# ILLEGAL WILDLIFE TRADE IN BELIZE: MILLIONS LOST ANNUALLY

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### Introduction: What is Illegal Wildlife Trade?

Illegal wildlife trade (IWT) can be defined as "supplying, purchasing, selling or transport of wildlife and wildlife parts and products in contravention of national and international laws or treaties".<sup>1</sup> It is an 'expanding' crisis threatening global biodiversity, causing species extinctions and extirpations, landscape and ecosystem destruction, disrupting livelihoods and costing millions in lost revenue for local economies. This global trade has been estimated to be worth between US\$7-\$23 billion, excluding illegal fishing and logging which are valued at US\$30-\$100 billion and US\$23.5 billion respectively. IWT stands as the fourth most lucrative global criminal activity after drug, human and arms trafficking.

To date, IWT has received very little attention in Belize. However, studies and anecdotal information indicate that the trade Belize is aligning with the global trend, it is expanding. Illegal trade threatens wildlife in our rivers, forests and sea, affects Belizean livelihoods and economy, and undermines the rule of law. There has been limited investigation into the ecological impacts and the extent of IWT in Belize; however, to date, there has been no attempt to quantify its economic value. In this Policy Brief, we attempt this estimate whilst recognizing the many limitations to the accuracy of such an estimate due to missing or incomplete data.

# IWT in Belize: What is the cause for concern?

#### Belize's Dependence on Wildlife

Belize is known for its high level of terrestrial and aquatic biodiversity. As is the case for developing countries, natural resources are incredibly important to society and the economy. In fact, Belize is considered **resource-dependent**; it is highly dependent on its natural resources for income generation (tourism, fisheries, agriculture, forestry) as well for *basic needs* (food, medicine, housing materials, etc.). Belize's natural resources face internal (national) and external (international) pressure and as human populations and consumption increase, so has the legal and illegal trade of wildlife. Given Belize's resource dependence, the growth of IWT could deliver a serious blow to Belize's economy given its potential threat to millions earned from the legal trade of wildlife as well as to the tourism industry. Some summary figures to quantify this threat reveal that, over the period 2003-2018, Belize earned approximately BZ\$131 million from the legal trade of conch and BZ\$181 million from lobster. Over a shorter period, 2010-2018, BZ\$71 million was generated from the legal trade of mahogany while rosewood generated over BZ\$16 million. Of even greater economic importance is Belize's tourism industry which generates more than a billion US Dollars each year and employs 20,680 Belizeans.

# Financial loss from Illegal Wildlife Trade

Like many other biodiverse countries in this region, Belize's wildlife is in high demand with many engaging in illegal trade to supply this demand. But, how much is this trade really worth? The clandestine nature of the trade and the fact that few studies have been conducted in Belize, makes it difficult to quantify. We believe this is the first attempt to gather scattered and incomplete data on the volume and value of IWT in Belize. Through desk based reviews, WCS compiled and analysed open source information, as well as raw data, reports, and papers from national experts and officials to estimate the value of IWT in Belize.

<sup>&</sup>lt;sup>1</sup>Reuter, A., J. Kunen, S. Roberton. (2018). *Averting a Crisis: Wildlife Trafficking in Latin America*. New York, NY: WCS.

Our search revealed that the top species targeted for IWT (including illegal, unregulated and unreported fishing) were: conch, lobster, sea cucumber, rosewood, mahogany, cedar, game species (armadillo, paca, collared peccary, red brocket deer, white-lipped peccary, white-tailed deer), sharks (various species), psittacines (parrots), hicatees and crocodiles. However, due to limited availability of data, the valuation focused on the species presented the table below.

