Critical Sites Network for Freshwater Biodiversity in the Lake Victoria Catchment

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Partners:

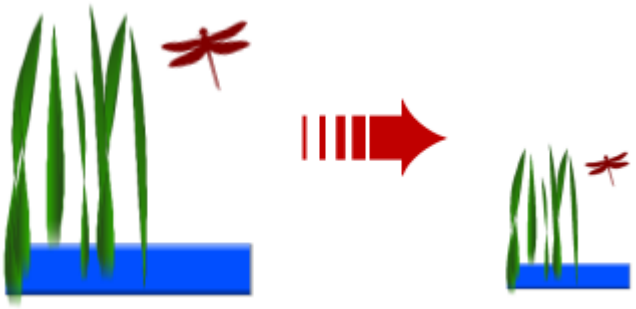
Supported by

Presentation Outline

- Status of Freshwater Ecosystems
- Potential value of Protected Areas
- Systematic Conservation Planning (Marxan)
- Optimal Site Networks (Preliminary findings)
  - Conservation benefits
  - Livelihoods benefits
- Next Steps / Recommendations

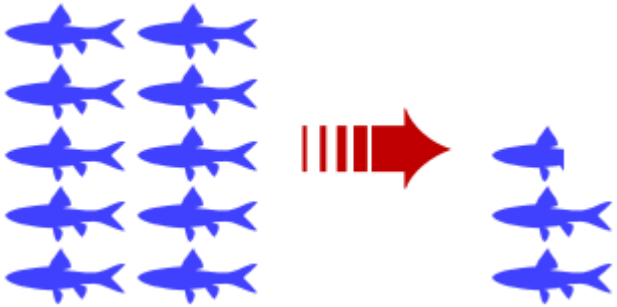
Status of Freshwater Biodiversity

1900 Now



64% wetlands lost

1970 Now



76% decline in freshwater species populations

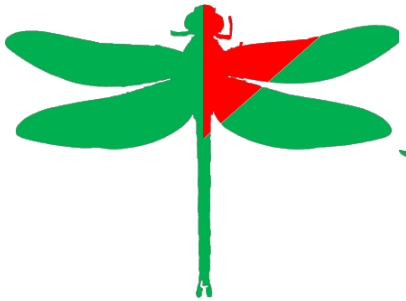
Davidson 2014; WWF 2014

Freshwater species threatened with extinction

THE IUCN RED LIST
OF THREATENED SPECIES™

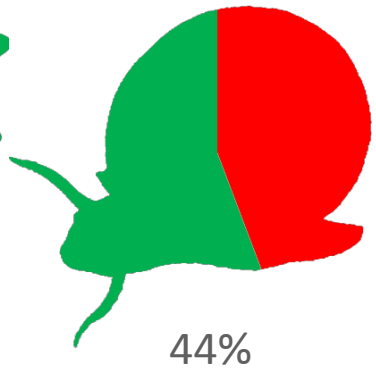
