



TRAFFIC
the wildlife trade monitoring network

JULY 2020

STOP WILDLIFE CYBERCRIME IN THE EU

**ONLINE TRADE IN REPTILES AND BIRDS IN
BELGIUM AND THE NETHERLANDS**

THIS REPORT IS
CO-FUNDED BY
THE EUROPEAN
UNION



JOINT REPORT

This report is published by WWF-Belgium with in-kind support from TRAFFIC in the context of the European Union (EU) Wildlife Cybercrime project, an EU-funded initiative aiming to disrupt and deter criminals and their networks trafficking wildlife in, or via, the EU using the internet and parcel delivery services. This project is implemented by WWF, IFAW, INTERPOL and the Belgian Customs, with in-kind support from TRAFFIC.

Project webpage:

<https://wwf.be/fr/wildlife-cybercrime/>

This report was funded by the European Union's Internal Security Fund – Police. The content of this report represents the views of the authors only and is their sole responsibility. The European Commission does not accept any responsibility for use that may be made of the information it contains.

LEAD AUTHOR

Vicki Crook

PROJECT SUPERVISOR AND AUTHOR

Emilie Van der Henst

CONTRIBUTORS

Florian Debève, Jaap Reijngoud, Jordi Janssen (Monitor Conservation Research Society), Sofie Ruysschaert

CONTRIBUTING ORGANISATIONS



PUBLISHED BY:

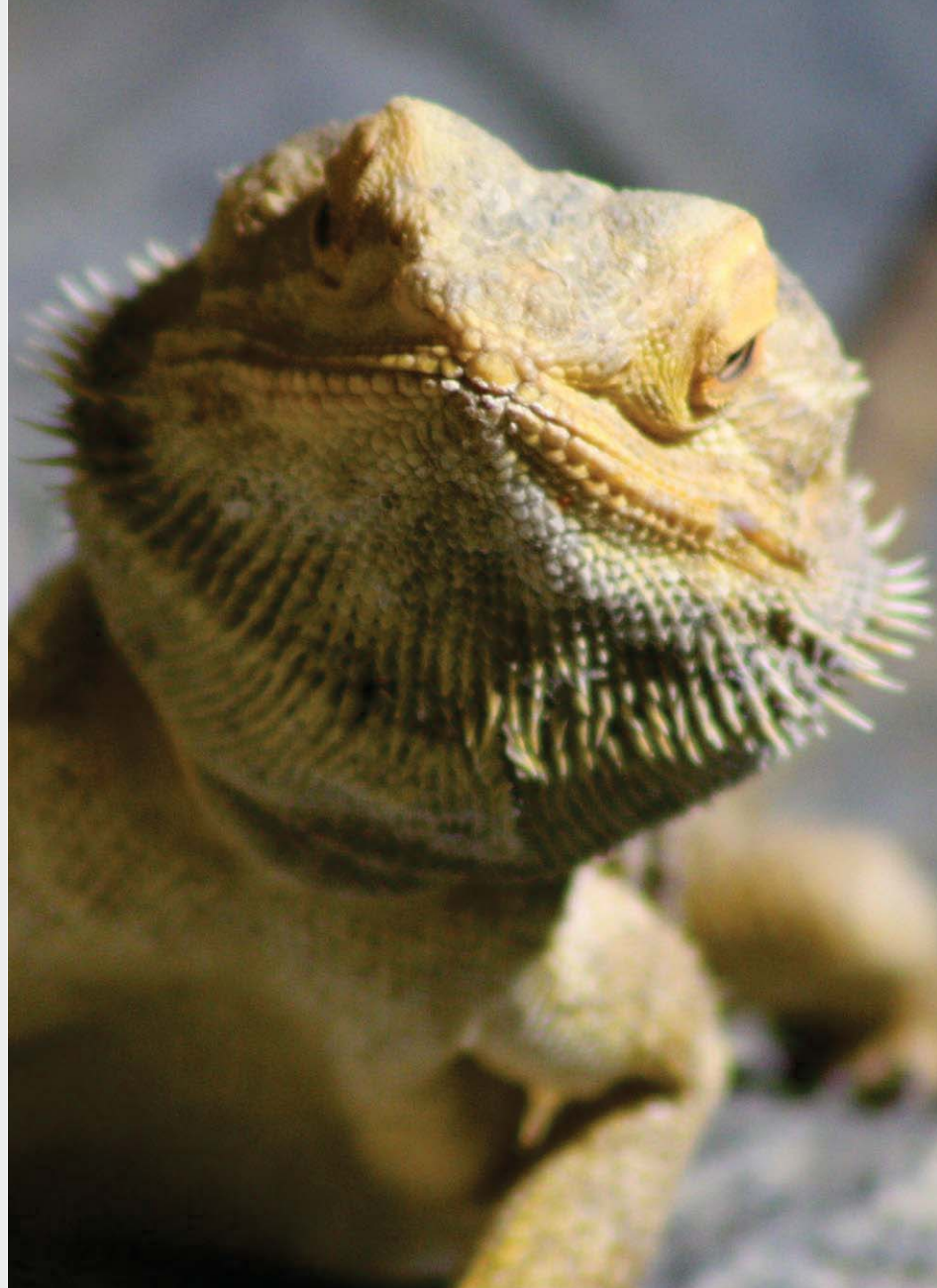
WWF-Belgium,
Bd E. Jacquain 90, 1000 Brussels.
E.R.: Antoine Lebrun

