# CEPF Final Completion and Impact Report

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| **Organization's Legal Name:** | International Union for Conservation of Nature - HQ |
| **Project Title:** | Identification and validation of West African Freshwater Key Biodiversity Areas |
| **Grant Number:** | CEPF-104060 |
| **Hotspot:** | Guinean Forests of West Africa |
| **Strategic Direction:** | 3 Safeguard priority globally threatened species by identifying and addressing major threats and information gaps |
| **Grant Amount:** | $219,702.30 |
| **Project Dates:** | July 01, 2018 - September 30, 2021 |
| **Date of Report:** | November 30, 2021 |

## IMPLEMENTATION PARTNERS

The IUCN Global Species Programme (GSP), Freshwater Biodiversity Unit (FBU) managed the project and coordinated the other implementing partners. FBU coordinated the Red List assessments, contracting Red List assessors and reviewing assessments. The IUCN Red List Unit (RLU) conducted the final review of the Red List Assessments. FBU provided KBA training in each of the KBA training and validation workshops. FBU conducted the data analysis and report writing, and edited the final published report.

The IUCN Central and West Africa Regional Office (PACO) PACO has identified regional policies for which the final report is relevant and will be liaising with relevant policy makers through the dissemination of the IUCN Starnes & Darwall (2021) publication produced by FBU and an accompanying policy brief produced by PACO. PACO also convened the KBA training and validation workshop in Douala, Cameroon.

Members of the BirdLife Africa, Accra Project Office, provided support with several of the KBA training and validation workshops, notably in Ghana and Nigeria. FBU supported the BirdLife Africa Conservation Programmes Coordinator to travel to the training workshop in Uyo, Nigeria and they led the training workshop in Accra, Ghana. BirdLife Africa provided assistance in communicating with BirdLife Partners and in delivering KBA training. Several BirdLife Partners were engaged to convene workshops in five of the six countries containing CEPF Freshwater KBAs. They were the Conservation Society of Sierra Leone (CSSL), the Society for the Conservation of Nature of Liberia (SCNL), SOS-Forêts (SF) in Côte d'Ivoire, Ghana Wildlife Society (GWS) and Nigeria Conservation Foundation (NCF). Missouri Botanical Garden was engaged through the RIT to assist with French language KBA training and workshop facilitation in Côte d'Ivoire and Cameroon.

## CONSERVATION IMPACTS

Planned Long-Term Impacts: 3+ years (as stated in the approved proposal)

| Impact Description | Impact Summary |
|---|---|
| Data from the updated 1,200 species Red List assessments have been combined with the new information on at least 13 important sites for freshwater biodiversity (KBAs) to inform private sector and donor environmental safeguards providing greater protection for these species and sites. These impacts should start to be realised by mid-2020. | The private sector can use KBAs as a means to manage biodiversity risk associated with projects and investments. Information about KBAs is provided to companies, banks and multilateral financing institutions through the Integrated Biodiversity Assessment Tool (IBAT, 2021), and the Guidelines on business and KBAs (IUCN, 2018) provide guidance for companies operating in or near KBAs. However, as it stands, most of these freshwater KBAs cannot be confirmed without further data. Employing the precautionary principle, the sites identified here should be recognised as potential KBAs for the species indicated, until the recommended field surveys are conducted to confirm presence or absence of the potential KBA trigger species. Working through IUCN's regional offices, the project's findings are being communicated to those NGOs involved in conservation actions on the ground conservation planning at the National level, and private sector companies interested in minimising their impacts on freshwater biodiversity. |
| Data from updated species Red List assessments and freshwater KBAs enables more targeted management for the conservation and sustainable use of freshwater biodiversity resources located within existing KBAs and protected areas. | Most of the existing KBAs in western Africa (and globally) are Important Bird and Biodiversity Areas (IBAs) which were adopted as Global KBAs in 2016. Many of these sites require re-assessment against the KBA Global Standard (IUCN, 2016) and this process will often be driven by the BirdLife partners. By working with the BirdLife Partners in each of the countries containing CEPF freshwater KBAs, as well as building links with BirdLife International in West Africa, the freshwater biodiversity elements and potential trigger species have been brought into focus within the region. Where there has been a lack of field data to support formal KBA proposals for freshwater species at this stage, these sites are now flagged for consideration as KBAs and, where appropriate, incorporation into existing KBAs. The outcomes of this work will be communicated to decision makers across the western Africa region by the IUCN PACO West and Central Africa office. In particular, efforts will be made to improve recognition of these important sites for freshwater species through KBA nomination, increased representation of freshwater biodiversity in protected area networks, and incorporation of |