30%

~50% species assessed



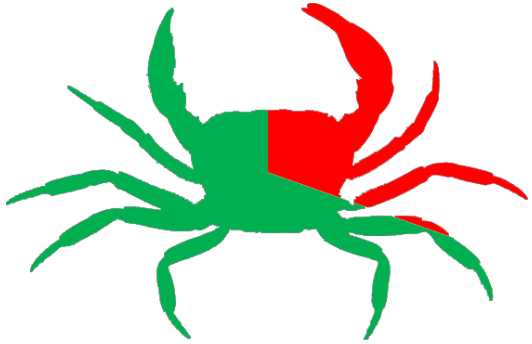
14%

~70% assessed



44%

~70% assessed



30%

100% assessed

< 20% Threatened – Lake Victoria catchment

IUCN Red List 2014.3

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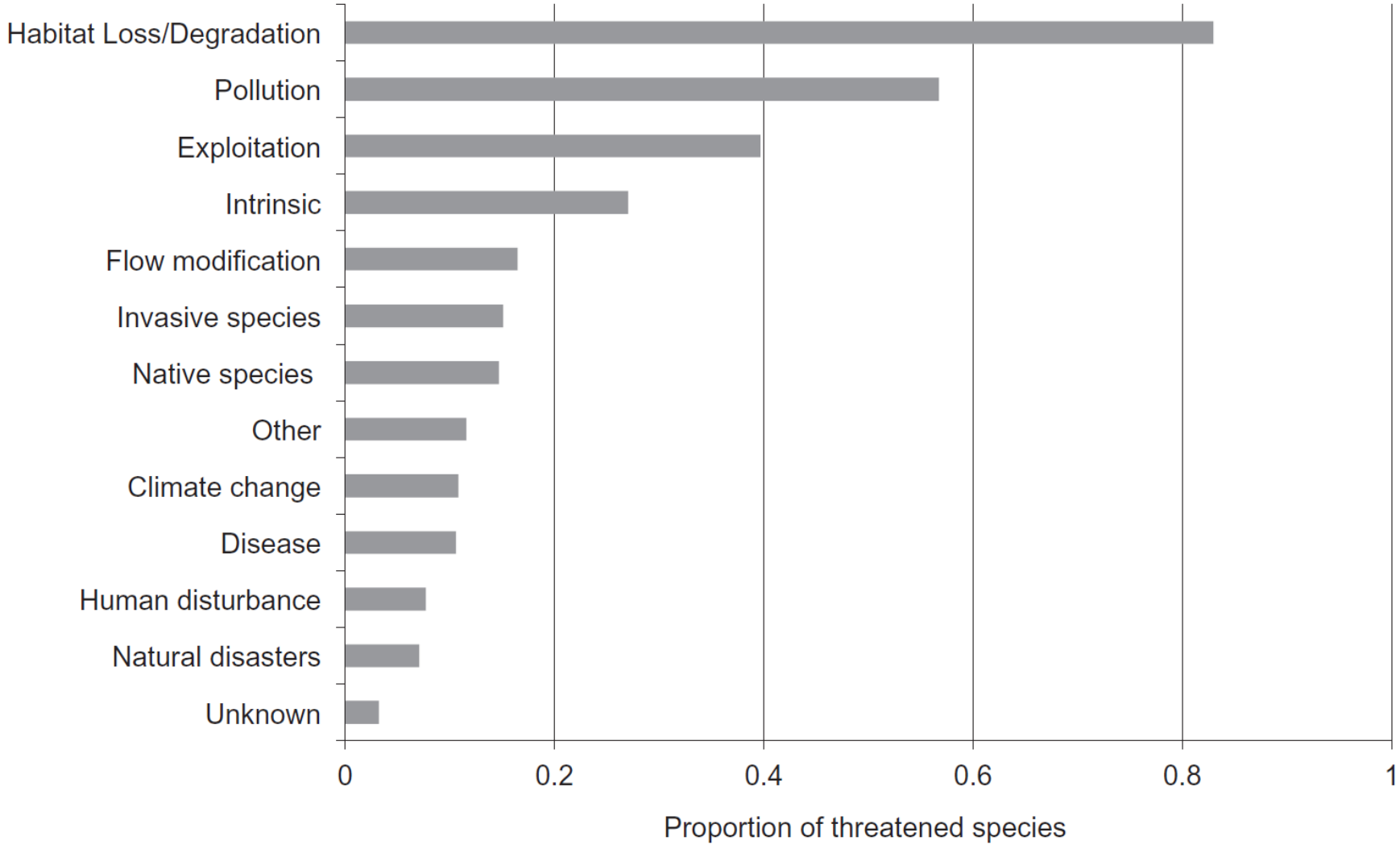
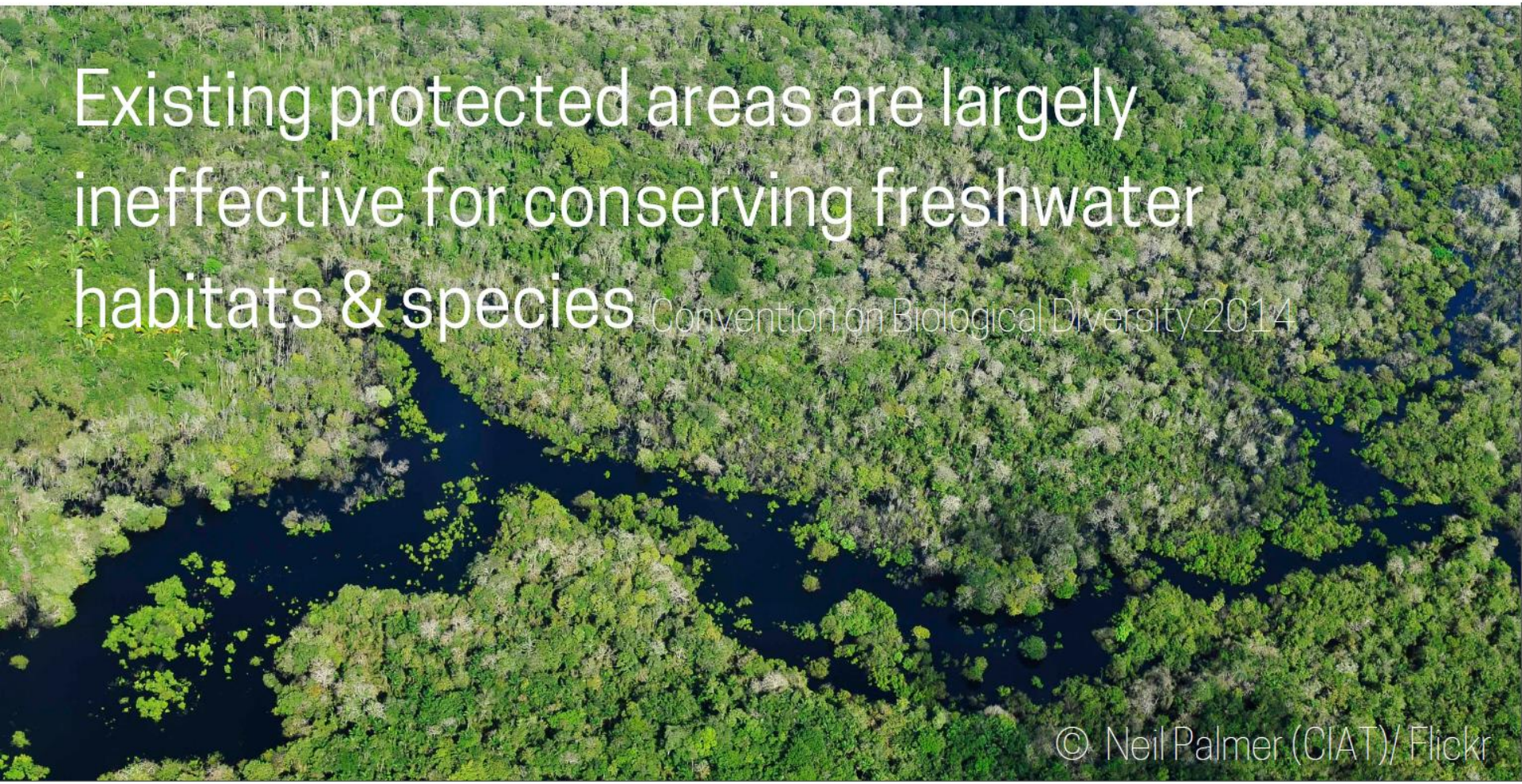
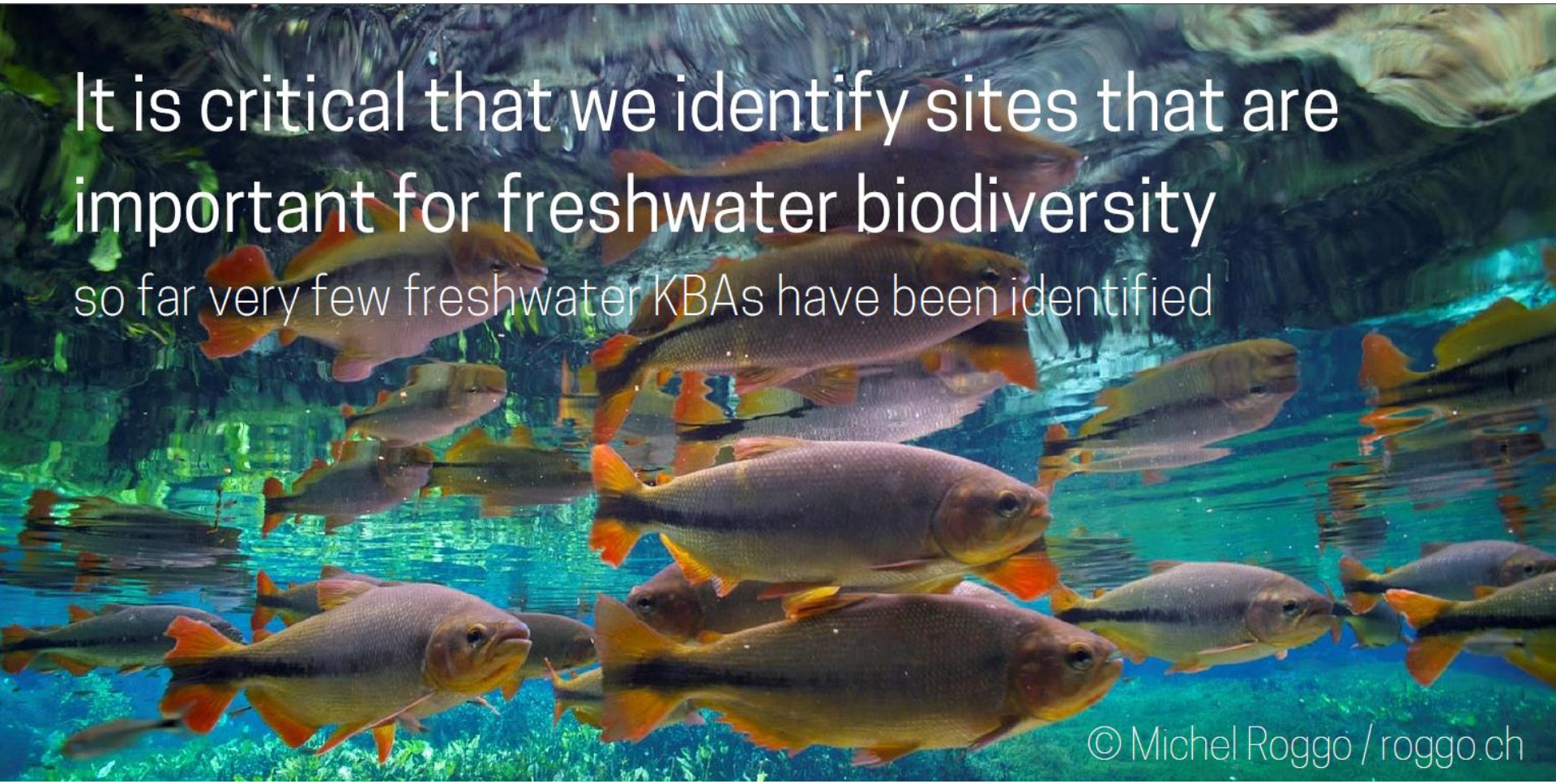
Causes of decline



