

## Supplementary Materials for

### **Navigating the complexities of coordinated conservation along the river Nile**

J. R. Allan\*, N. Levin, K. R. Jones, S. Abdullah, J. Hongoh, V. Hermoso, S. Kark

\*Corresponding author. Email: [james.allan@uqconnect.edu.au](mailto:james.allan@uqconnect.edu.au)

Published 3 April 2019, *Sci. Adv.* **5**, eaau7668 (2019)

DOI: [10.1126/sciadv.aau7668](https://doi.org/10.1126/sciadv.aau7668)

#### **This PDF file includes:**

Fig. S1. Freshwater richness for 331 fish species in the river Nile.

Fig. S2. Spatial distribution of the BHM.

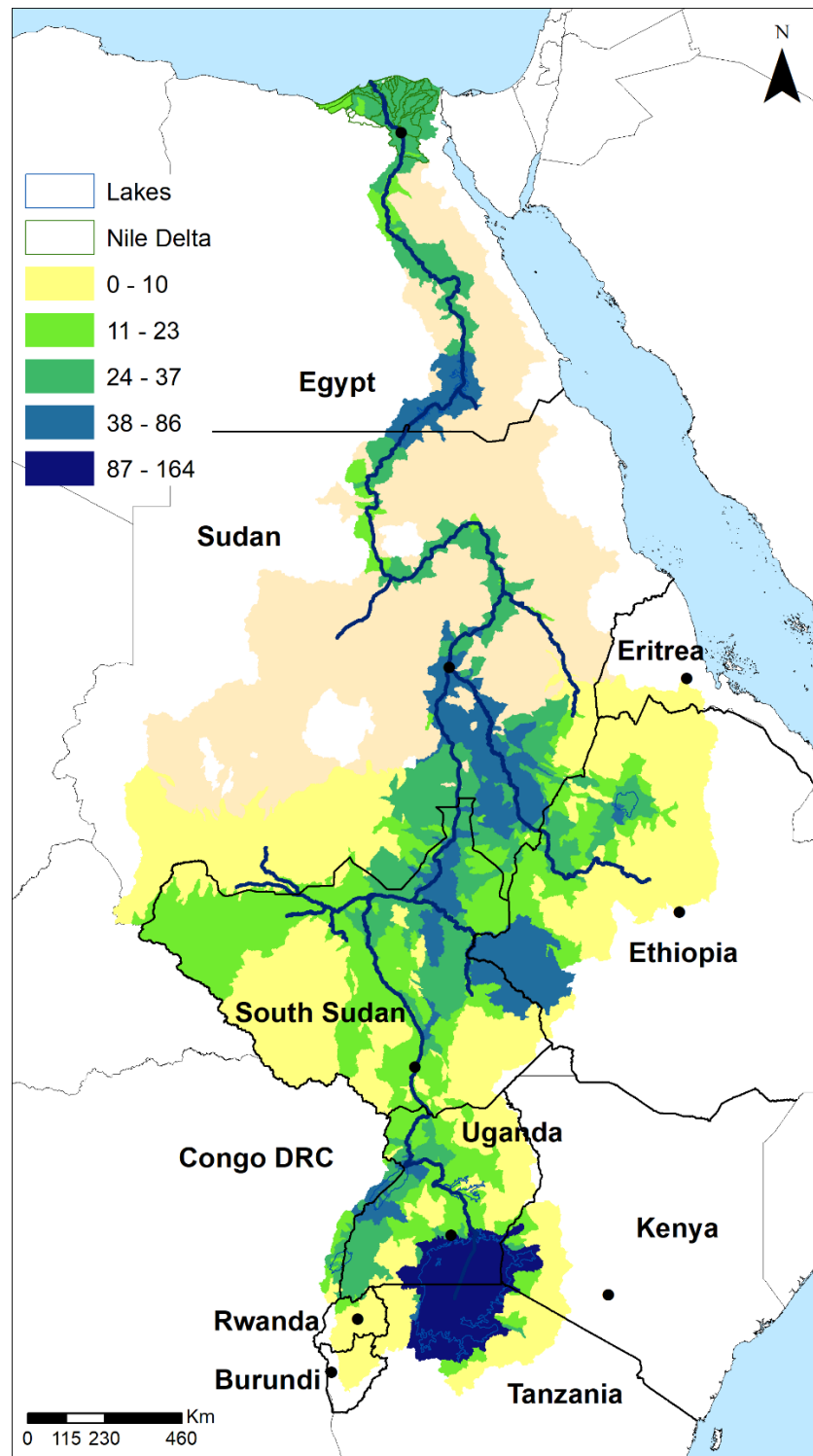
Fig. S3. Distribution of economic variables in the Nile basin in 2012.

