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Review of the Guiana Shield Priority Setting Outcomes: Narrative Report

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Ministry of Foreign Affairs

Review of the Guiana Shield Priority Setting Outcomes: Narrative Report

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LIST OF ACRONYMS AND ABBREVIATIONS

List of Acronyms and Abbreviations

AdeKUS	– Anton de kom University of Suriname
AET	– Actual Evapotranspiration
ARIES	– Artificial Intelligence for Ecosystem Services
AZE	– Alliance for Zero Extinction
CI	– Conservation International
DGDC	– Belgian Directorate-General for Development Co-operation
ES	– Ecosystem Services
GCM	– Global Climate Models
GEF	– Global Environmental Facility
GIS	– Geographic Information System
GSF	– Guiana Shield Facility
GSI	– Guiana Shield Initiative
HydroSHEDS	– Hydrological data and maps based on Shuttle Elevation Derivatives at multiple Scales
IBA	– Important Bird Area
ICMBio	– Instituto Chico Mendes de Conservação da Biodiversidade
IEF	– Forestry Institute
IEPA	– Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá
INSEE	– Institut National de la Statistique et des Etudes Economiques
IPCC	– Inter-Governmental Panel on Climate Change
IUCN	– International Union for the Conservation on Nature
IUCN NL	– International Union for the Conservation on Nature – Netherlands Committee
KBA	– Key Biodiversity Area
KCOCA	– Konashen Community Owned Conservation Area
KfW	– Kreditanstalt für Wiederaufbau
LCDS	– Low-Carbon Development Strategy
LULUCF	– Land Use, Land Use Change and Forestry
MODIS	– Moderate Resolution Imaging Spectroradiometer
MUMA	– Multiple Use Management Area
NGO	– Non-Governmental Organization
NPAS	– National Protected Areas System
OTS	– Organization of Tropical Studies
PET	– Potential Evapotranspiration
PPGBIO	– Graduate Program in Tropical Biodiversity
PSW	– Priority Setting Workshop
REDD+	– Reduction of Emissions from Deforestation and Degradation and Forest Conservation

LIST OF ACRONYMS AND ABBREVIATIONS

SCF	– Suriname Conservation Fund
SED	– Squared Euclidean Distance
SEMA	– State Secretariat of Environment
SIRAP	– Sistema Integrado Regional de Areas Protegidas
TEEB	– The Economics of Ecosystems Biodiversity
UECC	– Upper Essequibo Conservation Concession
UNDP	– United Nations Development Program
UNEP	– United Nations Environment Program
UNESCO	– United Nations Educational, Scientific and Cultural Organization
VGS	– Venezuelan Guiana Shield
VLIR-UOS	– Flemish Interuniversity Council
WAVES	– Wealth Accounting and the Valuation of Ecosystem Services
WLMS	– World Language Mapping System
WWF	– World Wildlife Fund

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Overview of the Report

In 2002, the Guiana Shield Conservation Priority Setting Workshop (2002 PSW) took place in Paramaribo, Suriname, and was cosponsored by Conservation International (CI), the Guiana Shield Initiative of the Netherlands Committee for IUCN (GSI/IUCN NL) the Caribbean Sub-regional Resource Facility for the United Nations Development Programme (UNDP), UNDP Suriname, and UNDP Guyana. The primary objective of the workshop was to promote effective biodiversity conservation in the Guiana Shield region. The 2002 PSW produced important outcomes including a map of the Guiana Shield eco-region and consensus on priority areas for conservation. A political call to action in the form of the Paramaribo Declaration was issued.

This report is the result of a brief desktop review of the outcomes of the 2002 PSW commissioned by the Guiana Shield Facility and conducted by Conservation International. The objective was to prepare an overview of the ecological situation in the Guiana Shield eco-region by reviewing the status of the outcomes (identified priorities and recommendations) of the 2002 PSW, updating the 2002 biodiversity conservation priorities and mapping ecosystem services in the Guiana Shield.ⁱ

ⁱ See the TOR for this consultancy in the Annex.

EXECUTIVE SUMMARY

Executive Summary

The Guiana Shield, covering approximately 2.7 million km² but home to only 8 million people, comprises one quarter of the remaining tropical rain forest in the world and has the lowest human density of any tropical rainforest. The diverse and intact ecosystems, abundant ecosystem services, and low human population density of the Guiana Shield make it stand out globally as a region where proactive conservation of nature is possible.

The 2002 PSW was the culmination of a conservation priority setting process organized and facilitated by Conservation International (CI) in collaboration with the United Nations Development Programme (UNDP), International Union for the Conservation of Nature National Committee of the Netherlands (IUCN NL) and the Guiana Shield Initiative (GSI). The PSW identified 41 priority areas covering approximately one-half of the region (Conservation International 2003) and resulted in the signing of the Paramaribo Declaration, which includes 20 recommendations for conservation action in the Guiana Shield.ⁱⁱ

In this review, we: 1) describe progress made since 2002 in biodiversity conservation across the Shield, highlighting advances made towards achieving the recommendations of the Paramaribo Declaration; 2) propose updates to the priority areas identified by the PSW using post-2002 data and information; 3) provide a qualitative assessment of ecosystem services in the Shield and map those services based on available global data sets; and 4) suggest future steps towards the update of the conservation priorities for the Guiana Shield.

Since the Paramaribo Declaration was signed, progress towards its recommendations has been made in each of the six countries of the Shield, none more so than Brazil. In Brazil, Parque Nacional Montanhas do Tumucumaque, a national park over 38,821 km² in size, was created on the 22 August of 2002. In 2003, the state government of Amapá created the Amapá Biodiversity Corridor to promote the development of green economies. In 2006, the largest strictly protected area in tropical forests, the Grão-Pará Ecological Reserve, was established along with four other state-level protected areas in the Northern Para Corridor. In 2008, Brazil committed to reducing deforestation in the Amazon by 80% by 2020. The Amazon Fund was created in the same year to support the accomplishment of this objective by improving forest management and promoting low-carbon development.

In Colombia the government established the Yaigojé-Apaporis National Park in the Guiana Shield portion of the country in 2009. Since 2005, Colombia has sought to improve management and conservation efforts by working with stakeholders in indigenous reserves and non-indigenous communities bordering this national park. In addition, efforts are underway to expand Chiribiquete National Park from 13,000 km² to roughly 40,000 km².

In French Guiana, the Amazonian Park of French Guiana (Parc Amazonien) was established in 2007. With over 20,000 km² included in its “heart area,” this national park is the largest in the European Union fully covered by tropical rainforest. Furthermore, a Land-use, Land-use change,

ⁱⁱHYPERLINK “<http://www.guianashield.org/site/en/psw-workshop>”<http://www.guianaShield.org/site/en/psw-workshop>. See full Paramaribo Declaration in the Annex.

and Forestry (LULUCF) inventory was carried out in French Guiana in 2006 and updated in 2008. Guyana has committed to sustainably managing its State forests to avoid deforestation as it develops, as articulated in the Low- Carbon Development Strategy (LCDS). In 2011, Guyana's National Assembly passed legislation for the establishment of a national system of protected areas and a trust fund for the management of protected areas in the country. Additionally, four new conservation areas covering a total of 14,500 km² have been established in Guyana since 2002.

Suriname is seeking to follow a climate friendly development path and has articulated a Climate Compatible Development Strategy. In 2009, the Government of Suriname made conservation a focal point of its national sustainable development strategy with the Suriname Green Approach, which advocates the conservation of nature as a deliberate strategy to align national development with international opportunities emerging from ecosystem services, especially those relating to climate change and biodiversity.

In Venezuela, major biodiversity assessments were developed in five watersheds in the Guiana Shield portion of the country between 2000 and 2008. Biodiversity conservation projects were developed in collaboration with the communities that inhabit the Caura River Basin and the Alto Paragua National Park.

At a regional level, several studies on the biodiversity and ecosystem services of the Shield have been supported by the GSI since 2002. The Guiana Shield Initiative has also piloted programs to realize payment for ecosystem services in Colombia and Guyana. Globally significant sites for biodiversity conservation, comprising Important Bird Areas and Alliance for Zero Extinction sites were identified across the Shield by BirdLife International and its partners and by the Alliance for Zero Extinction, respectively. A CI and KfW (German Development Bank) supported project aimed at fostering cooperation between Guyana, Suriname and the Brazilian states of Amapá and Para to reduce deforestation and prepare for participation in an eventual REDD+ programme, is ongoing. Additionally, a bi-national workshop involving Colombia and Venezuela declared the Meta-Bita-Orinoco Corridor as a priority conservation area for both countries.

This update of the 2002 PSW was based on new data collected from each of the six member countries and suggests new priority areas that comprise 725,759 km², or approximately 27% of the roughly 2.7 million km² Guiana Shield. The 2002 priorities, by comparison, comprised 1,231,935 km², or just less than 50% of the Guiana Shield. Together, the 2002 and draft 2011 priorities comprise 1,957,694 km² and 72.5% of the Guiana Shield. Among these new priorities are 89 protected areas created since 2002. That such a high percentage of the Shield is considered a priority for conservation speaks to the region's extraordinary biological importance.

As with conservation areas, the preliminary analysis of ecosystem services demonstrates the global importance of the Guiana Shield for climate regulation and the provision of freshwater, as much of the Shield has relatively high values of carbon stocks and available fresh water. The carbon stocks analysis shows that high carbon density in the Guiana Shield occurs in the southern and northeastern parts of the Shield with the highest values near the coast attributed to large pools of soil carbon associated with mangroves. The freshwater provision analysis shows that there are large "reservoirs" of fresh water on the eastern edge and in the

EXECUTIVE SUMMARY

central and western portions of the Guiana Shield. The area of the highest relative importance for provision of freshwater for drinking, domestic use and food production occurs in the east near the coast, where the majority of the population lives. Provision of ecosystem services that directly depends on presence of biodiversity such as ecotourism, which depends upon the link between species and tourists' willingness to pay to see those species, shows the highest priority area in the eastern part of the Shield. Results of the analysis of linguistic diversity, as a proxy for cultural services, show a distinct hot spot in the southwestern portion and in the central and eastern parts of the Guiana Shield.

The findings of this consultancy showed that many of the recommendations detailed in the Paramaribo Declaration have been accomplished. A key recommendation of this current study is therefore to use the results described here as the basis of a larger participatory process to identify the most critical actions to be taken across the Shield by individual countries and through transboundary collaboration. We suggest five key recommendations to ensure the maintenance of the ecological integrity of the Guiana Shield and realization of the sustainable development of its inhabitants:

1. Improve regional collaboration on conservation initiatives and in the protection of ecosystem services. This report should serve as the basis for a wider, more involved discussion and consideration of the conservation and development priorities for the region and recommitment to transnational and international collaboration.
2. Convene a larger Guiana Shield-wide participatory workshop to identify conservation and development priorities for the Shield based on the results of this review, and the integration of analyses of ecosystem services provision, analysis of the threats to biodiversity and ecosystem services in the Shield, and opportunities for their preservation.
3. Improve analysis of ecosystem services in the region to both allow for a more precise and spatially explicit quantification of the benefits to populations living in the region, as well as to demonstrate the magnitude of their contribution to economies at different scales of assessments. This information can be quite critical to policy analysis and decision-making processes that recognize the importance of ecosystem services to human well-being, which are being promoted by initiatives such as UNEP-led The Economics of Ecosystems Biodiversity (TEEB) and the World Bank-led Wealth Accounting and the Valuation of Ecosystem Services (WAVES).
4. Recognize the important role of indigenous and other traditional communities in conservation and land management decisions across the Shield and ensure integration of traditional knowledge in conservation and development across the Shield. While this can and should be discussed at a regional level, each country within the region addresses the issue of indigenous and communal land ownership, management of lands, and the conservation of the biodiversity on those lands differently, therefore country-level actions are also necessary.
5. Implement initiatives for improved transboundary collaboration, especially between academic and research institutions, for enhancing knowledge of the biodiversity, ecosystem services, and other related topics. These initiatives should also be geared toward improving collaboration on capacity development.

BEKNOPT OVERZICHT VAN HET RAPPORT

In 2002 werd de Workshop Prioriteitstelling voor het Behoud van het Guiana Schild-gebied (2002 PSW) gehouden in Paramaribo, Suriname, en gezamenlijk gesponsord door Conservation International (CI), het Guiana Shield Initiative van het IUCN Nederlands Comité (GSI/IUCN NL), de Caribbean Sub-regional Resource Facility van het United Nations Development Programme (UNDP), UNDP-Suriname, en UNDP-Guyana. De voornaamste doelstelling van de workshop was het promoten van effectief behoud van de biodiversiteit in het Guiana Schild-gebied. De 2002 PSW heeft belangrijke resultaten opgeleverd, waaronder inbegrepen een kaart van de Guiana Schild-ecoregio en consensus over prioriteitsgebieden voor natuurbehoud. Een politieke oproep tot actie werd gedaan in de vorm van de Paramaribo Declaration.

Het voorliggend consultancyrapport is het resultaat van een desktopanalyse van de resultaten van de 2002 PSW. Het doel van deze consultancy is een overzicht van de ecologische situatie in de Guiana Schild-ecoregio samen te stellen door het beoordelen van de status van de resultaten (geïdentificeerde prioriteiten en aanbevelingen) van de 2002 PSW, het updaten van de prioriteiten uit 2002 voor behoud van de biodiversiteit en het in kaart brengen van ecosysteemdiensten in het Guiana Schild.ⁱⁱⁱ

Samenvatting

Het Guiana Schild, dat ongeveer 2,7 miljoen km² beslaat maar bewoond wordt door slechts 8 miljoen mensen, vormt een kwart van het resterend tropisch regenwoud in de wereld en heeft de laagste bevolkingsdichtheid van welk tropisch regenwoud ook. Met diverse en intacte ecosystemen, een overvloed aan ecosysteemdiensten en een geringe menselijke bevolkingsdichtheid, onderscheidt het Guiana Schild zich wereldwijd als een regio waar proactief natuurbehoud mogelijk is.

De 2002 PSW was de culminatie van een proces van prioriteitstelling voor natuurbehoud georganiseerd en gefaciliteerd door Conservation International (CI) in samenwerking met het United Nations Development Programme (UNDP), het Nationaal Comité van Nederland van Internationale Unie voor het behoud van de natuur (IUCN NL) en het Guiana Shield Initiative (GSI). De PSW identificeerde 41 prioriteitsgebieden die ongeveer de helft van de regio beslaan (Conservation International 2003) en resulteerde in de ondertekening van de Paramaribo Declaration, waarin 20 aanbevelingen zijn opgenomen omtrent actiepunten voor natuurbehoud in het Guiana Schild.^{iv}

In dit rapport: 1) beschrijven we de vooruitgang gemaakt sinds 2002 met het behoud van de biodiversiteit in het Schild, waarbij de vorderingen bij de verwezenlijking van de aanbevelingen van de Paramaribo Declaration worden belicht; 2) doen we voorstellen voor het updaten van de prioriteitsgebieden geïdentificeerd door de PSW, waarbij gebruik wordt gemaakt van

ⁱⁱⁱ Zie de TOR voor deze consultancy in de Bijlage.

^{iv} HYPERLINK "<http://www.guianashield.org/site/en/psw-workshop>" <http://www.guianaShield.org/site/en/psw-workshop>. Zie volledige Paramaribo Declaration in de Bijlage.

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gegevens en informatie daterend van na 2002; 3) geven we een kwaliteitsbeoordeling van de ecosysteemdiensten in het Schild en brengen we deze diensten in kaart op basis van beschikbare wereldwijde datasets; en 4) opperen we toekomstige stappen voor de update van de prioriteiten voor behoud voor het Guiana Schild.

Sedert de ondertekening van de Paramaribo Declaration, is vooruitgang geboekt bij het verwezenlijken van haar aanbevelingen in elk van de zes landen van het Schild, niet het minst in Brazilië. Op 22 augustus 2002 werd in Brazilië opgericht het Parque Nacional Montanhas do Tumucumaque, een nationaal park met een oppervlakte van ruim 38.821 km². In 2003 creëerde de overheid van de staat Amapá de Biodiversiteitscorridor van Amapá om de ontwikkeling van groene economieën te bevorderen. In 2006 werd het grootste streng beschermde gebied in tropisch bos, het Grão-Pará Ecologisch Reservaat, ingesteld tegelijk met vier andere door de staat beschermde gebieden in de Corridor van Noordelijk Pará. In 2008 verbond Brazilië zich tot het beperken van de ontbossing in het Amazonegebied met 80% tegen 2020. Het Amazonefonds werd in datzelfde jaar opgezet ter ondersteuning van de verwezenlijking van deze doelstelling door het verbeteren van het bosbeheer en het bevorderen van koolstofarme ontwikkeling.

In Colombia werd door de regering in 2009 het Yaigojé-Apaporis Nationaal Park gesticht in het deel van het land gelegen in het Guiana Schild. Sinds 2005 zet Colombia zich in voor het verbeteren van de inspanningen voor beheer en behoud door samen te werken met belanghebbenden in inheemse reservaten en niet-inheemse gemeenschappen grenzend aan dit nationaal park. Daarnaast wordt ernaar gestreefd het Chiribiquete Nationaal Park uit te breiden van 13.000 km² tot ruwweg 40.000 km².

In Frans-Guyana, werd het Amazonepark van Frans-Guyana (Parc Amazonien) opgericht in 2007. Met een "hart" dat groter is dan 20.000 km², is dit nationaal park het grootste in de Europese Unie dat volledig bedekt is met tropisch regenwoud. Verder is in Frans-Guyana een inventarisatie van landgebruik, verandering in landgebruik en bosbouw (LULUCF) uitgevoerd in 2006 en bijgewerkt in 2008.

Guyana heeft zich ertoe verbonden zijn staatsbossen op duurzame wijze te beheren om ontbossing naarmate het land zich ontwikkelt te voorkomen, zoals verwoord in de strategie voor koolstofarme ontwikkeling (LCDS). In 2011, heeft het parlement van Guyana wetgeving aangenomen voor het opzetten van een nationaal systeem van beschermde gebieden en een trustfonds voor het beheer van beschermde gebieden in het land. Daarnaast zijn vanaf 2002 vier nieuwe gebieden voor natuurbehoud, die in totaal 14.500 km² beslaan, ingesteld in Guyana.

Suriname zet zich in om een duurzaam ontwikkelingspad te volgen en heeft een klimaatcompatibele ontwikkelingsstrategie geformuleerd. In 2009, maakte de Regering van Suriname natuurbehoud tot een kernpunt van haar nationale benadering van duurzame ontwikkeling, die pleit voor natuurbehoud als een weloverwogen strategie om de nationale ontwikkeling in lijn te brengen met internationale mogelijkheden voortvloeiend uit ecosysteemdiensten, in het bijzonder die welke klimaatverandering en biodiversiteit betreffen.

In Venezuela zijn in de periode 2000 – 2008 zeer belangrijke beoordelingen van de biodiversiteit uitgevoerd in vijf waterscheidingen in het deel van het land dat valt binnen het Guiana Schild. Projecten voor het behoud van de biodiversiteit werden ontwikkeld in samenwerking met de gemeenschappen die wonen in het stroomgebied van de Caurarivier en het Alto Paragua Nationaal Park.

Op regionaal niveau zijn diverse studies naar de biodiversiteit en ecosysteemdiensten van het Schild door het GSI ondersteund vanaf 2002. Het Guiana Shield Initiative heeft ook projecten geleid voor het realiseren van betaling voor ecosysteemdiensten in Colombia en Guyana. Locaties van wereldbelang voor het behoud van biodiversiteit, bestaande uit belangrijke vogelgebieden en locaties van de Alliance for Zero Extinction, zijn in het Schild geïdentificeerd door respectievelijk BirdLife International met zijn partners en de Alliance for Zero Extinction. Een door CI en KfW (Duitse Ontwikkelingsbank) ondersteund project gericht op het bevorderen van de samenwerking tussen Guyana, Suriname en de Braziliaanse staten Amapá en Pará met het oog op het beperken van de ontbossing en het voorbereiden op deelname in een uiteindelijk REDD+ programma, is in uitvoering. Daarnaast heeft een binationale workshop waarbij Colombia en Venezuela betrokken waren de Meta-Bita-Orinoco Corridor voor beide landen verklaard tot prioriteitsgebied voor natuurbehoud.

Deze update van de 2002 PSW is gebaseerd op nieuwe gegevens verzameld in elk van de zes lidlanden en stelt nieuwe prioriteitsgebieden voor die 725.759 km² omvatten, ofwel ongeveer 27% van de ruwweg 2,7 miljoen km² bestreken door het Guiana Schild. De prioriteiten uit 2002 bestreken, in vergelijking, 1.231.935 km² of net iets minder dan 50% van het Guiana Schild. De prioriteiten voor 2002 en de voorlopige prioriteiten voor 2011 bestrijken samen 1.957.694 km² of 72.5% van het Guiana Schild. Tot deze nieuwe prioriteiten behoren 89 beschermde gebieden die zijn ingesteld sinds 2002. Dat een zo hoog percentage van het Schild beschouwd wordt als prioriteit voor natuurbehoud spreekt voor het uitzonderlijk biologisch belang van de regio.

Zoals met gebieden voor natuurbehoud, demonstreert de voorlopige analyse van de ecosysteemdiensten het algemeen belang van het Guiana Schild voor klimaatbeheersing en zoetwatervoorziening, daar een groot deel van het Schild relatief grote koolstofvoorraden en hoeveelheden beschikbaar zoetwater heeft. De analyse van de koolstofvoorraden toont aan dat een hoge koolstofdichtheid in het Guiana Schild voorkomt in het zuidelijk en noordoostelijk deel van het Schild met de hoogste waarden nabij de kust, wat wordt toegeschreven aan met mangrove geassocieerde grote koolstofreservoirs in de bodem. De analyse van de zoetwatervoorziening toont grote "reservoirs" van zoetwater aan op de oostelijke rand en in het centraal en westelijk deel van het Guiana Schild. Het gebied van het grootste relatieve belang voor de zoetwatervoorziening voor gebruik als drinkwater, in het huishouden en de voedselproductie ligt in het oostelijk deel nabij de kust, waar de meerderheid van de bevolking woonachtig is. De levering van ecosysteemdiensten die rechtstreeks afhangt van de aanwezigheid van biodiversiteit, zoals ecotoerisme, toont het gebied met de hoogste prioriteit in het oostelijk deel van het Guiana Schild. Resultaten van de analyse van taalverscheidenheid, als representatie van culturele diensten, laten een duidelijke hotspot zien in het zuidwestelijk deel en in de centrale en oostelijke delen van het Guiana Schild.