Collen et al (2014). Glob. Ecol. Biogeogr. 23, 40-51


Existing protected areas are largely ineffective for conserving freshwater habitats & species Convention on Biological Diversity 2014
© Neil Palmer (CIAT)/ Flickr



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Site networks for freshwater biodiversity

- Systematic Conservation Planning (Marxan)
- Species targets:
  - Threatened, endemic, climate vulnerable, utilised
- Other targets:
  - catchment connectivity (river corridors);
  - FW Key Biodiversity Areas
- Data sources:
  - IUCN Red List species assessments
  - CC vulnerability assessments
  - Species livelihoods assessment
  - Key Biodiversity Areas assessment

Species data input to Marxan analysis

Taxonomic groups analysed	Number of species newly assessed & mapped for IUCN Red List
Freshwater Fishes – mainly riverine	76
Freshwater Fishes - haplochromines	167 - poor data on within-lake distribution maps
Dragonflies & Damselflies	219
Freshwater Molluscs	70
Freshwater decapods	8 (crabs)
Freshwater Plants	137
Total	**646 species**

Assessed for livelihoods	Species recorded as used
Plants and Fishes	194

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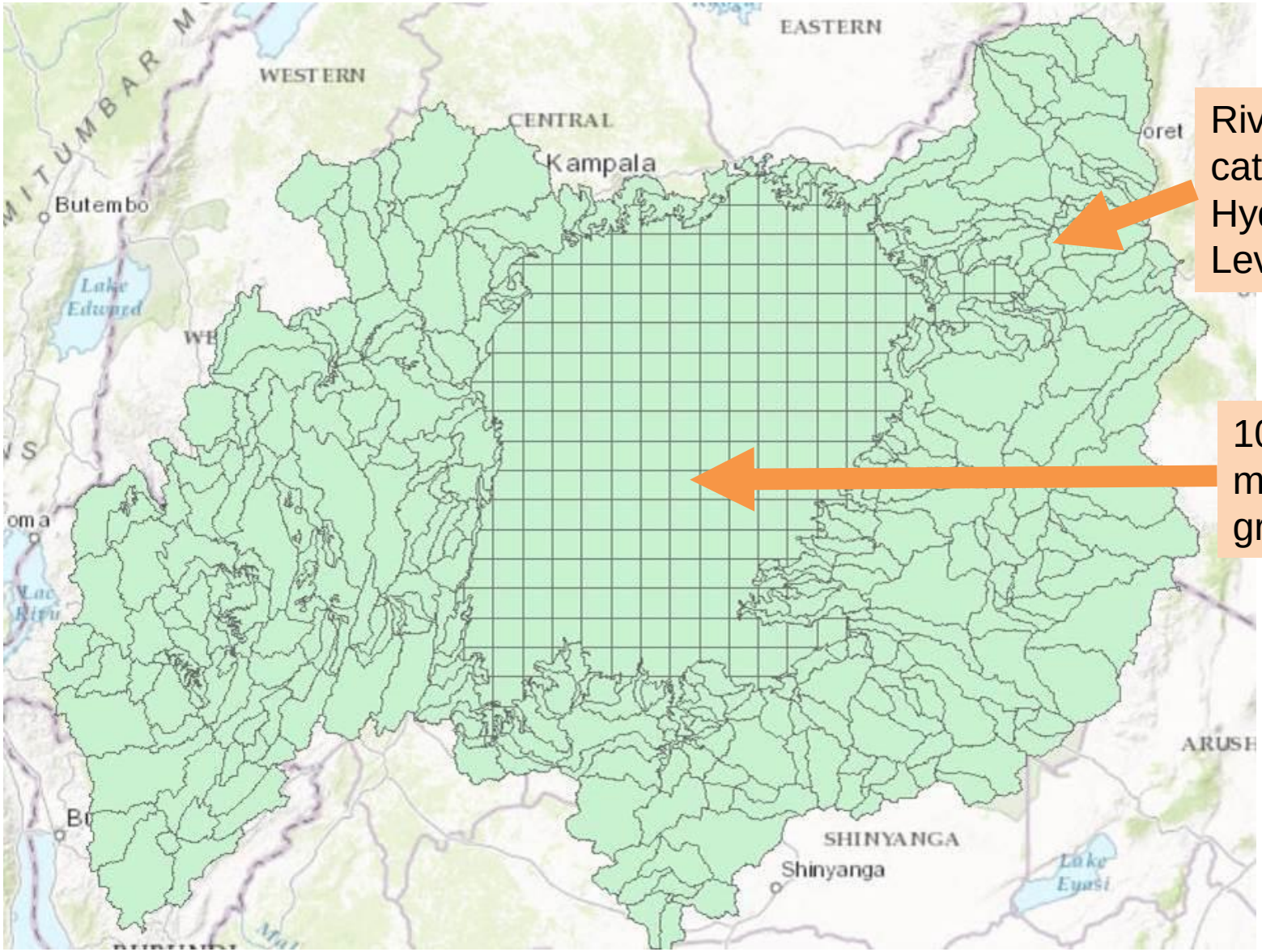
Marxan: Site Planning Units