Fig. S4. The distribution of socioeconomic and political factors in the Nile basin.

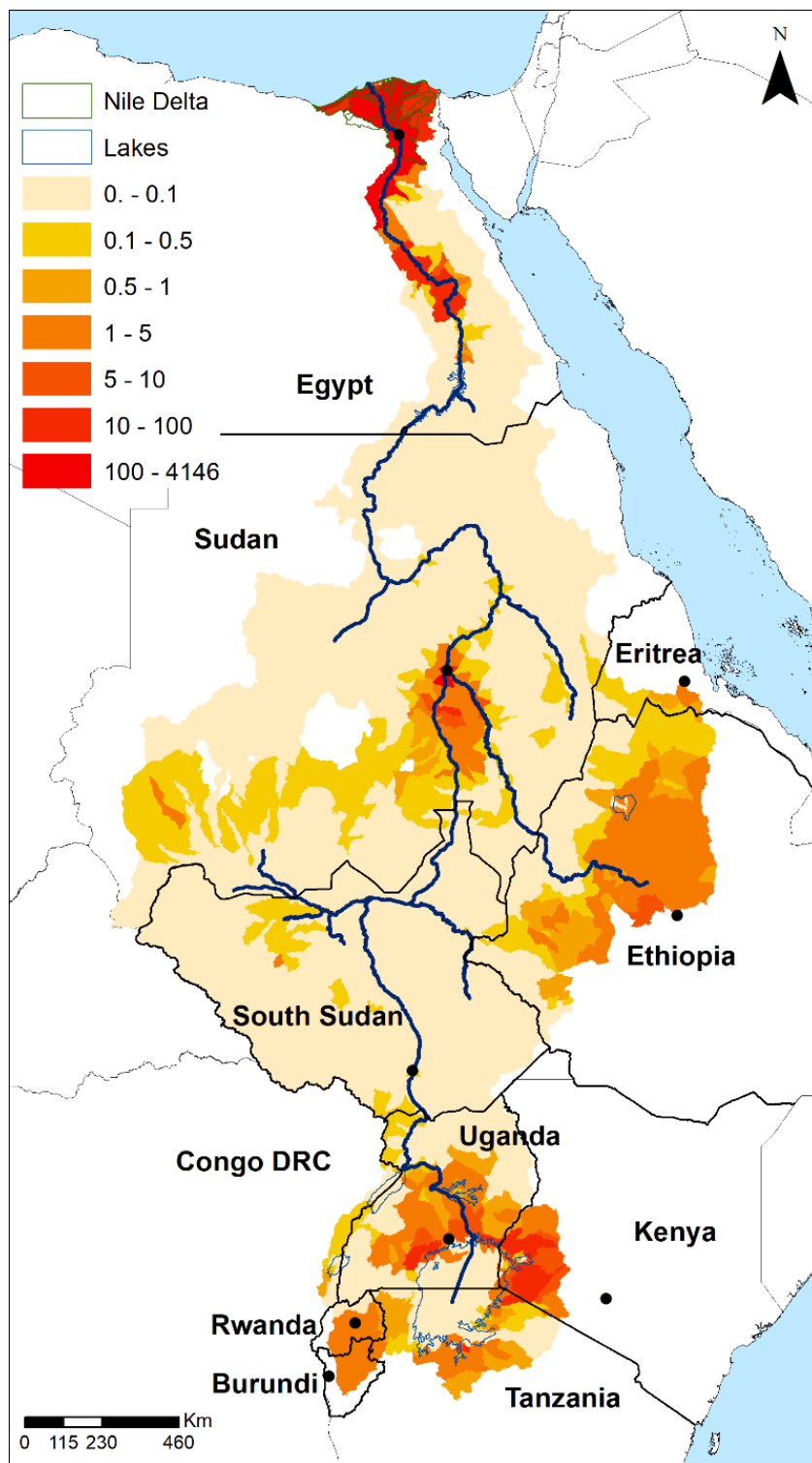
Table S1. Demographic and trade data for each Nile basin country (listed in order from north to south).

Table S2. General geographic and protected area statistics for each of the Nile basin countries.