| Impact Description | Impact Summary |
|---|---|
| | freshwater biodiversity into protected area management and monitoring plans. |
| The new data on Global Freshwater KBAs will assist the 11 governments across the hotspot to expand the existing protected areas network and the Ramsar network of internationally important wetlands to be more representative of the broad range of freshwater taxonomic groups. The proposed optimal network of sites to best represent freshwater biodiversity targets (employing Marxan) directly supports this objective. | Through a Marxan analysis published in Starnes & Darwall (2021), we have demonstrated how data from Red List assessments can be used together with other spatial data to identify optimal networks of sites for the conservation of threatened freshwater biodiversity within western Africa, according to a number of different criteria whilst building on the existing KBA and PA network. We emphasise that this exercise serves as a demonstration of the use of Red List and other datasets to identify gaps in the current protected area network for freshwater species and that further work building on this approach would be required to inform policy decisions. We identified 87 planning units representing gaps in the current network of KBAs and protected areas, and 22 irreplaceable sites for threatened freshwater species conservation. We note that, in addition to formal protected areas, Other Effective Area-based Conservation Measures (OECMs) may be an effective means of conserving freshwater biodiversity at some of the sites identified here, and these will play an increasingly important role over the next decade. We hope that this exercise serves as a useful demonstration to be used as a basis for a more inclusive application of the systematic conservation planning approach. |
| The identification and validation of the 13+ freshwater KBAs within the CEPF hotspot will, through the focus on sub-catchment site boundary delineations where appropriate, help towards enabling a more coordinated management across all sectors at the landscape scale of entire river catchments. | In 2015, as a component in development of the CEPF Ecosystem Profile for the hotspot, a preliminary set of freshwater KBAs was identified with potential site boundaries delineated according to river/lake sub catchments units, as the widely accepted management unit most applicable to the freshwater realm. A subset of those sub catchments containing KBA "trigger species" were subsequently proposed as potential KBAs and circulated for stakeholder review. Thirteen of these sites were then identified as being most likely to benefit from the financial resources available through CEPF investments. More than half of the freshwater fishes recorded were endemic to the western Africa region, but only a few were thought to be endemic to the hotspot itself. The hotspot boundaries are largely based upon forest habitats and not river catchments, and most river systems in the hotspot originate outside its boundaries. Many species are, however, endemic to catchments within or intersecting the hotspot. The KBA training and validation workshops coordinated through this project placed an emphasis on the importance of |

| Impact Description | Impact Summary |
|---|---|
| | catchment-scale management in the context of the western African freshwater biodiversity, raising awareness about catchment-scale processes within the regional conservation community. |

Planned Short-Term Impacts: 1 to 3 years (as stated in the approved proposal)

| Impact Description | Impact Summary |
|---|---|
| Species Red List assessments are updated for an estimated 1,200 freshwater species previously assessed in 2006/7. These assessments are published on the IUCN Red List by December 31st 2019, or in the next available Red List update. This work will provide the updated data as required to better inform conservation and development planning throughout the hotspot. | Some 1,047 species were assessed through this project, the final batch being published in the December 2020-3 IUCN Red List update. This means that we now have a comprehensive and up-to-date Red List assessment for freshwater species in West Africa available to the global community for evidence based conservation planning and KBA identification. |
| Updated information on the status and distribution of an estimated 1,200 freshwater species are available to assist the 11 Governments of the hotspot monitor progress towards meeting targets for international conventions, such as CBD, the SDGs and Ramsar. A freshwater Red List Index (RLI) is available as an indicator of trends in the status of freshwater biodiversity. | The Red List assessments are all available to access from the Red List website and through the Integrated Biodiversity Assessment Tool (IBAT). Another project is underway to incorporate freshwater Red List assessments into the Species Threat Abatement and Restoration (STAR) metric, which will also be available through IBAT. The comprehensive Red List assessments were used as a basis on which to draft the taxonomic chapters for the Starnes & Darwall (2021) publication. This provides an update on the Smith et al. (2009) report on the status and distribution of freshwater biodiversity in western Africa. Summaries of the major threats from the Red List assessments have been drawn up to inform the writing of these chapters, as well as updated species richness maps and threat status summaries for all of the major freshwater taxonomic groups, thus providing a comparison point and a significant update on the 2009 report. The Red List Index (RLI) is available in graphical format with methodology and discussion, in Starnes & Darwall (2021) and in the accompanying IUCN PACO policy brief. |
| The 13 sites identified in the hotspot profile as priority freshwater KBAs (CEPF 2015) have been re-evaluated and those meeting the new criteria are published on the World Database of Key Biodiversity Areas as Global Freshwater KBAs by July 2020. Additional sites have also been evaluated against the Global KBA standard as freshwater KBAs - the number of these newly designated freshwater KBAs is yet to be determined. | The 13 CEPF freshwater KBAs have been refined and validated against the KBA Global Standard based on new information collated through the Red List re-assessments and the input of stakeholders at the KBA workshops. However, it is now clear that most of these sites are lacking sufficiently recent data (within the past 12 years) to confirm the presence of the species within these sites, or to confirm that the reproductive unit thresholds are met for some of the KBA criteria. Despite the new information collated, most of the refined boundaries for potential |