River sub-catchments. HydroBASINs Level 8

10 arc minute grid cells

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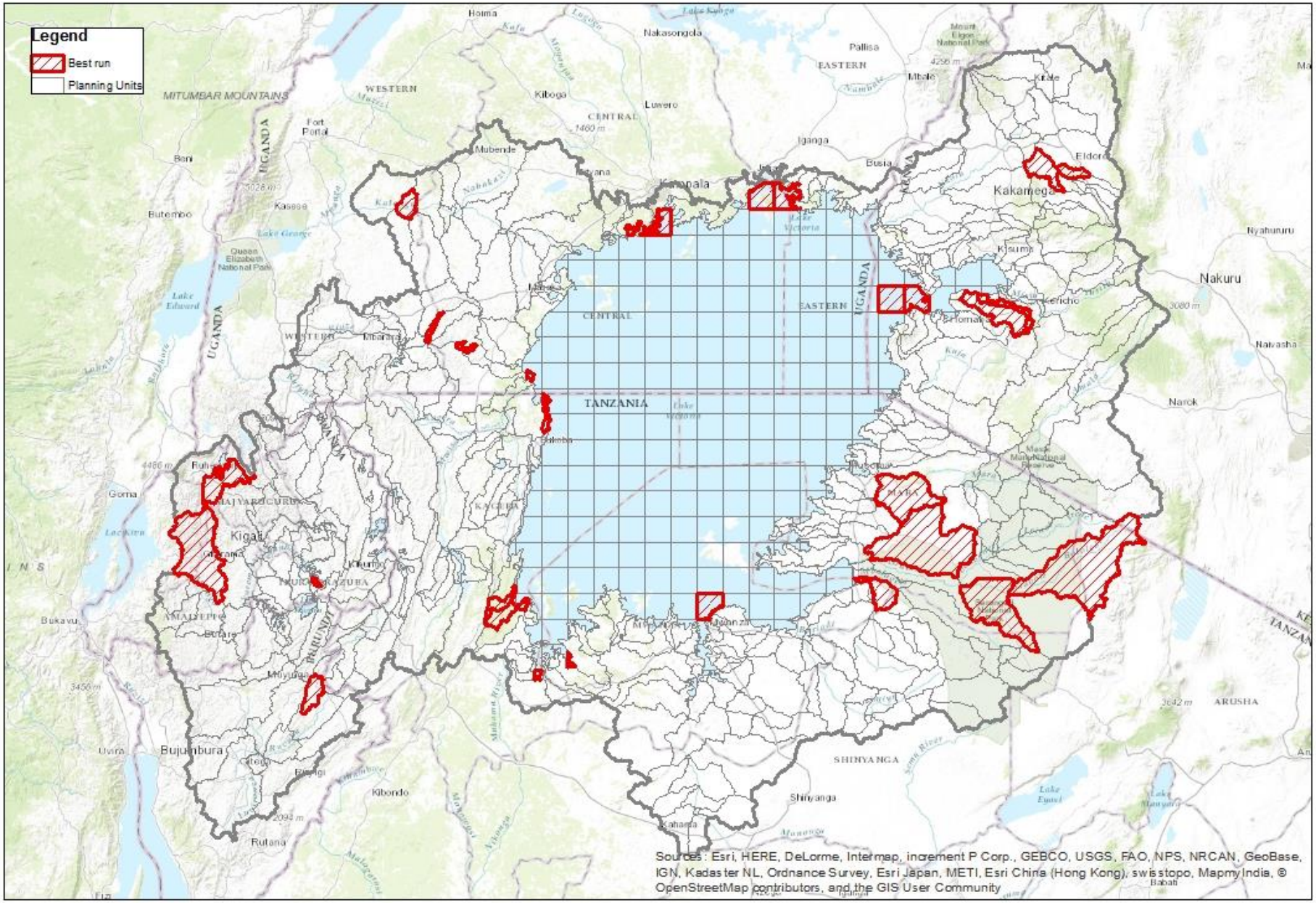
“Preliminary” results

