The State of the Common Hippo

july 2019

the state of the common hippo
acknowledgements and credits

authors
David Cowdrey
BSc, FRGS, Head of Policy & Campaigns, IFAW, & Vice Chair of the LINK Wildlife Crime & Trade Group

Sarah Crudgington
BSc, MPhil, Principal Researcher and Lead Author, IFAW

reviewed by
Dr. Rebecca Lewison
Co-Chair of the IUCN SSC Hippo Specialist Group

Dr. Luke Gibson
The common hippopotamus population has been severely impacted in the past by poaching for its teeth. It is all too easy to imagine that poachers and organised gangs in the illegal wildlife trade based in Africa could easily switch from elephant ivory to hippo teeth, as an alternative when markets for elephant ivory such as that in Hong Kong SAR, China close in 2021.

This literature review provides a comprehensive summary of the population history of the common hippopotamus, its conservation status and the threats it faces. A key finding of this report is that we must take a precautionary approach when a species is being legally and illegally traded, especially when it is also being threatened by habitat loss, climate change and water abstraction, the common hippopotamus has an extremely precarious future.

We must take bold action now.

We are asking countries that have introduced some of the toughest ivory bans in the world to consider adding hippo ivory to their existing bans. We also encourage countries that do not have any ivory bans to introduce them while there is still time to save vulnerable species from being exploited for their ivory.

The International Union for the Conservation of Nature (IUCN) estimates that there are only about 110,000 -130,000 common hippos left in the wild and describes their conservation status as vulnerable, while observing that there is a significant legal trade in their teeth. Trade data from the Convention on International Trade in Endangered Species (CITES) shows more than 770,000 kg of hippo ivory has been traded internationally since 1975 which represents approximately 146,850 individual animals, based on a formula developed by the University of Hong Kong. If that level of trade continues, in conjunction with the intensifying threats of habitat loss, climate change and water abstraction, the common hippopotamus has an extremely precarious future. We must take bold action now.

We are thankful for the work and input from our researchers and partners, as well as the advice and support of experts from the IUCN Hippo Species Survival Commission Group and the University of Hong Kong, all of which have been crucial to making this research report a reality. We are hopeful this report will act as a catalyst for change, to secure greater protection for the common hippopotamus, and encourage more research to be conducted on their status and plight.

Azzedine Downes
President & CEO
IFAW

**methodology**

A literature review of scientific research papers from 1975 to present, using the International Union for Conservation of Nature (IUCN) Red List bibliography, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) trade data, populations census data and peer reviewed research conducted by wildlife trade monitoring programmes.
The common hippopotamus (Hippopotamus amphibius) is listed as vulnerable but stable, with a population estimate of 115,000–130,000, according to the most recent 2016 IUCN Red List assessment. Once widely distributed throughout sub-Saharan Africa, the common hippo population has declined by between 7–20%, and its range reduced and fragmented during the last century. Once a stronghold for hippos, the Democratic Republic of Congo (DRC) and other West African countries have seen the sharpest decline in hippo populations.

In the early 2000s, the world’s largest population of hippos in the DRC dropped by more than 95% as hunters targeted them for their meat and teeth. While this particular population has since plateaued, it is only stable at 17% of its 1970’s peak population.

Hippo ivory is considered easier to carve and cheaper to obtain than elephant ivory. According to CITES trade databases, 771,000 kg of hippo ivory has been traded internationally for commercial purposes since 1975. Hong Kong SAR, China is the primary importer of hippo ivory, and has traded more than 90% of this quantity, with more than 75% of the hippo ivory originating from Uganda and Tanzania.

Using the methodology developed by researchers at the University of Hong Kong, we have estimated that the 771,000 kg of hippo ivory traded internationally during the past 40 years equates to more than 146,857 hippos.

However, Andersson and Gibson (2018) examined patterns in the trade of hippo ivory and discovered a huge discrepancy between export and import data of hippo ivory between Uganda and Hong Kong SAR, China. Since 1975, there has been an additional amount of 14,000 kg of hippo teeth unaccounted for, which represents 30% of Uganda’s total hippo population, and 2% of the global hippo population.

