Protected Area Resilient to Climate Change (PARCC) in West Africa

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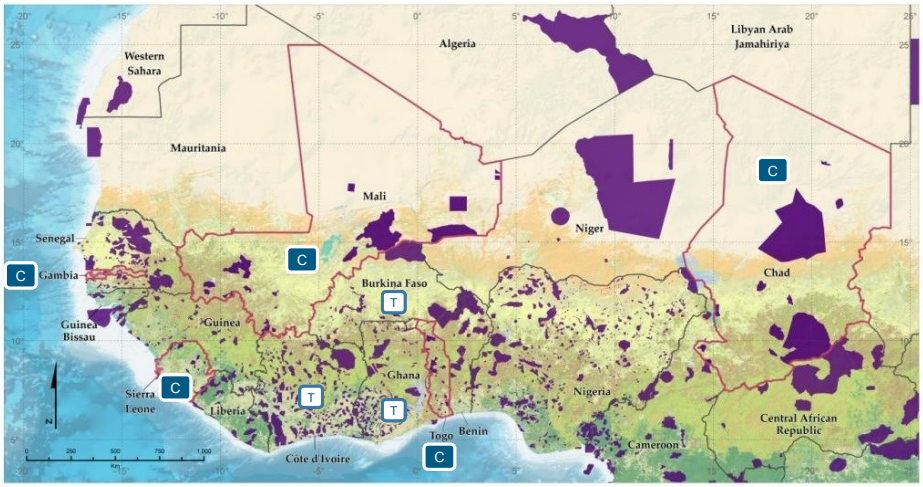
PARCC Project objectives

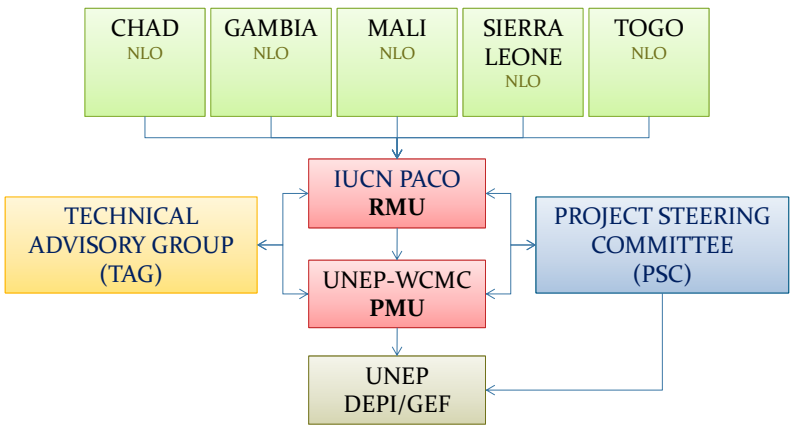
Help countries design **PROTECTED AREA SYSTEMS RESILIENT TO CLIMATE CHANGE**, by:

- Developing innovative **tools** for assessing the vulnerability of PAs to climate change
- Designing adaptation **strategies** to strengthen the resilience of PAs
- **Building capacity** in the region for applying the tools and implement the strategies
- Creating a **platform for field implementation** (pilot projects)

PARCC Project countries

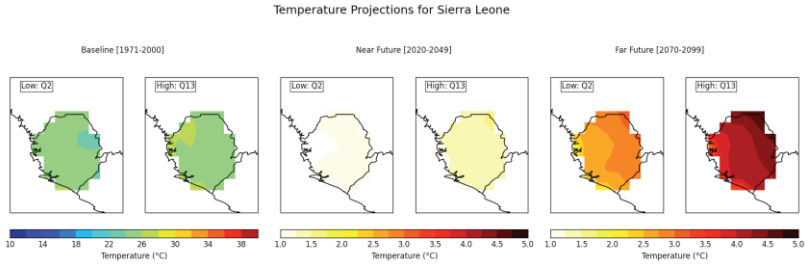


Project Structure



Regional climate projections
Met Office Hadley Centre

- 5 high resolution regional climate simulations
- A high level of confidence that **temperatures will increase** in West Africa
- **Little consensus** on the direction and magnitude of potential changes **in rainfall**