BEKNOPT OVERZICHT VAN HET RAPPORT

De bevindingen van deze consultancy wijzen uit dat veel van de aanbevelingen genoemd in de Paramaribo Declaration zijn gerealiseerd. Een cruciale aanbeveling van de voorliggende studie is dan ook gebruik te maken van de hierin beschreven resultaten als de basis voor een groter participatief proces voor het identificeren van de meest essentiële actie te ondernemen in het Schild door individuele landen en door middel van grensoverschrijdende samenwerking. Wij geven vijf cruciale aanbevelingen in overweging om de instandhouding van de ecologische integriteit van het Guiana Schild en de verwezenlijking van de duurzame ontwikkeling van zijn bewoners te waarborgen:

1. Het verbeteren van regionale samenwerking bij initiatieven voor natuurbescherming en bij het beschermen van ecosysteemdiensten. Dit rapport zou moeten dienen als de basis voor een bredere discussie met grotere betrokkenheid en overweging van de prioriteiten van de regio voor natuurbescherming en ontwikkeling en een hernieuwde commitment aan transnationale en internationale samenwerking.
2. Het bijeenroepen van een grotere heel het Guiana Schild beslaande participatieve workshop voor het identificeren van prioriteiten voor natuurbescherming en ontwikkeling met betrekking tot het Schild op basis van de resultaten van deze beoordeling, en de integratie van analyses van de levering van ecosysteemdiensten, analyse van de bedreigingen voor de biodiversiteit en ecosysteemdiensten in het Schild, en mogelijkheden voor hun instandhouding.
3. Het verbeteren van de analyse van ecosysteemdiensten in de regio om zowel een preciezere en ruimtelijk expliciete kwantificering van de voordelen voor de populaties die de regio bewonen mogelijk te maken als om de omvang van hun bijdrage aan economieën van uiteenlopende schaal aan te tonen. Deze informatie kan cruciaal zijn voor processen van beleidsanalyse en besluitvorming die het belang erkennen van ecosysteemdiensten voor het menselijk welzijn, welke worden bevorderd door initiatieven zoals het door de UNEP geleide The Economics of Ecosystems Biodiversity (TEEB) en de door de Wereldbank gestuurde Wealth Accounting and the Valuation of Ecosystem Services (WAVES).
4. Het erkennen van de belangrijke rol van inheemse en andere traditionele gemeenschappen voor beslissingen inzake natuurbescherming en beheer van de grond in het Schild en het waarborgen van de integratie van traditionele kennis bij natuurbescherming en ontwikkeling in het Schild. Hoewel dit kan en moet worden besproken op regionaal niveau, wordt de kwestie van bezit van grond door inheemsen en gemeenschappen, gebruik van de grond en behoud van de biodiversiteit op die grond door elk land binnen de regio anders aangepakt, dus zouden ook overwegingen op landelijk niveau in aanmerking moeten worden genomen.
5. Het uitvoeren van initiatieven voor verbeterde samenwerking over grenzen heen, vooral tussen universitaire en onderzoeksinstanties, voor het vergroten van de kennis over biodiversiteit, ecosysteemdiensten en andere gerelateerde onderwerpen. Dergelijke initiatieven zouden ook gericht moeten zijn op het verbeteren van de samenwerking bij capaciteitsontwikkeling.

PRESENTATION DU RAPPORT

En 2002, l'atelier sur la définition des priorités de conservation sur le Plateau des Guyanes (2002 PSW) s'est tenu au Suriname, à Paramaribo. Il était co-sponsorisé par Conservation International (CI), la Guiana Shield Initiative du Comité Néerlandais de l'UICN (GSI/IUCN NL), le bureau sous régional des Caraïbes du Programme des Nations Unies pour le Développement (PNUD) et les bureaux du PNUD au Suriname et au Guyana. L'objectif premier de l'atelier était de promouvoir une conservation effective de la biodiversité sur le Plateau des Guyanes. Le 2002 PSW a généré d'importants résultats parmi lesquels une carte de l'écorégion du Plateau des Guyanes et un consensus en matière d'aires de priorité de conservation. Un appel à l'action politique, Déclaration de Paramaribo, fut également produit.

Le présent rapport d'experts est le fruit d'une revue documentée des résultats du 2002 PSW. Son objectif était de préparer un état des lieux de la situation écologique de l'écorégion du Plateau des Guyanes en faisant le point sur la mise en oeuvre des actions prioritaires et des recommandations du 2002 PSW, en actualisant les priorités d'alors en matière de conservation de la biodiversité et la cartographie des services écosystémiques sur le Plateau des Guyanes.^v

Resume Executif

Le Plateau des Guyanes couvre approximativement 2,7 millions km² et n'est peuplé que d'à peine 8 millions de personnes. Il abrite un quart des forêts tropicales humides mondiales et présente la densité de population la plus faible de toutes les forêts tropicales humides. La diversité et le caractère intact de ses écosystèmes, l'abondance de ses services écosystémiques, et la faible densité de population font du Plateau des Guyanes une région où une conservation proactive de la nature reste possible.

Le 2002 PSW était l'aboutissement d'un processus de définition des priorités de conservation organisé et facilité par Conservation International (CI) en collaboration avec le Programme des Nations Unies pour le Développement (PNUD), le Comité Néerlandais de l'Union Internationale pour la Conservation de la Nature (UICN NL) et la Guiana Shield Initiative (GSI). Le PSW 2002 a permis d'identifier 41 zones prioritaires couvrant environ la moitié de la région (Conservation International 2003) et a abouti à la signature de la Déclaration de Paramaribo, incluant 20 recommandations d'actions de conservation sur le Plateau des Guyanes.^{vi}

Dans le présent rapport, nous : 1) décrivons les avancées réalisées depuis 2002 en matière de conservation de la biodiversité sur le Plateau des Guyanes, et plus particulièrement celles en direction de la mise en oeuvre des recommandations de Déclaration de Paramaribo ; 2) proposons une actualisation des zones prioritaires identifiées lors du PSW 2002 en s'appuyant sur des données et informations postérieures à 2002 ; 3) fournissons une évaluation qualitative des services écosystémiques sur le Plateau des Guyanes et cartographions ses services à partir des données géographiques disponibles ; et 4) élaborons des suggestions d'étapes ultérieures en vue de la mise à jour des priorités de conservation pour le Plateau des Guyanes.

^v Cf. les TDR pour cette étude dans l'annexe.

^{vi} HYPERLINK "<http://www.guianashield.org/site/en/psw-workshop>" <http://www.guianaShield.org/site/en/psw-workshop>. Cf. la version complète de la Déclaration de Paramaribo dans l'annexe.

PRESENTATION DU RAPPORT

Depuis la signature de la Déclaration de Paramaribo, des avancées en direction de la mise en oeuvre de ses recommandations ont été réalisées dans les six territoires du Plateau des Guyanes. Parmi celles-ci, au Brésil, le Parc National des Monts Tumuc Humac, d'une superficie de 38 821 km² a été créé le 22 août 2002. En 2003, le gouvernement d'Amapá a mis en place le Corridor de Biodiversité de l'Amapá afin de promouvoir le développement des économies « vertes ». En 2006, la plus grande zone en forêt tropicale strictement protégée, la Réserve Ecologique de Grão-Pará, a été créée en même temps que quatre autres zones protégées dans le Corridor du Nord Pará. En 2008, le Brésil s'est engagé à réduire la déforestation de 80 % en Amazonie d'ici 2020. Le Fonds Amazonien a été instauré la même année afin d'appuyer financièrement la réalisation de cet objectif en améliorant la gestion forestière et en faisant la promotion d'un développement décarboné.

En Colombie le gouvernement a créé en 2009 le Parc National de Yaigó-Jé-Apaporis situé dans la zone colombienne du Plateau des Guyanes. Depuis 2005, la Colombie a oeuvré afin d'accroître les efforts de gestion et de conservation en travaillant avec les différentes parties prenantes dans les réserves indigènes et avec les communautés non indigènes riveraines du parc national. De plus, des efforts sont en cours pour agrandir la superficie du Parc National de Chiribiquete de 13 000 km² à environ 40 000 km².

En Guyane française, le Parc Amazonien de Guyane a été créé en 2007. Avec une superficie de plus de 20 000 km² dans la zone de coeur, ce parc national est le plus grand au sein de l'Union européenne intégralement couvert par la forêt tropicale humide. De plus, un inventaire sur l'usage des terres, le changement d'usage des terres et la forêt (LULUCF) a été réalisé en Guyane française en 2006 et mis à jour en 2008 dans le cadre de l'application du Protocole de Kyoto pour les pays de l'Annexe I.

Le Guyana s'est engagé à gérer durablement ses forêts domaniales afin d'éviter la déforestation et ce dans le cadre de la mise en oeuvre de sa Stratégie de Développement à Faibles Emissions de Carbone (LCDS). En 2011, l'Assemblée Nationale du Guyana a instauré une législation relative à la mise en place d'un système national d'aires protégées et à la création d'un fonds pour la gestion des aires protégées du pays. De plus, quatre nouvelles zones de conservation, couvrant 14 500 km², ont été instaurées au Guyana depuis 2002.

Suriname vise à suivre une voie de développement intégrant pleinement les enjeux climatiques, articulée avec sa Climate Compatible Development Strategy. En 2009, le Gouvernement du Suriname a fait de la conservation un point clé de sa stratégie nationale de développement au sein de la Suriname Green Approach, qui recommande la conservation de la nature comme une stratégie délibérée de placer le développement national dans le sillage des opportunités internationales en matière de services écosystémiques, et plus particulièrement ceux en lien avec le changement climatique et la biodiversité.

Au Vénézuéla, des évaluations conséquentes de la biodiversité ont été menées dans cinq bassins versants d'une partie du Plateau des Guyanes entre 2000 et 2008. Les projets de conservation de la biodiversité ont été développés en collaboration avec les communautés du bassin de la rivière Caura et du parc national Alto Paragua.

PRESENTATION DU RAPPORT

Au niveau régional, plusieurs études sur la biodiversité et les services écosystémiques du plateau ont été soutenues par la GSI depuis 2002. La Guiana Shield Initiative a piloté des programmes de paiements services écosystémiques en Colombie et Guyana. Des sites mondialement importants pour la conservation de la biodiversité, comprenant des zones peuplées d'oiseaux et des sites de Alliance for Zero Extinction, ont été identifiés à travers le plateau respectivement par BirdLife International et ses partenaires et par l'Alliance for Zero Extinction.

Un projet soutenu par CI et KfW (la banque de développement allemande) visant à promouvoir la coopération entre le Guyana, le Suriname et les Etats brésiliens de Amapá et Pará afin de réduire la déforestation et préparer la participation à un potentiel programme REDD+, est en cours. En outre, un atelier bi-national comprenant la Colombie et le Venezuela a déclaré le Corridor Meta-Bita-Orinoco comme zone prioritaire de conservation pour les deux pays.

Cette mise à jour du 2002 PSW se basait sur des données collectées de chacun des six pays membres et a suggéré de nouvelles zones prioritaires comprenant 725 759 km², ou approximativement 27 % d'à peu près les 2,7 millions de km² du Plateau des Guyanes. Les priorités établies en 2002, en revanche, incluaient 1 231 935 km², soit un peu moins de 50 % du Plateau des Guyanes. Ensemble, les priorités 2002 et 2011 incluent 1 957 694 km², soit 72.5 % du Plateau des Guyanes. Parmi ces nouvelles priorités, 89 zones protégées ont été créées depuis 2002. Qu'un tel pourcentage du plateau soit considéré comme une priorité de conservation prouve l'importance biologique extraordinaire de la région.

Au regard des aires de conservation, l'analyse préliminaire des services écosystémiques démontre l'importance mondiale du Plateau des Guyanes pour la régulation climatique et les provisions d'eau douce, une partie du plateau recèle des quantités disponibles élevées de stocks de carbone et d'eau douce. L'analyse des stocks de carbone montre qu'une densité élevée en carbone sur le Plateau des Guyanes est présente sur les parties sud et nord-est du plateau avec les plus fortes quantités près de la côte attribuées aux grandes réserves de carbone dans le sol associées aux mangroves. L'analyse des réserves d'eau douce montre de larges « réservoirs » d'eau douce sur l'extrémité est dans le centre et l'ouest du Plateau des Guyanes. La zone de la plus grande importance en ce qui concerne les réserves d'eau douce potable, à usage domestique et pour la production alimentaire, se trouve sur la partie est près de la côte, où réside la majorité de la population. L'approvisionnement en services écosystémiques, dépendant directement de la présence de la biodiversité tel que l'écotourisme, localise la zone de priorité la plus élevée dans la partie est du Plateau des Guyanes. Les résultats de l'analyse de la diversité linguistique, en relation avec des services culturels, pointent des zones sensibles distinctes dans le sud-ouest et dans le centre et l'ouest du Plateau des Guyanes.

Les résultats de cette étude ont montré que beaucoup des recommandations détaillées dans la Déclaration de Paramaribo ont été menées à bien. Une recommandation clé de cette étude en cours est par conséquent d'utiliser les résultats décrits ici comme bases dans un processus de participation plus large afin d'identifier les actions les plus cruciales à mener à bien à travers le plateau par les différents pays, et en particulier grâce à une collaboration transfrontalière. Nous suggérons cinq recommandations clés pour assurer le maintien de l'intégrité écologique du plateau des Guyanes et pour le développement durable au profit de ses habitants :

PRESENTATION DU RAPPORT

1. Une collaboration régionale améliorée en relation avec les initiatives de conservation et pour la protection des systèmes écosystémiques. Ce rapport devrait servir de base à une discussion plus avancée et approfondie sur la prise en compte des priorités de conservation et de développement pour la région et le réengagement pour une collaboration transnationale et internationale.
2. Organiser un atelier participatif à plus grande échelle pour le Plateau des Guyanes afin d'identifier les priorités de conservation et de développement basées sur les résultats de ce rapport, et l'intégration des analyses des services écosystémiques, l'analyse des menaces sur la biodiversité et sur les services écosystémiques du plateau, et les opportunités pour leur préservation.
3. Améliorer l'analyse des services écosystémiques dans la région pour à la fois, permettre une quantification plus précise et explicite dans l'espace des bénéfices pour les populations de la région, et démontrer l'ampleur de leur contribution dans les économies à différentes échelles d'évaluation. Cette information peut être vitale pour l'analyse des politiques et des processus de prise de décision prenant en compte l'importance des services écosystémiques pour la qualité de vie, ce qui a été mis en valeur par les initiatives comme celles menées par le PNUE, « The Economics of Ecosystems Biodiversity (TEEB) », et par la Banque Mondiale « Wealth Accounting and the Valuation of Ecosystem Services » (WAVES).
4. Reconnaître le rôle important des indigènes et des autres communautés traditionnelles dans les décisions relatives à la gestion de la conservation et du territoire et pour assurer l'intégration d'un savoir traditionnel dans le développement et la conservation sur tout le plateau. Ceci peut et doit être discuté à un niveau régional, chaque pays de la région répond différemment aux questions de propriété territoriale indigène et communautaire, gestion des terres, et conservation de la biodiversité sur ces territoires ; aussi des considérations au niveau national doivent être également prises en compte.
5. Mettre en œuvre des initiatives pour une collaboration transfrontalière améliorée, en particulier entre les institutions académiques et de recherche, afin de rehausser la connaissance sur la biodiversité, les services écosystémiques, et d'autres sujets connexes. Ces initiatives devraient également être destinées à l'amélioration de la collaboration sur le développement des capacités.

RESUMO DO RELATÓRIO

No ano de 2002, a Sessão de Trabalho para Determinar Prioridades de Conservação no Escudo das Guianas (2002 PSW, do inglês) teve lugar em Paramaribo, Suriname, patrocinada por Conservação Internacional (CI), A Iniciativa do Escudo das Guianas do Comité Nacional da Holanda para IUCN (GSI/IUCN NL, do inglês), a Facilidade de Recursos Sub-Regionais para o Caribe do Programa para Desenvolvimento das Nações Unidas (UNDP, do inglês), UNDP Suriname e UNDP Guiana. O objetivo principal da Sessão de Trabalho era: estimular conservação efetiva da biodiversidade na região do Escudo das Guianas. O 2002 PSW produziu resultados importantes, incluindo um mapa da região ecológica do Escudo das Guianas e consenso sobre áreas prioritárias para conservação. Foi formulado um apelo para ação política, na forma da Paramaribo Declaration.

Este relatório de consulta é o resultado de um estudo de material disponível (desktop review, em inglês) dos resultados do 2002 PSW. O objetivo desta consulta é formular uma visão geral da situação ecológica na eco-região do Escudo das Guianas, analisando o estado atual dos resultados (as prioridades identificadas e as recomendações) do 2002 PSW, atualizando as prioridades de conservação formuladas no ano 2002 e preparando mapas de serviços dos ecossistemas no Escudo das Guianas.^{vii}

Sumário Executivo

O Escudo das Guianas cobre aproximadamente 2.7 milhões de km², e tem só 8 milhões de habitantes, representa uma quarta parte das florestas tropicais úmidas no mundo e tem a densidade humana mais baixa de todas as florestas tropicais úmidas no mundo. Os ecossistemas variados e intactos, os serviços abundantes de regulação dos ecossistemas e a baixa densidade humana no Escudo das Guianas, fazem que esta região destaca mundialmente como uma região onde conservação pro-ativa da natureza será possível.

O 2002 PSW foi o auge de um processo para determinar prioridades, organizado e facilitado por Conservação Internacional (CI) em colaboração com o Programa de Desenvolvimento das Nações Unidas (United Nations Development Programme: UNDP), a União Internacional para a Conservação da Natureza, Comité Nacional da Holanda (International Union for the Conservation of Nature, National Committee of the Netherlands: IUCN NL) e a Iniciativa para o Escudo das Guianas (Guiana Shield Initiative: GSI). O PSW identificou 41 áreas prioritárias, cubrindo aproximadamente a metade da região (Conservação Internacional 2003) e resultou na assinatura da Declaração de Paramaribo (Paramaribo Declaration), que inclui 20 recomendações para ações de conservação no Escudo das Guianas.^{viii}

Neste sumário, vamos: 1) descrever o progresso feito desde 2002 em relação com a conservação da biodiversidade no Escudo, enfatizando os avances para alcançar as recomendações da Paramaribo Declaration; 2) propor atualizar as áreas de prioridade identificadas por PSW, utilizando os dados e a informação sobre o período depois de 2002; 3) fornecer uma avaliação qualitativa de serviços dos ecossistemas no mapa do Escudo e elaborar mapas sobre estes serviços, partindo de bases de dados mundiais; e 4) sugerir novos passos para atualização das prioridades de conservação no Escudo das Guianas.

^{vii} Veja o TOR para esta consulta no Anexo.

^{viii} <http://www.guianaShield.org/site/en/psw-workshop>. Veja o texto completo da Paramaribo Declaration no anexo.

RESUMO DO RELATORIO

Depois da assinatura da Paramaribo Declaration, foi alcançado progresso em relação com as recomendações em cada um dos seis países que formam o Escudo, sobre tudo no Brasil. No Brasil, o Parque Nacional Montanhas de Tumucumaque, um parque nacional de mais de 38.821 km², foi criado no dia 22 de agosto de 2002. Em 2003, o governo do estado de Amapá criou o Corridor de Biodiversidade do Amapá, para estimular o desenvolvimento de economias verdes. No ano de 2006, foi estabelecida a maior área estritamente protegida de florestas tropicais, a Reserva Ecológica do Grão-Pará, junto com mais quatro áreas protegidas no nível de estado, do Corridor do Norte do Pará. No ano de 2008, o Brasil se comprometeu a reduzir a deforestação na região do Amazonas com 80% até o ano de 2020. O Fundo para Amazonas foi criado no mesmo ano, como suporte para a realização deste objetivo, melhorando a gestão das florestas e estimulando desenvolvimento 'baixo-carbono'.

Na Colombia, no ano de 2009, o governo estabeleceu o Parque Nacional Yaigó-Jé-Apaporis na região do país que forma parte do Escudo das Guianas. A partir de 2005 Colombia tentou melhorar a gestão e os esforços de conservação, cooperando com participantes de reservas indígenas e comunidades não-indígenas nas fronteiras deste parque nacional. Adicionalmente, novos esforços estão sendo realizados para a expansão do Parque Nacional de Chiribiquete, de 13.000 km² para aproximadamente 40.000 km².

Na Guiana Francesa, O Parque Amazônico da Guiana Francesa (Parc Amazonien) foi estabelecido em 2007. Consistindo de mais de 20.000 km², na área do coração, este parque é o maior parque da União Européia, completamente coberto por floresta tropical úmida. Fora disso, no ano de 2006 foi realizado na Guiana Francesa um inventário sobre Uso de Terras, Modificação do Uso de Terras e Silvicultura (Land-use, Land-use change, and Forestry : LULUCF), e atualizado no ano de 2008.

A República de Guiana se comprometeu de praticar gestão sustentável das Florestas do Estado, para evitar deforestação, desenvolvendo ao mesmo tempo uma Estratégia de Desenvolvimento Baixo-Carbono (low-Carbon Strategy: LCDS). No ano de 2011, a Assembleia Nacional da República de Guiana aprovou a legislação para o estabelecimento de um sistema nacional de áreas protegidas e um fundo de fideicomisso para a gestão das áreas protegidas no país. Adicionalmente, quatro novas áreas de conservação, cubrindo um total de 14.500 km² foram estabelecidas na República de Guiana a partir do ano de 2002.

Suriname está procurando seguir um caminho de desenvolvimento amável para o clima e desenhou uma Estratégia de Desenvolvimento Compatível com o Clima (Climate Compatible Development Strategy). No ano de 2009, o Governo de Suriname determinou que a conservação formaria um ponto focal de sua estratégia nacional de desenvolvimento sustentável, com o Enfoque Verde de Suriname (Suriname Green Approach), que defende a conservação da natureza como estratégia com o propósito de alinhar o desenvolvimento nacional com oportunidades internacionais, emergindo de serviços de regulação dos ecossistemas, especialmente aqueles em relação com câmbio climático e a biodiversidade.

Em Venezuela, de 2000 até 2008, foram desenvolvidas importantes avaliações de biodiversidade, em cinco linhas de separação das águas na região do país que faz parte do Escudo das Guianas. Projetos de conservação da biodiversidade foram desenvolvidos em cooperação com as comunidades que habitam a Bacia do Rio Caura e o Parque do Alta Paragua.