Researchers at the University of Hong Kong speculate that these discrepancies in the hippo ivory trade between Uganda and Hong Kong SAR, China are a result of illegal trade. The discordance of import and export data of hippo ivory between source and market, combined with a lack of current population estimates for hippos, and the ever-increasing threat of climate change, makes assessing the sustainability of the legal hippo trade extremely difficult.

What’s more, where there is legal trade, there will be illegal trade. The 1989 global ban on the elephant ivory trade saw a huge surge in demand for hippo ivory as a legal substitute. A similar elephant ivory ban is due to be enforced in 2021 in Hong Kong SAR, China – the predominant importer of hippo ivory. Without concurrent demand and increased enforcement efforts from all exporting range states and importing countries, there is a serious and pressing risk that hippo populations will suffer once again.

In essence, hippo populations are precarious. The cumulative threats of climate change, habitat loss and the legal and illegal trade in hippo teeth are seriously challenging the persistence of hippo populations.
The common hippopotamus (Hippopotamus amphibius) is one of only two extant species in the Hippopotamidae family—the other being the pygmy hippopotamus (Choeropsis liberiensis). Found throughout Africa, they are social, polygynous animals with herd sizes ranging from 10 to 100 individuals. The common hippo is the third largest terrestrial mammal, after the rhinoceros and the elephant, and the largest living member of the order Artiodactyla (even-toed ungulates), with males weighing in at around 1,500 kg, and females at 1,300 kg. Despite the hippo’s resemblance to pigs, this semi-aquatic, mega-herbivorous mammal is most closely related to cetaceans.

Hippos have extremely large canine teeth, which can reach 50 cm in size. They are barrel-shaped and have almost hairless bodies, and have a reputation for being one of the most aggressive and most dangerous animals in Africa. As they are semi-aquatic mammals, they require access to some form of permanent water source as their skin must remain moist. They are unable to sweat but instead secrete a substance known as ‘blood-sweat’, which is red in colour and protects the animal from sunburn. Hippos can live for up to forty years, but have a slow reproductive rate, with females generally producing only one calf every two years.

The hippo is a ‘keystone species’, as its behaviours and foraging activities have a disproportionately large effect on the terrestrial and aquatic ecosystems within its habitat, relative to its abundance. The hippo’s excretion of organic matter into freshwater systems has a significant effect on their biochemistry. In lakes in Virunga, for example, this phenomenon has affected the ecosystem of the fish species, tilapia (Tilapia sparrmanii). A single hippo can produce as much as 25 kg of dung per day, which the tilapia feed on. A reduction of hippos in this area could therefore have a direct impact on the tilapia population of Virunga.

The most recent IUCN Red List assessment of common hippos was updated in 2016, and classifies hippos as ‘vulnerable’ yet stable, with a population of approximately 115,000 – 130,000 individuals. They are found throughout sub-Saharan Africa (Table 1), with the eastern region of Africa being home to more than 77% of the total population (Fig 3). Zambia and Tanzania are home to the largest population of hippos, with populations of 40,000 and 20,000 respectively.

### Common hippo population distribution by country and region

#### East
- Burundi: 500 – 1000
- Ethiopia: 2500
- Kenya: 5000 – 7000
- Malawi: 3000
- Mozambique: 3000
- Rwanda: 1000
- Somalia: 50
- South Sudan: 2000 – 3000
- Tanzania: 20000
- Uganda: 7000 – 10000
- Zambia: 40000 – 45000
- Zimbabwe: 5000

**Total:** 89,050 - 100,550

#### West
- Benin: 500
- Burkina Faso: 1500 – 2000
- Gambia: 40
- Ghana: 150 – 200
- Guinea: 500
- Guinea Bissau: 200 – 500
- Ivory Coast: 500 – 600
- Mali: 100
- Niger: 150 – 200
- Nigeria: 100 – 200
- Senegal: 500
- Sierra Leone: 100 – 200
- Togo: 250 – 500