| Impact Description | Impact Summary |
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| | freshwater KBAs could not be formally proposed at this stage due to a paucity of recent data on the trigger species. Those sites with greatest potential to yield freshwater KBA have been identified and refined through stakeholder consultation workshops, and communicated to wider audiences. Where there is supporting field data e.g. for Lake Barombi Mbo crater lake in Cameroon, and North Tongu on the Lower Volta River in Ghana, KBA proposals are being taken forward by the relevant local stakeholders with support from IUCN. |
| At least 30 stakeholders including representatives from the governments of the hotspot, conservation NGOs, and potentially the private sector have received training to enable better understanding of the species Red List assessment and KBA data sets and their application to conservation planning | Six national KBA training and validation workshops were held in Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Nigeria and Cameroon, delivering a significant boost to the capacity for identifying, proposing and conserving KBAs within the region, initiation of National KBA Coordination Groups (KBA NCGs), as well as linking to national policies. A total 120 people attended these workshops including participants from conservation NGOs, Government Departments, such as those for Protected Areas, the private sector and local community representatives (Figure 9.5). The IUCN Global Species Programme enlisted the help of BirdLife West Africa office in Ghana to deliver KBA training in Nigeria and Ghana. Staff from Missouri Botanical Garden and the French Institut de Recherche pour le Développement (IRD) were invited to receive two days' KBA training during the Ghana workshop. They were then able to deliver KBA training in French in Côte d'Ivoire and Cameroon. These two workshops represent the first KBA training delivered in French globally. Several of the countries that received KBA training are subsequently working towards the establishment of NCGs, which will bring together the key stakeholders within the countries, to identify and safeguard KBAs nationally. |

**Unexpected impacts (positive or negative)?**
Six national workshops were convened in lieu of the two previously planned regional workshops (activities 2.1.5 and 2.1.6) to avoid the need for international travel. An advantage of this approach was the opportunity to reach more people, although remote facilitation brought its own challenges (see "Challenges/successes" and "Lessons learned" section of this report).

## PROJECT RESULTS/DELIVERABLES

**Overall results of the project:**
This project assessed the global conservation status of some 1,047 freshwater species on the IUCN Red List of Threatened Species™. These assessments were pooled with 455 existing assessments to achieve a comprehensive conservation status assessment of

freshwater biodiversity in western Africa. Some 1,502 freshwater species were assessed against a 2009 baseline, including 555 species of freshwater fishes, 100 species of freshwater molluscs, 307 species of odonates (dragonflies and damselflies), 54 species of freshwater decapods (crabs and shrimps) and 486 species of aquatic plants. We found that 213 species, or 14% of all native freshwater species, are globally threatened with extinction. The level of threat varies substantially between taxonomic groups. Of the aquatic plants and odonates, 4% and 5% are threatened, respectively. However, other taxonomic groups face higher levels of threat; 25% of freshwater fishes and freshwater molluscs are globally threatened, and for the smallest taxonomic group assessed, the decapods, 37% are threatened.

The Red List Index showed an increased extinction risk for 1% of freshwater fishes and 6% of freshwater molluscs, but no change was detected for other groups. This is despite clear evidence pointing to increased environmental degradation and human pressure in the region during the previous 10 years. The Red List Index is a relatively coarse measure of changes in conservation status over time, and there is a lag between genuine change and change detected by the RLI. Meanwhile, the Living Planet Index shows a 65% decline in species population abundance in Africa, and an 84% decline in freshwater populations globally. Standardised regional surveys have not been conducted for many years, if at all, and there are no significant long-term programmes for monitoring the state of freshwater biodiversity throughout the region. Many of the Red List assessments are therefore necessarily based on inferred declines in species populations or distributions based on habitat degradation, rather than robust scientific monitoring data. Novel survey techniques such as eDNA monitoring has huge potential to address the monitoring shortfall for freshwater biodiversity in western Africa.

Certain threats have disproportionate impact on some taxonomic groups, such as the impact of mining on fishes and the impact of drought on aquatic plants. The most frequently identified threat to freshwater species was pollution from agricultural and industrial effluents, and wastewater.
It is vital that conservation actions are implemented to halt and reverse the declines to freshwater biodiversity where possible. Conservation actions have been recommended for each taxonomic group and for freshwater biodiversity overall.