No nível regional, vários estudos sobre biodiversidade e serviços de regulação dos ecossistemas no Escudo foram apoiados por GSI a partir do ano 2002. A Iniciativa do Escudo das Guianas também criou programas piloto para realizar pagamento por serviços de regulação dos ecossistemas em Colombia e a República de Guiana. Lugares de importância mundial para conservação da biodiversidade, incluindo Áreas Importantes para Aves (Important Bird Areas) e lugares importantes para a Aliança para Extinção Zero (Alliance for Zero Extinction) foram identificados em várias partes do Escudo por BirdLife International e seus parceiros, respetivamente. Um projeto patrocinado por CI e KfW (o Banco Alemão de Desenvolvimento) tem como objetivo: fomentar a cooperação entre Guiana, Suriname e os estados brasileiros de Amapá e Pará, para reduzir a deforestação e preparar a participação num possível programa REDD+, e este projeto ainda continua. Adicionalmente, uma sessão de trabalho bi-nacional entre Colombia e Venezuela declarou o Corridor Meta-Bita-Orinoco como área prioritária de conservação para ambos países.

Esta atualização do 2002 PSW é baseada sobre informações recentes, fornecidas por cada um dos seis países membros e resulta que existem novas áreas prioritárias de 725,759 km², ou seja aproximadamente 27% do Escudo das Guianas, que consiste em mais ou menos 2.7 milhões de km². As prioridades para 2002, em comparação com o projeto para 2011, consistiram em 1.231.935 km², ou seja, um pouco menos de 50% do Escudo das Guianas. Hoje, sumando as prioridades de 2002 e as prioridades projetadas para 2011, chegam a um total de 1.957.694 km², ou seja 72.5% do Escudo das Guianas. Entre estas novas prioridades há 89 áreas protegidas, criadas depois do ano de 2002. O fato de que uma porcentagem tão elevada do Escudo seja considerada prioritária para conservação, ilustra a importância biológica excepcional desta região.

Em relação com as áreas de conservação, a análise preliminar dos serviços de regulação dos ecossistemas demonstra a importância mundial do Escudo das Guianas para regular o clima e a provisão de água fresca. Análise da sequestração de carbono mostra que existe uma alta densidade de carbono no Escudo das Guianas, sobre tudo na parte sul e nordeste do Escudo, com os valores mais altos perto da costa, o que é causado por grandes reservas de carbono no solo, associado com mangue. A análise de provisões de água fresca mostram que existem grandes 'depósitos' de água fresca na margem oriental e na parte central e oeste do Escudo das Guianas. A área da importância relativamente mais alta para provisão de água fresca potável, para uso doméstico e produção de alimentos, existe na parte oriental, perto da costa, onde mora a maioria da população. Provisão de serviços de regulação de ecossistemas que diretamente dependem da presença de biodiversidade, como o ecoturismo, indicam a parte oriental do Escudo das Guianas como prioridade mais alta. Resultados da análise sobre diversidade linguística, como indicador para serviços culturais, mostra uma área claramente prioritária no sudoeste e na parte central e oriental do Escudo das Guianas.

RESUMO DO RELATORIO

Os resultados desta consulta demonstram que muitas das recomendações mencionadas detalhadamente na Paramaribo Declaration foram realizados. Uma recomendação-chave deste estudo é portanto, usar os resultados descritos aqui, como base para um processo de participação mais amplo, identificando as ações mais críticas que devem ser executadas no Escudo, por países individuais e mediante cooperação trans-fronteiriça. Sugerimos cinco recomendações-chave para assegurar o mantimento da integridade ecológica do Escudo das Guianas e a realização do desenvolvimento sustentável dos seus habitantes:

1. Melhorar a cooperação regional em iniciativas de conservação e a proteção de serviços de regulação dos ecossistemas. Este relatório deve servir como base para uma discussão mais ampla, e mais intensa, considerando as prioridades de conservação e desenvolvimento para a região e novos compromissos no campo de colaboração transnacional e internacional.
2. Convocar uma sessão de trabalho maior, com participação de todo o Escudo das Guianas, para identificar prioridades para conservação e desenvolvimento para o Escudo, partindo dos resultados deste relatório, e a integração de análise sobre serviços de regulação dos ecossistemas; análise das ameaças para a biodiversidade e os serviços prestados pelos ecossistemas no Escudo e as oportunidades para sua preservação.
3. Aperfeiçoar a análise de serviços de regulação dos ecossistemas na região, para obter uma quantificação mais exata e espacialmente explícita dos benefícios para as populações residentes na região, e igualmente para demonstrar a medida de sua contribuição para economias em diferentes níveis de avaliação. Esta informação pode ser crucial para análise de políticas e procedimentos para tomar decisões, levando em conta a importância de serviços de regulação dos ecossistemas para o bem-estar humano, que são promovidos por iniciativas como aquela liderada pela UNEP; A Economia de Biodiversidade de Ecossistemas (The Economics of Ecosystems Biodiversity: TEEB) ou a iniciativa liderada pelo Banco Mundial: Contabilidade e Valuação de Serviços dos Ecossistemas (Wealth Accounting and the Valuation of Ecosystems Services: WAVES).
4. Reconhecer a importância da contribuição de comunidades indígenas e outras comunidades tradicionais para decisões sobre conservação e gestão de terras em toda a superfície do Escudo e garantir a integração entre conhecimentos tradicionais sobre conservação e desenvolvimento. Isto pode e deve ser discutido no nível regional, mas cada país na região atua de sua própria maneira em relação à propriedade de terras indígenas e comunais, e a conservação da biodiversidade nestas terras, portanto as decisões tomadas a nível de país devem ser levadas em consideração.
5. Implementar iniciativas para melhor a colaboração trans-fronteiriça, especialmente entre instituições académicas e fomentar a pesquisa científica, para estimular o conhecimento da biodiversidade, dos serviços de regulação dos ecossistemas e outros tópicos relacionados. Estas iniciativas devem ser dirigidas também para melhor colaboração em desenvolvimento de capacidade.

SÍNTESIS DEL INFORME

En 2002, El Taller de Fijación de Prioridades de Conservación del Escudo Guayanés (PSW 2002) tuvo lugar en Paramaribo, Surinam, y fue copatrocinado por Conservation International (CI), la Iniciativa del Escudo Guayanés del Comité de Países Bajos para UICN (GSI/IUCN NL), el Centro de Recursos Caribeño Subregional para el Programa de las Naciones Unidas para el desarrollo (PNUD), PNUD Surinam, y PNUD Guyana. El principal objetivo del taller era promover la conservación efectiva de biodiversidad en la región del Escudo Guayanés. El PSW 2002 tuvo resultados importantes, incluyendo un mapa de la región ecológica del Escudo Guayanés y un consenso sobre las áreas prioritarias de conservación. Se emitió un llamado a la acción política en la forma de la Declaración de Paramaribo.

El presente informe de consultoría es el fruto de un análisis de los resultados del PSW 2002. El objetivo de la presente consultoría es preparar una síntesis del estado de la ecología en la región ecológica del Escudo Guayanés al verificar el estado de los resultados (prioridades y recomendaciones identificadas) del PSW 2002, actualizar las prioridades de conservación de biodiversidad de 2002 y hacer un mapa de los servicios del ecosistema en el Escudo Guayanés.^{ix}

Resumen Ejecutivo

Escudo Guayanés, que cubre aproximadamente 2.7 millones de km² pero solo cuenta con una población de 8 millones de personas, representa una cuarta parte de todos los bosques tropicales del mundo y tiene la densidad poblacional más baja de todos los bosques tropicales. Los ecosistemas diversos e intactos, los abundantes servicios del ecosistema y la baja densidad poblacional del Escudo Guayanés hacen que se destaque a nivel mundial como una región en la que la conservación proactiva de la naturaleza es posible.

El PSW 2002 fue la culminación de un proceso de fijación de prioridades de conservación organizado y facilitado por Conservation International (CI) en colaboración con el Programa de las Naciones Unidas para el Desarrollo (PNUD), el Comité Nacional de los Países Bajos de la Unión Internacional para la Conservación de la Naturaleza (IUCN NL) y la Iniciativa del Escudo Guayanés (GSI). El PSW identificó 41 áreas prioritarias que cubrían aproximadamente la mitad de la región (Conservation International 2003) y se tradujo en la firma de la Declaración de Paramaribo, que incluye 20 recomendaciones de acciones de conservación en el Escudo Guayanés.^x

En el presente informe: 1) describimos los avances desde 2002 en relación a la conservación de la biodiversidad en todo el Escudo, subrayando los avances hacia la implementación de las recomendaciones de la Declaración de Paramaribo; 2) proponemos actualizaciones a las áreas prioritarias identificadas por el PSW utilizando datos e información post-2002; 3) proveemos una evaluación cualitativa de los servicios del ecosistema en el Escudo y creamos un mapa de dichos servicios en base a series de datos mundiales disponibles; y 4) sugerimos pasos futuros para la actualización de las prioridades de conservación del Escudo Guayanés.

^{ix} Ver los Términos de Referencia para esta consultoría en el Anexo.

^x HYPERLINK "<http://www.guianashield.org/site/en/psw-workshop>" "<http://www.guianaShield.org/site/en/psw-workshop>". Ver la totalidad de la Declaración de Paramaribo en el Anexo.

SÍNTESIS DEL INFORME

Desde la firma de la Declaración de Paramaribo, se han hecho avances hacia la implementación de las recomendaciones en cada uno de los seis países del Escudo, pero en ninguno más que en Brasil. En Brasil, el Parque Nacional Montanhas do Tumucumaque, un parque nacional que cubre más de 38,821 km², se creó el 22 de agosto de 2002. En 2003, el gobierno estatal de Amapá creó el Corredor de Biodiversidad de Amapá para promover el desarrollo de las economías verdes. En 2006, se estableció el área de protección estricta más grande en los bosques tropicales, la Reserva Ecológica de Grão-Pará, junto con otras cuatro áreas protegidas a nivel estatal en el Corredor Para del Norte. En 2008, Brasil se comprometió a reducir la deforestación en el Amazonas en un 80% para 2020. Ese mismo año se creó el Fondo del Amazonas para apoyar la consecución de este objetivo mediante la mejora de la administración forestal y promoción del desarrollo bajo en carbono.

En Colombia el gobierno estableció el Parque Nacional de Yaigojé-Apaporis en la porción del país que cae dentro del Escudo Guayanés en 2009. Desde 2005, Colombia ha intentado aumentar los esfuerzos de administración y conservación, trabajando con partes interesadas en reservas indígenas y comunidades no indígenas aledañas a este parque nacional. Además, se están realizando esfuerzos para expandir el Parque Nacional Chiribiquete de 13,000 km² a aproximadamente 40,000 km².

En la Guyana Francesa, el Parque Amazónico de la Guyana Francesa (Parc Amazonien) se estableció en 2007. Con más de 20,000 km² en su "área central", este parque nacional es el más grande en la Unión Europea íntegramente cubierto por un bosque tropical. Además, en 2006 se hizo un inventario de Uso del Suelo, Cambios de Uso del Suelo y Silvicultura (LULUCF) en la Guyana Francesa, y se actualizó en 2008.

Guyana se ha comprometido a administrar de manera sostenible sus bosques estatales para evitar la deforestación a medida que se desarrolla, tal y como se estipula en la Estrategia de Desarrollo Baja en Carbono (LCDS). En 2011, La Asamblea Nacional de Guyana aprobó una ley para el establecimiento de un sistema nacional de áreas protegidas y un fondo fiduciario para la administración de áreas protegidas en el país. Además, desde 2002 se han establecido cuatro nuevas áreas de conservación en Guyana que cubren un total de 14,500 km².

Surinam está intentando emprender una vía de desarrollo respetuosa del clima y ha preparado una Estrategia de Desarrollo Compatible con el Clima. En 2009, el Gobierno de Surinam hizo de la conservación un punto focal de su estrategia nacional de desarrollo sostenible con el Enfoque Verde de Surinam, el cual aboga por la conservación de la naturaleza como una estrategia deliberada para alinear el desarrollo nacional con oportunidades internacionales que emergen de servicios del ecosistema, especialmente los relacionados con el cambio climático y la biodiversidad.

En Venezuela se llevaron a cabo importantes evaluaciones de biodiversidad entre 2000 y 2008 en cinco cuencas hidrográficas en la parte del país que está dentro del Escudo Guayanés. Se desarrollaron proyectos de conservación de biodiversidad en colaboración con las comunidades que viven en la Cuenca del Río Caura y el Parque Nacional Alto Paragua.

A nivel regional el GSI ha apoyado varios estudios sobre la biodiversidad y los servicios del ecosistema del Escudo desde 2002. La Iniciativa del Escudo Guayanés también ha desarrollado programas piloto para realizar pagos por servicios del ecosistema en Colombia y Guyana. En todo el escudo sitios para la conservación de la biodiversidad de significancia mundial, incluyendo Áreas Importantes para las Aves y sitios de la Alianza para la Cero Extinción fueron identificados por BirdLife International y sus socios y la Alianza para la cero extinción, respectivamente. Actualmente se está desarrollando un proyecto apoyado por CI y KfW (Banco de Desarrollo Alemán) cuyo objetivo es promover la cooperación entre Guyana, Surinam y los estados brasileños de Amapá y Para, con el fin de reducir la deforestación y prepararse para participar en un posible programa REDD+. Además, un taller binacional de Colombia y Venezuela declaró que el Corredor Meta-Bita-Orinoco es un área de conservación prioritaria para ambos países.

Esta actualización del PSW 2002 se basó en nuevos datos recolectados de cada uno de los seis países miembros y sugiere nuevas áreas prioritarias que incluyen 725,759 km², o aproximadamente un 27% de los casi 2.7 millones km² del Escudo Guayanés. Las prioridades de 2002, en comparación, incluían 1,231,935 km², o un poco menos del 50% del Escudo Guayanés. En conjunto, las prioridades de 2002 y el borrador de prioridades de 2011 incluyen 1,957,694 km² y un 72.5% del Escudo Guayanés. Entre estas nuevas prioridades se encuentran 89 áreas protegidas creadas desde 2002. El hecho de que un porcentaje tan alto del Escudo sea considerado como una prioridad de conservación dice mucho sobre la extraordinaria importancia biológica de la región.

Al igual que con las áreas de conservación, el análisis preliminar de los servicios del ecosistema demuestran la importancia mundial del Escudo Guayanés para la regulación climática y provisión de agua dulce, dado que gran parte del Escudo tiene valores relativamente altos de reservas de carbono y agua dulce disponible. El análisis de las reservas de carbono demuestra que una alta densidad de carbono en el Escudo Guayanés se da en la parte sur y nororiental del Escudo, con los valores más altos cerca de la costa debido a grandes reservorios de carbono del suelo asociados con manglares. El análisis de provisión de agua dulce muestra que hay grandes reservorios de agua dulce en la orilla oriental y en las partes central y occidental del Escudo Guayanés. El área que reviste la mayor importancia relativa en relación a la provisión de agua dulce para consumo, uso doméstico y producción alimentaria es la parte oriental cerca de la costa, donde vive la mayor parte de la población. La provisión de servicios del ecosistema que dependen directamente de la presencia de la biodiversidad, tales como el ecoturismo, muestra que el área de mayor prioridad es la parte oriental del Escudo Guayanés. Resultados del análisis de diversidad lingüística, que representa los servicios culturales, muestra un punto clave bien definido en la porción suroccidental y en las partes central y oriental del Escudo Guayanés.

Los hallazgos de esta consultoría muestran que muchas de las recomendaciones detalladas en la Declaración de Paramaribo se han llevado a cabo. Debido a ello, una recomendación clave del presente estudio es utilizar los resultados aquí descritos como la base de un proceso participativo más amplio para identificar las principales acciones que se deben tomar en todo el Escudo por parte de países individuales y mediante colaboración transfronteriza. Sugerimos cinco recomendaciones clave para garantizar el mantenimiento de la integridad ecológica del Escudo Guayanés y alcanzar el desarrollo sostenible de sus habitantes:

SÍNTESIS DEL INFORME

1. Mejorar la colaboración regional en relación a las iniciativas de conservación y la protección de servicios del ecosistema. Este informe debería servir como la base para un debate y una consideración más amplios y más participativos sobre las prioridades de conservación y desarrollo para la región, así como para un nuevo compromiso a la colaboración transnacional e internacional.
2. Convocar un taller participativo en todo el Escudo Guayanés para identificar prioridades de conservación y desarrollo para el Escudo en base a los resultados de esta revisión, integrar el análisis de provisión de servicios del ecosistema, analizar las amenazas a la biodiversidad y servicios del ecosistema en el Escudo, y las oportunidades para su preservación.
3. Mejorar el análisis de servicios del ecosistema en la región para permitir tanto una cuantificación más precisa y espacialmente explícita de los beneficios para las poblaciones que viven en la región, como también demostrar la magnitud de su contribución a economías en diferentes escalas de evaluación. Esta contribución puede ser bastante crítica para los procesos de análisis de políticas y toma de decisiones que reconocen la importancia de los servicios del ecosistema para el bienestar humano, que están siendo promovidos por iniciativas como La Economía de la Biodiversidad de los Ecosistemas (TEEB), liderada por el PANU y la Contabilidad de Riqueza y el Valúo de los Servicios del Ecosistema (WAVES), liderada por el Banco Mundial.
4. Reconocer el papel importante de las comunidades indígenas y otras comunidades tradicionales en las decisiones de conservación y administración de la tierra en todo el Escudo y garantizar la integración del conocimiento tradicional en la conservación y el desarrollo en todo el Escudo. Mientras que esto puede y debe ser objeto de dialogo a nivel regional, cada país dentro de la región hace frente a los problemas de propiedad de la tierra por parte de comunidades o indígenas, administración de las tierras y conservación de la biodiversidad en dichas tierras de diferente manera, por lo que las consideraciones a nivel de país también se deberían tomar en cuenta.
5. Implementar iniciativas para una mejor colaboración transfronteriza, especialmente entre instituciones académicas y de investigación, para mejorar el conocimiento sobre la biodiversidad, los servicios del ecosistema y otros temas relacionados. Estas iniciativas también deberían tener como objetivo mejorar la colaboración para el desarrollo de capacidades.

1. Introduction and Background

The Guiana Shield³ is an area of approximately 2.7 million km² encompassing the large mountain systems in the watersheds between the Amazon and Orinoco rivers in northern South America. It is bounded roughly by the Amazon River to the south, the Japurá-Caquetá River to the southwest, the Sierra de Chiribiquete to the west, the Orinoco and Guaviare rivers to the northwest and north, and the Atlantic Ocean to the east⁴. The region is one of the oldest geological formations on Earth (EcoSecurities Ltd. 2002). Several sandstone tepuis dominate the elevated landscape in the Guiana Highlands. The tepuis reach elevations of between 1,000 and 3,000 meters and stand out strikingly from the surrounding lower areas by their almost vertical inclines and flat tops which earn them the name 'table mountains' (Conservation International 2003).

The region is also characterized by its rivers. The most significant river systems in the Guiana Shield are the Amazon, the largest river in the world in respect of flow volume; the Orinoco - the third largest river systems in South America (Rosales 2003); and the Essequibo – the second largest river basin within the Shield in terms of drainage area and discharge (Rosales et al 2002 cited in Rosales 2003).

The Guiana Shield is one of the most intact tropical regions in the world with dense forests alternating with open sandy savannas and impenetrable palm swamps. About one quarter of the remaining tropical rain forest in the world stands in the region. Large expanses of savannah and smaller areas of other ecosystems such as wetlands, lowland and montane forests, and nutrient poor white sands, also occur in the Shield.

The density of human inhabitation within the Shield is the lowest for any tropical rain forest region; approximately 8 million people (see table 1 below for individual population and sources) live in the more than 2.7 million square kilometers region (Landsat 2008). A significant portion of the population of the Shield relies exclusively on the ecosystems of the region for their sustenance. These traditional people represent more than one hundred distinct cultures and groups, some of which remain uncontacted. The majority of the region's population is of European, Asian and African descent – including six groups of Maroons in Suriname.

³There is no internationally recognized consensus on spelling but within this document, the following spelling applies: Guianas when referring to French Guiana, Guyana and Suriname; Guiana when referring to the Guiana Shield, Guiana Shield Initiative or Facility; Guyana when referring to the country of Guyana, and Guayana when referring to the parts of Colombia and Venezuela that lie within the Guiana Shield

⁴The delimitation of the Guiana Shield used in 2002 was expanded to include a greater portion of the Orinoco River basin. See Figure 1 in Appendix A for map.

INTRODUCTION AND BACKGROUND

Table 1: Population of the Guiana Shield region by country.

Country	Population	Source
Brazil*	3,685,325	http://www.censo2010.ibge.gov.br/
Colombia*	1,227,379	http://www.dane.gov.co/centro/files/presultados.pdf
French Guiana	229,000	INSEE (2009) http://insee.fr/fr/regions/guyane/default.asp?page=faitsetchiffres/presentation/presentation.htm#quatre
Guyana Suriname	751,223 491,989	http://www.statisticsguyana.gov.gy/census.html https://www.cia.gov/library/publications/the-world-factbook/geos/ns.html
Venezuela*	1,832,420	Instituto Nacional de Estadísticas (INE). Población de los estados Bolívar, Delta y Amazonas. 2008.

* Countries which only partly occur in the Shield. Population reflects the population of the area within the Shield.

The diversity of intact ecosystems and low human population density combine to produce a remarkable diversity of species of both plants and animals. A significant portion of the region remains uncatalogued, though significant levels of endemism have been observed.

The region is also of global significance for the carbon storage and freshwater services it provides (Rosales 2003; Saatchi et al. 2011). It stores approximately 2.6 billion of tons of total terrestrial carbon (Kapos et al. 2008). Carbon emission due to deforestation is considered to be one of the leading causes of global climate change, and accounts for approximately 10 to 15 percent of the world's freshwater supply (Veening 2003).

The diverse and intact ecosystems, abundant ecosystem services, and low human population density highlight the Guiana Shield as a region where proactive conservation of nature is possible. The Shield presents opportunities for finding ways for human wellbeing to be secured and enhanced without losing the integrity of the ecosystems that characterize the region. Countries within the Shield all recognize the value of the region and the necessity to conserve its biodiversity and resources. Guyana's Low Carbon Development Strategy (LCDS) and Suriname's Sustainable Development Strategy⁵ are overarching national development strategies which stand as examples. The extensive management of significant portions of the region for biodiversity protection or sustainable utilization also testifies to the value Guiana Shield countries place on biodiversity conservation.