Optimal networks of sites to meet the conservation targets within the minimum total land area

Optimal network: conservation & use

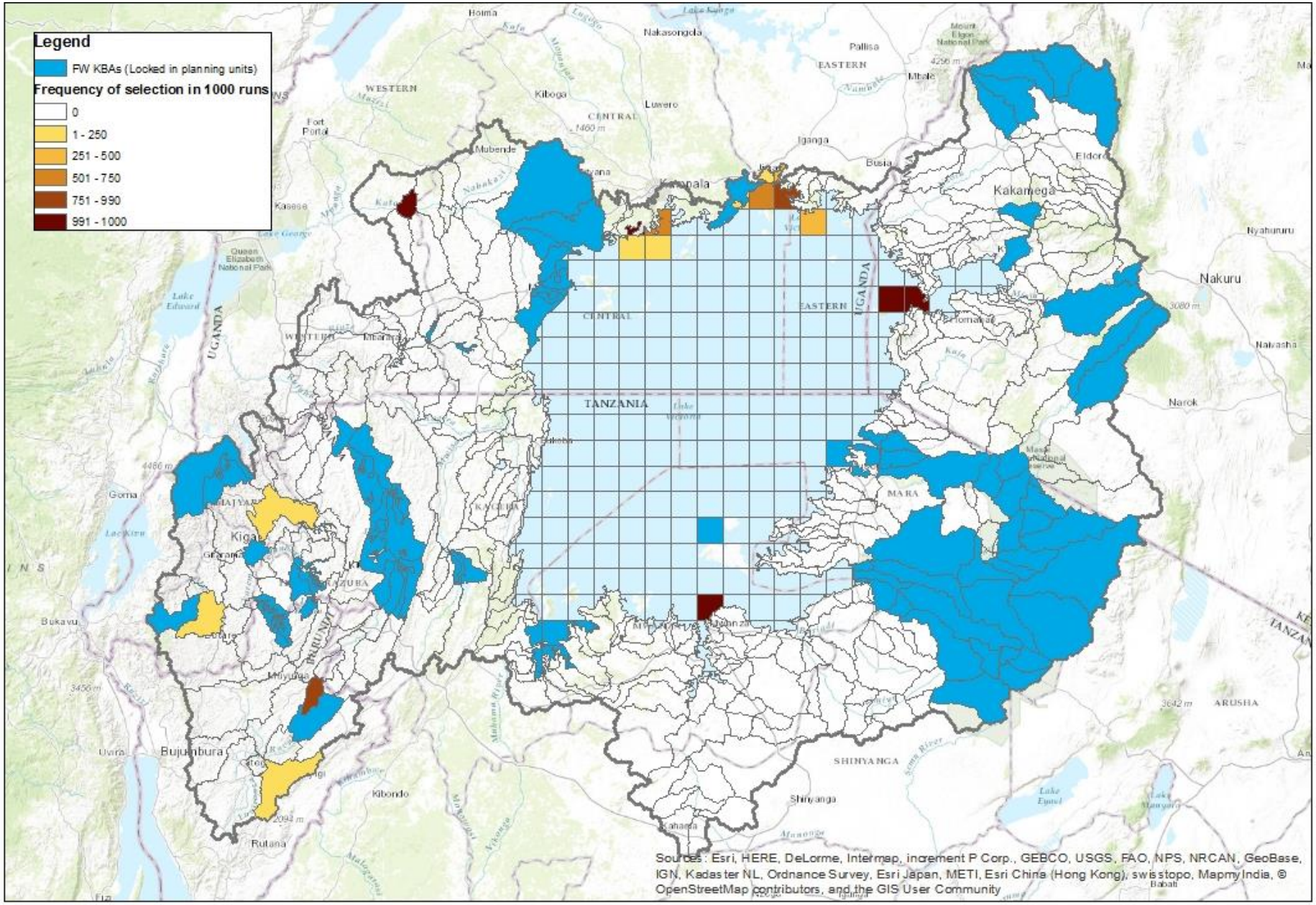


Incorporating Freshwater Key Biodiversity Areas (KBAs)