We have revised the CEPF freshwater KBAs of the Guinean Forests of West Africa, re-assessing them against the Global KBA Standard and identifying next steps for their recognition and conservation. Working together with the BirdLife Partnership and Missouri Botanical Garden, six national KBA training and validation workshops were held in Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Nigeria and Cameroon, delivering a significant boost to the capacity for identifying, proposing and conserving KBAs within the region and contributing towards the formation of National Coordination Groups in some countries. A total 120 people attended these workshops including participants from conservation NGOs, academia and governmental departments. Some twenty-two sub-catchments were identified as irreplaceable sites, representing the only known localities of thirty-nine threatened freshwater species. These sites can be used as a basis to a) ensure greater management focus on the unique freshwater biodiversity elements at these sites; b) target identification of Key Biodiversity Areas and designation of protected and conserved areas, and c) safeguard these critical sites for freshwater biodiversity in the face of wide-scale and rapid development across the region.

Income from fisheries combined with that from agriculture contributes to poverty alleviation for a rapidly growing population. The role of small-scale inland fisheries is often marginalised in political, economic and conservation policies, and their contribution to food

security, livelihoods local and national economies must be recognised and taken into account by decision makers, to ensure that these benefits continue to be realised.

Recommendations have been made for the conservation of species and their habitats, for further research opportunities and for the integration of freshwater biodiversity into the mainstream conservation agenda, such as through spatial conservation prioritisation exercises and the designation of Key Biodiversity Areas.

An IUCN publication was produced summarising the output from this project (Starnes & Darwall, 2021). The publication is available as a digital download free of charge from the IUCN Library at https://doi.org/10.2305/IUCN.CH.2021.RA.1.en in English and in French. The final IUCN publication together with an accompanying policy brief is being disseminated to relevant stakeholders throughout the region, including workshop participants, by the IUCN Central and West Africa Regional Office (PACO).

