Cross-taxon patterns of biodiversity, land cover, and protected areas in West Africa

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Motivation

Are areas rich in species of one group also rich in other groups?

- Site selection effectiveness

Species Richness & Endemisms

- Species rich sites as umbrella for rare species

Objectives

- To determine diversity and endemism patterns

- To evaluate the spatial congruence in order to define important areas

- To evaluate the threat imposed to important areas by current land uses

- To detect richness patterns of species not covered by the existing network of protected areas.

Input data: Species collection databases

- Vascular Plants = 1024 species
- Bats = 110 species
- Amphibians = 158 species

Environmental variables

Species Distribution Models

Species Richness Patterns

Bats

FIGURE REMOVED

Plants

FIGURE REMOVED

Amphibians

FIGURE REMOVED

High

Low

Endemism Patterns

(Range Size Rarity)

Bats

FIGURE REMOVED

Plants

FIGURE REMOVED

Amphibians

FIGURE REMOVED

High

Low

Identification of important areas based on species endemism and richness for each group

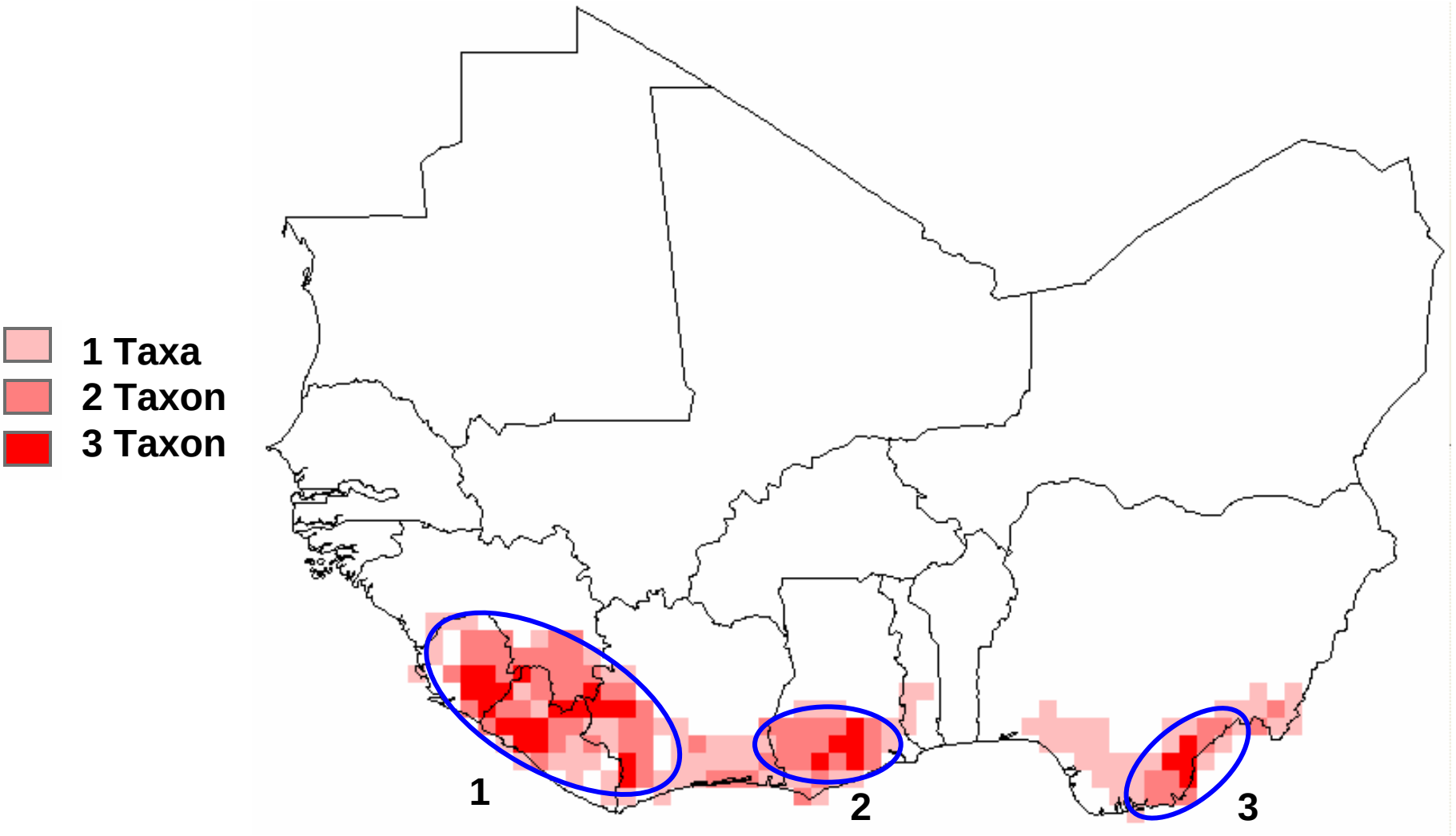
Top 5 percentile of the grid cells ranked by endemism index (RSR)