# Snapshot: losses (in \$BZD) from the illegal trade of key species in Belize 2012 – 2018

Species	Demand	Value of Trade
Game species	High local demand	\$22,628,914 <sup>2</sup>
Conch	High local and international demand	\$72,337 <sup>3</sup>
Lobster	High local and international demand	\$60,186 <sup>4</sup>
Timber (rosewood, mahogany, cedar)	High local and international demand	\$36,400,000 <sup>5</sup>
Sharks	High international demand	\$1,984,842 <sup>6</sup>
Parrots	High national and international demand	\$1,175,000 <sup>7</sup>
TOTAL		\$61,439,101

<sup>&</sup>lt;sup>2</sup> Foster, RJ, Harmsen, BJ, MacDonald, DW, Urbina, Y, Garcia, R, Doncaster, CP 2012. *Wild Meat: a shared resource amongst people and predator,* Oryx, Page 1 of 13, doi:10.1017/S003060531400060X

<sup>&</sup>lt;sup>3</sup> Enforcement Assessment Presentation, WCS

<sup>&</sup>lt;sup>4</sup> Enforcement Assessment Presentation, WCS

<sup>&</sup>lt;sup>5</sup> The Environmental Investigation Agency (EIA) 2014, 'Rosewood and the Illegal Logging Crisis'.

Friends for Conservation and Development (FCD) 2012, 'Illegal Logging in the Chiquibul Forest: An Economic and Ecological Value Assessment'. 6 Graham, R 2007, 'Vulnerability of Sharks and Rays in Belize: Captures and Trade', Wildlife Conservation Society.

<sup>7</sup>Harmsen, B & Urbina, Y 2017, 'Wildlife Use in Belize', Belize City

Rice, B 2017, 'Illegal Wildlife Hunting and Trade in Southern Belize: An Assessment of Impacts and Drivers', Master's thesis, SIT Graduate Institute Arias, M & Milner-Gulland, EJ 2019, 'Drivers, Enabling Factors, and Dynamics of Illegal Jaguar Trade and other Wildlife, Trade in Belize and Guatemala'. Unpublished papers from University of Oxford, Oxford Martin Programme on the Illegal Wildlife Trade, Interdisciplinary Centre for Conservation Science, Wildlife Conservation Society.

# Data limitations

As we outlined above, this is the first ever attempt to quantify IWT in Belize. Perhaps one of the most important things we learned is the severe lack of available datasets, missing or incomplete data in those databases that are available and, anecdotally, the potential scale of IWT that goes completely unrecorded. Below is a summary of the key data limitations which should be considered when discussing and interpreting results and also in conducting future, improved evaluations.

- 1. The full extent of illegal trade is not known as a great deal goes undetected. As the UNODC (2016) puts it; "Seizure data require careful interpretation because they are a mixed indicator, demonstrating both the presence of a problem and the initiative of the relevant authorities in addressing it. On their own, they cannot be used to demonstrate the magnitude of the trafficking or shed much light on law enforcement capacity." Therefore, what is presented in this brief is more than likely only 'the tip of the iceberg' and the country is potentially losing much more than what is presented.
- 2. The market values of IWT products are difficult to determine with accuracy as they may depend on scarcity, highly fluctuating demand or opportunism. Furthermore, it is difficult to obtain estimates from those directly involved in the illegal trade due to fear of arrest.
- 3. Investigation into IWT supply and demand chains (including illegal, unregulated and unreported fishing) is limited by national investigative capacity and resources. As a result, the full extent, the existence of national or international organization and ultimately the true scale of IWT will remain elusive. It is worth pointing out that even in Africa and Asia that have been the focus of an exponentially greater amount of resources and attention, the true extent of IWT is unknown.

4. The regulatory agencies' data collection on IWT is frequently unavailable or incomplete. For example, the extent of illegal timber trade at a national level is reported to be significant, but little data exists that could be utilized to gather an estimate. Furthermore, details of seizures are frequently missing; units or details that would enable accurate calculation often go unrecorded.

