Electronic Supplementary Material

Title: Linguistic Diversity of Natural UNESCO World Heritage Sites: Bridging the Gap between Nature and Culture

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Supplementary Material

Introduction

The supplementary material below comprises a detailed presentation of results from our analyses. It consists of three main components: 1) a tabular summary of overall results (Table S1); 2) a map and detailed tabular presentation of results from Darien and Los Katíos National Parks, depicting some of the complexities in determining language endangerment along national borders (Figure S1 and Table S2); and 3) map and detailed tabular presentations of results from United Nations Educational, Scientific and Cultural Organization (UNESCO) Natural World Heritage Sites (WHSs) that co-occur with 10 indigenous languages or more. The latter section includes three Natural WHSs officially listed by UNESCO as endangered (Selous Game Reserve [Figure S5], Tropical Rainforest Heritage of Sumatra [Figure S7], and Virunga National Park [Figure S8]) as well as four Natural WHSs which the International Union for the Conservation of Nature (IUCN) World Heritage Outlook (Osipova et al. 2014) considers to have "significant concern" (Cliff of Bandiagara (Land of the Dogons) [Figure S2], Lorentz National Park [Figure S4], the Three Parallel Rivers of Yunnan Protected Areas [Figure S6], and Western Ghats [Figure S9]). The Western Ghats map is a duplicate of that in the main body of the paper; we included it to make this supplementary material section stand-alone, rather than require that the reader refer back to the main paper for the map showing the languages listed in the supplementary table for Western Ghats (Table S10).

Table S1 contains results from our analyses for all 238 Natural (including Mixed Cultural-Natural) WHSs. The sites and corresponding languages appear in Figure 1 in the main body of the paper. As in the paper itself, we consider Expanded Graded Intergenerational Disruption Scale (EGIDS), a measure of language endangerment, focusing on the following categories: 6b threatened, 7 shifting, 8a moribund, 8b nearly extinct, and 9 dormant. We also consider estimated number of speakers, identifying languages spoken by 10,000 or fewer and 1,000 or fewer, as endangered. *The Ethnologue* database used for this study assigns EGIDS scores on a country-by-country basis (Lewis et al. 2013). Hence, cross-border languages and languages spoken by widespread diasporic populations may have different EGIDS scores, depending on factors such as size of speech community, presence of other languages, language status, etc. Zulu, for instance, has a score of EGIDS 1 in its primary country, South Africa, where it is spoken by more than 11 million and is one of 11 official languages. In other countries (i.e. Lesotho, Mozambique, Swaziland and Malawi), however, Zulu is a minority language spoken by fewer than a quarter million people total, and is ascribed an EGIDS value of 5. In our analysis Zulu intersects two Natural WHSs: iSimangaliso Wetland Park in South Africa and Maloti-Drakensberg Park, a transboundary site comprising uKhahlamba Drakensberg National Park in South Africa and the Sehlathebe National Park in Lesotho. Zulu is not endangered in either instance on the basis of EGIDS scores (EGIDS 1 in iSimangaliso Wetland Park, EGIDS 5 in Maloti-Drakensberg Park) or speaker numbers (248,000 in Maloti-Drakensberg Park). In other cases, however, where Natural WHSs and languages intersecting them straddle country borders, the situation is not as clear because a language might be *locally endangered*, in the particular WHS it intersects, either by virtue of EGIDS score or small speaker numbers, but not *globally endangered.* Although our main interest here is local endangerment in the context of Natural WHSs, we identified all such instances (N=25) and examined them on a case-by-case basis. Generally, if a language ranked as endangered *in the polygon that intersected a Natural WHS*, based on the EGIDS assessment, number of speakers, or both criteria, we defined it as endangered in our analysis, choosing to err on the side of being conservative with respect to potential language loss. Such

Table S1. Natural WHSs and Statistics on Indigenous Languages that Intersect Them