**Results for each deliverable:**

| Component | | Deliverable | | |
|---|---|---|---|---|
| **#** | **Description** | **#** | **Description** | **Results for Deliverable** |
| 1.0 | Species Red List assessments | 1.1 | An estimated 1200 updated freshwater species Red List assessments published on the IUCN Red List. The list of about 10 species experts contracted and their own regional expert networks compiled and shared with CEPF. | Thirteen Red List assessors were contracted to complete assessments for some 1,047 species on the IUCN Red List as part of this project. A further 455 species had recently been assessed and so were not re-assessed here but were fully incorporated into all analyses. All 555 native freshwater fish species were assessed or re-assessed according to the IUCN Red List Categories and Criteria (IUCN, 2012) as part of this project. Some 83 species of freshwater mollusc native to the western Africa region were assessed. A further 17 species of freshwater mollusc had recently been assessed and were not re-assessed here. Some 382 species of aquatic plants from 59 families were assessed. A further 104 species were identified as being native to the region but were not reassessed since they had all been assessed recently. Odonate species encompassed all 307 native species already assessed on the Red List and were not re-assessed here. All 26 native species of freshwater crabs from six genera were reassessed as part of this project. A global assessment of freshwater shrimps was completed in and only one recently discovered species – Euryrhynchina puteola (DD) was assessed as part of this project. |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| 1.0 | Species Red List assessments | 1.2 | A Freshwater Red List Index is presented for the hotspot in graphical format | The Red List Index (RLI) is available in graphical format with methodology and discussion, in Starnes & Darwall (2021) and in the accompanying IUCN PACO policy brief. The overall Red List Index (RLI) for all freshwater biodiversity decreased from 0.9152 in 2009 to 0.9122 in 2019. The RLI shows an increase in extinction risk for 1% for freshwater fishes and 6% of freshwater molluscs, but no change was detected for the other taxonomic groups. This is despite clear evidence pointing to increased environmental degradation and human pressure in the region during the previous 10 years. For the decapods, only the 22 species of freshwater crabs had two assessments upon which to base an RLI, and for many of these species there were no new surveys since the previous assessment in 2009, with some notable exceptions. |
| 2.0 | Freshwater KBA validation and update through stakeholder consultation. | 2.1 | New and existing (13 sites) Freshwater KBAs meeting the KBA standard are published in the World KBA Database and in IBAT | No new KBAs were published for reasons outlined in this report. Nevertheless, the work undertaken to identify and validate freshwater KBAs during this project has made vital contributions to the KBA Programme through involvement in various KBA working groups, including the KBA Technical Working Group, the World Database of KBAs Advisory Group and the KBA Committee. For example, lessons learned through this project have been shared with the Technical Working Group (TWG) and |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| | | | | the Standards and Appeals Committee (SAC) about the applicability of the KBA Standard and Guidelines to freshwater taxa. Feedback on the data challenges for freshwater KBA trigger species have been fed back to various KBA working groups and to the KBA Committee. The experience gained through the delivery of six KBA training and validation workshops has been fed back to the team developing the KBA e-learning course. |
| 3.0 | Conservation Planning | 3.1 | An optimal site conservation network representing freshwater biodiversity will be proposed. This will be presented as a dedicated section in the main project technical report to include a map of the site network. | We have identified 87 planning units representing gaps in the current network of KBAs and protected areas, and 22 irreplaceable sites for threatened freshwater species conservation. We note that, in addition to formal protected areas, Other Effective Area-based Conservation Measures (OECMs) may be an effective means of conserving freshwater biodiversity at some of the sites identified here, and these will play an increasingly important role over the next decade (Alves-Pinto et al., 2021; Donald et al., 2019). We hope that this exercise serves as a useful demonstration to be used as a basis for a more inclusive application of the systematic conservation planning approach to help inform future development and expansion of the existing KBA and protected area networks for freshwater biodiversity throughout the region. This is a dedicated section (Chapter 10) in Starnes & Darwall |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| | | | | (2021) A critical sites network for freshwater biodiversity in western Africa. |
| 4.0 | Dissemination of project outputs | 4.1 | Data analysis and production of a technical report (in the IUCN Red List report series) and policy brief on the freshwater species and sites findings. | An IUCN publication was produced summarising the output from this project (Starnes & Darwall, 2021). The publication is available as a digital download free of charge from the IUCN Library at https://doi.org/10.2305/IUCN.CH.2021.RA.1.en in English and in French. The final IUCN publication together with an accompanying policy brief is being disseminated to relevant stakeholders throughout the region, including workshop participants, by the IUCN Central and West Africa Regional Office (PACO). |
| 5.0 | CEPF project management and monitoring for compliance | 5.1 | Increased understanding of gender issues within our organization, as evidenced by comparison of Gender Tracking Tool' scores at project start and end. | Gender Tracking Tool completed and submitted with this report. |
| 5.0 | CEPF project management and monitoring for compliance | 5.2 | The Stakeholder Engagement Plan effectively implemented and monitored as evidenced by the relevant section of the programmatic report submitted every July to CEPF. | Completed as per regular Progress Reports. |
| 5.0 | CEPF project management and monitoring for compliance | 5.3 | CEPF financial and programmatic reports submitted online on time and accurately | Regular CEPF financial and technical reports have been submitted on time by the project team. |

| Component | | Deliverable | | |
|---|---|---|---|---|
| # | Description | # | Description | Results for Deliverable |
| 5.0 | CEPF project management and monitoring for compliance | 5.4 | Project impacts monitored and reported online at project end as evidenced by the Final Completion Report | This Final Completion Report serves as a record of the project impacts. |
| 5.0 | CEPF project management and monitoring for compliance | 5.5 | Communication materials are shared with the RIT per email or other online data transfer software | Communication materials including maps and photographs have been shared with the RIT via email. |

**Tools, products or methodologies that resulted from the project or contributed to the results:**
A KBA desktop scoping analysis was achieved through a screening of all sub-catchments against the full complement of species' Red List range maps using an R script (R Core Team, 2020) developed by Konstantina Spiliopoulou (Spiliopoulou, 2021, manuscript in preparation) to identify the trigger species present and the criteria triggered for each sub-catchment. Maps were created to show the numbers of potential freshwater KBA trigger species per sub-catchment (level 8 HydroBASINS) and lists of potential trigger species thought to be present in each sub-catchment were compiled.

## PORTFOLIO INDICATORS

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
|---|---|---|---|---|---|
| 3.2 | Number of inventory of Key Biodiversity Areas in the hotspot is updated to fill critical information gaps, particularly with regard to the Lower Guinean Forests subregion, and freshwater ecosystems. | | | 1 | It was not possible to update the inventories of existing KBAs with freshwater trigger species because of the paucity of data supporting confirmed presence and reproductive units as explained elsewhere in this report. However, despite this several existing KBAs now benefit from updated |

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
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| | | | | | information from the new Red List assessments. The latest freshwater Red List assessments have been used by the KBA Secretariat in their KBA scoping tool, so any KBA Secretariat KBA scoping for the hotspot (e.g. to support National Coordination Groups) will now identify potential freshwater trigger species. Through the KBA training and validation workshops, the ¬potential freshwater KBA trigger species identified for existing KBAs were shared with workshop participants, including with the BirdLife Partners who will be working to revise their existing sets of KBAs, as well as will stakeholders who are likely to be involved in National Coordination Groups. Some 22 irreplaceable sub-catchments were identified which could potentially yield KBAs under subcriterion A1e (AZE sites). These sub-catchments are discussed in Starnes & Darwall (2021) and have been shared with conservation organisations |