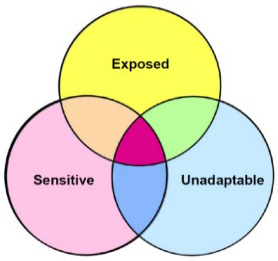
Projection of changes in ecosystem services
Met Office Hadley Centre

Climate change is likely to lead to:

- An **increase in carbon storage** in forests
- An **increase in vegetation productivity** in most of West Africa
- But this increase could be **limited by land use change**
- Ecosystems are projected to shift northwards in central and eastern West Africa

Species vulnerability according to their biological traits

IUCN Global Species Programme



Vulnerability assessments of amphibians, birds, mammals, freshwater fish, and reptiles based on traits (TVAs):

- **Extinction risk**: threatened species (317 reptiles) according to IUCN Red List
- **Vulnerability to climate change**: densities and proportions of vulnerable species within a given taxon (317 reptiles, 550 freshwater fish, 417 mammals)

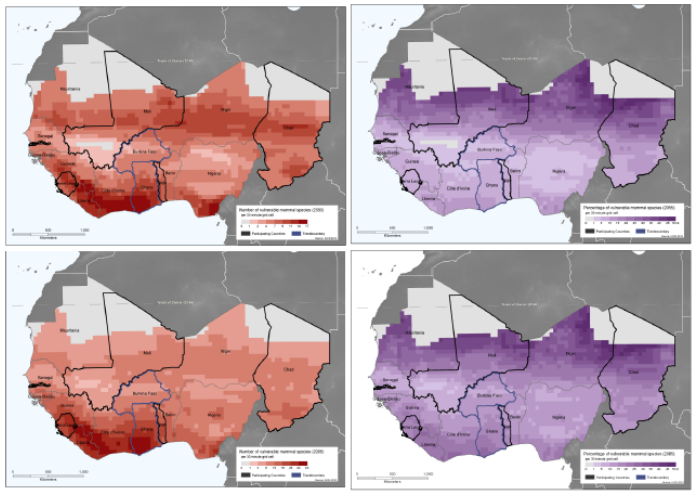
Example: Distribution of climate change vulnerable **mammals**