# Policy Alternatives: Current Policy Approaches and Proposed Action

#### Wildlife Protection Act, Forest Act, Fisheries Act

Most of Belize's wildlife focused legislation are severely outdated; therefore, are not fully aligned with current environmental crises such as IWT. There is no direct mention of IWT within Belize's legislation. However, a few acts (Wildlife Protection Act, Forests Act and Fisheries Act) offer some level of protection to wildlife and forest produce through their regulation of hunting (terrestrial wildlife), fishing (marine products) and logging/collection (timber and non-timber forest products). Generally, fines are levied if wildlife, forest products or marine products are removed, harvested, or extracted: (i) from areas declared as conservation areas, (ii) without permits, licenses, or special permissions, (iii) during closed seasons (iv) in violation of size limits or quantity limits (v). if species are prohibited from trade, and (vi) if damage is caused to wildlife or wild places.

In an attempt to ensure wildlife related legislation are current and relevant, the Government of Belize (GOB) has undertaken a number of revisions of the parent acts (still pending) and successfully amended some existing acts. The Forests Act<sup>8</sup> has been amended to increase fines and penalties for illegal possession of forest produce, this has already yielded some success. After a 10-year review process, the Fisheries Bill has now been updated and this year, 2020, it has been passed into law. This is a huge win for conservation as

<sup>8</sup>Act 17 – Forests (Amendment) Bill of 2017

the bill aligns with international commitments and sustainable resource management approaches which will certainly provide an improved framework for tackling IWT.

# Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES)

CITES was created to regulate or ban international trade of species under threat. This Convention is considered one of the cornerstones of international conservation and one of the best tools to regulate legal trade in endangered species and to address international wildlife crime such as the Illegal Wildlife Trade. Belize has been a signatory of CITES since its inception in 1973. As a signatory, Belize is bound to implement the Convention as part of a collaborative effort to ensure that the international trade in specimens of wild animals and plants does not threaten their survival.

To ensure compliance of the Convention, Belize has made significant investments (over BZD \$213, 000 annually) in national implementation. Consequently, the Forest and Fisheries Departments have established processes and structures to manage the export or international trade of CITES listed species (rosewood, mahogany and conch), which resulted in decline in the illegal trade of these species. Therefore, the Convention is supporting the protection of Belize's species, the country's economy as well people's livelihoods. It should be noted though, the Convention is not able to regulate domestic IWT, which, as highlighted in this brief, has been severely underestimated and overlooked in the past.

# CITES National legislation

Although the Convention is legally binding on States, it is not self-executing. It is the responsibility of each Party to adopt its own domestic legislation to ensure that CITES is implemented at the national level. National laws empower government official to act, regulate human behaviour and articulate policy in relation to conservation and trade in wildlife; ensuring Parties are able to implement and enforce all aspects of the Convention.

An evaluation of the Parties' progress on the creation of national CITES legislation has been conducted by the Secretariat. Belize currently falls in category 3 which means that its domestic legislation generally does not meet any of the four requirements (i. designate at least one Management Authority and one Scientific Authority, ii. prohibit trade in specimens in violation of the Convention, iii. penalize such trade and iv. confiscate specimens illegally traded or possessed) for effective implementation of CITES. Belize does not meet these requirements because it has not enacted its national CITES legislation.

According to official updates to the Secretariat, Belize has prepared a comprehensive draft legislation, with comments provided by the Secretariat and the Attorney General. However, Belize has not still not finalized or enacted its national legislation. For this reason, Belize is listed a Party *requiring attention of the Standing Committee as a priority.* At the past CITES CoP in 2019, Belize was reminded to submit its final draft legislation or face trade suspension.

#### Policy Recommendations:

Considering the IWT trends (national and international) as well as losses (financial and ecological) incurred from the trade, WCS is proposing the following:

- Amendment of all wildlife focused legislation to include the term 'Illegal Wildlife Trade', providing a clear definition of the IWT and levying fines specifically for trade of wildlife, their parts and products. This will help to prosecute and deter the supply, purchase, sale or transport of wildlife and wildlife parts and products. There should be a clear distinction between small-scale 'subsistence' and commercial trade, specifically when fines are levied to avoid unfair impact on poor rural communities. This amendment is intended to be a deterrent by making it costly to engage in IWT. Currently the risk of engaging in such trade is low and the potential to make profits is high.
- Update (and keep current) the out of date 'Schedule' in the Wildlife Protection Act that lists species prohibited from hunting. The schedule should be well publicized so that stakeholders (regulatory bodies, general public, prosecutors) are aware of prohibitions, increasing chances for enforcement and compliance.
- The enactment of national CITES legislation (CITES Bill) to strengthen national implementation of the Convention. This will help deter international IWT (for CITES listed species) and ensure Convention Compliance.
- 4. Collection, management of analysis of IWT data by regulatory bodies (Fisheries and Forest Departments) as well as co-management organisations. WCS has already created an IWT database that aligns with CITES reporting requirements. We have shared this with the Forest Department and have built this into to the Fisheries Fisherfolk Management System (FMS). However, the database has not been used to date. The use of this database would allow for

organisation of IWT data; its results can be used to inform management decisions and, to comply with international commitments.

- 5. Establish and implement long-term monitoring: Establish a monitoring network with relevant organisations, experts and departments to design and implement long-term monitoring for species from an established priority list. The priority list will include species that require immediate attention, due to threats face, data deficiency, etc. The network, which would work closely with the CITES Scientific Authority, would then provide advice and/or implement interventions/actions (such as endangered species recovery plans or conservation management plans) based on information collected. The network would be responsible for updating the priority list (Wildlife Protection Act Schedule and Fisheries Act) periodically, perhaps each 3-5 years.
- 6. Improve enforcement monitoring: Standardize enforcement data collection and monitoring, best available technology, utilizing across terrestrial and marine environments to increase efficiency of enforcement efforts and to support the implementation of relevant legislation. Enforcement technology, such as the SMART<sup>9</sup> tool, can ensure enforcement efforts are targeted so that an organisation's limited resources are directed to the areas that need it the most. In terms of data collection, there are major improvements that can be made in recording IWT from collection of data at point of interdiction to storage of confiscated items. The digitization that the departments are going through will help work towards the automatic generation of IWT summaries.

<sup>&</sup>lt;sup>9</sup> SMART (Spatial monitoring and reporting tool) aims to measure, evaluate and improve the effectiveness of wildlife law enforcement patrols and site-based conservation activities (https://smartconservationtools.org/).

- 7. Transparency: Authorize acts to build in elements of transparency, aligning with the Freedom of Information Act and the United Nations Convention against Corruption (UNCAC), whereby, the Belizean public is able to easily access information on processes taken to protect and manage wildlife, i.e. research methodology, results of species monitoring, list of wildlife dealers and exporters of wildlife, etc. This allows independent assessment and validation of methodologies utilised by the regulatory bodies by local and international experts. It also allows for the relevant government departments as well as the public to know which companies can legally trade/export wildlife.
- Education and Awareness: Publicize information on wildlife issues (such as IWT), management, research and new or amended legislation to ensure that the regulatory and management authorities as well as the general public are aware of such. This will encourage effective management as well as compliance.

# Conclusion

Between 2012 and 2018, based on limited information, it is estimated that Belize lost a minimum of \$61 million from the illegal trade (including illegal, unreported and unregulated) of game species, conch, lobster, timber (rosewood, mahogany), sharks and parrots. As mentioned above, this valuation is likely to be a gross underestimation of the trade as 1) this represents the first attempt to value IWT, 2) there is very little information available on IWT Belize, 3) The information that is available is frequently incomplete or missing. However, we believe the findings still retain value given that it is still very economically significant despite its likely underestimate.

Global studies predict continuous growth in IWT and increased pressure on wildlife, with increasing interest in Latin American and Caribbean countries such as Belize. Belize's economy and biodiversity is increasingly at risk due to the continued growth and expansion of IWT. Ultimately, increased IWT leads to decreased availability of wildlife and timber products for the legal (taxed) industry – this can be highly detrimental to a small developing country like Belize's economy. We see evidence of the threat in the well-publicised rosewood crisis, the collapse of the sea cucumber fishery and the increasingly frequent early closure of the conch fishery. Belize still has time to address this but that time is running out. The solution to tackling IWT can be found in tightening and updating legislation, improving enforcement and investigation, increasing transparency, utilising national expertise and properly engaging the public.