Natural WHS Site[a]	Total Languages	EGIDS Languages[b,c]	Languages ≤ 10K Speakers[c]	Languages ≤ 1K Speakers[c]
Air and Ténéré Natural Reserves	2	1	-	-
Aldabra Atoll	1	-	-	-
Alejandro de Humboldt National Park	-	-	-	-
Ancient Maya City and Protected Tropical Forests of Calakmul, Campeche	1	-	-	-
Archipiélago de Revillagedo	-	-	-	-
Area de Conservación Guanacaste	-	-	-	-
Atlantic Forest Southeast Reserves	1	-	1	-
Australian Fossil Mammal Sites (Riversleigh, Naracoorte)	-	-	-	-
Banc d'Arguin National Park	1	-	-	-
Belize Barrier Reef Reserve System	1	-	-	-
Białowieża Forest	2	-	-	-
Blue and John Crow Mountains	1	-	-	-
Brazilian Atlantic Islands: Fernando de Noronha and Atol das Rocas Reserves	-	-	-	-
Bwindi Impenetrable National Park	2	-	-	-
Canadian Rocky Mountain Parks	1	1	1	-
Canaima National Park	4	4	4	3
Cape Floral Region Protected Areas	1	-	-	-
Carlsbad Caverns National Park	-	-	-	-
Caves of Aggtelek Karst and Slovak Karst	2	-	-	-
Central Amazon Conservation Complex	1	-	-	-
Central Highlands of Sri Lanka	2	-	-	-
Central Sikhote-Alin	-	-	-	-
Central Suriname Nature Reserve	1	-	-	-
Cerrado Protected Areas: Chapada dos Vaadeiros and Emas National Parks	-	-	-	-
Chengjiang Fossil Site	1	-	-	-
China Danxia	6	-	-	-
Chitwan National Park	6	2	1	
Cliff of Bandiagara (Land of the Dogons)	12	1	4	1
Cocos Island National Park	-	-	-	-
Coiba National Park and its Special Zone of Marine Protection	-	-	-	-
Comoé National Park	7	-	2	-
Danube Delta	1	-	-	-
Darien National Park	5	1	3	2
Desembarco del Granma National Park	-	-	-	-
Dinosaur Provincial Park	-	-	-	-
Discovery Coast Atlantic Forest Reserves	-	-	-	-
Dja Faunal Reserve	3	-	-	-
Djoudj National Bird Sanctuary	2	-	-	-
Doñana National Park	1	-	-	-
Dong Phayayen-Khao Yai Forest Complex	5	-	-	-
Dorset and East Devon Coast	1	-	-	-
Durmitor National Park	2	-	-	-
East Rennell	1	-	1	-
Ecosystem and Relict Cultural Landscape of Lopé-Okanda	2	1	1	1
El Pinacate and Gran Desierto de Altar Biosphere Reserve	-	-	-	-
Ennedi Massif: Natural and Cultural Landscape	2	-	-	-
Everglades National Park	-	-	-	-
Fraser Island	-	-	-	-

Galápagos Islands	-	-	-	-
Garanjonay National Park	1	-	-	-
Garamba National Park	5	1	2	1
Giant's Causeway and Causeway Coast	1	-	-	-
Golden Mountains of Altai	3	1	-	-
Gondwana Rainforests of Australia	1	1	1	1
Göreme National Park and the Rock Sites of Cappadocia	1	-	-	-
Gough and Inaccessible Islands	-	-	-	-
Grand Canyon National Park	2	2	1	-
Great Barrier Reef	8	8	8	8
Great Himalayan National Park Conservation Area	5	-	1	1
Great Smoky Mountains National Park	1	1	-	-
Greater Blue Mountains Area	-	-	-	-
Gros Morne National Park	-	-	-	-
Gulf of Porto: Calanche of Piana, Gulf of Girolata, Scandola Reserve	2	-	-	-
Gunung Mulu National Park	1	1	1	-
Ha Long Bay	1	-	-	-
Hawaii Volcanoes National Park	2	-	1	-
Heard and McDonald Islands	-	-	-	-
Henderson Island	-	-	-	-
Hierapolis-Pamukkale	1	-	-	-
High Coast/Kvarken Archipelago	2	-	-	-
Historic Sanctuary of Machu Picchu	1	-	-	-
Huanglong Scenic and Historic Interest Area	2	1	1	-
Huascarán National Park	4	1	1	-
Hubei Shennongjia	1	-	-	-
Ibiza, Biodiversity and Culture	2	-	-	-
Ichkeul National Park	1	-	-	-
Iguaçu National Park	1	1	1	-
Iguazu National Park	1	1	1	-
Ilulissat Icefjord	1	-	-	-
Ischigualasto/Talampaya Natural Parks	-	-	-	-
iSimangaliso Wetland Park	2	-	1	1
Islands and Protected Areas of the Gulf of California	4	1	2	2
Isole Eolie (Aeolian Islands)	1	-	-	-
Jeju Volcanic Island and Lava Tubes	1	-	-	-
Jiuzhaigou Valley Scenic and Historic Interest Area	1	1	1	-
Joggins Fossil Cliffs	-	-	-	-
Kahuzi-Biega National Park	5	-	1	-
Kakadu National Park	5	5	5	4
Kaziranga National Park	3	-	-	-
Kenya Lake System in the Great Rift Valley	4	1	-	-
Keoladeo National Park	2	-	-	-
Khangchendzonga National Park	4	1	-	-
Kilimanjaro National Park	4	-	-	1
Kinabalu Park	2	2	1	1
Kluane / Wrangell-St. Elias/Glacier Bay / Tatshenshini-Alsek	3	3	3	3
Komodo National Park	3	1	1	1
Lagoons of New Caledonia: Reef Diversity and Associated Ecosystems	15	13	15	6
Lake Baikal	2	1	1	-
Lake Malawi	1	-	-	-