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
|---|---|---|---|---|---|
| | | | | | and government agencies regionally. As part of another CEPF project (CEPF 110627), the project team will advise on the strategic deployment of eDNA field surveys specifically to target some of the potential KBA species identified in this report. |
| 3.3 | Number of species from poorly assessed taxonomic groups with their global conservation status updated or assessed for the first time on the IUCN Red List (target: at least 100). | | | 1,047 | IUCN Red List assessments were done for 1,047 freshwater species, comprising 554 fishes, 83 molluscs, 26 crabs, 1 shrimp and 382 aquatic plants. These were supplemented with recent Red List assessments for 17 molluscs, 307 odonates, 28 shrimps and 104 plants to arrive at a comprehensive assessment of 1,502 freshwater species in western Africa. Of these, 429 species were assessed for the first time (60 fishes, 19 molluscs, 47 decapods and 303 plants). Some 68 species were moved from Data Deficient into one of the other IUCN threat categories (8 CR, 7 EN, 11 VU, 5 NT and 37 LC) while 28 species remained in DD |

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
|---|---|---|---|---|---|
| | | | | | (17 fishes, 5 molluscs, 4 odonates and 2 plants). Five species of fishes and six species of molluscs experienced a genuine change in their conservation status (reflected in the Red List Index) and these species are highlighted in Starnes & Darwall (2021). The remaining species changed status due to nongenuine reasons i.e. new information. |
| 2.2 | Number of key biodiversity areas with locally-relevant information on natural ecosystems generated and used to influence political and economic decision-making in favor of their conservation (target: for at least 20). | | | 13 | The 13 freshwater KBAs in the GFWA Ecosystem Profile have all been revised using information from the latest Red List assessments, supplemented with published literature and stakeholder consultation including from species experts at national workshops. Starnes & Darwall (2021) make specific recommendations for the next steps required for each of these sites in order to confirm KBAs (Chapter 9, pp. 108-115). This information is being disseminated to key policy stakeholders in the region |

| Portfolio Indicator Number | Portfolio Indicator Description | Expected Numerical Contribution | Expected Contribution Description | Actual Numerical Contribution | Actual Contribution Description |
|---|---|---|---|---|---|
| | | | | | by IUCN PACO. A significant outcome of the workshops was to raise awareness about the most important sites for freshwater biodiversity in western Africa. Many of the workshop participants will be involved in national spatial conservation prioritisation and policy, as well as the re-assessment of existing KBAs and identification of new KBAs in western Africa. Through the materials provided at the workshops, these key stakeholders are now aware of the potential freshwater triggers species in their regions. As a follow-on to this project, the IUCN project team are working with NatureMetrics and members of the IUCN SSC Specialist Groups on another CEPF project (CEPF 110627) to obtain further local information on the presence of freshwater KBA trigger species as a subset of sites identified in Darwall & Starnes (2021) through eDNA surveys. |

## GLOBAL INDICATORS

### Protected Areas

Protected areas that have been created and/or expanded as a result of the project. Protected areas may include private or community reserves, municipal or provincial parks, or other designations where biodiversity conservation is an official management goal.

| Name of Protected Area | WDPA ID* | Latitude | Longitude | Country | Original Total Size (Hectares) ** | New Protected Hectares *** | Year of Legal Declaration or Expansion |
|---|---|---|---|---|---|---|---|

*World Database of Protected Areas

**If this is a new protected area, 0 should appear in this column

*** This column excludes the original total size of the protected area.

## Key Biodiversity Area Management

Key Biodiversity Areas (KBAs) under improved management—where tangible results have been achieved to support conservation—as a result of the project.

| KBA Name | KBA Code | Size of KBA | Number of Hectares with Improved Management |
|---|---|---|---|
| | | | |

## Production Landscapes

Production landscapes with strengthened management of biodiversity as a result of the project.