⁵Previously referred to as the Green Development Strategy.

1.1 The 2002 PSW Results Desktop Review

The Guiana Shield Facility (GSF), a multi-donor funding facility to be set up and operated by the United Nations Development Programme (UNDP) Guyana country office, aims to support the conservation and sustainable development of the ecosystems of the Guiana Shield (UNDP Guyana 2010). The GSF is intended to be guided by the results of the 2002 Guayana Shield Priority Setting Workshop (PSW), described below. The GSF has commissioned this desktop review to ensure that the priorities reflect changes which have occurred since 2002.

The objective of this desktop review is to prepare an overview of the ecological situation in the Guiana Shield eco-region by reviewing the status of the outcomes (identified priorities and recommendations) of the 2002 PSW, updating the 2002 biodiversity conservation priorities and mapping ecosystem services in the Guiana Shield. More specifically, in this review, we: 1) describe progress made since 2002 in biodiversity conservation across the Shield, highlighting advances made towards achieving the recommendations of the Paramaribo Declaration; 2) propose updates to the priority areas identified by the PSW using post-2002 data and information; 3) provide a qualitative assessment of ecosystem services in the Shield and map those services based on available global data sets; and 4) suggest future steps towards the update of the conservation priorities for the Guiana Shield.

This review was conducted over a four month period commencing in August 2011 and is based on the best data available and accessible at the time of the review. All efforts were made to be as comprehensive as possible but time and other constraints have limited the comprehensiveness of the assessment. Consequently, this review should be viewed within this light as a suggestion of the priorities for conservation. It by no means is intended to replace the more comprehensive and inclusive process undergone in 2002. Additionally it should be noted that the level of threat and opportunities were not assessed and factored into this review and, like the 2002 priority setting process, it is terrestrial in its focus.

2. THE GUAYANA SHIELD CONSERVATION PRIORITY SETTING WORKSHOP

2. The Guayana Shield Conservation Priority Setting Workshop

The Guayana Shield PSW was held in Paramaribo, Suriname in 2002 and was the culmination of a conservation priority setting process organized and facilitated by Conservation International in collaboration with the UNDP, International Union for the Conservation of Nature National Committee of the Netherlands (IUCN NL) and the Guiana Shield Initiative (GSI). The process aimed to build consensus on priority areas for biodiversity conservation within the Guiana Shield based on the best available biological and socioeconomic knowledge and expert opinions. Thirteen thematic working groups were established for the collection of data and information, and priority setting. The groups were focused on floristics, plant ecology, invertebrates, fishes and freshwater ecology, reptiles and amphibians, birds, mammals, physical geography, non-timber forest products, mining, protected areas and indigenous lands, forestry, and infrastructure (Conservation International 2003).

Based mainly on expert opinion, the workshop analyzed available data and identified priorities by assessing four criteria: scientific effort, biological importance, socioeconomic pressure, and opportunity for conservation. The workshop recognized the importance of conservation for the entire Shield and identified 41 priority areas covering approximately half of the region – see Figure 1 in Appendix A (Conservation International 2003).

The PSW also resulted in the signing of the Paramaribo Declaration, which include 20 recommendations for conservation action in the Guiana Shield (<http://www.guianaShield.org/site/en/psw-workshop>).

2.1 Review of Implementation of 2002 PSW Results

There has been significant progress in the implementation of the results of the 2002 PSW, including the Paramaribo Declaration, primarily through individual country actions. No formal multinational organization primarily focused on ecosystem and biodiversity conservation across the region exists. However, international and regional non-profits and non-governmental organizations focused on conservation and related research across the region. Conservation International has offices in four of the six Guiana Shield countries, and WWF works across the region, as does the GSF. Major efforts have been made, primarily by Non-Governmental Organisations (NGOs), to build global recognition of the importance of the Guiana Shield as one of the last remaining tropical wilderness areas and to foster regional collaboration and transnational conservation actions.

2.1.1 Brazil

Brazil stands out from the other countries in the Shield with respect to increase in knowledge and conservation of ecosystems and biodiversity.

Amapá is the best protected state in the tropical zone, with 72% of its territory in 12 protected areas and five indigenous territories. These areas form the Amapá Biodiversity Corridor, created in 2003 by the state government. The corridor was designed for the development of green economies and sought to advance beyond biodiversity protection and protected areas creation by focusing on territorial planning and the creation of new environmental institutions, such as the Forestry Institute (IEF).

2. THE GUAYANA SHIELD CONSERVATION PRIORITY SETTING WORKSHOP

Tumucumaque National Park is considered the corridor's core area and it was created in August 2002. At 38,821.20 km², it was at the time of creation the largest strictly protected area in tropical forests – the Grão-Pará Ecological Reserve declared in the state of Pará in 2006 now holds this distinction. The management plan for the park was approved by Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) in March 2010 and its implementation has begun. Though there are challenges with access to resources and the implementation of the management plan, the protected area is ahead of most in the Amazon in terms of effective implementation. Not to be confused with Tumucumaque National Park is the Tumucumaque Indigenous Park, which is one of the five indigenous territories in the Corridor.

Five state-level protected areas were created in 2006 in the Northern Pará Corridor (including the largest strictly Protected Area, Grão-Pará Ecological Reserve). Along with their creation, the state government created a consortium of organizations, which included participation from NGOs, to help implement these protected areas. Since its creation, the consortium has established advisory committees for three of the protected areas, worked extensively to build the capacity of both the Secretariat of Environment (SEMA) and the advisory committee members, and developed management plans for four of the protected areas.

The state of Amazonas created the State Center of Climatic Change (CECLIMA), the first governmental center established to articulate public policies for climate change, in 2008. It was founded to implement the state's climate change legislation.

In 2008, Brazil committed to reducing deforestation in the Amazon by 80% by 2020. The Amazon Fund was established to realize this commitment through improved management and incentivizing low-carbon development in the region. The fund benefited from an initial pledge by the Government of Norway of US\$1 billion (Zadek et al. 2010). Currently, the Amazon Fund has 16 contracted projects totaling US\$ 109.2 million and four approved projects with a total support of US\$ 17.9 million (http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/Projetos/).

Lastly, with the Scientific and Technological Research Institute of Amapá- IEPA, CI-Brazil undertook one of the most ambitious biological inventory programs ever conducted in the State. In 2005, CI Brazil, IEPA, the Amapá Federal University and Embrapa-Amapá joined forces to build the Graduate Program in Tropical Biodiversity (PPGBIO), the first complete graduate program (Master and Doctoral levels) in the state. The PPGBIO aims to educate highly qualified students to lead the consolidation of the Amapá Biodiversity Corridor.

2.1.2 Colombia

The Sistema Integrado Regional de Areas Protegidas (SIRAP) for the Colombian Guayana has developed projects in the portion of the lower Caquetá River, which is the southernmost portion of the Guiana Shield in Colombia. The SIRAP involved two national parks, Cahuinari and Río Puré, just south of the Caquetá River and various indigenous

2. THE GUAYANA SHIELD CONSERVATION PRIORITY SETTING WORKSHOP

reserves along the Caquetá River. The reserves are located both north and south of the river, i.e., both outside and inside the Shield limits. In 2007, the SIRAP of the lower Caquetá River stopped due mainly to lack of funding. Although the SIRAP activities did not continue, it is important to highlight that the declaration of the Yaigojé-Apaporis National Park in 2009, represents an important advance in consolidating the protection and management of a large portion of the Guiana Shield in Colombia. Along with the Declaration, there has been inter-institutional work, starting in 2005, to strengthen and articulate management and conservation efforts with indigenous authorities in indigenous reserves and non-indigenous communities bordering the Yaigojé Apaporis NP (some inside the borders of the Shield, and others just on the other side of the Caquetá River), and covering nearly 1.5 million hectares.

There is a current government effort (led by the National Parks Unit) and with the participation of many government and non-governmental institutions to enlarge Chiribiquete National Park, from 1.3 million hectares to approximately 4 million hectares. This will allow the consolidation of ca. 4 million hectares of indigenous lands and protected areas in Colombia, stretching from the westernmost border of the Guiana Shield to the Orinoco River. It is also aimed as a strategy to halt the advance of the agricultural frontier and guarantee that oil exploration, which has historically concentrated in the Andes-Amazon foothills and adjacent floodplains, will not advance towards priority conservation areas in the east.

Additionally, in the Guiana Shield portion of the Orinoco region, a bi-national workshop involving Colombia and Venezuela declared a corridor from the Tuparro National park north towards the confluence with the Meta River (300 kilometers). This corridor, Meta - Bitá - Orinoco, along with the fluvial star of the Orinoco - Inirida have been categorized as a priority conservation area.

2.1.3 French Guiana

The creation of the Amazonian Park of French Guiana (Parc Amazonien) was formally⁶ approved on February 27, 2007 by the French Ministry in charge of the environment. With an area of 2.03 million ha included in its "heart area," this national park is the largest one in the European Union fully covered by tropical rainforest.

The Amazonian Park is the achievement of a long process of stakeholder consultation which began in 1992, before the Earth Summit in Rio de Janeiro. A task force was created in French Guiana in 1993 to complete preliminary studies for the park, and in 1995 a first project proposal was submitted to stakeholders (local and national institutions, local communities, scientists, etc.) but was not approved. As a consequence, additional consultations in the municipalities affected by the project and also with local traditional communities (Amerindians and Maroons) were held.

⁶Decree n° 2007-266

2. THE GUAYANA SHIELD CONSERVATION PRIORITY SETTING WORKSHOP

Managed by a staff of approximately 90 people and with an annual budget of Euro10 million, the park has satellite antennas in different locations of French Guiana, including in Saül, Maripasoula and Camopi. A management plan and a sustainable development project are in preparation with stakeholders' involvement.

Apart from the Amazonian Park of French Guiana, a Land-use, Land-use change, and Forestry (LULUCF) inventory was carried out in French Guiana in 2006 and updated in 2008. Assessments of forest carbon stocks and carbon emissions due to land use and land use change have been completed using remote sensing technology and field data.

2.1.4 Guyana

Guyana has made a global commitment to sustainably manage its State forests to avoid deforestation as the country develops along a low-carbon trajectory, provided that the country is compensated for the climate change mitigation services provided. This development option is laid out in the Low-Carbon Development Strategy (LCDS) drafted in 2009 and now in its third review (Office of the President Republic of Guyana 2010). Participation in a global REDD+ program is also being pursued by Guyana as part of the LCDS. To this end Guyana has begun the development of a system to monitor, report on and verify the state of its forests, an essential component of the elements needed for the operation of a REDD+ program (Guyana Forestry Commission 2009a, 2009b, 2011).

Guyana's National Assembly in July 2011 passed legislation for the establishment of a national system of protected areas and a trust fund for management. The Protected Area Act 2011 received Presidential assent in October of the same year and steps for implementation are expected, the timeframe for this is uncertain at this stage. The Act provides for

"the protection and conservation of Guyana's natural heritage and natural capital; the creation, management and financing of a national system of protected areas; the maintenance of ecosystem services of national and global importance including climate regulation; the establishment of a protected areas commission; the establishment and management of a protected areas trust fund; the fulfillment of Guyana's international environmental responsibilities; public participation in protected areas and conservation, and related purposes." (Protected Area Act 2011)

The Protected Areas Act (2011) was drafted to reflect international best practice, taking into consideration local requirements and conditions. It calls for the creation of a Protected Areas Commission, a new entity, which would be responsible for the implementation of the Act and the setting up of the National Protected Areas System (NPAS). The NPAS would comprise the Kaieteur National Park; Iwokrama; national protected areas; protected areas previously declared and urban parks including the Botanical Gardens and the Zoological Park; and privately managed protected areas. The Act also outlines the process for the establishment of national protected areas which involves public participation, including that of indigenous communities and peoples. (Protected Areas Act 2011)

2. THE GUAYANA SHIELD CONSERVATION PRIORITY SETTING WORKSHOP

Since 2002, four formal conservation areas have been established, the Upper Essequibo Conservation Concession (UECC) in July 2002, the Konashen Community Owned Conservation Area (KCOCA) in 2007, and the Kanuku Mountain Protected Area and Shell Beach Protected Area in October 2011. Combined, these areas cover 14,500 km². The UECC was established under the Forest Act (1953) as a timber concession in which payments are made for the rights to keep the timber standing. The KCOCA was declared by the Amerindian village of Konashen over the entirety of lands titled to them under provisions of the Amerindian Act (2006). Participatory processes with significant involvement of local communities advanced the design and management of the new protected areas in the Kanuku Mountains and Shell Beach which were established with the assent of the Protected Area Act (2011) (CI-Guyana 2007; Guyana Marine Turtle Conservation Society 2011).

2.1.5 Suriname

Suriname has the lowest population density of any moist tropical country on Earth and as a result, nearly 90 percent of its rainforest cover remains intact. Most people live along the coastal strip of the country, while the vast interior wilderness is inhabited by no more than 10 percent of the population, namely tribal indigenous and Maroon peoples (and in recent years a growing garimpeiro population), all of whom live primarily along the courses of the larger rivers. The country has a long tradition of nature protection based on legislation dating from 1954. There are 16 official protected areas in the country, including eleven nature reserves, one nature park, and four multiple-use management areas, which together make up 13 percent of the country's surface area. In addition, the Suriname Conservation Foundation (SCF) was created in 2000 to support the long term management of Suriname's protected areas system.

The government of Suriname recognizes the challenges of ensuring the protection and preservation of the country's natural resources to be essential for sustainable economic development for future generations. Its medium-term development plan, currently under discussion, mentions the importance of protection and conservation, as the government moves towards a low-carbon, climate-resilient path that accelerates development and realigns the economy towards sustainable growth.

In July 2011, UNDP/GEF signed a project for strengthening the management of Multiple Use Management Areas (MUMAs), which are areas managed to ensure the long-term protection and conservation of their biological diversity, while providing a sustainable flow of natural goods and services to meet the needs of the community. This project also aims to promote local stakeholder involvement in the management of MUMAs.

The government of Suriname is making conservation a focal point of its national sustainable development strategy. In 2009, the Ministry of Planning and Development Cooperation organized a conference on Green Economic Development, presenting the Suriname Green Approach. Suriname Green recognizes the nation's pristine environment as natural capital that can sustain economic growth and prosperity, creating an identifiable Suriname brand and securing an enduring competitive advantage. Suriname

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Green advocates the conservation of nature as a deliberate strategy to align national development with international opportunities emerging from ecosystem services, especially those relating to climate change and biodiversity. The current government recognizes that incomes from the non-durable sectors gradually need to be invested in sustainable sectors to secure a better future for the country and the people (President of the Republic of Suriname, 2011).

As a result of collaboration between UNDP, WWF Guianas and the Ministry of Labour, Technological Development and Environment (National Institute for Environment and Development in Suriname), the National Biodiversity Strategy 2006-2020 was developed in 2006. This serves as a framework for the National Biodiversity Action Plan, which is currently still in draft.

In 2008 the Anton de Kom University of Suriname (AdeKUS) started a 10-year long Institutional University Cooperation (IUC) with Flemish universities in Belgium, with technical, scientific and financial support of the Belgian Directorate-General for Development Cooperation (DGDC) and the Flemish Interuniversity Council (VLIR-UOS). Among other goals, one main objective of this partnership is to develop a Master's degree program in Sustainable Management of Natural Resources.

To improve the link between education and implementation, the Organization of Tropical Studies (OTS) initiated an assessment of the education and training programs and needs that are relevant in the context of management of protected areas in the Guiana Shield. The Moore Foundation financed this assessment and the results were presented in 2009 (De Dijn, 2009).

2.1.6 Venezuela

During 2005, a workshop was held by national experts to define the Venezuelan Guiana Shield (VGS) Corridor and to develop an initial strategy to promote its conservation by creating connectivity between the protected area in it (Conservation International Venezuela, 2003). A second workshop in 2007 defined with more detail the conservation priorities for the Venezuelan Guayana, and priority areas were identified for fish, plants, amphibians and reptiles, mammals, and birds. Additionally, the boundaries of the proposed VGS corridor were defined. The priority areas identified include the tepuis of the Orinoco-Cuyuni lowlands, the Lema and Senkopirén Serranías, the Ichun-Erebato and Sierra Maigualida, Asita-Parima, the Northwest Lands, and Pantepui (Conservation International, 2008).

Recognizing the importance of the lowlands in the Guianan region, between 2000 and 2008 five rapid assessment of biodiversity were conducted, in the Caura River Basin, the Orinoco Delta and Gulf of Paria, the Orinoco-Ventuari watershed, the Upper Paragua watershed, and the Upper Cuyuni watershed. These evaluations were led by CI Venezuela, with the support of the Venezuelan Government and in alliance with Fundación La Salle and public-private companies. All together fifteen national institutions and forty researchers from Venezuela participated in the assessments.

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Results of the assessments included documenting 6,000 species of plants and animals, 65 species of which were new to science and 42 considered threatened species in the areas evaluated (Alonso et al., 2011).

Based on the results of the assessments, three major biodiversity conservation projects were developed in collaboration with the communities that inhabit these sites: Forest Conservation in the Caura River Basin, Basic Studies for establishing the Alto Paragua National Park (23,000 km²), and the design of the aforementioned VGS corridor (180,000 km²) (Conservation International Venezuela and Gold Reserve Inc, 2009).

The Venezuelan government has also conducted turtle conservation initiatives, including censuses, protection efforts, and hatchling releases. In accordance with the Law of Biodiversity Management and the construction of the National Strategy for the Conservation of Biological Diversity, public consultations and workshops with indigenous and local communities have been conducted to ensure active participation in the design of state policies. Additionally, two Venezuelan Congresses on Biological Diversity have taken place.

Sustainable development projects are only possible through building partnerships with community councils and organized communities in the region. Ecotourism projects in Canaima National Park, non-timber forest product development in the Lower Caura Basin, and handcrafts production with indigenous communities in the Upper Caura Basin have been developed with technical support from local NGOs.

2.1.7 Regional and Transboundary

There have been several efforts at refining and redefining conservation priorities across the Guiana Shield since the 2002 PSW, all commissioned by NGOs. WWF Guianas initiated an Eco-regional planning process for the Guianan Eco-region, an area which includes the Guianas and parts of Venezuela and Brazil, in 2005. This process aimed to utilize knowledge of biodiversity, geography and socio-economics of the region to identify the geographies most in need of conservation actions. The results of the Eco-regional planning for the Guianas remain unpublished. Globally significant sites for biodiversity conservation, comprising Important Bird Areas and Alliance for Zero Extinction sites were identified across the Shield by BirdLife International and its partners and by the Alliance for Zero Extinction, respectively. Conservation International, through its offices in Guyana, Suriname and Brazil, initiated assessments to identify Key Biodiversity Areas (KBAs) within the Guianas and northern Brazil.

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Definitions of AZE, IBA, and KBA sites.

The Alliance for Zero Extinction (**AZE**), a joint initiative of 75 biodiversity conservation organizations from around the world, identifies sites that are the last remaining refuges of one or more Endangered or Critically Endangered species, as assessed on the IUCN Red List. <http://www.zeroextinction.org>

Important Bird Areas (**IBAs**) are sites that either hold one or more Vulnerable, Endangered or Critically Endangered species, as assessed on the IUCN Red List, are part of a set of sites that hold restricted-range species or biome-restricted bird species, or hold very large numbers of a congregatory or migratory avian species (<http://www.birdlife.org/action/science/sites>).

Key Biodiversity Areas () are sites of global significance for biodiversity conservation that are identified using globally standard criteria based on the framework of vulnerability and irreplaceability used in systematic conservation planning (Langhammer et al 2007).

The GSI commissioned several studies focused primarily on the biodiversity and ecosystem services of the Shield since 2002. These studies included assessments of water and carbon services; examination of potentials for sustainable ecotourism, ornamental fish trade and non-timber forest products; an exploration of the possibilities for a regional monitoring program; and a documentation of the contributions of indigenous people in Colombia to the conservation and sustainable forest use.

Some support has been realized for regional collaboration on the realization of payment for ecosystem services. A CI and KfW (German Development Bank) supported project aimed at fostering cooperation between Guyana, Suriname and the Brazilian states of Amapá and Pará to reduce deforestation and prepare for participation in an eventual REDD+ programme, is ongoing. The GSI has also piloted programs to realize payment for ecosystem services in Brazil, Colombia and Guyana.

The Presidents of Guyana⁷ and Suriname have discussed collaboration on environmental issues including knowledge sharing and joint negotiating positions related to REDD+. Additionally, a bi-national workshop involving Colombia and Venezuela declared the Meta-Bita-Orinoco Corridor as a priority conservation area for both countries.

2.2 Ecosystem Services

Humankind benefits from a multitude of resources and processes that are supplied by natural ecosystems. Collectively, these benefits are known as ecosystem services (ES) and include products like clean drinking water and processes dependent on the presence of biodiversity such as the decomposition of waste. It is a well-known fact that the degradation of ecosystem services and loss of biodiversity poses a number of risks to human health, food security, income, and other aspects of human wellbeing. On the other hand, promotion of ecosystem services and conservation of biodiversity can provide business opportunities, improve conservation of natural resources, restore ecosystems and enhance natural capital.

⁷President Bharrat Jagdeo, whose term in office recently came to an end.

3. METHODS

3. Methods

3.1 Conservation Priorities Update

To propose updates to the conservation priority areas identified by the 2002 PSW, we conducted extensive literature review, consulted with experts in each of the six Guiana Shield countries, and compiled and assessed data available since 2002 on biological priorities in the Shield. To assess ecosystem services in the Shield, we build upon existing research (e.g., Wendland et al. 2010; Naidoo and Ricketts 2006).

To update the conservation priorities, data were collected from each of the six countries on the following (where available): national priority setting initiatives, conservation priorities of NGOs and community-based organizations, records, ranges and ecology of species, taxonomic assessments, and protected areas. In addition, results from recent conferences, biodiversity research, and global conservation prioritization efforts were gathered. Where possible, emphasis was placed on the collection of data that was either georeferenced or could easily be georeferenced as Geographic Information Systems (GIS) tools were used to determine the geographic priorities and aid analyses of the levels of effort expended towards increasing knowledge of the biodiversity of the region. Details of the data collected can be found in Appendix B.