**Total:** 4,590 - 6,040

#### Central
- Angola: 500
- Cameroon: 1500 – 2000
- Central African Republic: 200 – 500
- Chad: 500
- Congo: 50
- Democratic Republic of Congo: 5000
- Equatorial Guinea: 50 – 100
- Gabon: 200 – 300

**Total:** 8,500 - 8,950

#### South
- Botswana: 2000 – 4000
- Namibia: 3500
- South Africa: 7000
- Swaziland: 150

**Total:** 12,650 - 14,650

### Table 1 - IUCN Red List assessment 2016 hippo population estimates by country


---

Figures 3 - Hippo population distribution throughout Africa

---

The State of the Common Hippo

In the last century, the common hippo’s range has declined and fragmented, and its population size has reduced by between 7–20%1. The Democratic Republic of the Congo and West African countries have seen the sharpest declines in hippo numbers.

During the 1970s to the 1990s, Lake Edward in the Democratic Republic of Congo (DRC) was home to the largest population of hippos in the world with a population estimate of roughly 29,000 hippos2,3. However, in the early 2000s, the population fell by 95% as a result of hunting during eight years of civil unrest4. Armed groups sold hippo teeth and meat to fund themselves during the war5. While hippo numbers are increasing in the DRC, the current population is estimated at just 5,000 and ongoing violence in the region makes progress uncertain. Currently, the population is only stable at 17% of its 1970’s peak3,4 (fig 4).

Finding up-to-date global population estimates for hippos after 2016 is extremely difficult, with IUCN assessments only undertaken in 2016, 2008, 2006 and 1992. Global figures for hippo populations since the early 2000’s show a downward trend, but there is also a plateau between the 2008 and the 2016 IUCN Red List assessments (fig 5), which is why they are listed as vulnerable yet stable.

According to the supplementary data provided by the IUCN Red List assessment in 20165, there is concern regarding the conservation status of hippos in more than 64% of the countries where they are found. More than 42% of countries where hippos live are showing population declines, and more than 23% of countries have unknown hippo population trends (fig 6). Just under a quarter of countries have stable populations, and just 10% of countries have populations that are increasing. There is a projected population decline of 30% over the next 30 years. Current data suggests that hippo populations in Western Africa are at the highest level of risk due to the fragmented nature of their distribution and the high frequency of hippo-human conflicts6.

2 “DR Congo’s hippos face extinction” BBC Article (2005) http://news.bbc.co.uk/1/hi/world/africa/4240420.stm
The hippo’s primary threats are habitat loss, habitat degradation, climate change and the unregulated trade in their teeth and meat. Hippos have several behavioural and physical characteristics that exacerbate these threats, which are outlined below (Table 2).

### Threats

#### Behaviour or physical characteristic

<table>
<thead>
<tr>
<th>Threat</th>
<th>Contribution to threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large teeth</td>
<td>- Ivory trade</td>
</tr>
<tr>
<td>Aggressive</td>
<td>- Human-wildlife conflict</td>
</tr>
<tr>
<td>Semi-aquatic</td>
<td>- Ivory trade</td>
</tr>
<tr>
<td>- Bushmeat trade</td>
<td>- Human-wildlife conflict</td>
</tr>
<tr>
<td>- Climate change</td>
<td>- Climate change</td>
</tr>
</tbody>
</table>

**Table 2: Hippopotamus physical and behavioural characteristics, and associated threats**

#### Sustainability of the legal trade

In order to assess and monitor sustainability of the legal hippo trade, up-to-date scientific population estimates are required to inform trade and policy decisions. Unfortunately, these are lacking. Accurate trade data, such as import and export quantities is also essential to monitor sustainability. Discordance in such data poses a challenge in implementing regulatory measures, and therefore the persistence of hippo populations in Africa.

Anderson and Gibson (2018) examined the discordances between import and export data on the legal, commercial trade in hippo ivory as specified in the CITES Trade Database, accessed in April 2016. They noted that 771,000 kg of hippo ivory has been traded internationally for commercial purposes since 1975.