Lake Turkana National Parks	1	-	-	-
Lakes of Ounianga	1	-	-	-
Laponian Area	2	-	-	-
Laurisilva of Madeira	1	-	-	-
Lena Pillars Nature Park	2	1	1	-
Lord Howe Island Group	-	-	-	-
Lorentz National Park	12	2	7	3
Los Glaciares National Park	-	-	-	-
Los Katíos National Park	2	1	2	1
Lut Desert	2	-	-	-
Macquarie Island	-	-	-	-
Maloti-Drakensberg Park	3	-	-	-
Malpelo Fauna and Flora Sanctuary	-	-	-	-
Mammoth Cave National Park	-	-	-	-
Mana Pools National Park, Sapi and Chewore Safari Areas	2	-	-	-
Manas Wildlife Sanctuary	3	-	-	-
Manovo-Gounda St. Floris National Park	5	-	1	-
Manú National Park	4	2	3	2
Messel Pit Fossil Site	1	-	-	-
Meteora	2	1	-	-
Miguasha National Park	-	-	-	-
Mistaken Point	-	-	-	-
Monarch Butterfly Biosphere Reserve	3	-	-	-
Monte San Giorgio	2	-	-	-
Morne Trois Pitons National Park	1	-	-	-
Mosi-oa-Tunya / Victoria Falls	2	-	-	-
Mount Athos	1	-	-	-
Mount Emei Scenic Area, including Leshan Giant Buddha Scenic Area	1	-	-	-
Mount Etna	1	-	-	-
Mount Hamiguitan Range Wildlife Sanctuary	2	-	-	-
Mount Huangshan	2	-	-	-
Mount Kenya National Park/Natural Forest	5	-	-	-
Mount Nimba Strict Nature Reserve	3	-	-	-
Mount Sanqingshan National Park	1	-	-	-
Mount Taishan	1	-	-	-
Mount Wuyi	2	-	-	-
Nahanni National Park	-	-	-	-
Namib Sand Sea	-	-	-	-
Nanda Devi and Valley of Flowers National Park	3	-	1	-
Natural and Cultural Heritage of the Ohrid Region	4	-	1	-
Natural System of Wrangel Island Reserve	-	-	-	-
New Zealand Sub-Antarctic Islands	-	-	-	-
Ngorogoro Conservation Area	4	1	1	1
Ningaloo Coast	1	1	1	1
Niokolo-Koba National Park	4	1	1	-
Noel Kempff Mercado National Park	-	-	-	-
Ogasawara Islands	1	-	-	-
Okapi Wildlife Reserve	7	-	-	-
Okavango Delta	7	1	3	1
Olympic National Park	1	1	1	1
Pantanal Conservation Complex	1	1	1	1
Papahānaumokuākea	-	-	-	-
Península Valdés	-	-	-	-

Phoenix Islands Protected Area	1	-	-	-
Phong Nha-Ke Bang National Park	6	2	3	1
Pirin National Park	2	-	1	-
Pitons Management Area	1	-	-	-
Pitons, cirques and remparts of Reunion Island	1	-	-	-
Pitvice Lakes National Park	1	-	-	-
Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany	5	-	-	-
Puerto-Princesa Subterranean River National Park	2	1	2	1
Purnululu National Park	2	2	2	2
Putorana Plateau	-	-	-	-
Pyrénées-Mont Perdu	4	2	1	-
Rainforests of the Atsinanana	6	-	-	-
Redwood National and State Parks	-	-	-	-
Río Abiseo National Park	-	-	-	-
Río Plátano Biosphere Reserve	4	1	2	2
Rock Islands Southern Lagoon	1	-	-	-
Rwenzori Mountains National Park	1	-	-	-
Sagamartha National Park	2	-	-	-
Salonga National Park	4	-	2	-
Sanganeb Marine National Park and Dungonab Bay – Mukkawar Island Marine National Park	1	-	-	-
Sangay National Park	4	1	-	-
Sangha Trinational	4	-	1	-
Saryarka – Steppe and Lakes of Northern Kazakhstan	1	-	-	-
Selous Game Reserve	12	4	1	1
Serengeti National Park	5	-	-	-
Shark Bay, Western Australia	1	1	1	1
Shirakami-Sanchi	1	-	-	-
Shiretoko	1	-	-	-
Sian Ka'an	1	-	-	-
Sichuan Giant Panda Sanctuaries – Wolong, Mt. Siguniang and Jiajin Mountains	4	2	1	-
Simien National Park	1	-	-	-
Sinharaja Forest Reserve	1	-	-	-
Škocjan Caves	1	-	-	-
Socotra Archipelago	1	1	-	-
South China Karst	9	4	-	-
Srebarna Nature Reserve	1	-	-	-
St. Kilda	-	-	-	-
Stevns Klint	1	-	-	-
Sundarbans National Park	1	-	-	-
Surtsey	1	-	-	-
Swiss Alps Jungfrau-Aletsch	1	-	-	-
Swiss Tectonic Arena Sardona	2	-	-	-
Tai National Park	3	-	1	-
Tajik National Park (Mountains of the Pamirs)	4	1	1	-
Talamanca Range – La Amistad Reserves/La Amistad National Park	4	-	3	-
Tasmanian Wilderness	-	-	-	-
Tassili n'Ajjer	2	1	-	-
Te Wahipounamu – South West New Zealand	-	-	-	-
Teide National Park	1	-	-	-