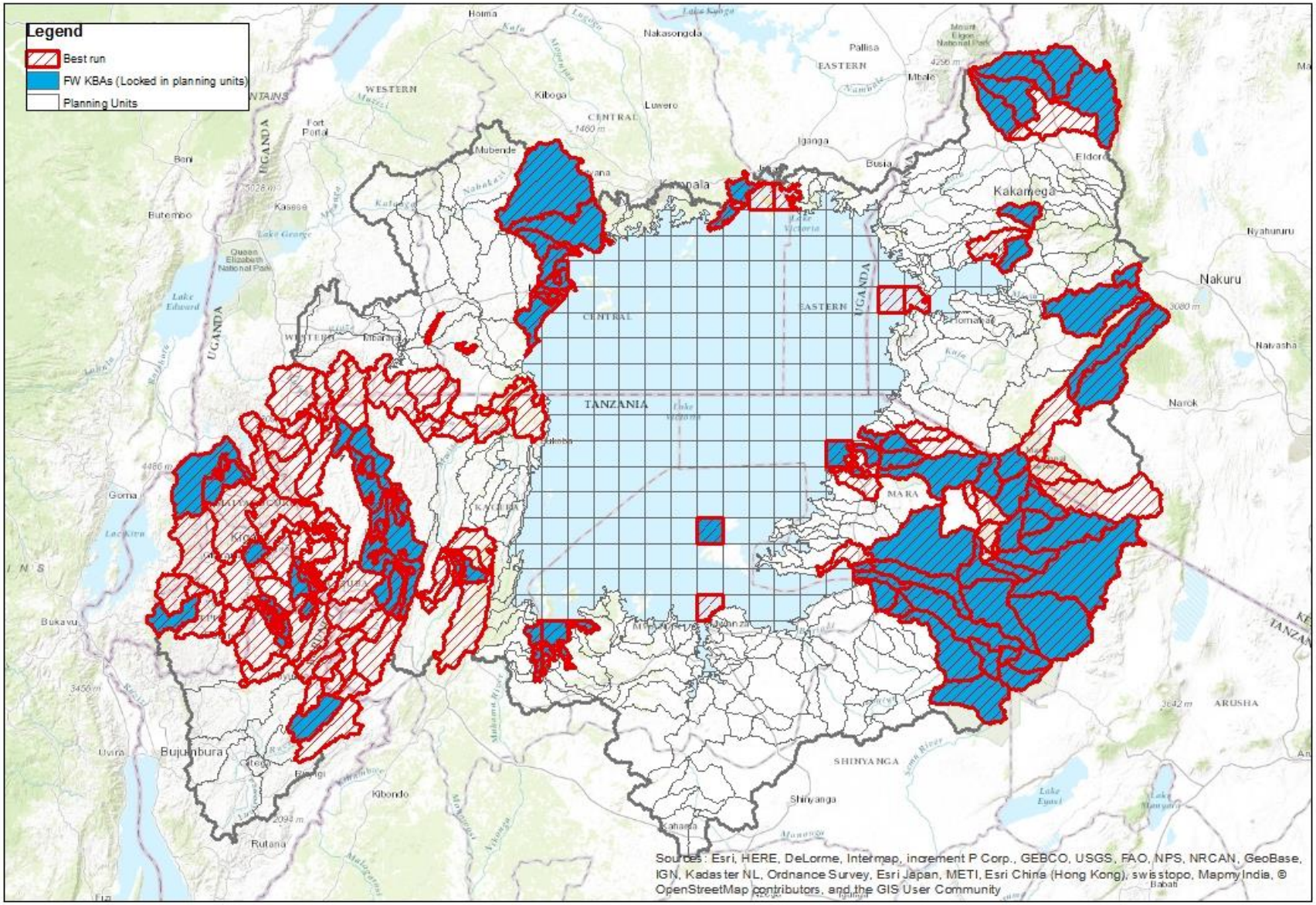
All sub-catchments with 20% overlap with a Freshwater KBAs are automatically included in the network.

How many additional sites are required to meet the species targets?