We determined where protected areas were established since the 2002 workshop and added those protected areas as biological priority areas. Similarly, where Important Bird Areas (IBAs), Key Biodiversity Areas (KBAs) or Alliance for Zero Extinction sites (AZE sites) were identified, those areas were added as biological priority areas (see above text box for more information on these priority areas).

We identified biological priority areas where species of conservation concern occurred, which we defined as species which have been assessed by the IUCN Red List as threatened, have restricted ranges, are migratory, or are local endemics. Boundaries of either candidate KBAs, IBAs, management units, ranges or watersheds, considered in this order of priority, were used to bound the new priority areas identified using species point locality data.

The individual biological priority areas identified through the methods detailed above were then combined to create the single set of priority areas. These areas were then placed in one of three classes – the biological priority ranking used during the 2002 workshop was used – based primarily on the irreplaceability, or uniqueness, of the site. Table 2 below details the criteria used for assigning biological priority to each site. The conclusion arrived at in 2002 that the entire Shield is of conservation value was maintained. As such the lowest priority assigned to any portion of the Shield was that of significant priority.

Table 2: Criteria for classification of 2011 biological priorities.

Class	Criteria
Highest Priority	Priority areas triggered by either 1) AZE status 2) KBAs or IBAs, triggered by species which are not represented in other priorities, or 3) species of conservation concern which are not represented in other priorities.
Very High Priority	KBAs and IBAs with some representation in other priorities.
High Priority	Protected Areas or portions of protected areas which do not meet other criteria.
Significant Priority	All areas not identified within any of the other classes neither in 2002 nor 2011.

The 2011 and 2002 biological priorities were then merged. New priority areas were identified where 2011 priority areas occurred outside of the boundaries of the 2002 priorities, and upgraded areas where areas were considered to be of a higher priority in 2011 than in 2002.

3.2 Ecosystem Services Mapping

We make use of recently available global datasets to conduct a “tier one” analysis of ecosystem services for the Guiana Shield. In our approach we focus on mapping both the magnitude of the service provided and, when applicable, the demand or relative “value” for the service by beneficiaries (we did not conduct monetary valuations). When data on beneficiaries is available, we try to capture differences in the value of services across space (i.e., one watershed may have more beneficiaries than another watershed) using qualitative indices similar to those described by Boyd and Wainger (2003).

3.2.1 Climate Regulation

All living organisms benefit globally from climate regulation. Accurate measurements of stored terrestrial carbon are critical to the development of policies aiming to reduce carbon emissions from deforestation and forest degradation. For this report, we obtained the Kapos et al. (2008) carbon stock map of above- and below-ground biomass (30 arc sec, ~1km at the equator) (Appendix A – Figure 2). This map was produced by combining the best available globally consistent datasets on carbon in live biomass (Ruesch and Gibbs, 2008), estimated using the Intergovernmental Panel on Climate Change (IPCC) Tier-1 approach (IPCC 2006, Gibbs et al. 2007), and a dataset on soil carbon to 1m depth (IGBP-DIS 2000).

3.2.2 Freshwater Provision

Provision of clean freshwater is critical for sustaining life. To assess which areas are potentially important for the provision of surface freshwater, we used water balance data (mm y⁻¹) developed by Mulligan (2010) (Appendix A – Figure 3).

3. METHODS

This 30 arc-seconds (~1 km at the equator) global water balance data was estimated as WorldClim (Hijmans et al., 2005) derived annual total rainfall and Hargreaves potential evapotranspiration (PET) (Zomer et al. 2006; Zomer et al. 2008) which was then linearly scaled between PET and the MODIS-derived Actual Evapotranspiration (AET) climatology of Mu et al. (2007).

To measure freshwater benefits provided by these areas in the absence of data on actual water use, we followed a methodology described by Honzák et al. (in prep.) which uses water flow directional information derived from the HydroSHEDS dataset (Lehner et al. 2006), relative availability of water and different proxies for actual water use. In particular, as a proxy for the use of clean freshwater we used population distribution data obtained from the LandScanTM 2007 global population dataset (LandScan, 2008), a global geographic distribution of crop areas (Monfreda et al. 2008; Ramankutty et al. 2008), data on Areas of Zero Extinction (AZE) (Ricketts et al. 2005) and Key Biodiversity Areas (KBA) (Langhammer et al. 2007) and devised three spatial indices. The first captured benefits of water used for drinking and domestic use by weighting areas that provided freshwater services by the downstream population's need for fresh water (Appendix A – Figure 4), the second captured food security benefits by weighting areas that provided freshwater by downstream area and yield of irrigable crops (rice, maize, wheat, sugar cane and soya beans) (Appendix A – Figure 5), and the third captured the importance of providing freshwater services to biodiversity by weighting areas that provided freshwater by downstream AZE sites and KBAs (Appendix A – Figure 6). In each case, a relative value for each service was derived using relative water availability from water balance data by dividing “available surface water at a particular location” by “total available water in a given watershed” and weighting by a cumulative sum of each proxy (calculated from the mouth of a river to the headwaters) (Honzák et al. in prep.).

3.2.3 Biodiversity

Biodiversity is important for maintaining natural processes that generate critical ecosystem services, including such disparate benefits as the provision of oxygen, climate regulation, and income derived from ecotourism. Despite this fact, research on the linkages between biodiversity and ecosystem services is still nascent. In the absence of this knowledge, we used data on three taxa as a proxy for the “value” of biodiversity to ecotourism. We assumed that most tourists are directed by tourist operators to focus their attention on mammals, birds and amphibians. We therefore assume that a person's willingness to pay would be higher for these more “charismatic” species and created a non-binary index for biodiversity value using a 2008 rendition of global vector data on species ranges of mammals (Baillie et al. 2004), birds (BirdLife International 2006), and amphibians (IUCN et al. 2006), and weighted them by their threat status as defined by IUCN's Red List (IUCN website) as described in Wendland et al. (2010) (Appendix A – Figure 7). Plants also represent biodiversity value locally through medicinal uses and globally through bioprospecting; however, to our knowledge there is no spatially explicit database that highlights important medicinal plants in the region.

3.2.4 Linguistic Diversity

In 2001, cultural and linguistic diversity were recognized as a common heritage of humanity, according to the Universal Declaration on Cultural Diversity⁸ adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO). While languages that have at least 10,000 speakers are considered by some authors (e.g., Dixon 1997) to be safe from extinction in the medium term, other factors relating to geography, socio-economics, and politics are also of relevance. In this analysis we use 30,000 speakers as a cut-off for selecting which languages to analyze from a list of the world's 6,900 language groups included in the World Language Mapping System⁹ (WLMS) dataset (Lewis 2009). In addition to polygons depicting areas of language use, we use point occurrences to produce a density kernel map (Appendix A – Figure 8).

3.2.5 Climate change

For the survival of some species under future climate scenarios, it is important to identify and understand safe havens (refugia) for biodiversity. We used the “disappearing climates” method described in Williams et al. (2007) using a climate model ensemble of 23 GCMs downscaled to 10-minute resolution (Tabor and Williams, 2010). The resulting maps reveal the Squared Euclidean Distance (SED) between the current climate and the 2090 climate under the A2 and B1 emission climate scenario (Appendix A – Figure 9 and 10 respectively)¹⁰ (Tabor et al. in prep.). It was found that at the spatial resolution of 2.8 arc degree (~250 km at the equator) SED greater than 3.22 indicates significant climate change that exceeds climate variability within biomes (Williams et al. 2007). However, there is a scale-dependence to the climate-dissimilarity analyses, and therefore the 3.22 threshold in the Williams et al. 2007 paper cannot be simply applied to the 10-minute dataset (Williams pers. comm. 2011). Therefore, we avoided defining a climate distance threshold and instead used continuous SED values.

3.2.6 Ecosystem services provided by mangroves

Mangroves provide important ecosystem services by protecting shorelines from erosion, maintaining water quality and clarity, and serving as nursery areas for fish and invertebrates. Figure 11 in Appendix A shows distribution of mangroves along the coast of the Guiana Shield. These data from the World Atlas of Mangroves¹¹ are the result of a project implemented in 2005 as a joint initiative of the International Tropical Timber Organization (ITTO), the International Society of Mangrove Ecosystems (ISME), the Food and Agriculture Organization of the United Nations (FAO), UNEP-World Conservation Monitoring Centre (UNEP-WCMC), UNESCO-Man and the Biosphere (UNESCO-MAB), UNU-Institute for Water Environment and Health (UNU-INWEH) and The Nature Conservancy (TNC) to revise the World Mangrove Atlas published in 1997. The detailed maps and new mangrove area statistics are derived from recent satellite imagery, comprising the most comprehensive study ever undertaken of these important ecosystems.

⁸<http://unesdoc.unesco.org/images/0012/001271/127160m.pdf>

⁹<http://www.worldgeodatasets.com/language/>

¹⁰Only 2.8 arc degree resolution data are shown due to restrictions imposed by the data owners.

¹¹Available at <http://datadownload.unep-wcmc.org/datasets>

3. METHODS

3.2.7 Ecosystem services provided by wetlands

Wetlands also provide essential ecosystem services including flood control, buffering shorelands against erosion and refilling aquifers and other drinking water supplies. Figure 12 in Appendix A shows the distribution of wetlands along the coast of the Guiana Shield. This map is based on the results of the GlobCover project which are available at the GlobCover Portal.¹² GlobCover is an ESA initiative which began in 2005 to deliver global composites and land cover maps using as input observations from the 300m MERIS sensor on board the ENVISAT satellite mission.

3.2.8 Overlay analysis

We conducted a simple overlay analysis to roughly indicate the geographic nexus between the occurrence of the ecosystem services and the conservation priority areas by analyzing the overlap between each service and the priority areas. While this analysis does not take the place of a more thorough integration of the services and conservation priority areas, it provides a first look at the intersection and complementarity of these two sets of areas.

¹²Available at <http://ionia1.esrin.esa.int>

4. RESULTS AND SUGGESTED UPDATES TO THE 2002 CONSERVATION PRIORITIES

4. Results and suggested updates to the 2002 Conservation Priorities

4.1 Conservation Priorities Update

The 2011 update of the 2002 PSW suggests new priority areas that comprise 725,759 km², or approximately 27% of the roughly 2.7 million km² Guiana Shield. The 2002 priorities, by comparison, comprised 1,231,935 km², or just under 50% of the Guiana Shield. All together, 1,957,694 km², 72.5% of the Guiana Shield, has been suggested to be of at least a high priority for conservation (Appendix A – Figure 13)

Among these new priorities are 89 protected areas created since 2002 that were added as new priorities, including the huge protected areas Tumucumaque National Park in Brazil and Amazonian Park in French Guiana (Appendix A – Figure 14).

Two Alliance for Zero Extinction (AZE) sites, Caruachi in Venezuela and Rio Tacutu in Brazil, are included in the new priorities (Appendix A – Figure 15). Caruachi is an AZE site for *Amaurospiza carrizalensis* and Rio Tacutu is an AZE site for the species *Synallaxis kollari*.

There are 69 Important Bird Areas (IBAs) in the Guiana Shield. A total of 16 IBAs are in the Brazilian portion of the Guiana Shield, seven in the Colombian section of the Guiana Shield, 22 in the Venezuelan part of the Guiana Shield, 11 in French Guiana, 13 in Suriname, and 10 in Guyana. Many of the IBAs completely or partially overlapped with the 2002 priorities, so while IBAs cover 558,663 km² of the Guiana Shield, only 35% (195,126 km²) of the Guiana Shield IBAs are identified as new priorities in this 2011 update (Figure 15).

Similarly, many new or newly assessed species of conservation concern fell within the boundaries of the 2002 geographic priorities. A total of twenty-eight new geographic priority areas were added where species of conservation concern occurred outside of the 2002 priorities, including 19 in Brazil and nine in Colombia. In Brazil, the 41 KBAs in the Guiana Shield were also added as new priority areas as they contain threatened species that occur outside of the 2002 priorities.

A total of approximately 12,000 km² of the area originally identified as being at least of high importance for conservation in 2002 was identified as being of a higher priority in this update. This area is contained primarily in four sites.

4.2 Ecosystem Services

The carbon stocks map presented in this report shows that highest carbon density in the Guiana Shield occurs in the southern and northeastern part of the Shield. The high values near the coast in some areas can be attributed to large pools of soil carbon associated with mangroves.

4. RESULTS AND SUGGESTED UPDATES TO THE 2002 CONSERVATION PRIORITIES

The freshwater provision analysis shows that there are large “reservoirs” of fresh water on the eastern edge, though the largest freshwater areas are in the central and western part of the Guiana Shield. These reservoirs are mainly untapped by humans except near the larger human population centers at the eastern edge of the Guiana Shield. However, the moderate relative importance of water supply to support biodiversity in KBAs and AZE sites extends throughout the entire western part of the region. The highest relative importance occurs in the eastern part near the coast where the majority of the population lives.

The resulting biodiversity map shows a large hotspot in the eastern part of the Guiana Shield. Results of the density kernel analysis of linguistic diversity show a distinct hot spot in the southwestern portion of the Guiana Shield. Three other areas located in the central and eastern parts also have elevated values of linguistic diversity. The polygons showing the spread of the languages could potentially be used to determine priority areas.

The results for both the B1 and A2 climate scenarios vary slightly, with the A2 scenario showing a higher value for “disappearing climate” than B1. However, spatial patterns between scenarios B1 and A2 are generally similar to each other, with areas of the highest “disappearing climate” values occurring in the western and also the central areas of the Guiana Shield.

Our simple overlay analysis shows that areas of high carbon value largely overlap with conservation priority areas, though there are areas in the western and south-central part of the Guiana Shield with high carbon value that do not overlap with priority areas. Areas of hydrologic importance for both human populations and agriculture overlap almost entirely with the biodiversity conservation priorities. While much of the area of high linguistic diversity overlaps with areas of conservation priority, a portion of the area in the southwestern Guiana Shield with the highest linguistic diversity does not overlap with conservation priority areas. The vast majority of mangrove areas in the Shield overlap with conservation priority areas. Most of the high species density areas coincide with conservation priority areas, though a large portion of an area of very high species density in the northeastern part of the Shield do not.

5. DISCUSSION AND RECOMMENDATIONS

5. Discussion and Recommendations

5.1 Conservation Priorities Update

The results of the conservation priorities update reinforce the results of the 2002 PSW by demonstrating that a large part of the Guiana Shield is of high conservation importance. Additionally, the results show that over the past nine years, major efforts have been made by governments, with support from NGOs, researchers, and other institutions, to formally protect some of the incredible natural capital that exists in the Shield. Initiatives by conservation organizations to identify priority areas in the Guiana Shield have also provided critical information for current and future conservation endeavors.

The conservation priorities update results also show that the stronger focus by national and state governments on identifying conservation areas and the biological research conducted in the Shield to fill in some of the knowledge gaps for the region led to the proposal of an additional 27% of the entire Shield to be considered as the highest conservation priority. This highlights the extent of conservation accomplishments made in the past nine years as well as the exceptional importance of the Shield for biodiversity.

Identifying and prioritizing conservation areas in the Guiana Shield presents us with a challenge that conservationists are thrilled to have but seldom deal with, namely, how to identify the most important areas for conservation in a region that remains highly intact. This fact was recognized by the participants of the 2002 PSW when they classified the entire Shield as a significant conservation priority. It is also driven home by the abundance of areas that are important for conservation in the Guiana Shield – approximately 72.5% of the Shield is currently identified as at least of high conservation priority. Given this challenge, we focused first on bringing together areas that have been identified by different organizations as priorities for birds (IBAs), for threatened species (KBAs), and for the most threatened species on the planet (AZE sites), while also incorporating sites that have been identified by governments as national priorities (national parks and reserves). Adding in priorities where the few threatened species not covered by existing priority areas occur rounds out this analysis.

The contribution of the Indigenous Peoples of the region to the conservation of its biodiversity is immeasurable. However, each country within the region addresses the issue of communal land ownership, management of lands, and the conservation of biodiversity on those lands differently. In French Guiana and Suriname, indigenous and other communities, including Maroon Peoples, currently cannot own communal land, but there are some conditions under which management rights for land or other resources can be obtained by communities. In Venezuela, laws exist for the establishment of indigenous lands but this law is not applied as currently no community has title to land. In Guyana and Colombia, communities can hold absolute title to land communally and have sole management rights, and therefore can manage the land and resources – with some exceptions – in ways they consider to be in their best interest. Brazilian law considers indigenous lands as a kind of protected area. The primary objective of indigenous territories in Brazil is the maintenance of traditional use, with biodiversity conservation being a secondary objective. There are no requirements for the production of management plans for these lands, and communities are responsible for management.

5. DISCUSSION AND RECOMMENDATIONS

Biodiversity and ecosystems are generally intact within indigenous lands across the Shield. However, owing to the range of legal interpretations of management rights and requirements for these lands, they were not factored into the analysis to identify priorities except where portions or all of the land were considered important for other reasons. Notwithstanding this fact, support should be realized to maintain and enhance indigenous and other communal group stewardship as well as to incorporate their invaluable traditional ecological knowledge in the pursuance of sustainable development across the Shield. An example of incorporating Indigenous Peoples in conservation action is CI Suriname's initiation in 2010 of a process of participatory ecosystem services mapping with the indigenous communities of South Suriname. Together with a series of rapid assessments, these maps will provide necessary information for future conservation and use of the area.

5.2 Ecosystem Services

For the ecosystem services (ES) portion of this work, at this point we have only qualitatively assessed the results. As with conservation areas, the ecosystem services analysis demonstrates the richness of the Guiana Shield, as much of the area has high values for carbon and freshwater. The linguistic diversity displayed in the Shield also points to its cultural diversity, which includes indigenous and traditional groups with knowledge that can benefit conservation in the region.

While the ES analysis conducted here has not been integrated with the conservation priorities, our simple overlay study shows that while most of the areas of high ES value fall within the 2002 priorities and the 2011 proposed priorities, there are areas of high carbon value and linguistic diversity that are complementary to the conservation priority areas.

While some of the algorithms we used in the ES analysis mapped and relatively quantified the importance of areas providing ecosystem services, these maps should be interpreted with the following caveats in mind. Our analysis was limited to those services for which data for proxies existed at the regional-to global-scale. Proxies in general may or may not accurately represent the actual ecosystem service. For example, water balance is a crude measure of ecosystem service provision and proxies we used for population, irrigable crops and biodiversity crude measures of demand. The areas identified in our final map as high importance represent high water balance in a given cell relatively to overall water availability in a given watershed where demand is high. However, it is conceivable that in some extreme there are areas of high importance even when demand is low. In these cases we are clearly mixing an actual service with a potential for the service. Similar caveats apply to other ecosystem service presented in this report. Finally, this analysis is static, and so does not account for the temporal changes in ecosystem service provision, and demand for services, or the interactions of these variables across space. A completely dynamic model that can account for the feedback between freshwater service provision and demand would eliminate this shortcoming. Modeling tools such as Artificial Intelligence for Ecosystem Services (ARIES)¹³, WaterWorld¹⁴, and Costing Nature,¹⁵ for example, are capable of carrying out such modeling.

¹³<http://www.ARIESonline.org>

¹⁴<http://www.waterworldmodel.org>

¹⁵<http://www.policysupport.org/links/costingnature>

5. DISCUSSION AND RECOMMENDATIONS

5.3 Recommendations

A significant portion of the recommendations detailed in the Paramaribo Declaration has been accomplished. A next important step could therefore be for the results described here to be the basis of a larger process to identify the most critical actions to be taken across the Shield by individual countries and through transboundary collaboration to maintain the ecological integrity of the Shield and to realize the development of its inhabitants. Such a process would need to consider the changed state of pressures in the Shield in assigning priorities and adapt a similar methodology as that employed in 2002.

A key recommendation of this current study is therefore to use the results described here as the basis of a larger participatory process to identify the most critical actions to be taken across the Shield by individual countries and through transboundary collaboration. We suggest five key recommendations to ensure the maintenance of the ecological integrity of the Guiana Shield and realization of the sustainable development of its inhabitants:

1. Improve regional collaboration on conservation initiatives and in the protection of ecosystem services. This report should serve as the basis for a wider, more involved discussion and consideration of the conservation and development priorities for the region and recommitment to transnational and international collaboration.
2. Convene a larger Guiana Shield-wide participatory workshop to identify conservation and development priorities for the Shield based on the results of this review, and the integration of analyses of ecosystem services provision, analysis of the threats to biodiversity and ecosystem services in the Shield, and opportunities for their preservation. A larger and participatory workshop will improve and validate the findings in this report by adding expert opinion to a desktop review of conservation priorities areas. To fully update the conservation priority areas for the region, integrating the biological priorities with the ecosystem service priorities will allow us to identify areas of highest priority based on both the species they protect and the services they provide. Finally, while this report updates the priority areas identified by the 2002 PSW and begins to incorporate ecosystem services into a regional assessment, it was not tasked with evaluating threats to biodiversity or ecosystem services. A comprehensive analysis of such threats, and opportunities, in the region will help direct targeted conservation action in the Shield.
3. Improve analysis of ecosystem services in the region to both allow for a more precise and spatially explicit quantification of the benefits to populations living in the region, as well as to demonstrate the magnitude of their contribution to economies at different scales of assessments. We recommend using ARIES technology in the next phase of the project. By using ARIES a more realistic assessment of ES for the region will be possible. It will also enable decision makers to use ARIES themselves to explore consequences of their decisions about land cover-related and infrastructure development in the region. This information can be quite critical to policy analysis and decision-making processes that recognize the importance of ecosystem services to human well-being, which are being promoted by initiatives such as UNEP-led The Economics of Ecosystems

5. DISCUSSION AND RECOMMENDATIONS

Biodiversity (TEEB) and the World Bank-led Wealth Accounting and the Valuation of Ecosystem Services (WAVES). TEEB is a global study, begun in 2007, that looks at the economic benefits of biodiversity and the costs of failing to protect ecosystem services compared to the costs of protecting them. WAVES works to incorporate the economic value of ecosystem services into national governments' income accounts in order to demonstrate the importance of ES to governments and other decision-makers.