Number of species assessed as climate change vulnerable

Percentage of species assessed as climate change vulnerable

Short term

Medium term

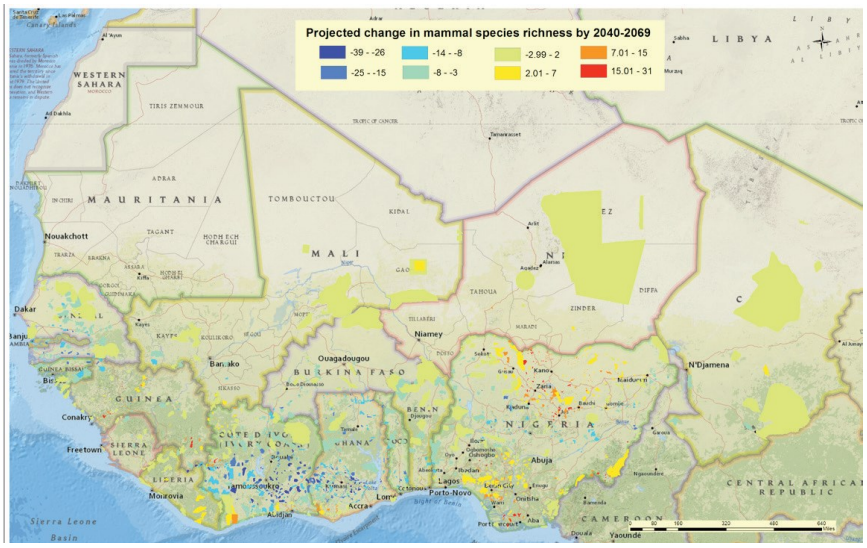


Future species distribution in the face of climate change

Durham University

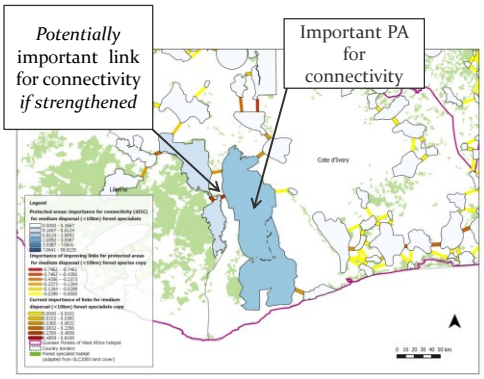
- Assessment of the potential impacts of climate change on West African PAs using Species Distribution Models (SDMs)
- PA network projected to decline in mean climate suitability for most species by 2060-2099.
- Proportion of species projected as 'highly likely' to experience declining climate suitability:
  - 44% of amphibians
  - 52% of birds
  - 47% of mammals

Example: Projected mammal species turnover by 2040-2069



Assessment of the connectivity of the regional PA network

UNEP-WCMC Science Programme



- A model of PA connectivity for a combination of:
  - **Species habitat preferences:** forest specialists, grassland specialists and generalists
  - **Species dispersal abilities:** short (≤1km), medium (≤10okm), and long (≤100km)
- Most important **PAs** for connectivity and **transboundary links**

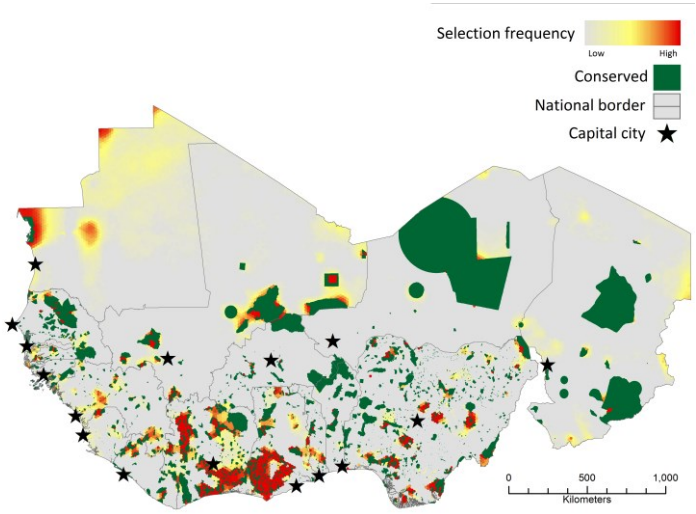
Identification of priority areas for biodiversity conservation

DICE University of Kent

Gap analysis and spatial conservation prioritisation <u>for the West Africa region</u>:

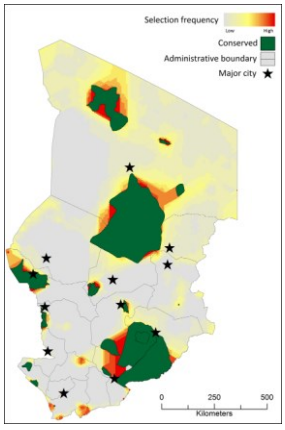
- Network of PAs & IBAs **meets conservation targets for >50% ecoregions**, but does not conserve some important ecoregions
- Majority of species well protected, but **some conservation features completely unprotected**, especially threatened species
- To meet all the conservation targets, **<u>>20% of the West Africa region needs to be protected</u>**

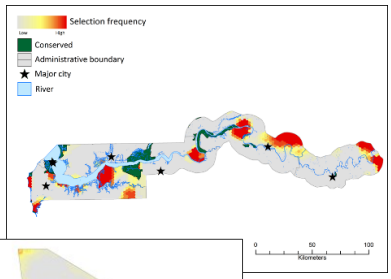
Identification of priority areas for the West Africa region