Using the most conservative method available to estimate individual hippo numbers using the weight of hippo teeth, as specified in Williamson’s ‘Tackling the ivories: The Status of the US trade in elephant and hippo ivory’ report, we estimate that this volume of ivory equates to a shocking 146,857 hippos. According to Anderson and Gibson’s research paper, 90% of this volume was imported by and re-exported from Hong Kong SAR, China, representing 132,171 hippo traded to Hong Kong SAR, China alone between 1975 and 2016. More than 75% of these hippo ivory imports originated from two countries, Tanzania (41%) and Uganda (35%). Additionally, 97% of all the CITES-registered commercial trade of hippo teeth into or out of Hong Kong SAR, China since 1975 is specified as ‘wild caught’, with less than 3% listed as captive-bred, ranched or pre-convention, which equates to roughly 128,106 wild hippos. The researchers also uncovered a huge disparity between what is reported as imported and exported between countries. Over 14,000 kg of hippo teeth was unaccounted for between Uganda and Hong Kong SAR, China, representing more than 2,700 hippos. This represents 2% of the global hippo population, and nearly 30% of Uganda’s total hippo population, which is currently estimated at 10,000–100,0004.

#### Illegal trade

Concern about the falling hippo numbers led Uganda to ban the trade in hippo teeth in 2014, but wildlife authorities have reported that since the ban, the flow of hippo ivory to international markets has continued due to the long established transcontinental trade networks, structures and mechanisms that had previously been in place. Similarly, the existence of the legal trade in elephant ivory pre-1989 provided fertile ground for illegally traded ivory; it is feared the same will happen to the hippo ivory trade, with trade continuing illegally under the guise of ‘legal trade’.

During the period following the 1989 global ban on elephant ivory trade there was a surge in demand for hippo ivory as a legal substitute. Hong Kong SAR, China, the world’s biggest importer of hippo ivory is set to implement a domestic elephant ivory ban in 2021. It is wholly possible that this will encourage buyers to look to hippo ivory as a substitute. Without appropriate demand reduction and enforcement efforts, this could lead to the decimation of an already vulnerable wild hippo population.

#### Hippo teeth trade

**Legal trade**

Hippo teeth can reach up to 50cm in size and are a source of ivory considered easier to obtain and transport in comparison with elephant ivory. They are also considered luxury goods and easier to carve into sculptures and other ornaments.

The trade in hippo ivory is regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Hippos have been listed on CITES Appendix II since 1995. Appendix II species are not necessarily threatened with extinction, but trade must be controlled to avoid over-exploitation or utilisation incompatible with their survival. To trade or export hippo parts, an export permit may be issued only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species. No import permit is needed unless required by national law.

Currently, trade quotas and hunting regulations differ across African range states. In 2014, Uganda became the only source country to ban the trade in hippo teeth.

**Illegal trade**

Hippo ivory at the headquarters of the Ministry of Natural Resources and Tourism in Dar es Salaam, Tanzania.

771,000 kg of hippo ivory has been traded internationally for commercial purposes since 1975, and 90% of this volume was imported by and re-exported from Hong Kong SAR, China.

---

3. CITES website https://www.cites.org/eng/app/appendices.php
Hippos rely on a permanent body of water to submerge themselves, and grasslands to graze\(^\text{10}\). This niche environmental requirement puts hippos in competition with an ever-increasing human population for natural resources, water and land — which can lead to increased instances of human-wildlife conflict. It also makes them extremely vulnerable to the effects of climate change\(^\text{11}\).

Droughts can be extremely devastating for hippos\(^\text{13}\). In 2006, severe drought conditions killed 60–80 hippos in the Masai-Mara National Reserve\(^\text{14}\). In Kenya, during a 12-year period between 1997 and 2008, there were more than 4,490 recorded reports of human-hippo conflict incidences, exacerbated by droughts\(^\text{15}\).