4. Recognize the important role of indigenous and other traditional communities in conservation and land management decisions across the Shield and ensure integration of traditional knowledge in conservation and development across the Shield. While this can and should be discussed at a regional level, each country within the region addresses the issue of indigenous and communal land ownership, management of lands, and the conservation of the biodiversity on those lands differently, therefore country-level actions must also be taken into account.
5. Implement initiatives for improved transboundary collaboration, especially between academic and research institutions and other sectors of civil society, for enhancing knowledge of the biodiversity, ecosystem services, and other related topics. These initiatives should also be geared toward improving collaboration on capacity development. Though some efforts are being made by individual countries, collaboration will remove the tendency for the duplication of efforts and can realize optimization of the use of limited resources. Increased collaboration amongst research institutions, universities and other organizations across the Shield can help to fill geographic and taxonomic gaps in knowledge to provide more complete data on which planning and management should be based.

6. Conclusion

The Guiana Shield continues to provide opportunities for the realization of sustainable development based on the maintenance of natural capital. The region's people and governments can be best served by maintaining natural resources to ensure sustained economic growth and prosperity, and to mitigate global climate change. This is the last frontier of conservation and a great opportunity to demonstrate the lessons learned from the last two centuries; the region's resources will only become more valuable as resources diminish in the rest of the world. Here, in the Guiana Shield, the development of a healthy and sustainable economy can be given a real-world test. As such it is imperative that the most critical areas needed to be addressed are tackled for progress. Such progress can be best achieved through improved regional collaboration. This desktop review of the conservation priority setting process outputs and mapping of ecosystem services in this important region is a small but necessary step towards realizing this goal.

Moving forward this output should serve as the basis for a wider, more involved discussion and consideration of the conservation and development priorities for the region and recommitment to transnational and international collaboration to realize the agreements. The active involvement of Indigenous Peoples, universities, and other sectors of civil society within the region in any such discussion is of paramount importance.

As one of the last tropical wilderness areas left on earth, the global importance of the Guiana Shield cannot be understated. It is therefore of significant consequence for the international community to continue supporting the quest by Guiana Shield countries to maintain and improve on their good stewardship of the land while also providing for their people.

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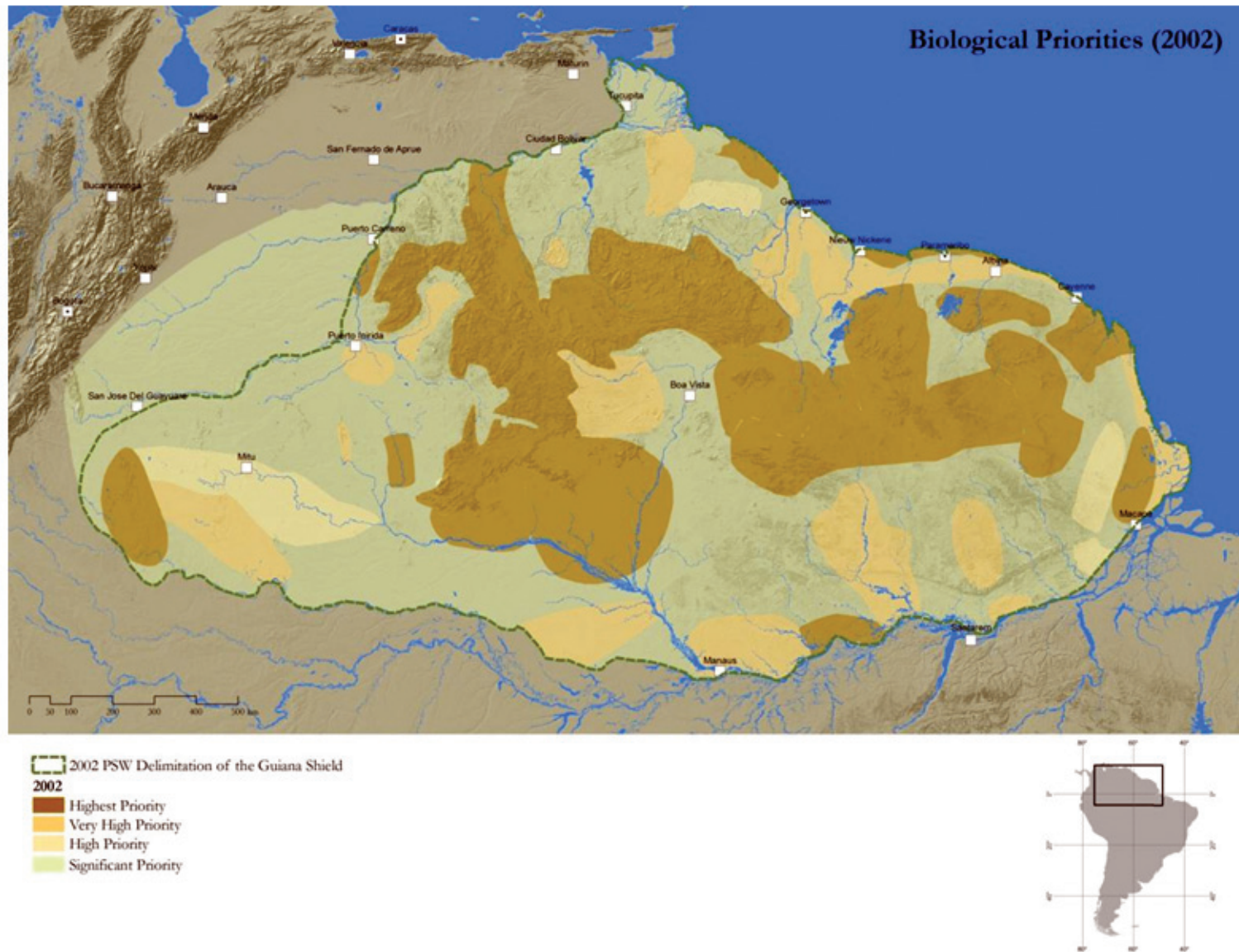
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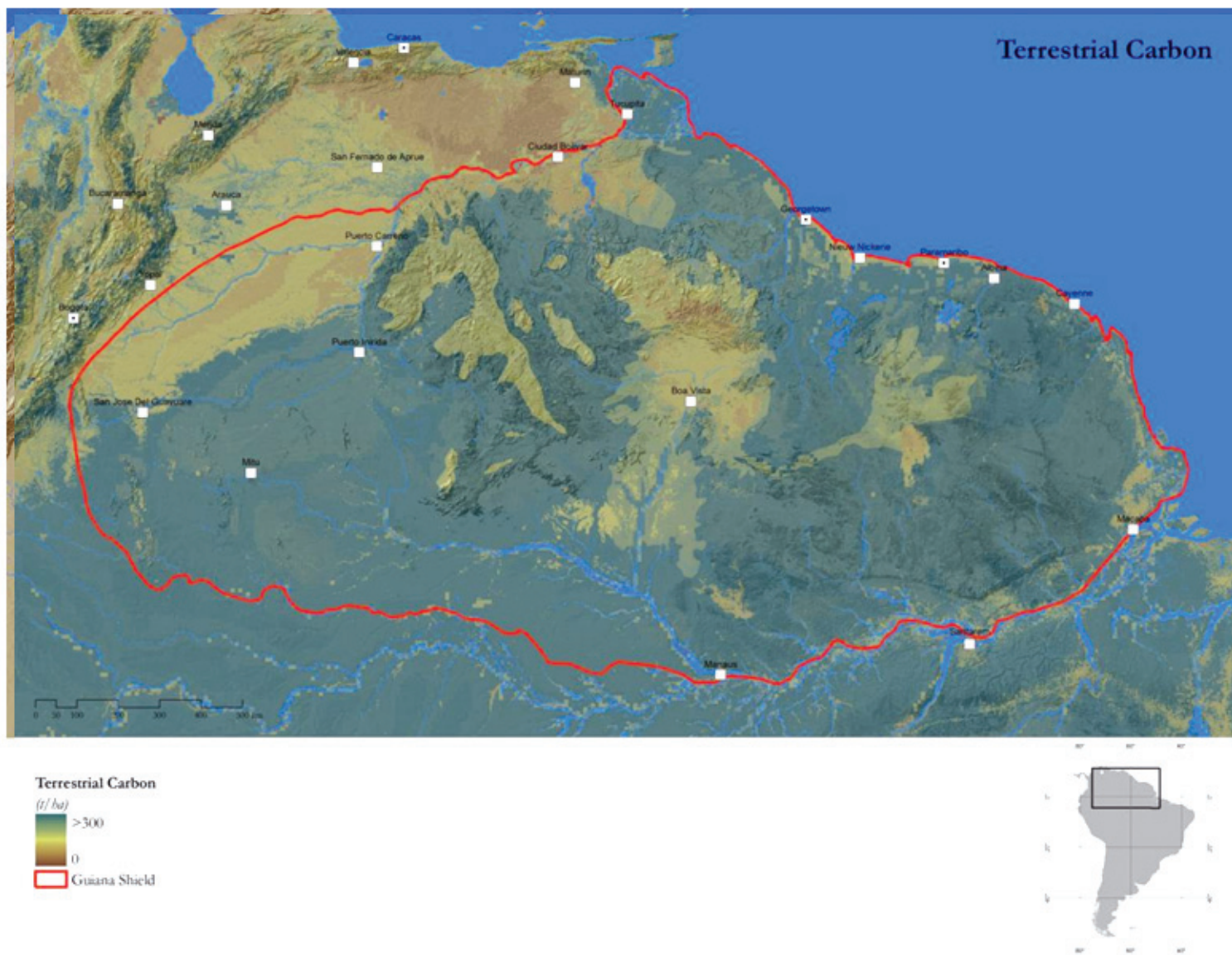
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APPENDIX A

Maps

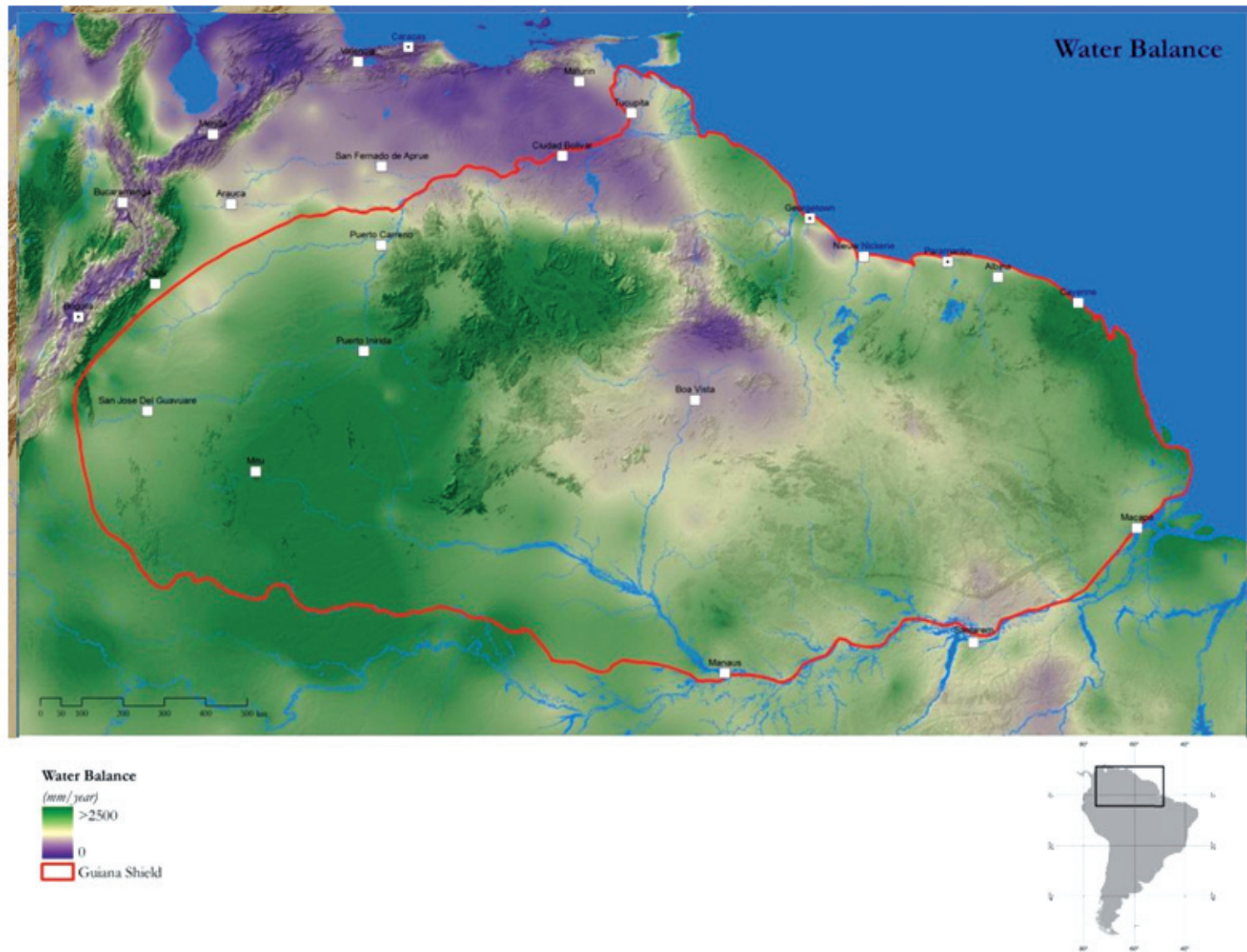


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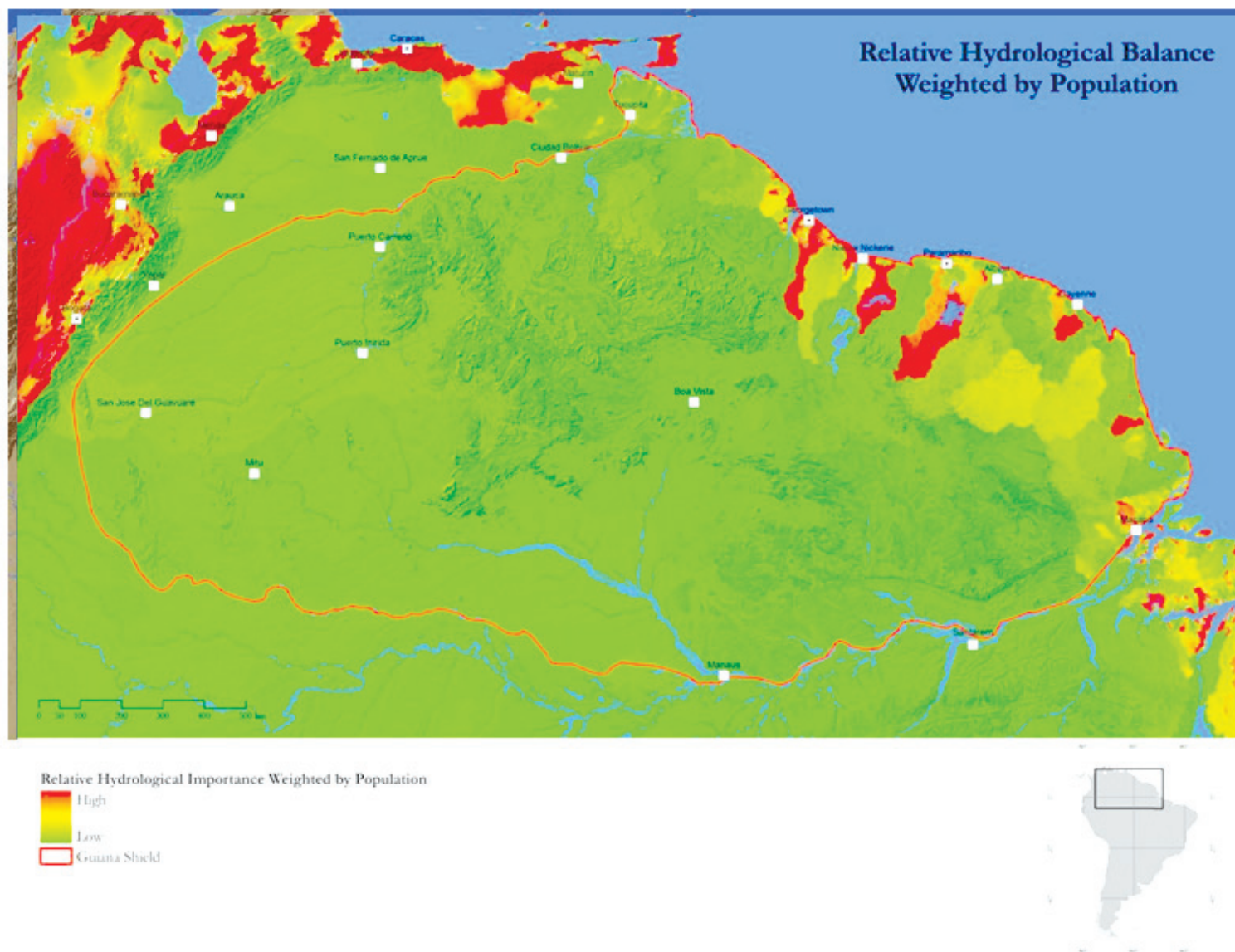


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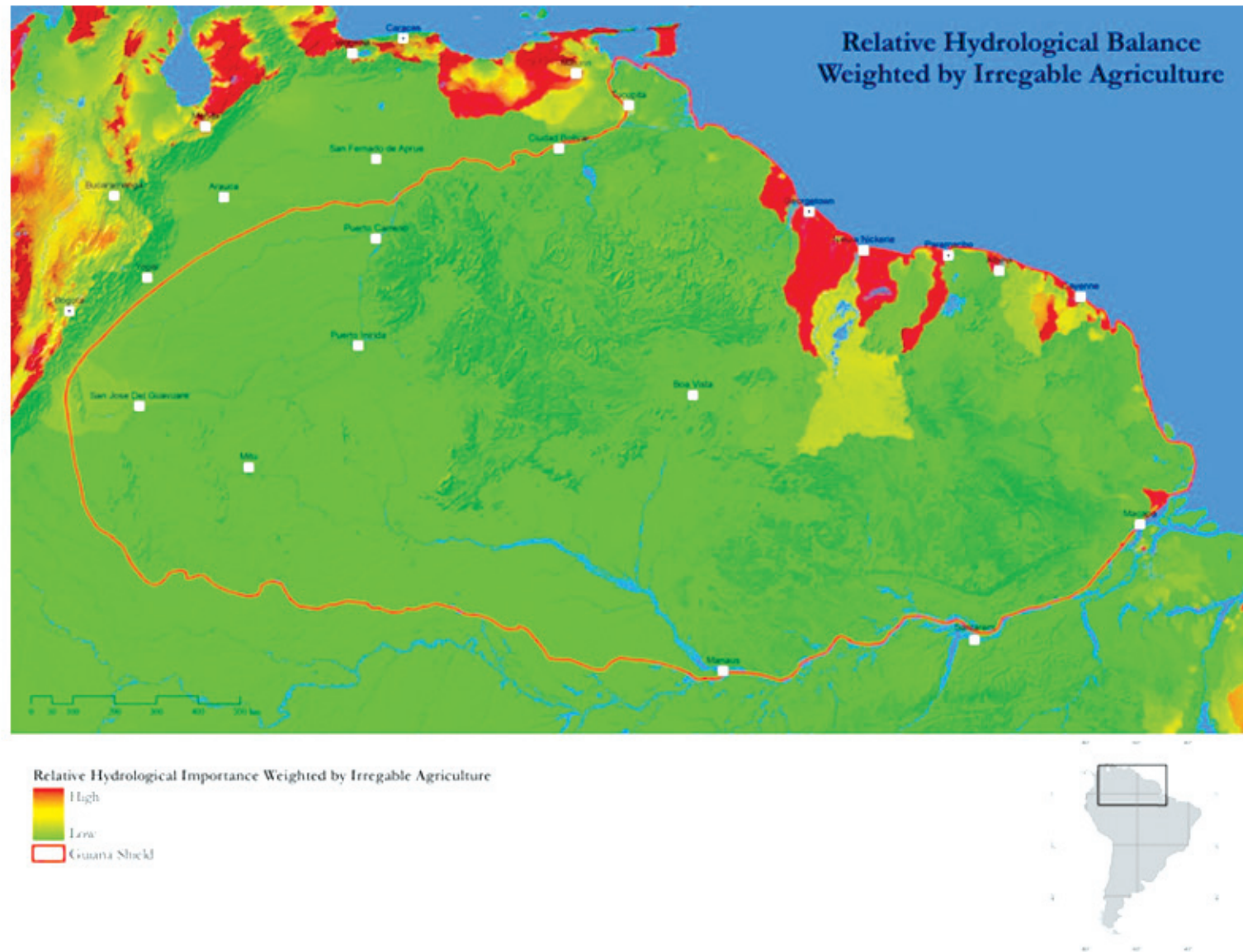


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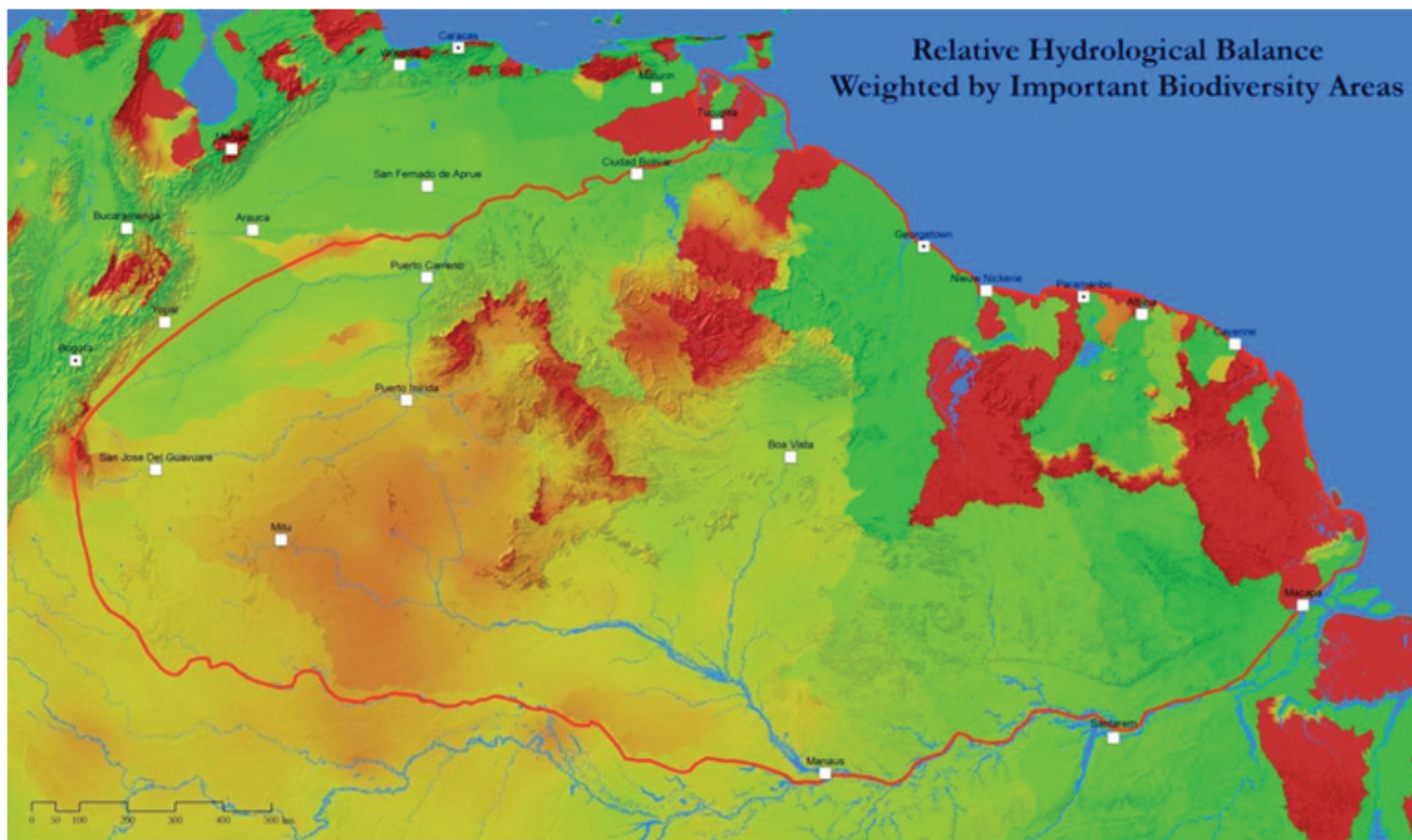