The Ahwar of Southern Iraq	2	-	-	-
The Dolomites	4	1	-	-
The Sundarbans	1	-	-	-
The Wadden Sea	6	1	1	-
Three Parallel Rivers of Yunnan Protected Areas	15	3	3	1
Thungyai – Huai Kha Khaeng Wildlife Sanctuaries	5	1	-	-
Tikal National Park	-	-	-	-
Tongariro National Park	1	-	-	-
Trang An Landscape Complex	1	-	-	-
Tropical Rainforest Heritage of Sumatra	16	3	-	-
Tsingy de Bemaraha Strict Nature Reserve	1	-	-	-
Tubbataha Reefs Natural Park	-	-	-	-
Ujung Kulon National Park	1	-	-	-
Uluru-Kata Tjuta National Park	1	-	1	-
Uvs Nuur Basin	3	1	-	-
Vallée de Mai Nature Reserve	1	-	-	-
Virgin Komi Forests	-	-	-	-
Virunga National Park	10	2	3	-
Volcanoes of Kamchatka	1	1	1	-
Vredefort Dome	2	-	-	-
W. National Park of Niger	3	-	-	-
Wadi Al-Hitan (Whale Valley)	2	-	-	-
Wadi Rum Protected Area	2	-	-	-
Waterton Glacier International Peace Park	1	1	1	1
West Norwegian Fjords – Geirangerfjord and Nærøyfjord	1	-	-	-
Western Caucasus	2	-	-	-
Western Ghats	24	4	9	2
Western Tien-Shan	3	-	-	-
Wet Tropics of Queensland	5	5	5	5
Whale Sanctuary of El Vizcaino	-	-	-	-
Willandra Lakes Region	-	-	-	-
Wood Buffalo National Park	-	-	-	-
Wulingyuan Scenic and Historic Interest Area	1	-	-	-
Xinjiang Tianshan	4	1	-	-
Yakushima	1	-	-	-
Yellowstone National Park	-	-	-	-
Yosemite National Park	-	-	-	-

Notes: a—Endangered Natural WHS shown in **bold**; b—EGIDS values for endangerment consist of 6b ("threatened"), 7 ("shifting"), 8a ("moribund"), and 8b ("nearly extinct"); c—for language endangerment, assessment based on EGIDS assessment and number of speakers for the language polygons occurring in a particular nation and intersecting the Natural WHS in question, and assessed on a case-by-case basis where other occurrences of the same language indicate that it is not globally endangered; "-" equals 0.

cases often involve small cross-border tribal and/or indigenous peoples, whose most recent population numbers or status is uncertain.

Figure S1 presents a map showing languages that intersect the Darien National Park and Los Katíos National Park WHSs on the Panama-Columbia border as an example of the challenges in assessing endangerment. Table S2 contains corresponding tabular data for those same languages. Although these two adjacent parks do not formally constitute one of UNESCO's fifteen transboundary Natural WHSs, they occupy almost 50 kilometers of shared border and are both part of a larger regional biodiversity complex, Chocó-Darién, part of the Chocó-Darién-Magdalena Biodiversity Hotspot (Mittermeier et al. 2005; World Wide Fund for Nature-Colombia 2014). Darien National Park, Panama's single most

Figure S.1. Map of indigenous languages intersecting Darien National Park and Los Katíos National Park WHSs

Table S2. Indigenous Languages Intersecting or Adjacent to WHSs Darien National Park and Los Katíos National Park WHSs, along with Occurrences of Some of Those Same Languages in Colombia

Language (Country)	EGIDS Assessment	Estimated Number of Speakers
Border Kuna (Colombia)[a]	5	2,600
Border Kuna (Panama)[b]	5	900
Emberá-Catío (Colombia)[c]	6a	15,000
Emberá-Catío (Panama)[b, d]	6b	40
Northern Emberá (Colombia)[e]	5	49,700
Northern Emberá (Panama)[b]	5	22,500
San Blas Kuna (Panama)[b]	5	57,100
Woun Meu (Colombia)[c]	5	4,000
Woun Meu (Panama)[b]	5	6,800

Notes: a—Intersects Los Katíos (Colombia) National Park; b—intersects Darien (Panama) National Park; c—occurs elsewhere in Colombia; d—adjacent to Los Katíos National Park; e: adjacent to Darien National Park

extensive national park, extends along 90% of the Panama-Colombia border. Table S2 lists the five languages currently spoken by the three indigenous groups (Kuna, Emberá-Katío and Wounaan), whose traditional territories overlap the area occupied by the two Natural WHSs. The only language not present in both countries is San Blas Kuna, which has the largest number of speakers. Because most Kuna migrated long ago to Panama from their original territory along the Gulf of Urabá, Colombia, today only a few small settlements comprising several thousand people remain in Colombia. The separation of San Blas Kuna from the remaining Colombian Kuna and another group of several thousand Kuna residing in scattered settlements in the Darién jungle on the Panama side of the border has led to linguistic differences substantial enough for *Ethnologue* to recognize two Kuna languages shown in Table S2: San Blas Kuna and Border Kuna.

The Emberá people are also dispersed geographically, residing in territories ranging from Eastern Panama to Colombia and through Western Colombia to the northern border of Ecuador. Table S2 includes two of the six Emberá languages recognized as distinct by *Ethnologue*: Northern Emberá and Emberá-Catío, both of which intersect Darien National Park. The largest number of speakers of both languages, however, are located in Columbia outside the area of Los Katíos National Park. The Wounaan people speak Woun Meu, a related but distinct language to Emberá, which also intersects Darien National Park, but another group of Woun Meu speakers is located in Columbia outside the area of Los Katíos National Park.