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# References

Arias, M & Milner-Gulland, EJ 2019, 'Drivers, Enabling Factors, and Dynamics of Illegal Jaguar Trade and other Wildlife, Trade in Belize and Guatemala'. Unpublished papers from University of Oxford, Oxford Martin Programme on the Illegal Wildlife Trade, Interdisciplinary Centre for Conservation Science, Wildlife Conservation Society.

Belizelaw.org. 2020, 'Wildlife Protect Act', *BELIZE LEGAL INFORMATION NETWORK ONLINE*\*. [online] Available at: <a href="http://www.belizelaw.org/web/lawadmin/index2.html">http://www.belizelaw.org/web/lawadmin/index2.html</a> [Accessed 3 March 2020].

Belizelaw.org. 2020, 'Belize Forests Act', Available at: <a href="http://www.belizelaw.org/web/lawadmin/PDF%20files/cap220.pdf">http://www.belizelaw.org/web/lawadmin/PDF%20files/cap220.pdf</a> [Accessed 26 February 2020].

Belizelaw.org. 2020. *BELIZE LEGAL INFORMATION NETWORK ONLINE*\*, 'Belize Fisheries Act 2000; [online] Available at: <a href="http://www.belizelaw.org/web/lawadmin/index2.html">http://www.belizelaw.org/web/lawadmin/index2.html</a> [Accessed 3 March 2020].

Butchart, Stuart H. M., et al. "Global Biodiversity: Indicators of Recent Declines." *Science*, vol. 328, no. 5982, 2010, pp. 1164–1168. JSTOR, www.jstor.org/stable/40656326.

Cardinale, B., Duffy, J., Gonzalez, A., Hooper, D., Perrings, C., Venail, P., Narwani, A., Mace, G., Tilman, D., Wardle, D., Kinzig, A., Daily, G., Loreau, M., Grace, J., Larigauderie, A., Srivastava, D. and Naeem, S. (2019). *Biodiversity loss and its impact on humanity*. https://www.nature.com/articles/nature11148.

Cedeño-Vázquez, J.R., Platt, S.G. & Thorbjarnarson, J. (IUCN Crocodile Specialist Group) 2012. *Crocodylus moreletii. The IUCN Red List of Threatened Species 2012*: e.T5663A3045579. http://dx.doi.org/10.2305/IUCN.UK.2012.RLTS.T5663A3045579.en. Downloaded on 09 July 2019.

Duarte, J.M.B & Vogliotti, A. 2016. *Mazama americana. The IUCN Red List of Threatened Species 2016*: e.T29619A22154827. http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T29619A22154827.en.

Government of Belize 2017, 'Forest Act Amendment Bill'. [online] Available at: <a href="http://extwprlegs1.fao.org/docs/pdf/blz175473.pdf">http://extwprlegs1.fao.org/docs/pdf/blz175473.pdf</a>> [Accessed 3 March 2020].

Enforcement Assessment Presentation, WCS

Frost, M. D. 1974. A Biogeographical Analysis of Some Relationships between Man, Land, and Wildlife in Belize (British Honduras). Unpublished Ph.D. dissertation, Oregon State University, Corvallis, Oregon, United States.

Foster, RJ, Harmsen, BJ, MacDonald, DW, Urbina, Y, Garcia, R, Doncaster, CP 2012. *Wild Meat: a shared resource amongst people and predator*, Oryx, Page 1 of 13, doi:10.1017/S003060531400060X

Friends for Conservation and Development (FCD) 2012, 'Illegal Logging in the Chiquibul Forest: An Economic and Ecological Value Assessment'. IUCN 2019. *The IUCN Red List of Threatened Species. Version 2019-1.* http://www.iucnredlist.org.