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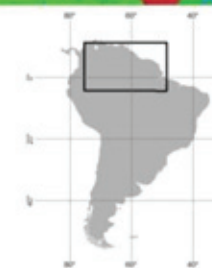
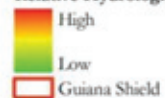
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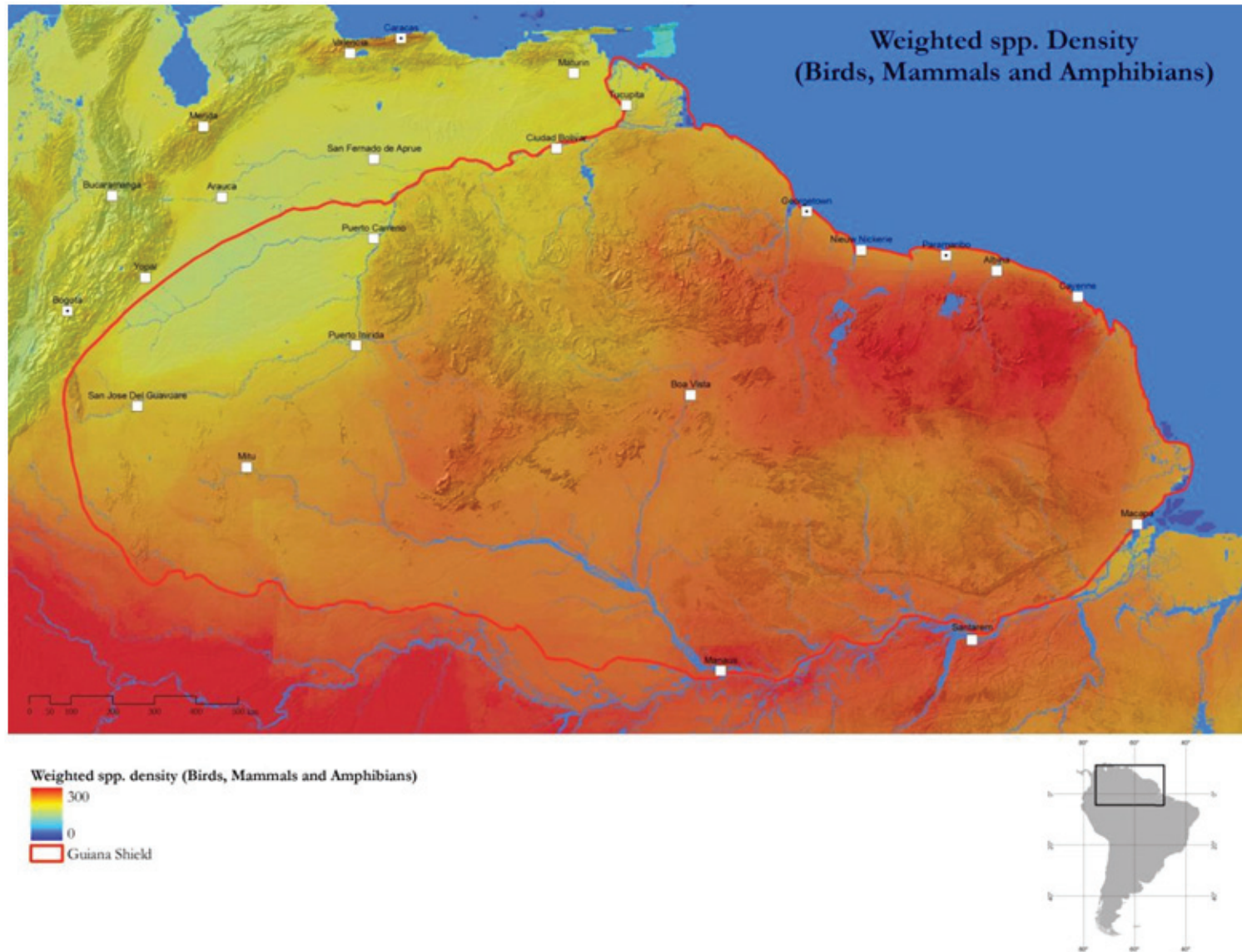


Relative Hydrological Importance Weighted by Important Biodiversity Areas

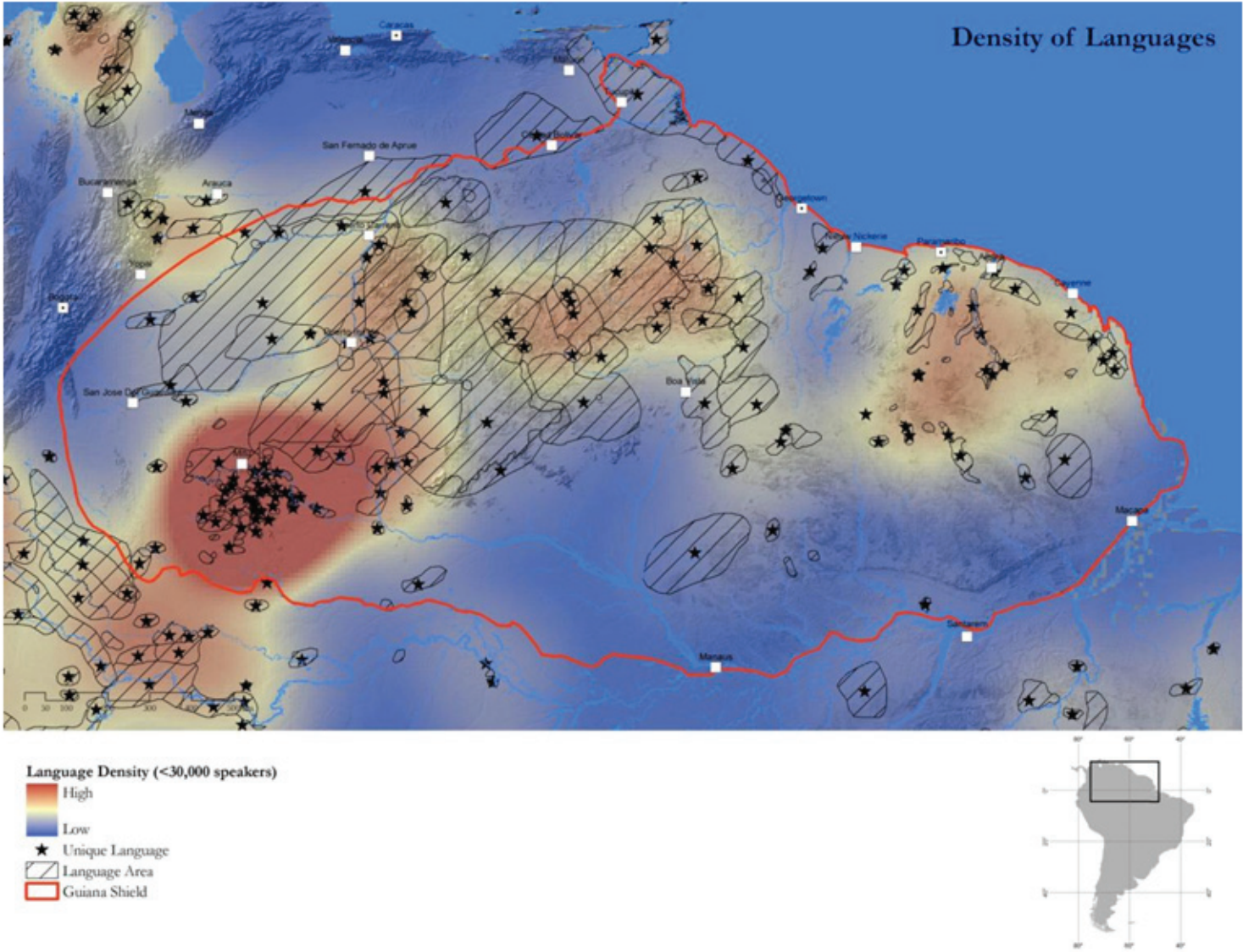


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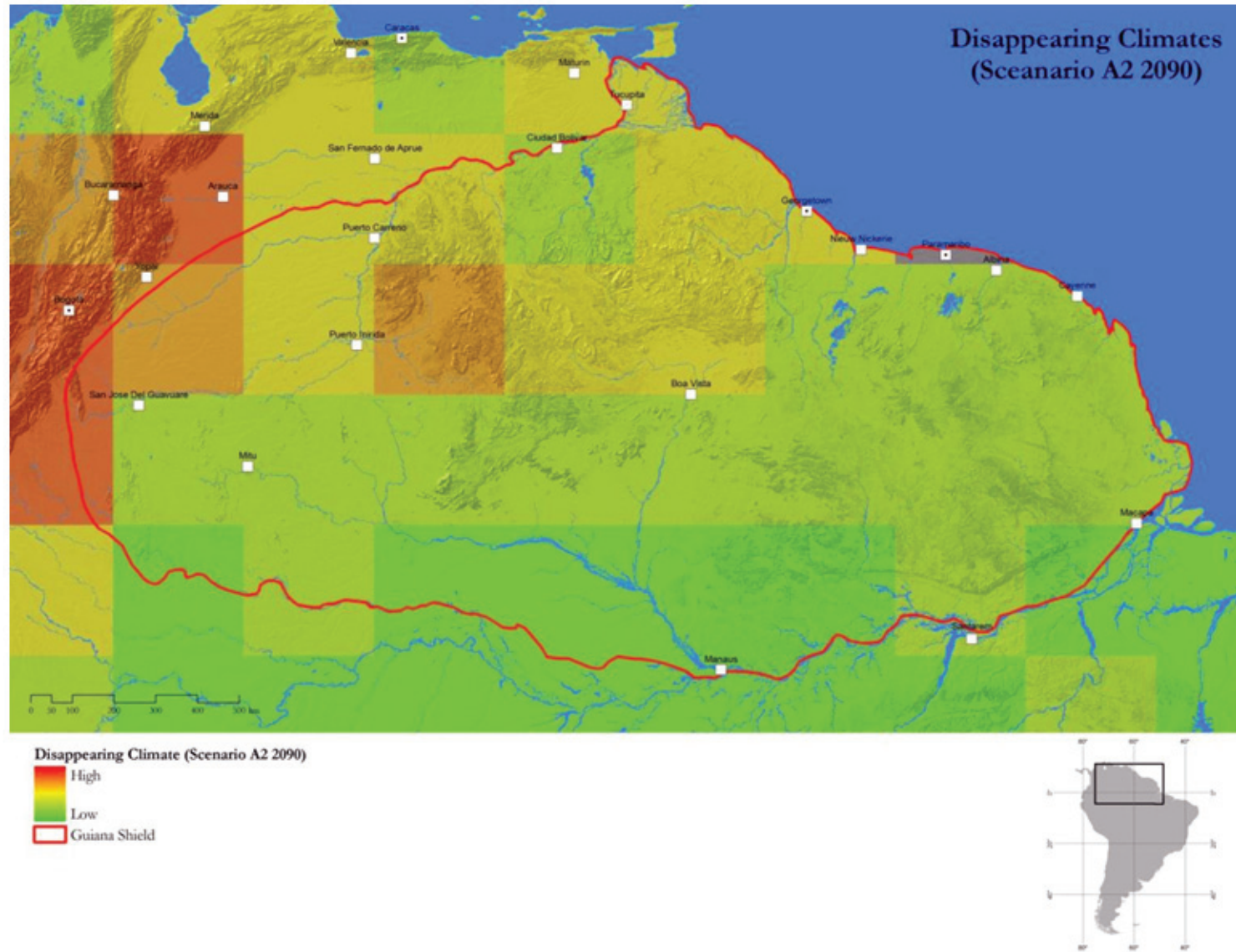


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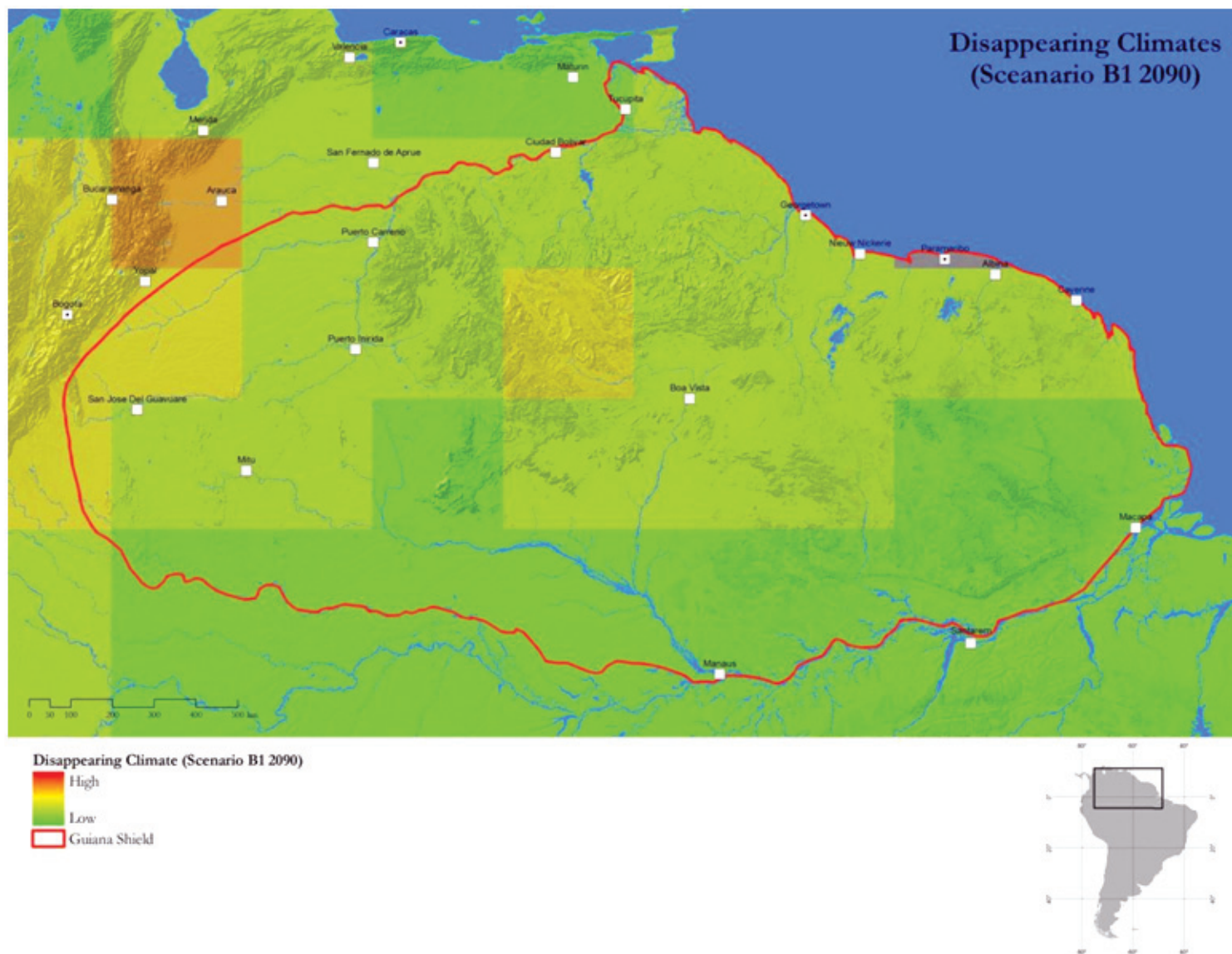


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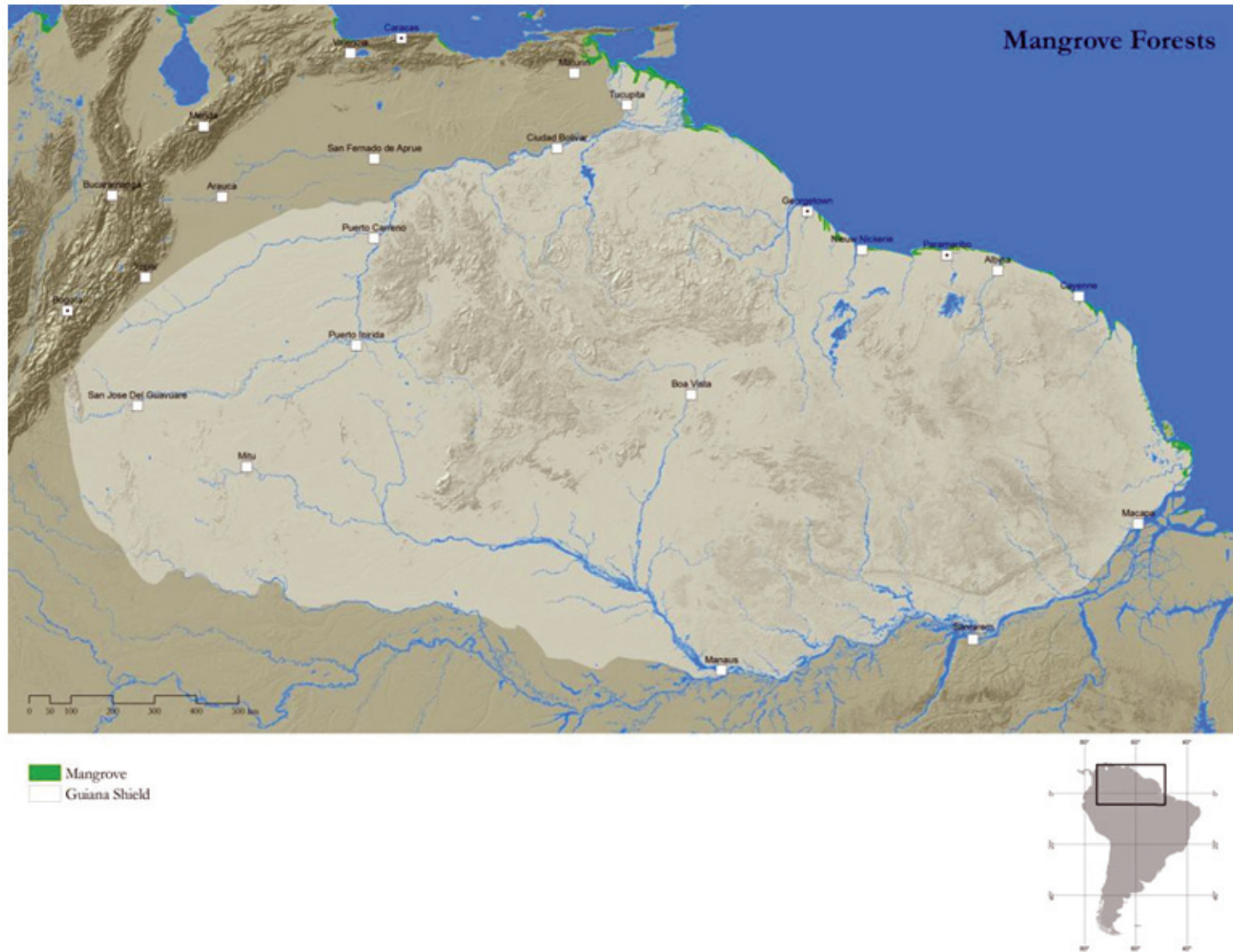