In the case of Los Katíos National Park in Colombia, Table S2 shows that neither of the two indigenous languages intersecting the reserve, Border Kuna and Emberá-Catío, has an EGIDS rating that would indicate endangered status, but the former has fewer than 10,000 speakers. However, Emberá-Catío also has an even smaller group of 40 speakers in *Panama*, within the area of Darien National Park. *Ethnologue* assigns this occurrence of Emberá-Catío an EGIDSs score of 6b, indicating the language is threatened in Panama. Another occurrence of Emberá-Catío is found further south in Colombia, but has 15,000 speakers, and a 6a EGIDS rating, both above our thresholds of endangerment. Were we to consider all occurrences for all languages, Emberá-Catío would not meet criteria for endangerment under EGIDS or total speakers. Due to the difficult circumstances along the Colombia-Panama border, we decided to categorize all languages that intersect Los Katíos at the level of endangerment indicated in those intersecting polygons, regardless of global values. We debated the inclusion of the Panamanian occurrence of Emberá-Catío for a Colombian park, but ultimately decided that the fluid border and level of threat experienced by indigenous peoples in this area justified a decision to associate it with the park. In addition, *Ethnologue* population estimates for Emberá-Catío date from 1982 (Panama) and 1992 (Colombia), and almost certainly do not reflect current threats in this impoverished and remote region of dense mountainous jungle and swamps. Absence of government control has left these numerous small

indigenous communities vulnerable, with many forcibly resettled elsewhere or displaced by decades of internal armed conflict, civil war, and clashes with mestizo in-migrants and settlers whose farming and ranching have caused large-scale deforestation. In 2009 Colombia made a rare proactive request to the World Heritage Committee for inscription of Los Katíos National Park on the list of endangered WHSs due to the operation of guerilla and paramilitary groups, drug smugglers, illegal loggers, fishers and hunters. Although the park was removed from the endangered list in 2015 (UNESCO 2015), IUCN's World Heritage Outlook still considers this site (as well as neighboring Darien National Park) to be of "significant concern" (Osipova et al. 2014). The possible completion of the final segment of the Pan-American Highway through the Darien Gap, passing through both parks and some thirty communities, still poses a major threat, as do proposals being considered by the governments of Panama and Colombia for megadevelopment projects (e.g., gas pipelines, roads, ports, hydroelectric dams) that could further damage the communities and ecology of both WHSs (Bermúdez and Robertson 2011, Suman 2007, World Wide Fund for Nature-Colombia 2014).

In the case of Darien National Park in Panama, Table S2 indicates five indigenous languages that intersect the reserve—Border Kuna, Emberá-Catío, Northern Emberá, San Blas Kuna, and Woun Meu. With the exception of San Blas Kuna, all of those occur elsewhere in Panama. Levels of endangerment vary. For instance, Woun Meu has an EGIDS ranking of 5 everywhere it occurs, including where it intersects Darien National Park. However, the number of total speakers is 10,800 for both countries, though only 6,800 for the portion in Panama. Consistent with our conservative treatment of Los Katíos, we categorized Woun Meu as having fewer than 10,000 speakers in Table S1 because the polygon that intersected the park met this criterion. Our examination of these two sites shows that even within countries, a language may encompass numerous smaller speech communities with different and often continually changing sociolinguistic dynamics. In such situations, ultimately a desk-based analysis is not an adequate substitute for on-the-ground fieldwork and regular monitoring.

Figure S2 presents a map showing languages that intersect the Cliff of Bandiagara (Land of the Dogons) Natural WHS. Table S3 contains corresponding tabular data for those same languages.