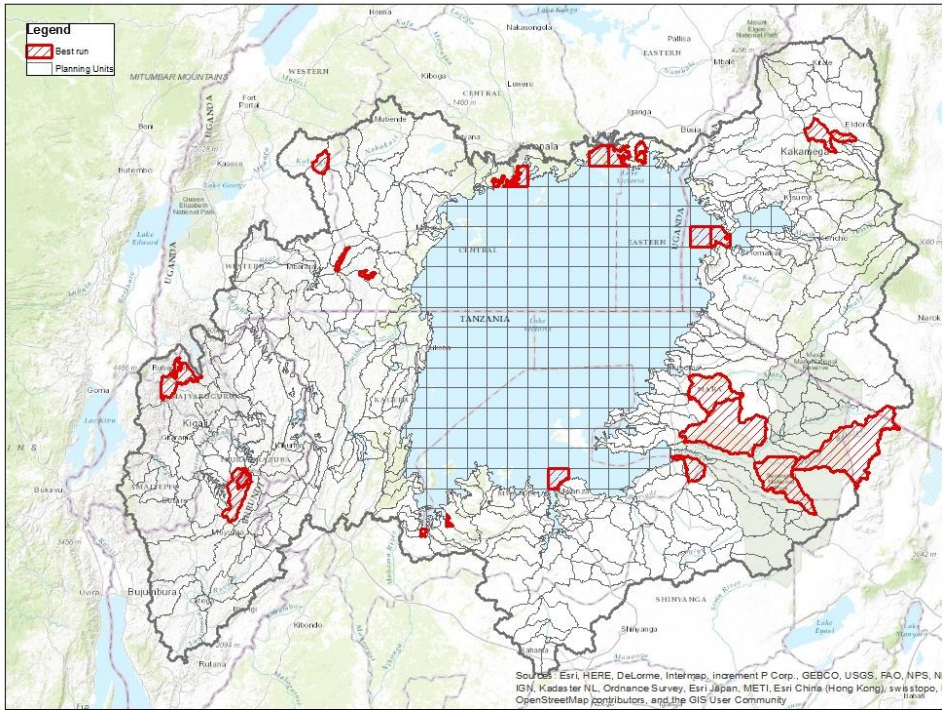
Incorporating Freshwater KBAs

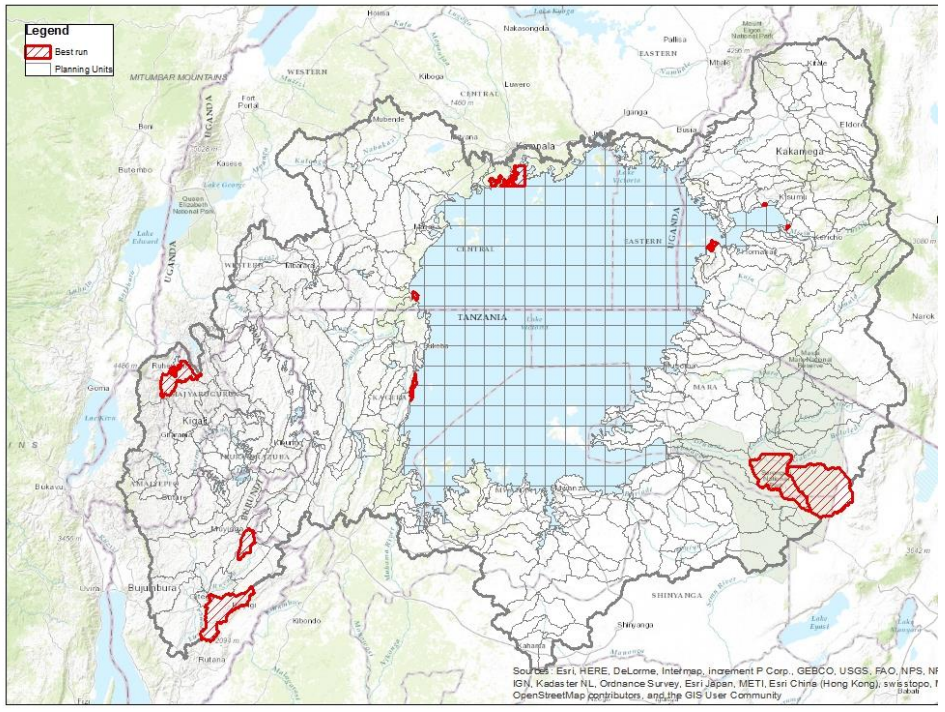


With “high connectivity” targets – river corridors are identified



Conservation vs Use





Species Conservation targets “Best run”

Species Use targets “Best run”

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Next Steps

- Refine Marxan analysis: incorporate current land use, existing PAs, CC exposure…
- Gap analysis: FW biodiversity in current PA and KBA networks
- Propose critical sites network to better represent FW biodiversity
- Make all data and outputs widely available
  - www.iucnredlist.org
  - www.ibat-alliance.org/ibat-conservation

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Recommendations

- Evaluate current management focus on FW biodiversity within existing PAs and KBAs
- Consider expansion of current PA network
- Conduct baseline survey of species distributions and status – v data poor at present
- Establish long-term monitoring programme for species status
- Create habitat map for Lake Victoria
- Raise awareness of importance of FW species

THANK YOU FOR LISTENING