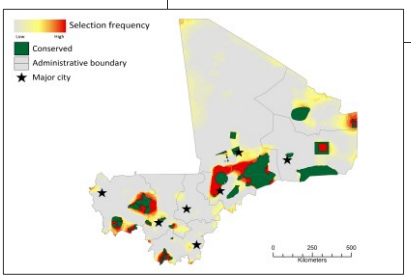


National workshops

Identification of priority areas for each project country







Activities at transboundary pilot sites

- Transboundary agreements
- Joint management plans integrating climate change
- Implementation of revised METT which integrates climate change
- Recommendations for species monitoring (IUCN GSP)
- Other relevant activities such as:
  - Awareness raising and training for local communities
  - Social vulnerability assessments
  - Development of alternative livelihoods
  - Monitoring system for large mammal species

Adaptation strategies and policy recommendations

- At the national level:
  - Developed **taking into account existing adaptation actions**
  - **3 strategic goals** (11 objectives and 39-42 specific actions):
    1. Strengthening ongoing conservation programmes and their implementation to improve the performance of existing PAs
    2. Anticipating climate change impacts and adopting a proactive response to ongoing and future changes
    3. Creating or strengthening the enabling environment for a successful implementation of national strategies

Adaptation strategies and policy recommendations

- At the regional level:
  - To allow countries to implement actions which **contribute to the strategic goals of the national strategies**
  - To facilitate: Harmonization in legislations and institutions; Resource mobilization; Human and technological capacity building; and Reporting processes
  - To highlight **key conservation features** that require protection

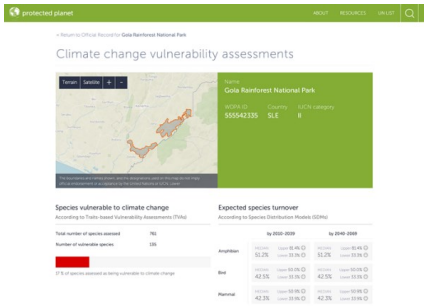
Guidelines for PA managers in the face of climate change

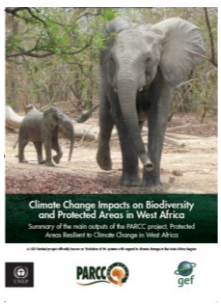
Adapted from IUCN Guidelines: Responding to Climate Change

- PA managers will increasingly have to **manage for change**
- **Key elements of management planning** are to:
  1. Review existing goals and objectives from a climate change perspective to adopt forward-looking goals
  2. Assess vulnerability to climate change to identify and select adaptation actions
  3. Build capacity for adaptation to climate change and monitor the effectiveness of actions

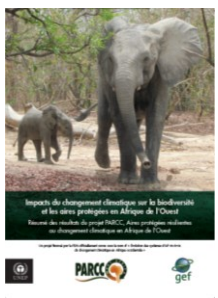
Project information and outputs

- Project information can be found at http://parcc.protectedplanet.net
  - ✓ Scientific results
  - ✓ Regional and national activities
  - ✓ Recommendations and planning
  - ✓ Newsletters
- **Mapping link displaying all vulnerability assessment results for each PA**





PARCC report (EN/FR)



Belle E.M.S., Burgess N.D., Misrachi M., Arnell A., Masumbuko B., Somda J., Hartley A., Jones R., Janes T., McSweeney C., Mathison C., Buontempo C., Butchart S., Willis S.G., Baker D.J., Carr J., Hughes A., Foden W., Smith R.J., Smith J., Stolton S., Dudley N., Hockings M., Mulongoy J., and Kingston N. 2016. *Climate Change Impacts on Biodiversity and Protected Areas in West Africa, Summary of the main outputs of the PARCC project, Protected Areas Resilient to Climate Change in West Africa*. UNEP-WCMC, Cambridge, UK.

Project vision

Provide the tools and build the capacity to create
PROTECTED AREAS RESILIENT TO CLIMATE CHANGE,
Not only in West Africa, but in other African regions and beyond…

Thank you for your attention!

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