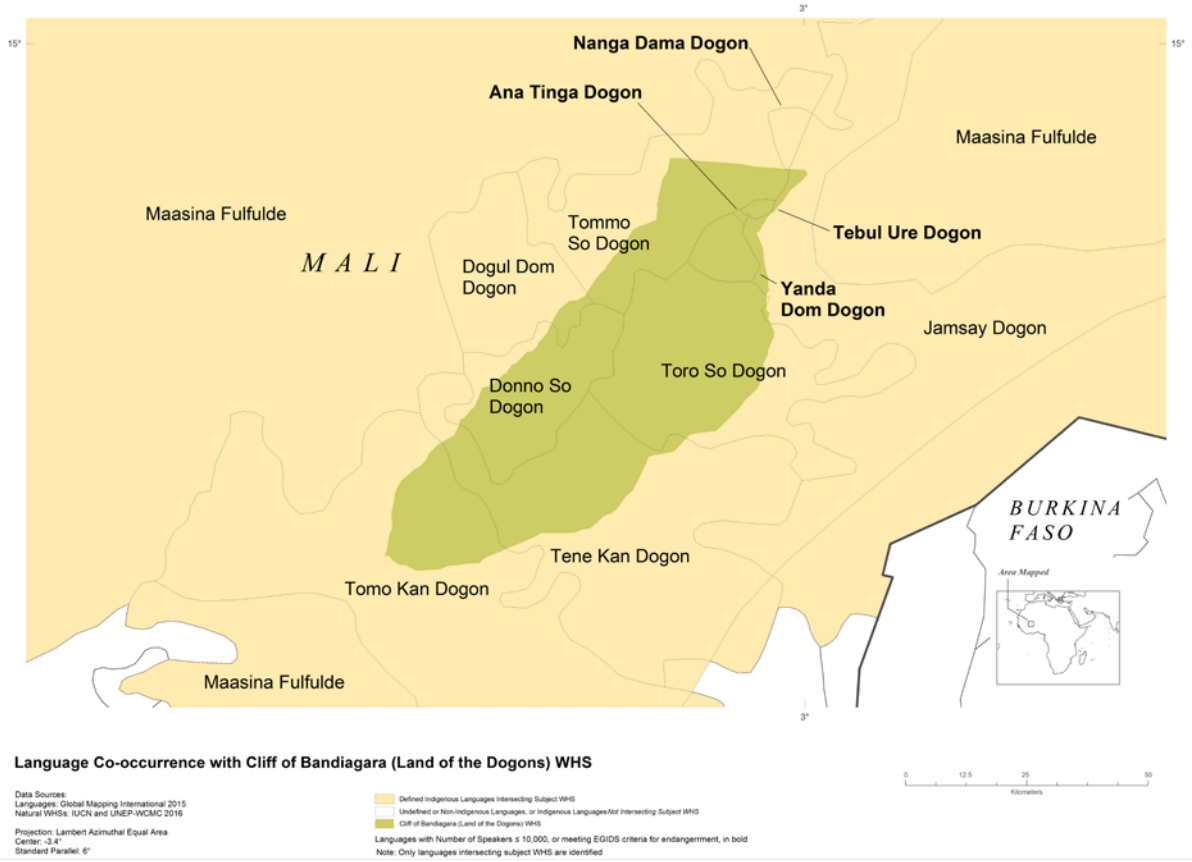

Figure S.2. Map of indigenous languages intersecting Cliff of Bandiagara (Land of the Dogons) WHS

Table S3. Indigenous Languages Intersecting Cliff of Bandiagara (Land of Dogons) WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Ana Tinga Dogon	6b	500
Dogul Dom Dogon	6a	15,700
Donno So Dogon	5	45,300
Jamsay Dogon	6a	130,000
Maasina Fulfulde	4	1,000,000
Nanga Dama Dogon	6a	3,000
Tebul Ure Dogon	6a	3,000
Tene Kan Dogon	6a	127,000
Tommo So Dogon	6a	60,000
Tomo Kan Dogon	6a	133,000
Toro So Dogon	4	50,000
Yanda Dom Dogon	6a	2,000

Figure S3 presents a map showing languages that intersect the Lagoons of New Caledonia Natural WHS. Table S4 contains corresponding tabular data for those same languages.

Figure S3. Map of Indigenous Languages intersecting Lagoons of New Caledonia: Reef Diversity and Associated Ecosystems WHS]

Table S4. Indigenous Languages Intersecting Lagoons of New Caledonia: Reef Diversity and Associated Ecosystems WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Ajië	5	5,360
Caak	6b	1,170
Cemuhî	6b	2,600
Fagauvea	6b	2,220
Fwâi	6b	1,860
Jawe	6b	990
Nêlêmwa-Nixumwak	6b	1,090
Nemi	6b	910
Numèè	6b	2,180
Nyelâyu	6b	1,960
Orowe	7	490
Paicî	5	7,250
Pije	8a	180
Tîrî	7	600
Vamale	8a	100

Figure S4 presents a map showing languages that intersect the Lorentz Natural Park Natural WHS. Table S5 contains corresponding tabular data for those same languages.

Figure S4. Map of Indigenous Languages Intersecting Lorentz National Park WHS

Table S5. Indigenous Languages Intersecting Lorentz National Park WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Central Asmat	6b	7,000
Damal	6b	14,000
Dem	6a	1,000
Ekari	5	100,000
Kamoro	6a	8,000
Lower Grand Valley Dani	5	20,000
Mid-Grand Valley Dani	5	50,000
Nduga	5	10,000
North Asmat	6a	1,000
Sempan	6a	1,000
Silimo	5	5,000
Western Dani	6a	180,000

Figure S5 presents a map showing languages that intersect the Selous Game Reserve Natural WHS. Table S6 contains corresponding tabular data for those same languages.

Figure S5. Map of Indigenous Languages Intersecting Selous Game Reserve WHS

Table S6. Indigenous Languages Intersecting Selous Game Reserve WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Kutu	6b	45,000
Matumbi	6a	72,000
Mbunga	6b	29,000
Mwera	6a	469,000
Ndendeule	6a	100,000
Ndengereko	6b	72,000
Ngindo	6a	220,000
Pogolo	6a	185,000
Rufiji	6a	200,000
Swahili	1	15,000,000
Yao	5	3,116,000
Zarama	8a	-

Figure S6 presents a map showing languages that intersect the Three Parallel Rivers of Yunnan Protected Areas Natural WHS. Table S7 contains corresponding tabular data for those same languages.