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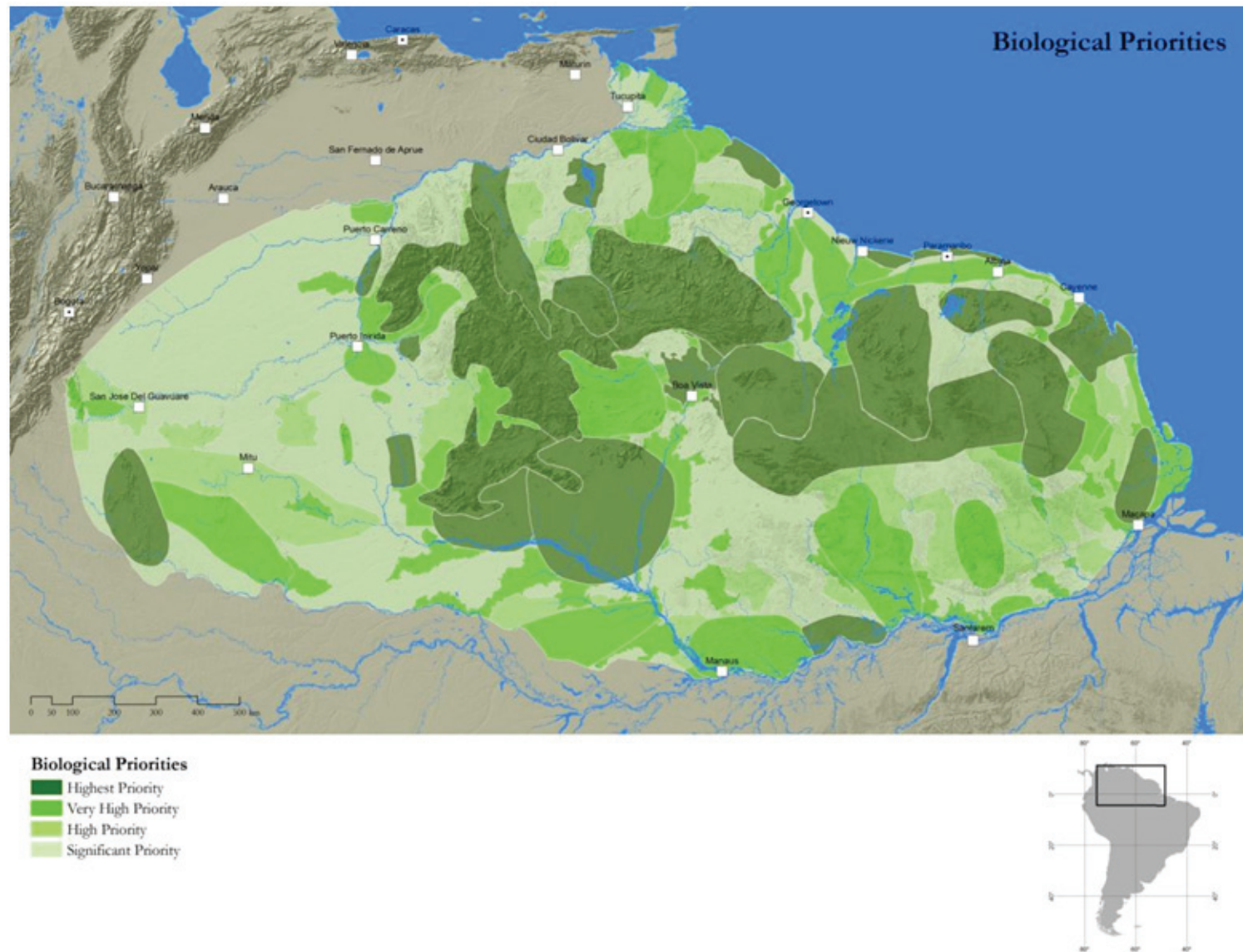
Wetlands (GLOBCOVER 2009)

- Closed to open broadleaved forest regularly flooded (fresh-brackish water)
- Closed broadleaved forest permanently flooded (saline-brackish water)
- Closed to open vegetation regularly flooded
- Guiana Shield



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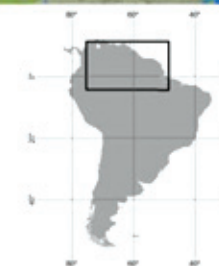
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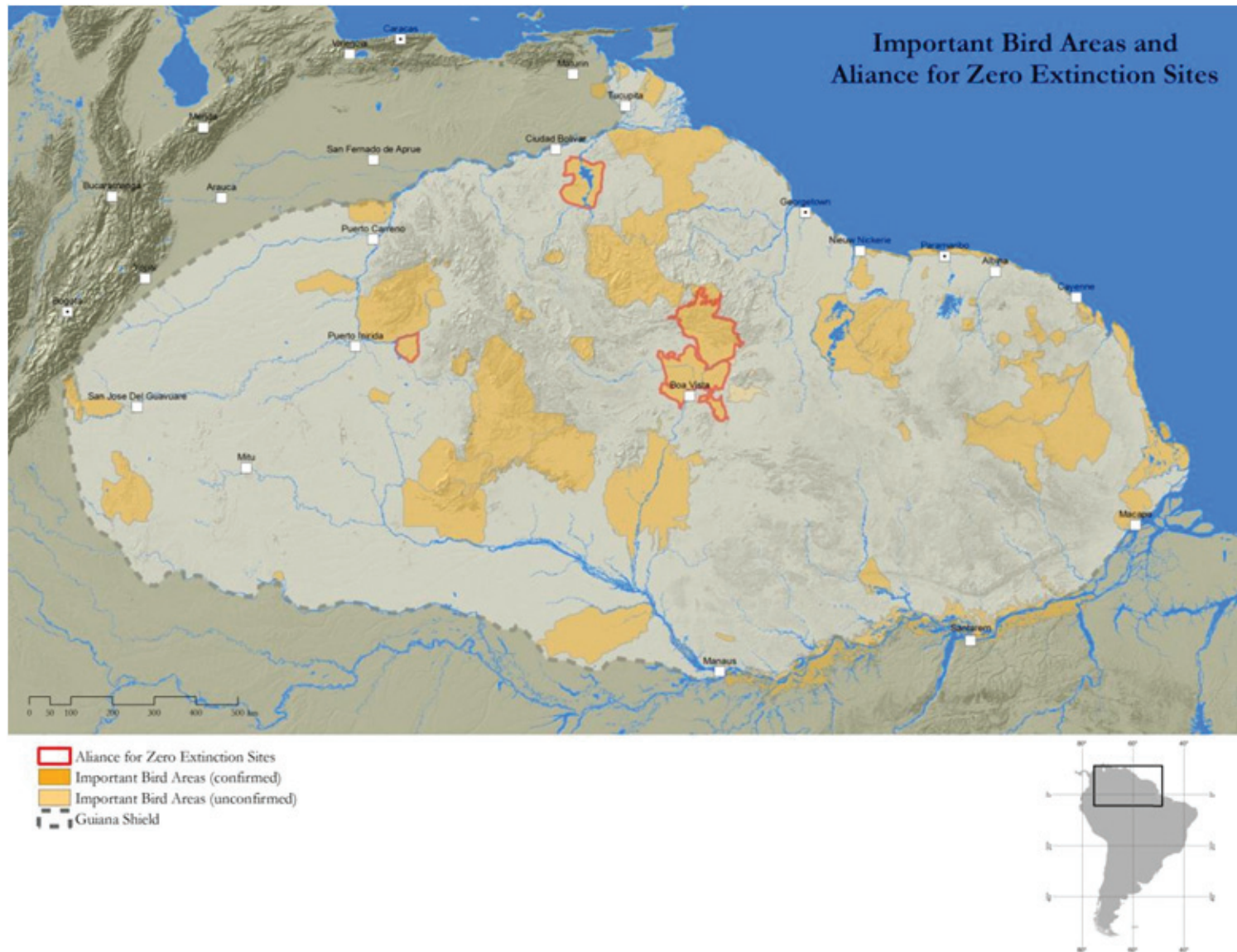


■ Protected Areas
 Guiana Shield



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The Paramaribo Declaration

To define conservation priorities for the Guayana Shield, Guiana Shield Initiative (GSI) of the Netherlands Committee for IUCN (NC-IUCN), the United Nations Development Program (UNDP), and Conservation International (CI) sponsored a workshop entitled “The Guayana Shield Conservation Priority-setting Workshop.” This important exercise brought together more than 100 of the world’s leading experts on the biodiversity of the region, complemented by a group of specialists on the socioeconomic forces at play, and took place 5–9 April, 2002, in Paramaribo, Suriname.

Acknowledging the results and recommendations of the Guayana Shield Conservation Priority-setting Workshop, and considering:

- (1) That the Guianan region of South America is a unique and very special part of our planet, and ranks as one of the world’s last great wild places, occupying roughly the northeastern third of Amazonia, and that it is particularly noteworthy for its endemism, unique ecosystems, and exceptionally pristine state, as well as for its cultural diversity;
- (2) That the Guianan region also has a higher percentage of intact tropical rain forest than any other region on Earth, with some 80–90 percent still in pristine condition; that as such, it is a truly privileged region in terms of natural resources; that the Guianan region is one of the few places left on Earth where all options are still available, and where development and conservation can proceed hand-in-hand, maintaining healthy ecosystems and advancing economically at the same time;
- (3) That the biodiversity of the Guianan region is very high, with an estimated 20,000 plant species and at least 4,000 vertebrate species, several of which are found exclusively in this region;
- (4) That the Guianan region is also extremely important in terms of ecosystem services, both regionally and globally, and that it includes a major portion of the largest river system on Earth (both in volume and catchment area), the Río Amazonas, and the southern portion of the Río Orinoco drainage, which ranks third in the world, and a series of important watersheds in the Guianas that drain into the Atlantic;
- (5) That the Guianan region may account for as much as 10–15 percent of the world’s fresh water, and has the largest number of pristine or near pristine river basins on Earth;
- (6) That the Guianan region provides unparalleled opportunities for conservation and protected area creation at a scale that is simply no longer possible in tropical Asia or Africa, and is rapidly becoming difficult elsewhere in South America; and

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- (7) That the biodiversity resources and ecological services of the Guianan region potentially represent an enormous competitive economic advantage to its people, through ecotourism, non-timber forest products, and capturing of compensation for ecosystem services, especially as intact resources of this kind become an ever scarcer global commodity.

Furthermore, recognizing:

- (1) The continuous efforts and achievements by the countries of the Guianan region, both at the national and regional level;
- (2) The role that the private sector and indigenous communities must play in conservation and sustainable development;
- (3) That several of the countries in the region also protect large areas of indigenous territory, including some 15 million hectares of resguardos indigenas in Colombia, 37 million hectares of demarcated indigenous lands in the Guianan portion of Brazil, and 75 villages defined by legislation in Guyana; that these are obviously of great importance for the indigenous people themselves and also play a critical role in biodiversity conservation;
- (4) That the burden of conservation must be supported by the international community and should not fall on the countries of the region alone (as is already recognized by international conventions, especially the Convention on Biological Diversity);
- (5) That activities need to be aimed both at promoting improvements in the standard of living of human communities in the Guianan region, while at the same time conserving the biodiversity resource base in perpetuity; that compensation for carbon sequestered in standing forest—via carbon bonds and other mechanisms—also has the potential to bring in very significant levels of foreign exchange, and is in the process of being further developed;
- (6) That the involvement of indigenous people in decision-making, and providing them with access to resources and training to effectively manage and protect their homelands and natural resources is a major conservation activity;
- (7) The need for the creation of a network to facilitate technical training, postgraduate studies, and infrastructure development in the universities and research centers of the Guianan region that focuses on biodiversity conservation and sustainable development;
- (8) The need for long-term financial support (via trust funds and other mechanisms) for both existing and proposed protected areas; and
- (9) The need to work within the bounds of established policies, plans, and strategies of national governments, and to support related initiatives of these governments.

We declare:

- (1) Support for the commitment by workshop participants to continue to work together, sharing information and experiences among themselves, with the wider scientific community, with key decision-makers, and with local communities and indigenous people in the countries of the region, and to develop a web portal to make this possible;
- (2) A commitment to promote the use of scientific knowledge for education programs aimed at local communities;
- (3) Support for the continued effort to identify those areas under the most pressure from human activities;
- (4) Support for the continued effort to identify those areas which remain very poorly known and are in need of further study;
- (5) Support for the effort to prioritize the economic value of the ecosystems of the Guianan region that have high potential for non-timber forest products, watershed protection, and carbon sinks;
- (6) A commitment to integrate attempts to conserve the Guianan region's biodiversity with solutions to the socioeconomic challenges of the region in order to improve the quality of life of its inhabitants;
- (7) Support to the countries of the Guianan region in their efforts to find the resources required for their biodiversity strategies for conservation and sustainable development;
- (8) Support to the countries of the Guianan region in their efforts to find fair compensation for ecological services provided to the global community;
- (9) Long-term financial support via trust funds and other mechanisms for both existing and proposed protected areas;
- (10) Support to the Brazilian government in the creation and implementation of the 3.8 million hectare Parque Nacional de Tumucumaque, which would become the largest strictly protected area in the Guianan region and would increase protected area coverage in this part of Brazil by 25 percent;
- (11) Support to the government of the Brazilian state of Amapá in implementation of its Sustainable Development Program, which has prevented deforestation by supporting the building of local economies based on biodiversity resources;
- (12) Support to the Brazilian government in the process of implementing two major ecological corridors in the Guianan region, the Northern Amazonian Corridor and the Central Amazonian Corridor;

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- (13) Continued support to the government of Suriname for effective management of protected areas, especially the Central Suriname Nature Reserve, the Sipaliwini Savanna Nature Reserve, and high priority protected areas in the coastal region, as well as for efforts to expand the area under effective protection;
- (14) Support for the National Protected Areas Secretariat of the Government of Guyana for the creation of a system of protected areas;
- (15) Support to the government of Guyana's National Protected Areas Secretariat in implementation of a system of protected areas, with special emphasis on Shell Beach, Orinduik, Roraima, Kaieteur National Park, Kanukus, and Southern Guyana;
- (16) Support to the French regional and national authorities in the implementation of the Parc National de Guyane in French Guiana, in harmony with the rights of its inhabitants;
- (17) Support to the Colombian Ministerio del Medio Ambiente in organizing and strengthening a regional protected areas system (SIRAP – Sistema Integral Regional de Areas Protegidas) for the Colombian portion of the Guianan region; and
- (18) Recognition of the fact that Venezuela already has excellent representation of the high altitude ecosystems of the region within protected areas, but that the lowlands, which are extremely important, are not included in protected areas. The workshop therefore recognizes the need to support the government of Venezuela and state government agencies to evaluate the possible inclusion of lowland areas into protected zones, doing this in harmony with the rights of indigenous peoples. Among those of particular value are the basins of the Rios Caura, Ventuari, Atabapo, and Parucito.
- (19) Recognition of the need to guarantee long-term conservation of the unique tepui ecosystems of this region. Although many are in protected areas, they still require further attention.
- (20) Recognition of the need to support the government of Venezuela and its Guayanian region states in implementing a Sustainable Development Program which can help to prevent deforestation by supporting the building of local economies based on biodiversity resources.

Consultancy Terms of Reference

TERMS OF REFERENCE

Short-Term Consultancy

Review of Guiana Shield Conservation Priority Setting Outcomes

Project Name: Guiana Shield Facility

Project Identification: EuropeAid/ENV/2010-242905/RMS
UNDP Atlas No. 00076255

Background:

In ecological terms, the Guiana Shield eco-region is of immense importance to the world. The eco-region is made up of several unique ecosystems that:

- store approximately 10-15% of global freshwater supply
- store about 50 billion tonnes of carbon
- support an estimated 20,000 vascular plant species, of which about 35% is endemic
- provide habitat for rich biodiversity, including 975 species of avifauna, 282 mammalian species, 280 reptilian species, 272 amphibian species and 2,200 fish species.

Despite the known threats (illegal logging, gold mining, and large scale infrastructure and agricultural activities) to the integrity of the unique ecosystems, the countries of the region pursue alternative development paths that increasingly focus on maximising use of the value of natural resources and minimising their loss or degradation. However, a comprehensive regional planning process for the conservation and sustainable development of the Guiana Shield is needed to complement individual country efforts to manage common problems and pursue region-wide human development.

Some steps have been taken in this direction.

In April 2002, several international organisations (Conservation International, IUCN National Committee of the Netherlands and UNDP) pooled resources to organise the conservation priority setting workshop (PSW) in Paramaribo, which produced important outcomes including a map of the Guiana Shield eco-region and a consensus on priority areas for conservation in the official languages of the Guiana Shield countries. A political call to action in the form of the Paramaribo Declaration was issued.

Since 2002, the Guiana Shield Initiative (GSI) projects have implemented at least two of the Paramaribo recommendations dealing with ecosystem services. Valuable lessons were documented including the need to align the GSI with national priorities.

APPENDIX C

The Guiana Shield Facility (GSF) is to take guidance from the PSW outcomes. However, given that much has changed since 2002, it has become necessary to review those conservation priorities in view of the changes and to ensure that recommendations in the Paramaribo Declaration are updated for relevance. This will ensure that GSF resources are deployed in a more effective and efficient manner in support of country specific conservation and sustainable development plans as well as regional scale conservation initiatives, and contribute to the achievement of the goal of the GSF.

The GSF is a multi-donor funding facility, which aims to support the conservation and sustainable development of the unique ecosystems of the bio-diverse Guiana Shield eco-region. It is an initiative of the European Union and UNDP and builds on the gains made during previous phases of the Guiana Shield Initiative (GSI).

The overall objective of the GSF is to promote and support the conservation and sustainable development of the Guiana Shield eco-region. The strategy is to set up the GSF as a multi-donor funding facility for the long-term financing of the activities needed to ensure the ecological integrity of the Guiana Shield eco-region, one of the most important eco-regions in the world.

To help achieve this overall objective, the following specific objectives have been formulated:

- The GSF to be a long-term forum and vehicle to address national and overarching regional, in particular, environmental issues related to management of the ecosystems of the Guiana Shield eco-region;
- To maintain the GSF as a sustainable financial vehicle for the conservation and sustainable development of the Guiana Shield eco-region;
- To support the exchange of knowledge and capacity building to enhance the conservation and sustainable development of the Guiana Shield eco-region.

Objective of the desk study:

To prepare an actualized overview of the ecological situation of the Guiana Shield eco-region; reviewing the status of the outcomes (identified priorities and recommendations) of the 2002 Conservation Priority Setting Workshop for the Guiana Shield, updating the 2002 biodiversity conservation priorities and mapping ecosystem services in the Guiana Shield. This work will utilize the updated GSI eco-regional boundary definition.

Scope of work

Ecologically, the Guiana Shield eco-region includes the large forested mountain systems that form the watersheds between the Amazon and Orinoco rivers, as well as savannahs and wetlands. Specifically, they cover 250 million hectares of mostly pristine rain forests, bounded roughly by the Amazon River to the South, the Japari-Caqueta River to the Southwest, the Sierra de Chiribiquete to the West, the Orinoco and Vichada Rivers to the Northwest and North, and the Atlantic Ocean to the East.

The review will focus on the Guiana Shield eco-region, the results and recommendations of the 2002 PSW, integrating new findings included in reports, and publications such as the ATBC conference of 2008 in Paramaribo, Biodiversidad de la Cuenca del Orinoco, Bases Científicas para la Identificación de Areas Prioritarias para la Conservación y Uso Sostenible de la Biodiversidad, the results of the International Congresses on the Biodiversity of Guiana Shield. New biological information (such as priorities and new research) should be as much as possible geo-referenced and stress the transboundary and regional dimension. The current policy initiatives and implementation of multilateral environment agreements (MEAs) and the national and regional levels should be taken into account and reviewed.

Detailed task(s)

- To gather and compile into draft maps and narrative report, new biological and other data and information produced since 2002 on national and other priorities, priorities of non-governmental organizations, and community-based organisations, taxa assessments, conservation units, and documented sources as mentioned above, gather data on ecosystem services, including but not limited to freshwater, carbon sequestration/storage, and biodiversity, and to represent the data on Guiana Shield eco-regional maps.

Expected Output(s)

1. An English language narrative report providing a review and update of the outcomes of the 2002 conservation priority setting workshop (PSW) based on best available knowledge. This report should be provided in a format which can be used for determining national and regional priorities for conservation of the Guiana Shield eco-region and contain a summary and recommendations in Dutch, French, Portuguese and Spanish languages;
2. An updated Guiana Shield map, using the GSI definition of the ecoregional boundaries, with compiled data, showing options for expanding/refining biodiversity conservation priorities for PSW+10 (2012);
3. A series of maps of ecosystem services of the Guiana Shield compiled from existing regional and global data sets.

Duration

22 August 2011 to 31 December 2011.

APPENDIX C

The following suggested timelines apply:

By August 26	By Sep 02	By Oct 21	Oct 27-28	Dec 14
Preparation and submission of proposed work plan and outline of narrative report	Compile list of authoritative sources of information; Sep 07 Collection and management of information	Submission of preliminary narrative report and maps for updated PSW data and regional ecosystem services, in English	Presentation of key findings in preliminary report and maps in English, to the GSF regional workshop	Submission of final report including comments from GSF regional workshop and UNDP, in English with summary in Dutch, French Portuguese and Spanish

All eligible costs associated with participation of key CI staff in the GSF regional workshop will be borne separately by the UNDP and are not included in this consultancy.

Qualifications and experience

- Personnel of consultancy firm must be holder of advance University degree related to the assignment
- Substantive knowledge of the issues covered by the project
- Prior involvement in related projects in the eco-region including the 2002 PSW workshop, GSI projects or Guiana Shield biodiversity congress
- Good understanding of the ecological, social, economic, political, and historic trends in the Guiana Shield eco-region
- Institutional base or support within the Guiana Shield eco-region
- Access to post 2002 information on the ecology and sustainable development initiatives undertaken in the Guiana Shield eco-region
- Advance analytical skills, sound judgement, resourcefulness, ability to take initiative, capacity to work independently and in a multi-lingual, multi-cultural environment
- Skills in process facilitation, strategic planning and alliance building
- Excellent communication skills and fluency in English and Spanish and working knowledge of Portuguese, French and Dutch
- Excellent PC user and writing skills.

Reporting

The consultancy firm will:

- Report to the Head of Office, UNDP Guyana.
- Present a short work plan and an outline of the narrative report in consultation with UNDP Guyana country office within one week after signing the contract.
- Present preliminary findings and recommendations from the consultations in English language in soft copy using Microsoft Word and PowerPoint formats to the UNDP Guyana country office (by 10 August 2011) and the proposed GSF regional workshop (18-19 August 2011), respectively, for further input, comments and feedback.
- Finalise the reports and maps based on further inputs, comments and feedback received from the UNDP and GSF regional workshop. Drafts of the final documents in soft copy and hard copy should be presented in English language to UNDP Guyana country office on or before 15 October 2011. The UNDP will provide review and feedback within ten days of receipt of drafts and the final documents, completed with translated components, should be submitted by 31 October 2011.

APPENDIX D

APPENDIX D

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See the TOR for this consultancy in the Annex.
<http://www.guianaShield.org/site/en/psw-workshop>. See full Paramaribo Declaration in the Annex.

Zie de TOR voor deze consultancy in de Bijlage.
<http://www.guianaShield.org/site/en/psw-workshop>. Zie volledige Paramaribo Declaration in de Bijlage.

Cf. les TDR pour cette étude dans l'annexe.
<http://www.guianaShield.org/site/en/psw-workshop>. Cf. la version complète de la Déclaration de Paramaribo dans l'annexe.

Veja o TOR para esta consulta no Anexo.
<http://www.guianaShield.org/site/en/psw-workshop>. Veja o texto completo da Paramaribo Declaration no anexo.

Ver los Términos de Referencia para esta consultoría en el Anexo.
<http://www.guianaShield.org/site/en/psw-workshop>. Ver la totalidad de la Declaración de Paramaribo en el Anexo.