Myers, Norman. "Environmental Services of Biodiversity." *Proceedings of the National Academy of Sciences of the United States of America*, vol. 93, no. 7, 1996, pp. 2764–2769. JSTOR, www.jstor.org/stable/39060.

Milner-Gulland, E.J., Cugnière, L., Hinsley, A., Phelps, J., 't Sas-Rolfes, M., Verissimo, D. (2018) Evidence toAction: Research to address the illegal wildlife trade. Briefing note to policy-makers and practitioners.doi: 10.31235/osf.io/35ndz

Malcolm, J R, and Markham, A. Global warming and terrestrial biodiversity decline. Canada: N. p., 2000. Web. National Biodiversity Strategy and Ac<on Plan, Belize. Ministry of Agriculture, Forestry, Fisheries, the Environment and Sustainable Development, Belmopan, Belize, 2016.

Gastanaga, M., Macleod, R., Hennessey, B., Nunez, J. U., Puse, E., Arrascue, A., Engblom, G. (2011). A study of the parrot trade in Peru and the potential importance of internal trade for threatened species. *Bird Conservation International*, 21(01), 76–85. https://doi.org/10.1017/S0959270910000249

Gibson, J., M. McField, W.D. Heyman, S. Wells, J. Carter and G. Sedberry. 2003. Belize's Evolving System of Marine Reserves. In: a.C.D. J. Sobel (ed.) Marine Reserves. A Guide to Science, Design and Use, Island Press, Washington. p. 287-315.

Goyenechea, A., & Indenbaum, R. A. (2015). *Combating Wildlife Trafficking from Latin America to the United States: The illegal trade from Mexico, the Caribbean, Central America and South America and what we can do to address it.* Washington, D.C. Retrieved from https://www.defenders.org/sites/default/files/publications/combating-wildlife-trafficking-from-latin-america-to-the-united-states-and-what-we-can-do-to-address-it.pdf

Graham, R 2007, 'Vulnerability of Sharks and Rays in Belize: Captures and Trade', Wildlife Conservation Society.

Harmsen, B., & Urbina, Y. (2017). Wildlife Use in Belize. Belize City.

Huitric, Miriam. "Lobster and Conch Fisheries of Belize: a History of Sequential Exploitation." *Ecology and Society*, vol. 10, no. 1, 2005. JSTOR, www.jstor.org/stable/26267709.

Pires, S. F. (2012). The illegal parrot trade: A literature review. *Global Crime*, 13(3), 176–190.

Pires, S. F., & Moreto, W. D. (2011). Preventing wildlife crimes: Solutions that can overcome the 'Tragedy of the Commons'. *European Journal on Criminal Policy and Research*, 17(2), 101–123.

Platt, S. G., and J. Thorbjarnarson. 2000. Status and conservation of the Morelet's Crocodile, *Crocodylus moreletii*, in northern Belize. Biological Conservation 96: 21–29.

Platt, S. G., and J. Thorbjarnarson. 2000a. Status and conservation of the American crocodile, *Crocodylus acutus*, in Belize. Biological Conservation 96: 13–20. Platt, S. G., and J.

Ponce-Campos, P., Thorbjarnarson, J. & Velasco, A. (IUCN SSC Crocodile Specialist Group) 2012. *Crocodylus acutus. The IUCN Red List of Threatened Species 2012*: e.T5659A3043244. http://dx.doi.org/10.2305/IUCN.UK.2012.RLTS.T5659A3043244.en. Downloaded on 09 July 2019.

Quigley, H., Foster, R., Petracca, L., Payan, E., Salom, R. & Harmsen, B. 2017. *Panthera onca* (errata version published in 2018). *The IUCN Red List of Threatened Species 2017*: e.T15953A123791436. http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T15953A50658693.en. Downloaded on 08 July 2019.

Reuter, A., J. Kunen, S. Roberton (2018). Averting a Crisis: Wildlife Trafficking in Latin America. New York, NY: WCS.