Figure S6. Map of Indigenous Languages that Intersect Three Parallel Rivers of Yunnan Protected Areas WHS

Table S7. Indigenous Languages Intersecting Three Parallel Rivers of Yunnan Protected Areas WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Anong	8a	50
Central Bai	6a	800,000
Drung	6a	14,225
Jingpho	3	900,000
Khams Tibetan	6a	1,380,300
Lama Bai	6a	60,000
Lashi	5	31,800
Lhao Vo	5	100,000
Lisu	3	900,000
Naxi	5	300,000
Nusu	6a	12,670
Rawang	3	62,000
Shixing	6b	1,800
Southern Pumi	6a	19,000
Zauzou	6b	2,100

Figure S7 presents a map showing languages that intersect the Tropical Rainforest Heritage of Sumatra Natural WHS. Table S8 contains corresponding tabular data for those same languages.

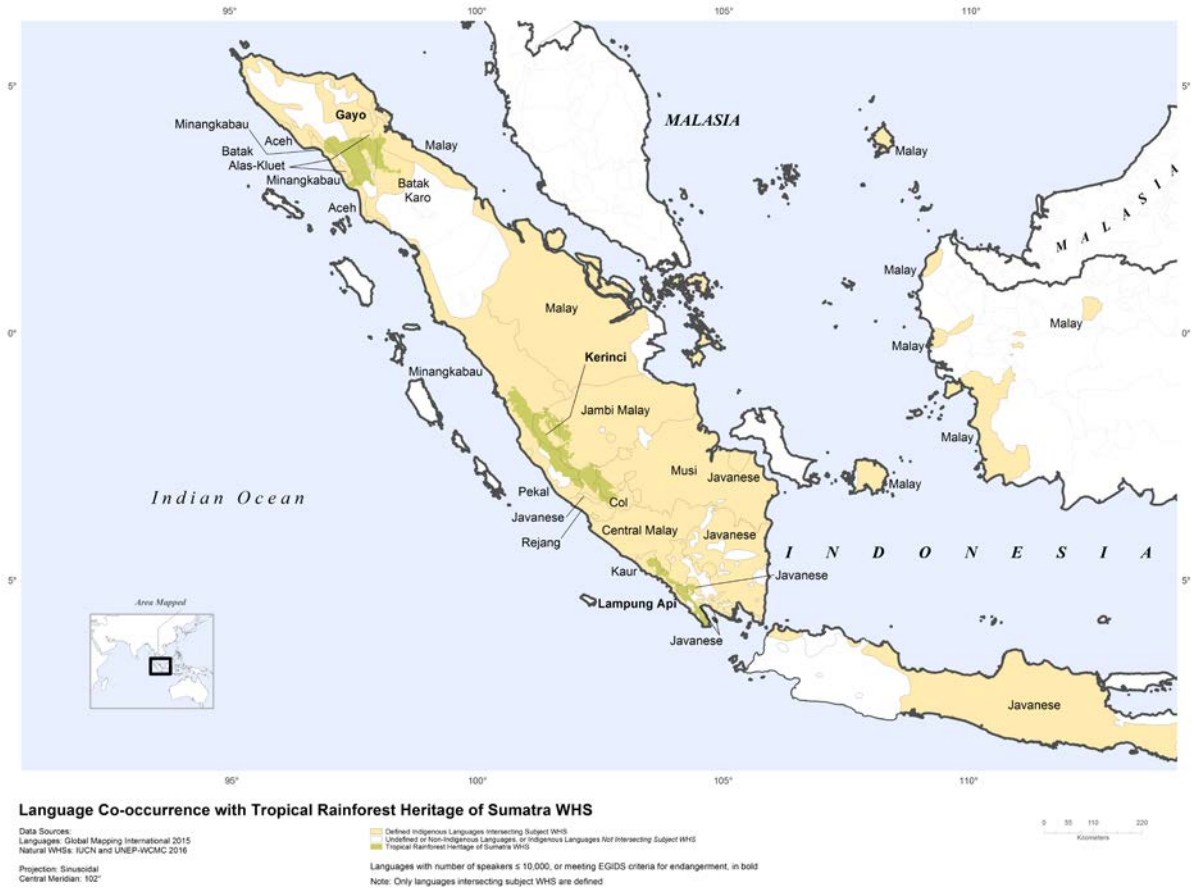

Figure S7. Map of Indigenous Languages Intersecting Tropical Rainforest Heritage of Sumatra WHS

Table S8. Indigenous Languages Intersecting Tropical Rainforest Heritage of Sumatra WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Aceh	5	3,500,000
Batak Alas-Kluet	6a	195,000
Batak Karo	5	600,000
Central Malay	6a	590,000
Col	6a	145,000
Gayo	6b	300,000
Jambi Malay	6a	1,000,000
Javanese	2	84,300,000
Kaur	6a	40,000
Kerinci	6b	260,000
Lampung Api	6b	827,000
Malay	6a	4,910,000
Minangkabau	5	5,530,000
Musi	3	3,105,000
Pekal	6a	30,000
Rejang	6a	350,000

Figure S8 presents a map showing languages that intersect the Virunga National Park Natural WHS. Table S9 contains corresponding tabular data for those same languages.