A production landscape is defined as a site outside a protected area where commercial agriculture, forestry or natural product exploitation occurs.

| Name of Production Landscape | Latitude | Longitude | Hectares Strengthened | Intervention |
|---|---|---|---|---|
| | | | | |

## Benefits to Individuals

- **Structured Training:**

| Number of Men Trained | Number of Women Trained | Topics of Training |
|---|---|---|
| 104 | 18 | The training covered Key Biodiversity Area identification and proposal process, through application of the KBA Standard and Guidelines. Topics included:<br>• Overview of the KBA Standard history and current context<br>• KBA Proposal process<br>• Single-species and multi-species criteria<br>• Delineation procedures<br>• Stakeholder consultation for KBA proposals<br>• KBA documentation standards<br>• KBA mapping standards |

- **Cash Benefits:**

| Number of Men – Cash Benefits | Number of Women – Cash Benefits | Description of Benefits |
|---|---|---|
| | | |

## Benefits to Communities

| View the **characteristics** column below with the following corresponding codes: | View the **benefits** column below with the following corresponding codes: |
|---|---|
| 1- Small Landowners | a. Increased Access to Clean Water |
| 2- Subsistence Economy | b. Increased Food Security |
| 3- Indigenous/ Ethnic Peoples | c. Increased Access to Energy |
| 4- Pastoralists / Nomadic Peoples | d. Increased Access to Public Services |
| 5- Recent Migrants | e. Increased Resilience to Climate Change |
| 6- Urban Communities | f. Improved Land Tenure |
| 7- Other | g. Improved Use of Traditional Knowledge |
| | h. Improved Decision-Making |
| | i. Improved Access to Ecosystem Services |

| **Community Name** | **Community Characteristics** | | | | | | | **Type of Benefit** | | | | | | | | **Country** | **Number of Males Benefitting** | **Number of Females Benefitting** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **a** | **b** | **c** | **d** | **e** | **f** | **g** | **h** | **i** | | | |

**Characteristics of "Other" Communities:**

## Policies, Laws and Regulations

| View the **topics** column below with the following corresponding codes: | | | |
|---|---|---|---|
| A- Agriculture | E- Energy | I- Planning/Zoning | M- Tourism |
| B- Climate | F- Fisheries | J- Pollution | N- Transportation |
| C- Ecosystem Management | G- Forestry | K- Protected Areas | O- Wildlife Trade |
| D- Education | H- Mining and Quarrying | L- Species Protection | P- Other |

| **No.** | **Name of Law** | **Scope** | **Topics** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **I** | **J** | **K** | **L** | **M** | **N** | **O** | **P** |

**"Other" Topics Addressed by the Policy, Law or Regulation:**

| No. | Country/ Countries | Date Enacted/ Amended | Expected impact | Action Performed to Achieve the Enactment/ Amendment |
|---|---|---|---|---|
| | | | | |

## Companies Adopting Biodiversity-friendly Practices

A company is defined as a for-profit business entity. A biodiversity-friendly practice is one that conserves or uses natural resources in a sustainable manner.

| Name of Company | Description of Biodiversity-Friendly Practice | Country/Countries where Practice was Adopted |
|---|---|---|
| | | |

## Networks and Partnerships

Networks/partnerships should have some lasting benefit beyond immediate project implementation. Informal networks/partnerships are acceptable.

| Name of Network/Partnership | Year Established | Country/ Countries | Established by Project? | Purpose |
|---|---|---|---|---|
| Nigerian KBA National Coordination Group | 2020 | Nigeria | No | The KBA National Coordination Groups are groups of experts representing taxonomic groups and other biodiversity elements for which the KBA criteria may be applied within countries. They coordinate initiatives at the national level to identify KBAs to ensure the |

| Name of Network/Partnership | Year Established | Country/ Countries | Established by Project? | Purpose |
|---|---|---|---|---|
| | | | | development of a single KBA list and to review proposals from individual proposers. |

## Sustainable Financing

Sustainable financing mechanisms generate funding for the long-term (generally five or more years). These include, but are not limited to, conservation trust funds, debt-for-nature swaps, payment for ecosystem services (PES) schemes, and other revenue, fee or tax schemes that generate long-term funding for conservation.

| Name of Mechanism | Purpose | Date Established | Description | Country/ Countries | Project Intervention | Delivery of Funds? |
|---|---|---|---|---|---|---|

## Globally Threatened Species

Globally threatened species (CR, EN, VU) on the IUCN Red List of Threatened Species, benefitting from the project.

| Genus | Species | Common Name (English) | Status | Intervention | Population Trend at Site |
|---|---|---|---|---|---|

## LESSONS LEARNED

It was not possible to propose formally any new KBAs during this project, because the overwhelming majority of potential freshwater KBA trigger species dis not have enough data to support them. See "Challenges" below for a further explanation. One of the key recommendations, therefore, is to scale up freshwater biodiversity monitoring in the region, and particularly to target the sites and species identified as potentially yielding KBAs in Starnes & Darwall (2021). Another recommendation is to include this data collection as a component of future projects set up to propose KBAs. In order to roll this out for the entire hotspot would have incurred significant additional cost, but with the help of the RIT and the Grant Director we have been able to identify several opportunities to follow up on the substantial groundwork completed through this project. For example, we are now targeting eDNA surveys within some of the irreplaceable sub-catchments most likely to yield KBAs for threatened freshwater species.