## Supplementary Materials



**Fig. S1. Freshwater richness for 331 fish species in the River Nile.** Spatial data obtained from the International Union for the Conservation of Nature (IUCN).



**Fig. S2. Spatial distribution of the BHM measured in millions of USD in the Nile Basin.**

**Table S1. Demographic and trade data for each Nile basin country (listed in order from north to south).**

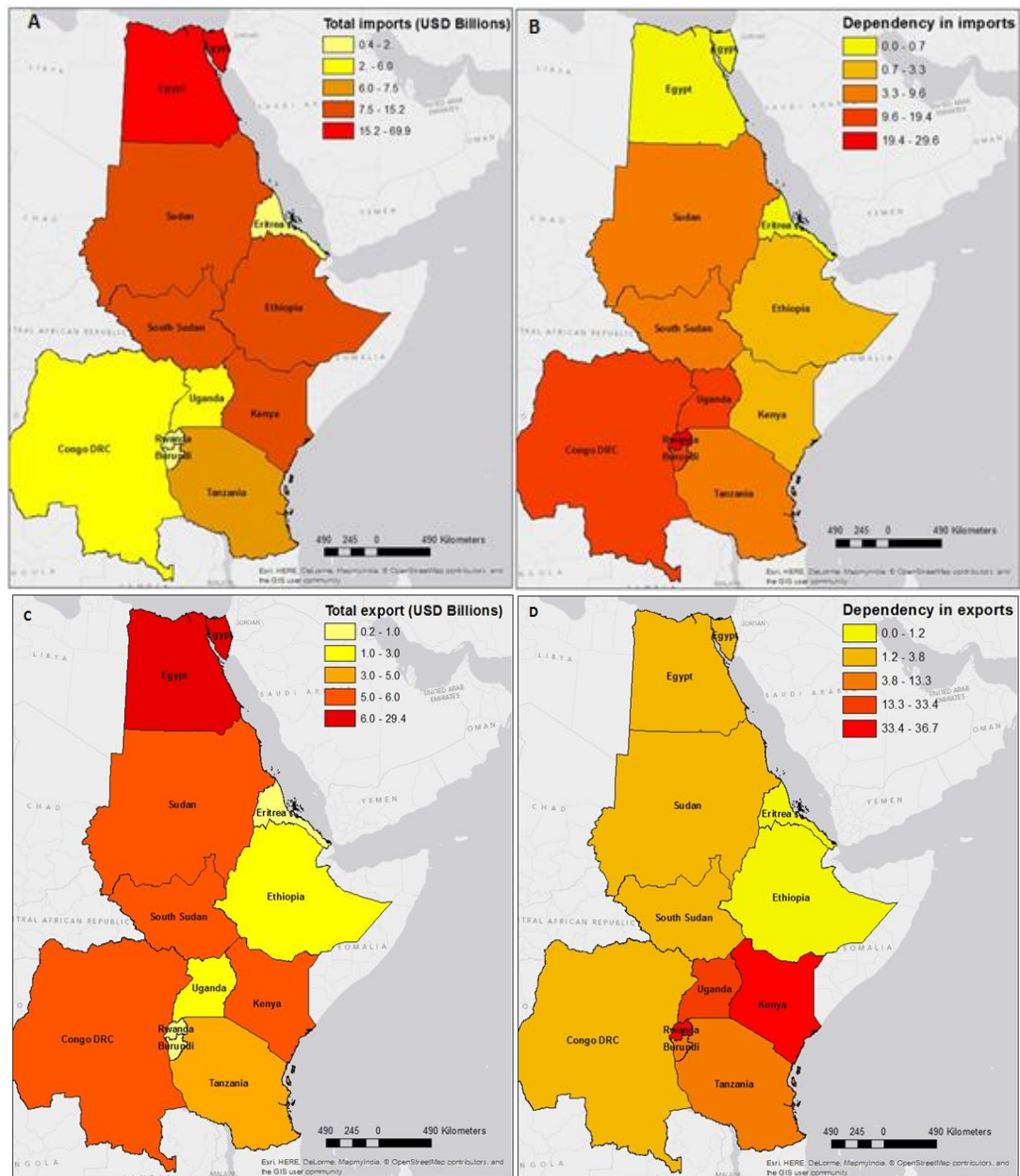
Country	2012 Population (millions)	2012 GDP (USD billions)	2012 GDP per capita (USD)	Purchasing Power Parity (PPP)	Number of Shared borders	Exports			Imports		
						2012 Total exports to world (USD millions)	2012 Total exports to Nile basin (USD millions)	Percentage of exports to Nile basin	2012 Total imports from world (USD millions)	2012 Total imports from Nile basin (USD millions)	Percentage of imports within Nile basin
Egypt	84.0	253.9	3024.2	1.9	3.0	29417.0	1112.1	3.8	69865.6	459.5	0.7
Sudan*	35.3	51.6	1459.8	2.0	7.0	3810.0	98.1	13.3	7511.6	98.1	9.6
Eritrea	5.6	3.1	556.9	6.3	3.0	403.3	no data	no data	383.5	no data	no data
Ethiopia	86.5	39.9	461.3	6.5	6.0	2891.3	33.9	1.2	11912.9	33.9	1.9
South Sudan	10.4	10.4	997.0	1.5	6.0	no data	no data	no data	no data	no data	no data
Uganda	35.6	24.7	693.4	1057.7	5.0	2357.4	788.1	33.4	6044.1	788.1	11.9
Kenya	42.7	40.7	952.2	38.0	5.0	5259.2	1931.2	36.7	15191.5	1931.2	3.3
DRC**	69.6	18.1	260.7	550.8	10.0	5647.4	115.7	2.0	5307.0	724.0	13.6
Rwanda	11.3	6.8	598.9	257.0	4.0	505.7	181.9	36.0	1624.3	181.9	29.6
Burundi	8.7	2.5	282.4	563.5	3.0	242.7	19.5	8.1	1003.1	194.3	19.4
Tanzania	47.7	29.9	628.3	665.6	8.0	5547.2	507.8	1.8	11715.6	507.8	6.5

