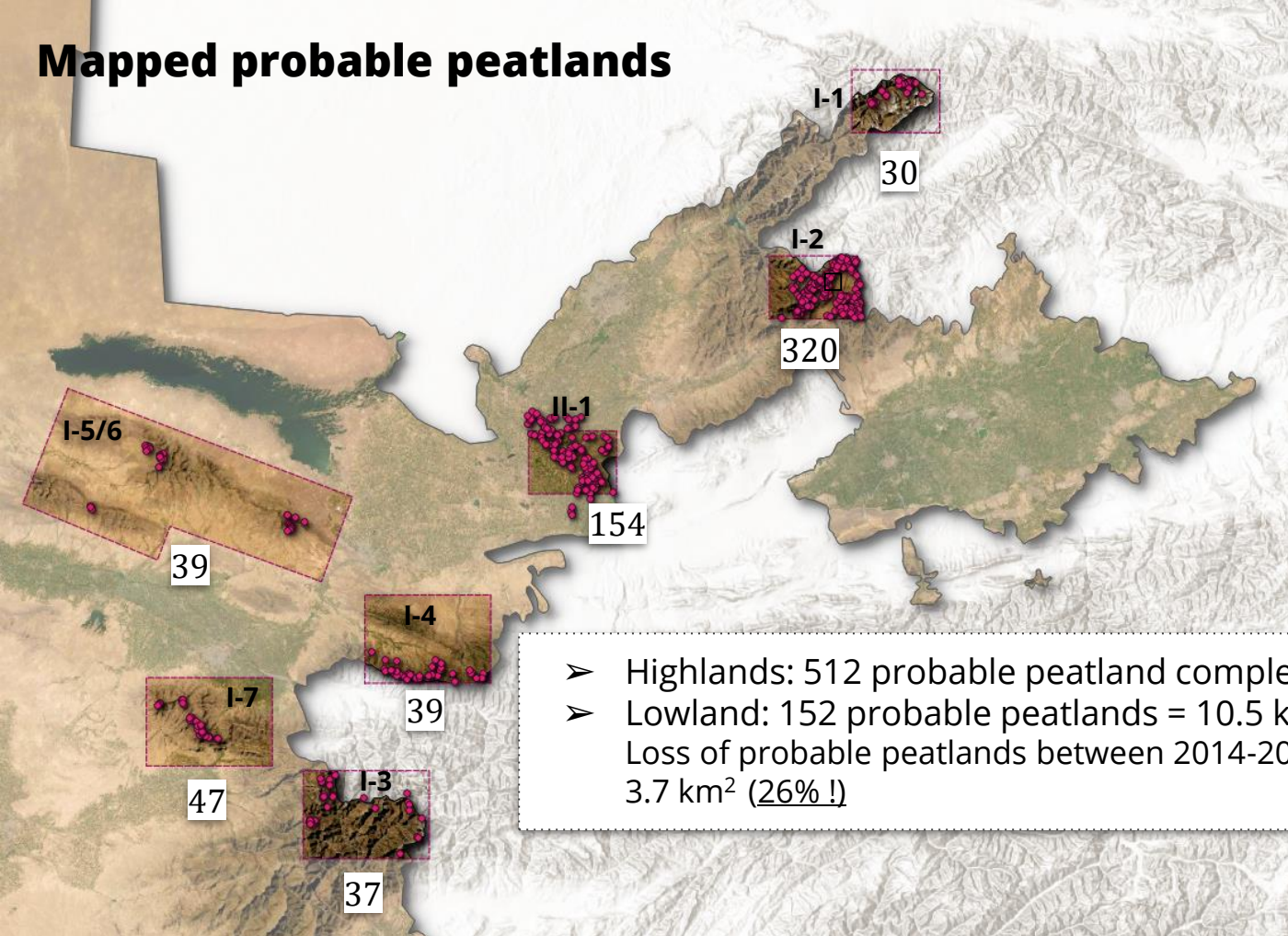
I-1 Pskem Valley
I-2 Angren Plateau
I-3 Gissar Mountains

I-4 North-Turkestan
I-5/6 Nuratau/Aktau
I-7 Urgut

LOWLAND:

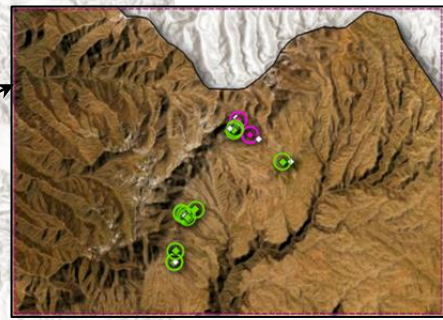
II-1 Syr Darya

Mapped probable peatlands



- Highlands: 512 probable peatland complexes = 22 km²
 - Lowland: 152 probable peatlands = 10.5 km²
- Loss of probable peatlands between 2014-2019:
3.7 km² (26% !)

All locations with *peat* (> 30% SOM) & *half-peat* (10-30% SOM)