Climate change models of the predicted impacts in the Virungas of East Africa anticipate that hippo populations residing here would be seriously affected from an increase in droughts and human demand for water\(^\text{16}\). Additionally, a lack of grass foraging areas for hippos due to human encroachment would also threaten their existence\(^\text{17}\).

human-induced environmental changes

> The EAGLE Network (Eco Activists for Governance and Law Enforcement) aims to protect threatened wildlife species in key African countries from large-scale poaching, by increasing the level of wildlife law enforcement in each country and deterring poachers and traffickers. The EAGLE Network has representatives in Congo, Gabon, Guinea, Togo, Benin, Senegal, Ivory Coast and Burkina Faso. They have reported evidence of illegal trade in hippo teeth as recently as January 2019, with 4 traffickers caught smuggling hippo ivory in Cameroon\(^\text{8}\) and a trafficker attempting to trade in hippo teeth in Uganda. The EAGLE Network’s 2018 annual report documented the arrest of traffickers who were attempting to traffic more than 230 pieces of hippo ivory\(^\text{9}\).

---


Only 10% of the hippo populations across Africa are growing, and more than 65% of populations have decreasing or unknown population trends. Hippos are classified as vulnerable yet stable by the IUCN, yet the term ‘stable’ also reflects populations that have dramatically declined and not recovered after previous poaching incidents. The Democratic Republic of Congo once held the world’s largest population of hippos, but this population declined by 95% due to civil unrest in the region in the early 2000s. These incidents demonstrate the devastating impact of poaching on population numbers over a small period of time.

The closure of the domestic elephant ivory market in Hong Kong SAR, China presents a real threat to hippos after 2021. There is potential for a parallel trade to grow in hippo ivory as a substitute for elephant ivory, as was seen after the 1989 ban on elephant ivory. Furthermore, the current discrepancies in trade data shown by Andersson and Gibson (2018) and the lack of up-to-date population estimates makes the sustainability of the legal hippo trade extremely difficult to discern.

With cumulative threats from climate change, habitat loss and human-wildlife conflict, hippo populations could become more vulnerable than they are today, with some reports projecting population declines of 30% in the next 30 years. Increasing frequencies of drought spells due to climate change threaten this species, as do a reduction in grazing areas which can force hippos into surrounding agricultural landscapes, which in turn lead to increased incidents of human-hippo conflicts, persecution and poaching.

It is strikingly evident that there needs to be more research to understand common hippo populations continent-wide, and it is essential that precautionary measures are put in place to protect populations which are in decline, and ensure better trade controls are introduced.

IFAW calls for hippo ivory to be added to all current elephant ivory bans, before 2021. This precautionary measure will ensure that the closure of elephant ivory markets does not impact hippos. In concurrence, demand reduction and increased enforcement efforts are required in consumer nations.

As Dr. Alexandra Andersson, research scientist at the University of Hong Kong, comments: “...hippos may not survive a quadruple-threat of increased demand for their teeth, mismanaged legal trade, continued poaching, and climate change.”

We must take bold action now.

Further recommendations

- Support adding hippo ivory to the Ivory Act.
- Support IFAW’s campaign on social media using #EndWildlifeCrime.
- Ensure demand reduction and enforcement efforts accompany any bans.

- Improve monitoring and protection of hippo populations.
- Conduct up-to-date census/population estimates on current hippo populations, certainly in countries where trafficking is rife and areas that have experienced or are experiencing civil unrest. A new population estimate could change their IUCN and CITES conservation status.
- Improve the accuracy of import and export data reports and encourage the exchange of data from market and source countries.
- Should populations continue to decline, up-listing hippos from CITES Appendix II to Appendix I should these populations meet the relevant criteria.

In conclusion

Support adding hippo ivory to the Ivory Act.
Support IFAW’s campaign on social media using #EndWildlifeCrime.
Ensure demand reduction and enforcement efforts accompany any bans.

International Fund for Animal Welfare

The State of the Common Hippo

87-90 Albert Embankment
London
SE1 7UD

Registered Charity No. 1024806
Registered Company No. 2701278

Australia
Belgium
Canada
China
France
Germany
Kenya
Malawi
Morocco
Netherlands
South Africa
United Arab Emirates
United Kingdom
United States
Zambia