\*Economic data for Sudan includes South Sudan. Trade statistics obtained from: <http://www.trademap.org/>. Population and GDP statistics obtained from UNECA African Statistical Year Book 2013. Purchase Power Parity (PPP) data obtained from the World Bank: [data.worldbank.org/indicator](http://data.worldbank.org/indicator) and from <http://databank.worldbank.org/data/reports.aspx?source=2&series=PA.NUS.PPP&country>

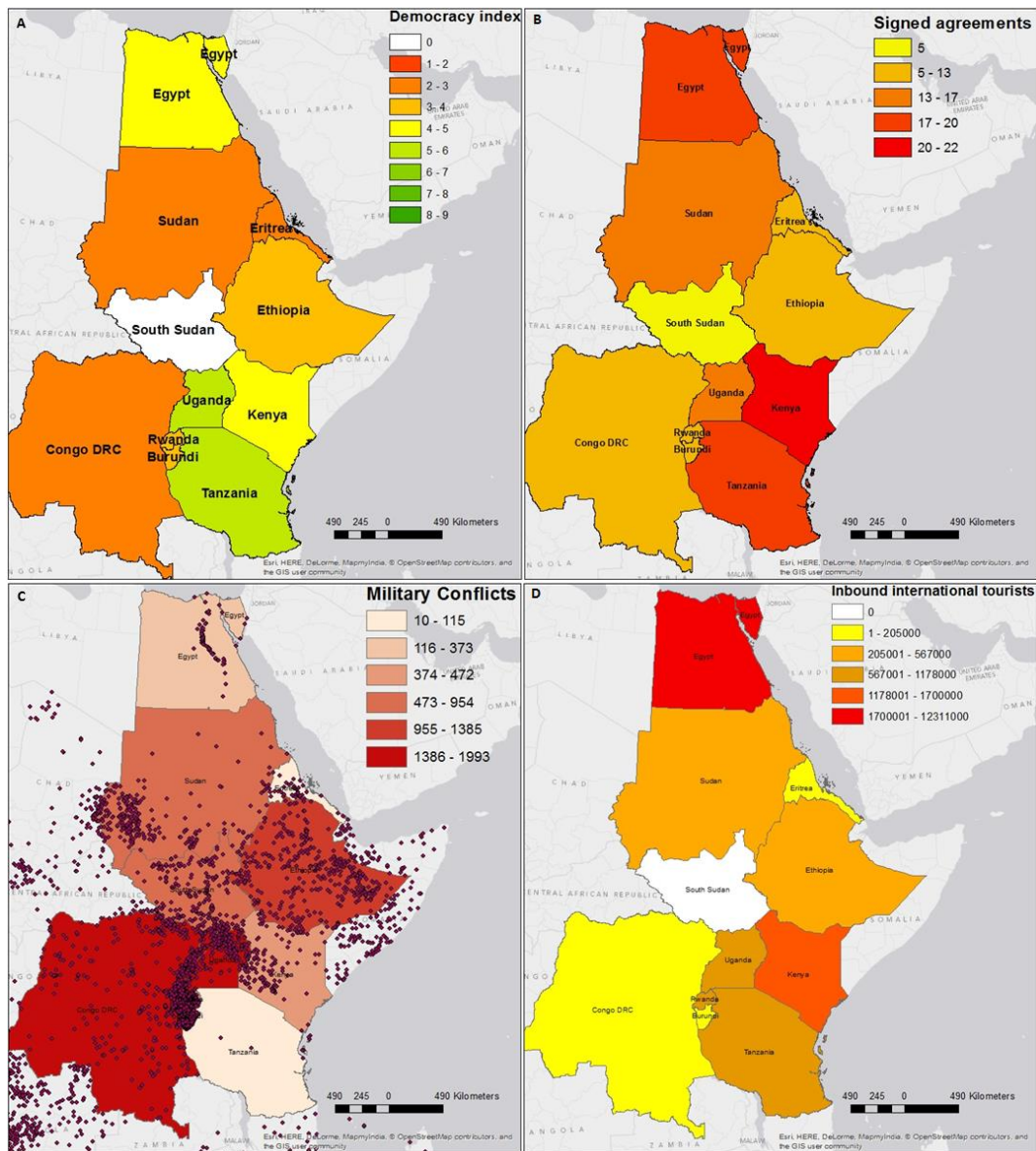
\*\*Democratic Republic of Congo

**Table S2. General geographic and protected area statistics for each of the Nile basin countries.** Countries are listed from North to South

<b>Country</b>	<b>Area of Country (km<sup>2</sup>)</b>	<b>Area of Country in Nile Basin (km<sup>2</sup>)</b>	<b>Percentage of Country in the Nile Basin</b>	<b>Area Protected in Country (km<sup>2</sup>)</b>	<b>Percentage of Protected areas in each country (km<sup>2</sup>)</b>	<b>Area Protected in Nile Basin (km<sup>2</sup>)</b>	<b>Percentage of protected areas in the Nile Basin</b>
Egypt	987702	239172	24.2	161049	16.3	65333	6.6
Sudan	1880789	1216033	64.7	26476	1.4	26269	1.4
Eritrea	123944	24963	20.1	6602	5.3	918	0.7
Ethiopia	1144968	359265	31.4	229221	20.0	76024	6.6
South Sudan	626505	618680	98.8	16619	2.7	16619	2.7
Uganda	241434	234191	97.0	35976	14.9	35974	14.9
Kenya	597807	49002	8.2	89120	14.9	10411	1.7
Congo DRC	2402901	19145	0.8	242938	10.1	57867	2.4