Plants

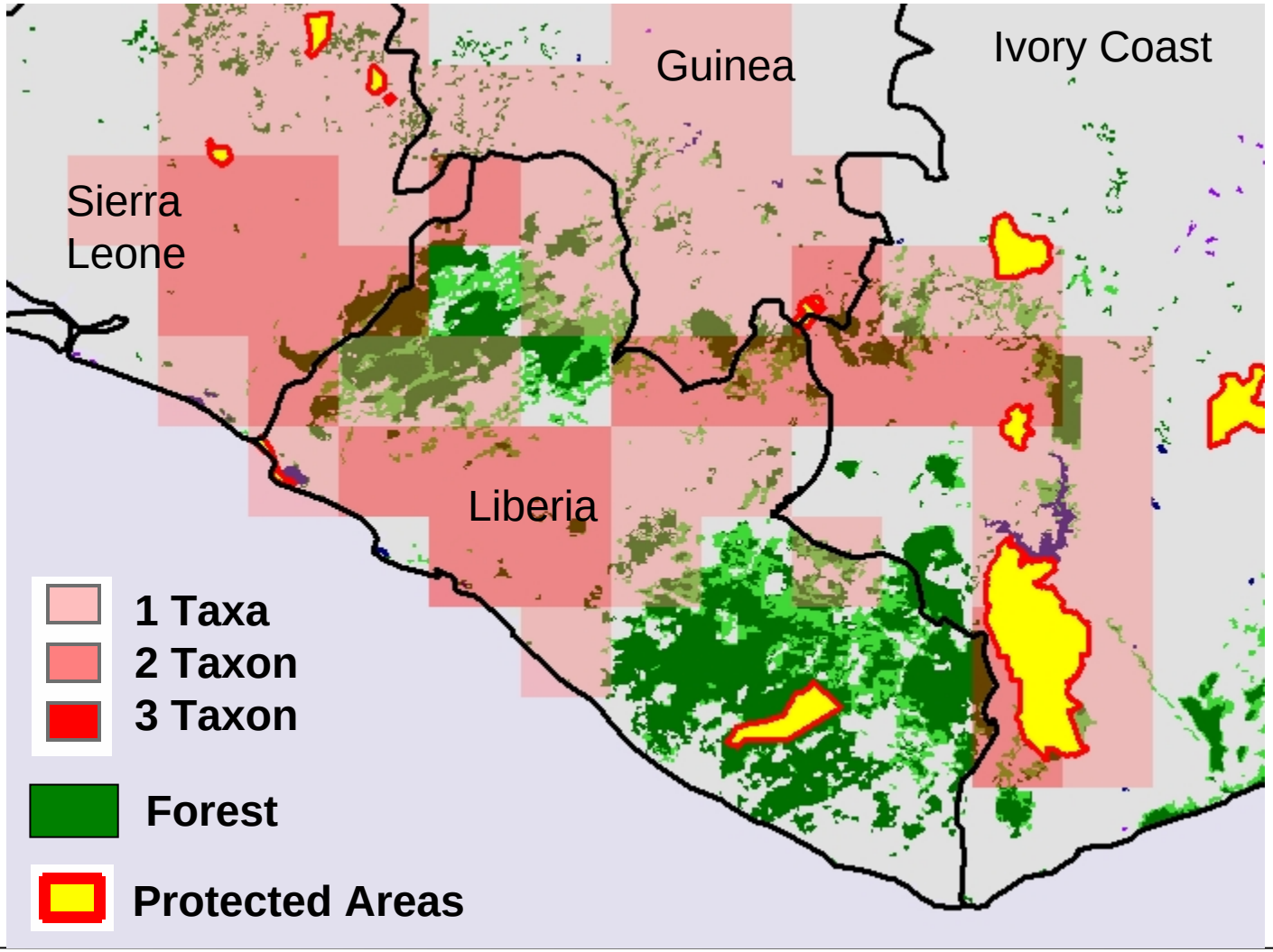
Bats

Amphibians

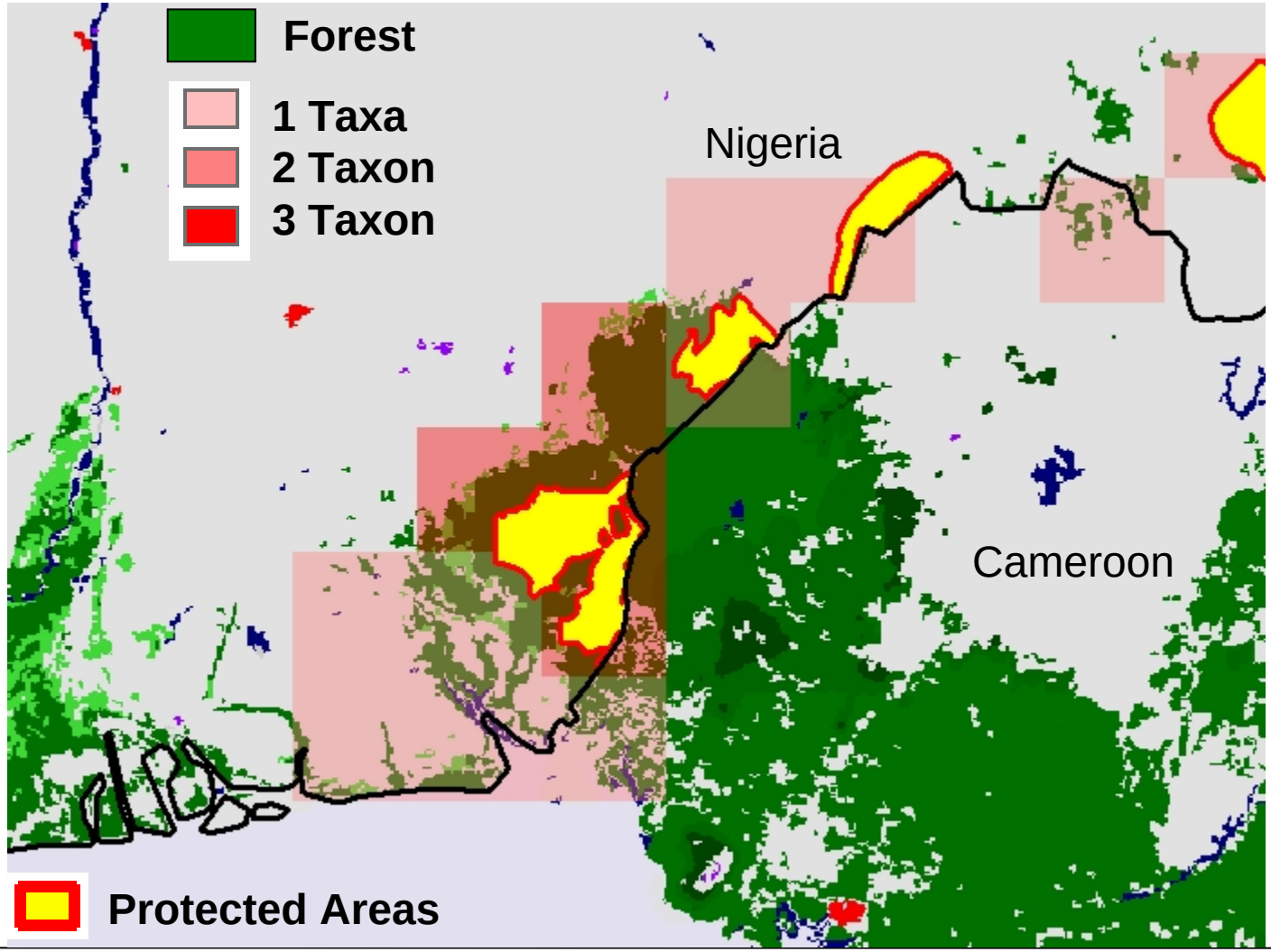
Spatial Congruence of all groups based on species richness and endemisms



Land Use Threat to Important Areas – Hot spot 1



Land Use Threat to Important Areas – Hot spot 3



Gap Analysis

Bats: 3 species, 2 %

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Plants: 238 species, 23 %

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Amphibians: 21 species, 13 %

FIGURE REMOVED

High

Low

Outlook

- Incorporation of more criteria for a proper site selection procedure.
- Connexion with decision makers - implementation.
- Establishment of a dynamic feedback process for model refinement.
- Integration with land cover monitoring.
- Data and analysis integration with ongoing projects.

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