In the KBA training and validation workshops, we found that those workshops where an in-person facilitator was present were more productive. In particular, the KBA training and validation workshops in Nigeria and Ghana benefitted from the presence and leadership of the Conservation Programs Coordinator from the BirdLife Africa Accra Project Office. Workshops where there was just one trainer/facilitator, particularly when they were joining online, were less effective. The training component of the workshops was given significant resource. This was perhaps at the expense of validating and delineating freshwater KBAs, although as an outcome in itself very significantly increased the regional capacity for KBA identification.

## SUSTAINABILITY/REPLICATION

The comprehensive Red List assessment of western African freshwater species completed through this project provides an updated assessment of the conservation status of freshwater biodiversity in the region and a means of comparison against the 2009 baseline assessment (Smith et al., 2009). This information is presented in Starnes & Darwall (2021). This report represents a significant reference resource on the status and distribution of freshwater biodiversity in western Africa, with chapters summarising the Red List assessments for each of the major freshwater taxonomic groups, potential Key Biodiversity Areas and systematic conservation planning for freshwater biodiversity. The publication also includes a Red List Index section comparing the new assessments against the 2009 baseline (see also further details in this report).

Although great efforts were made to collate all existing information and to consult stakeholders widely in preparation of KBA proposals, and all 13 CEPF freshwater KBAs were re-assessed against the Global KBA Standard, it has not been possible to propose formally any new KBAs. This is because the overwhelming majority of potential freshwater KBA trigger species do not have enough site-level data to support KBAs. Most of the subcriteria under Criterion A on "Threatened Biodiversity" and Criterion B on "Geographically Restricted Biodiversity" require evidence for a minimum number of "Reproductive Units" (≥5 or ≥10 Reproductive Units, depending on the criterion) within the proposed site. All of the KBA criteria require confirmation of presence of the species (or ecosystem) within the past 12 years. The KBA Guidelines (Version 1.1) state that "If the KBA Proposer wants to use data older than 12 years, they should provide a brief explanation of why these data are still considered valid (e.g., no major ecological or human management changes have occurred in

the area in the intervening period)." Because there has been significant alteration and degradation of freshwater habitats and systems in recent times, it would not be possible to justify using data older than 12 years for the KBA proposals. Such data are generally not available for freshwater species in the region, making it impossible to confirm KBAs for these species at present. One of the key recommendations of the report, therefore, is to scale up freshwater biodiversity monitoring in the region, and specifically to target those sites and species identified as potential KBA trigger species in this report, with a focus on potential A1e trigger species/sites. IUCN is now working with NatureMetrics on project CEPF 110627 to conduct eDNA field surveys for some of these potential KBAs, in the hope that we may detect some of these highly threatened, range-restricted and cryptic species.

## ENVIRONMENTAL AND SOCIAL SAFEGUARDS/STANDARDS

The project did not trigger any safeguards.

## ADDITIONAL COMMENTS/RECOMMENDATIONS

The global COVID-19 pandemic forced a rethink the format of the two regional in-person KBA training and validation workshops that had been planned for the Upper Guinean Forests and Lower Guinean Forests. A new strategy was developed to minimise the need for international travel, both to/from the region and between countries within the region, by convening hybrid workshops in the six countries containing CEPF freshwater KBAs. A 3-month no-cost extension was granted by CEPF to allow preparation time for these additional workshops and the finalisation of the French KBA training materials, which were under development at the time. We were able to re-allocate the budget that had been planned for international travel to convene the higher number of national workshops. This allowed us to reach many more people than originally planned for – 120 participants as opposed to the 30 participants planned for the two in-person workshops – as well as two workshops conducted in French, which had not been planned. This hybrid meeting approach did bring its own challenges. In the workshops where there was no KBA trainer physically present in the room, it was much more difficult to communicate the training material, keep participants on track and facilitate activities, particularly among breakout groups. The KBA training materials developed by Re:wild and the KBA Secretariat were invaluable for the KBA training delivery component of the project. In addition to the presentation materials, we made use of the online knowledge check quizzes and exercises which had been developed to be compatible with an online training format.

## ADDITIONAL FUNDING

| | |
|---|---|
| **Total Amount of Additional Funding Actually Secured (USD)** | |
| **Breakdown of Additional Funding** | |

## INFORMATION SHARING AND CEPF POLICY

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. For more information about this project, you may contact the organization and/or individual listed below.

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