Rwanda	25370	20854	82.2	2530	10.0	2530	10.0
Burundi	27284	13200	48.4	959	3.5	959	3.5
Tanzania	941829	116442	12.4	300526	31.9	84196	8.9
<b>Totals</b>	<b>9000533</b>	<b>2910945</b>	<b>32.3</b>	<b>1112016</b>	<b>12.4</b>	<b>377100</b>	<b>4.2</b>



**Fig. S3. Distribution of economic variables in the Nile basin in 2012. (A)** Total annual imports in billions of US dollars. **(B)** Dependency on imports calculated as the percentage of imports from Nile Basin countries. **(C)** Total annual exports in billions of US dollars. **(D)** Dependency on exports calculated as the percentage of exports sent to Nile Basin countries.



**Fig. S4. The distribution of socioeconomic and political factors in the Nile basin. (A)**

Democracy index. **(B)** The number of signed international agreements relating to conservation and the environment. **(C)** The number of military conflicts between 1989 and 2010, each point represents an individual conflict. **(D)** Number of inbound international tourists in 2012. We used the Corruption Perceptions Index, derived from the World Resources Institute (<https://www.transparency.org/cpi2013/>) and the Democracy Index 2011 from the Economist Intelligence Unit ([www.eiu.com/public/topical\\_report.aspx?campaignid=DemocracyIndex2011](http://www.eiu.com/public/topical_report.aspx?campaignid=DemocracyIndex2011)). There was no data available for South Sudan.