Rice, B 2017, 'Illegal Wildlife Hunting and Trade in Southern Belize: An Assessment of Impacts and Drivers', Master's thesis, SIT Graduate Institute

Rogers A, Hamel JF, Baker SM, Mercier A. 2018. The 2009–2016 Belize sea cucumber fishery: Resource use patterns, management strategies and socioeconomic impacts. Regional Studies in Marine Science 22:9–20. Sachs, Jeffrey D., et al. "Biodiversity Conservation and the Millennium Development Goals." *Science*, vol. 325, no. 5947, 2009, pp. 1502–1503. JSTOR, www.jstor.org/stable/40301814.

Schneider, J. L. (2008). Reducing the illicit trade in endangered wildlife: The market reduction approach. *Journal of Contemporary Criminal Justice*, 24, 274–295.

Schneider, J. L. (2012). *Sold into extinction: The global trade in endangered species*. Santa Barbara: ABC-CLIO https://www.tandfonline.com/doi/abs/10.1080/17440572.2013.770370

Smartconservationtools.org. 2020. SMART Conservation Software - Spatial Monitoring And Reporting Tool. [online] Available at: <a href="https://smartconservationtools.org/">https://smartconservationtools.org/</a> [Accessed 3 March 2020].

Sutherland, W. J., Pullin, A. S., Dolman, P. M., & Knight, T. M. (2004). *The need for evidence-based conservation. Trends in Ecology & Evolution*, 19(6), 305–308.doi:10.1016/j.tree.2004.03.018

Tellez, M., M. Boucher, and K. Kohlman. 2016. Population status of the American Crocodile (*Crocodylus acutus*) in Caye Caulker, Belize. Mesoamerican Herpetology 3: 450–460.

Tellez, M., B. Arevalo, I. Paquet-Durand, and Shawn Heflick. 2017. Population status of Morelet's Crocodile (*Crocodylus moreletii*) in Chiquibul Forest, Belize. Mesoamerican Herpetology 4: 8–21.

The Environmental Investigation Agency (EIA) 2014, 'Rosewood and the Illegal Logging Crisis'

Thorbjarnarson, J., F. Mazzotti, E. Sanderson, F. Buitrago, M. Lazcano, K. Minkowski, M. Muñiz, P. Ponce, L. Sigler, R. Soberon, A. M. Trelancia, and A. Velasco. 2006. Regional habitat conservation priorities for the American Crocodile. Biological Conservation 128: 25–36.

Thorbjarnarson. 2000b. Status and conservation of the Morelet's Crocodile, *Crocodylus moreletii*, in northern Belize. Biological Conservation 96: 21–29.

TRAFFIC. 2019. Illegal Wildlife Trade. TRAFFIC International I. https://www.traffic.org/about-us/illegal-wildlife-trade/ (accessed May 13, 2019).

UNEP, 2018 . Saving the jaguar, Latin America's iconic and endangered species. *UN Environment*. Retrieved from https://www.unenvironment.org/news-and-stories/story/saving-jaguar-latin-americas-iconic-and-endangered-species

UNODC (United Nations Office on Drugs and Crime). 2016. World wildlife crime report: trafficking in protected species, 2016. UNODC, New York.

Wagler, Ron. "The Sixth Great Mass Extinction." *Science Scope*, vol. 35, no. 7, 2012, pp. 48–55. JSTOR, www.jstor.org/stable/43184436.

Wildlife Conservation Society, 2018, 'Enforcement Assessment', presentation.

Wilson-Wilde, L. (2010). Wildlife crime: A global problem. *Forensic Science, Medicine and Pathology*, 6(3), 221–2

Wyler L, Sheikh P (2008) International illegal trade in wildlife: threats and U.S. policy. CRS Report for Congress, March 3,2008, 49 pp

WWF (World Wide Fund for Nature). 2017. Not for sale. WWF International. Available from www.wwf.org.uk.

Zimmerman, M. E. (2003). The Black Market for Wildlife: Combating Transnational Organized Crime in the Illegal Wildlife Trade. *Vanderbilt Journal of Transnational Law*, 36, 1657–1689.