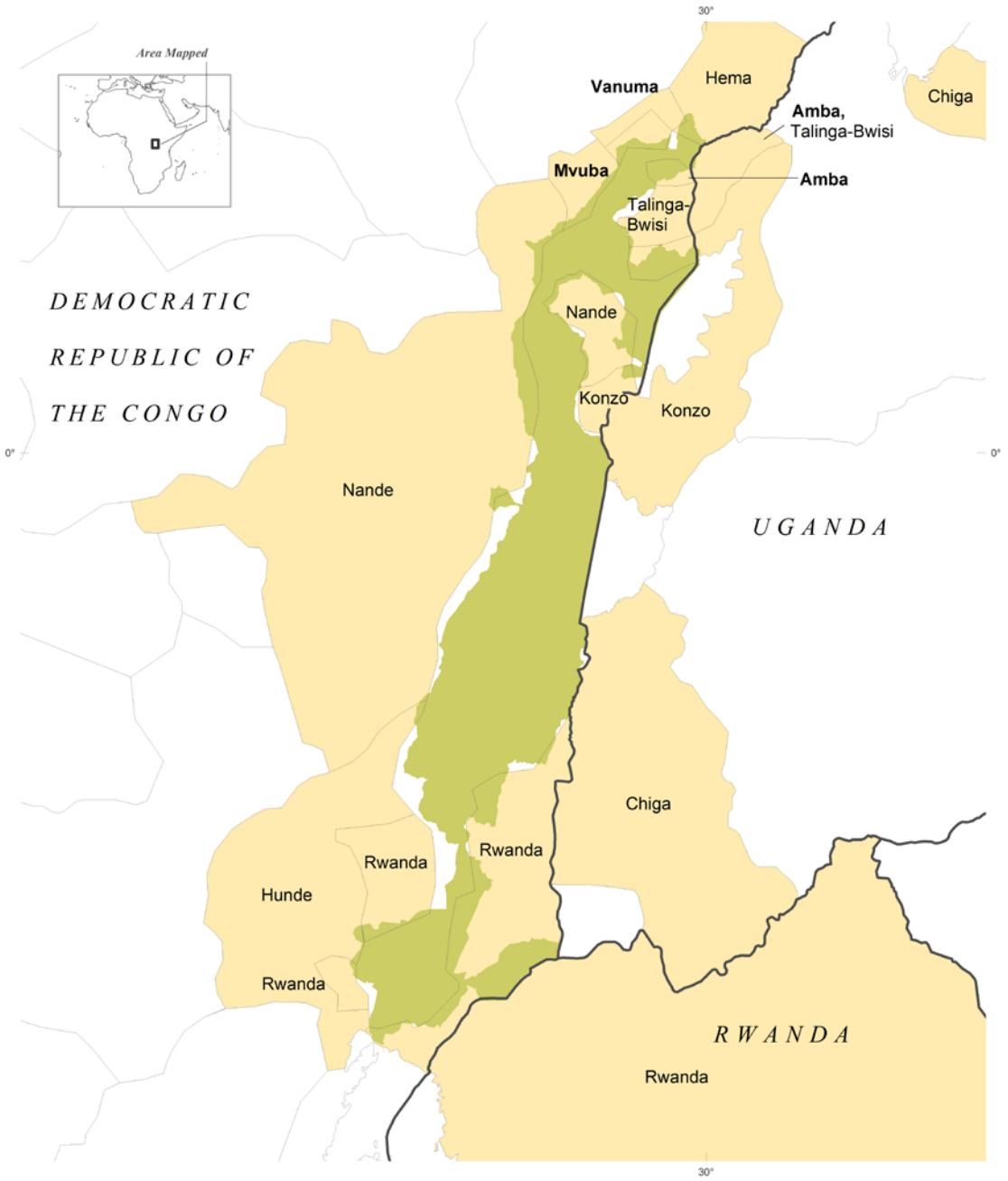

Figure S8. Map of Indigenous Languages Intersecting Virunga National Park WHS

Table S9. Indigenous Languages Intersecting Virunga National Park WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Amba	6b	40,100
Chiga	4	1,580,000
Hema	6a	125,000
Hunde	6a	200,000
Konzo	5; 6a	609,000; 0
Mvuba	6b	5,100
Nande	5	903,000
Rwanda	1; 5	6,490,000; 25,000
Talinga-Bwisi	5; 6a	68,500; 30,900
Vanuma	6a	6,700

Figure S9 presents a map showing languages that intersect the Western Ghats Natural WHS. Table S10 contains corresponding tabular data for those same languages.

Figure S9. Map of Indigenous Languages Intersecting Western Ghats WHS

Table S10. Indigenous Languages Intersecting Western Ghats WHS

Language	EGIDS Assessment	Estimated Number of Speakers
Allar	6b	350
Attapady Kurumba	6a	1,370
Badaga	5	135,000
Kanikkaran	6a	19,000
Kannada	2	37,700,000
Kannada Kurumba	5	180,000
Kodava	5	200,000
Kudiya	6a	2,800
Kurichiya	6b	29,400
Mala Malasar	6a	1,000
Malankuravan	6a	18,600
Malapandaram	6a	5,850
Malayalam	2	33,000,000
Mannan	6b	7,850
Marathi	2	71,700,000
Muduga	6a	3,370
Muthuvan	6a	16,800
Paliyan	6a	9,520
Pardhi	6a	49,300
Ravula	5	26,900
Tamil	2	60,700,000
Thachanadan	6b	3,000
Tulu	5	1,720,000
Waddar	6a	172,000

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