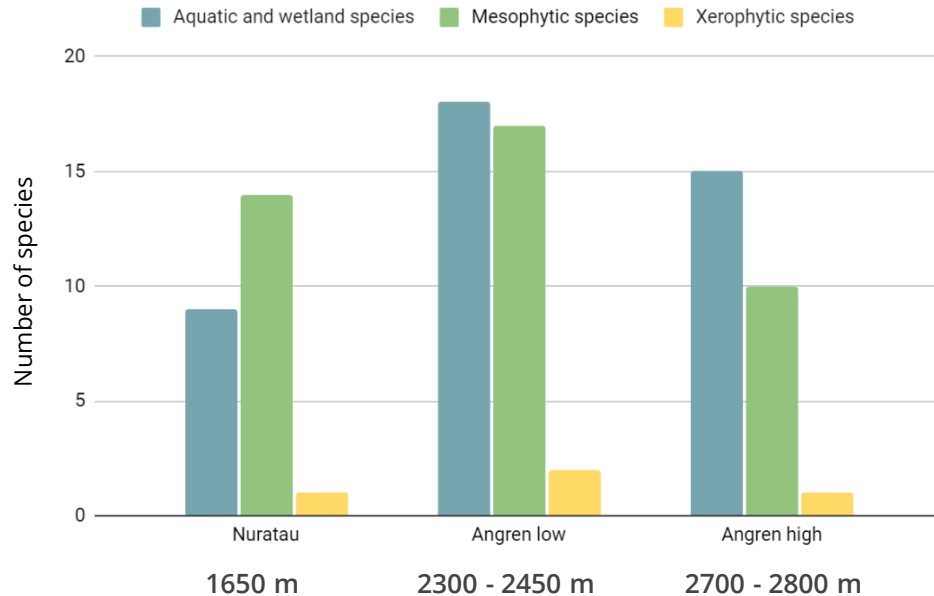


> 30 cm peat only here
(traditional 'peatland' definition)

30 sites documented
34 cores taken

- ◆ half peat
- ◆ peat
- field studies

Peatland vegetation



Habitat preferences of documented plant species, sorted by region

52 species are documented

Including:

- *Kobresia stenocarpa*
- *Carex enervis*
- *Carex melanantha*
- *Carex orbicularis*
- *Carex pseudofoetida*
- *Juncus articularis*
- *Trifolium repens*
- *Plantago lanceolata*
- *Cerastium cerastoides*



Kobresia growing on peat

Peatlands: ecosystem services and threats

Ecosystem services

Highland peatlands

- Headwater function (Water regulation, water storage)
- Provisioning services: land for grazing, nutrient rich plants
- Supporting biodiversity

Lowland peatlands

- Flood regulation
- Nutrient sink
- Provisioning services: Biomass for fodder and energy production
- Carbon sequestration

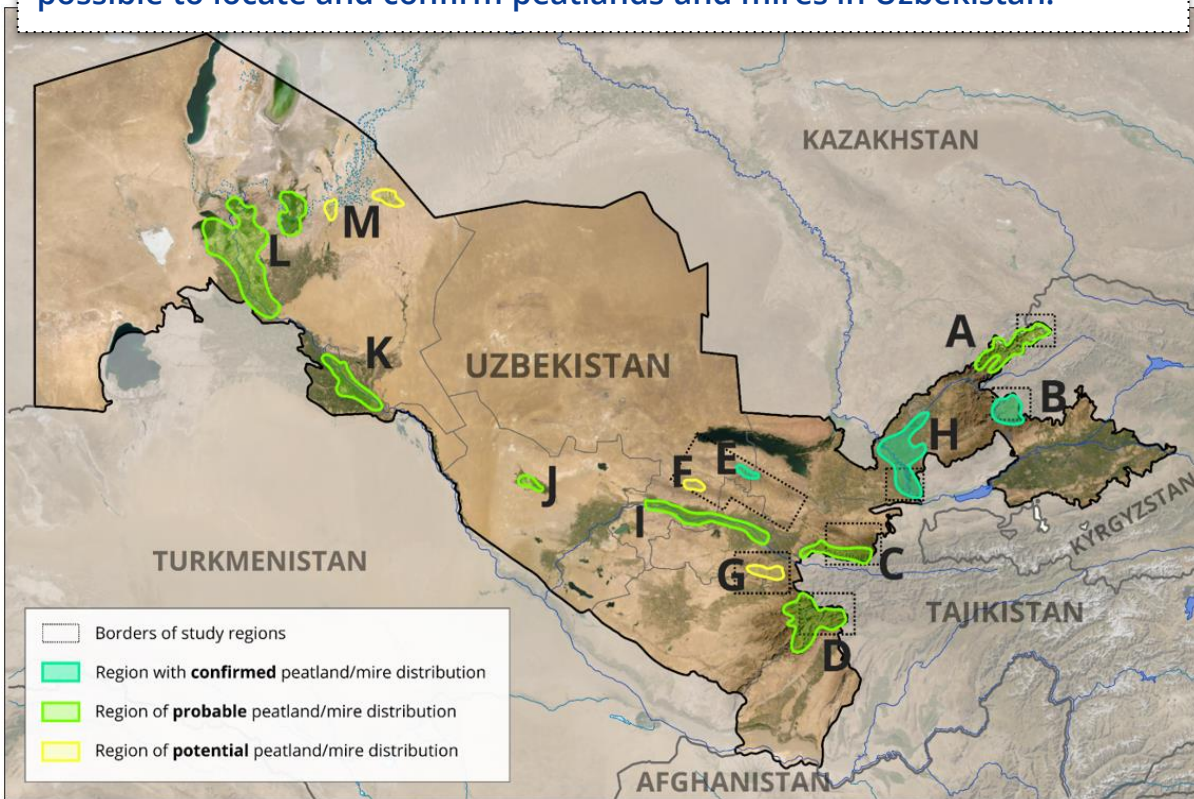
Threats

- Overgrazing
- Climate change

- Direct destruction (land reclamation)
- Intensive land-use
- Change of seasonal flood regimes (power production upstream)

Conclusion

With the help of proxy data, remote sensing and mapping, it was possible to locate and confirm peatlands and mires in Uzbekistan!



- Peatlands and mires are concentrated in high altitudes (*sloping mires*)

Mires are also present in the lowlands (*floodplain mires*)

- All peatlands & mires are intensively used
- Less pronounced features (peat depths & SOM), compared to peatlands in more temperate climates
- Small patches, but widely spread in the mountains
- Vegetation is a mix of wetland species and mesophytic species