© TRAFFIC 2020. Copyright of material published in this report is vested in TRAFFIC.

UK Registered Charity No. 1076722

DESIGN

Marcus Cornthwaite



ACKNOWLEDGEMENTS

The survey team would like to thank the Netherlands Food and Consumer Product Safety Authority (NVWA), especially Meriam Wortel and Jamie Bouhuys, as well as the Belgian CITES Management Authority, in particular Elke Malfait, and the Belgian FPS Health Inspection Service, notably Bruno Cachapabailarote, for their contribution to the study. Thanks also go to WWF and TRAFFIC colleagues Katalin Kecse-Nagy, Lu Gao, Magdalena Norwicz, Richard Thomas, Giavanna Grien, Crawford Allan and Marcus Cornthwaite, and IFAW colleagues Tania McCrea-Steele and Anna Bahraynian-Thayenthal for their ongoing support with project design and report reviews. The European Union is gratefully thanked for its financial support of this study.

TABLE OF CONTENTS

page 1

INTRODUCTION

Overview of results

Executive summary

Introduction

Legislation

Methods

page 20

RESULTS AND DISCUSSION

Total number of listings

Listings by taxa and number of specimens

Online platforms

Sellers

Modus operandi

Source, CITES documentation and marking

Examples of cases of interest

page 33

USE AND POLICIES OF ONLINE PLATFORMS

Social media – Facebook

Specialist and classified ads sites

Website policies

page 39

ONLINE SURVEY CHALLENGES

Determining legality

National, EU and global online markets

Scams

page 44

CONCLUSIONS AND RECOMMENDATIONS

OVERVIEW OF FINDINGS

SCOPE OF THE SURVEYS



28

bird and reptile taxa, made up of 26 species and 2 genera, were selected for the surveys



50

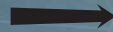
online platforms relevant for the Dutch and Belgian markets between July and September 2019 were monitored

alongside recording of other discussions of interest (such as wanted/old listings and breeding discussions in forums), and further research into specific cases of interest – all specifically, or potentially, relevant to Belgium and the Netherlands.

LISTINGS, TAXA, AND POSTS OF INTEREST

106

active listings for priority taxa were observed, with 15 identified as duplicates



42 REPTILE

listings, for at least 94 specimens



49 BIRD

listings, totalling at least 93 specimens

300

other posts (discussions of interest) were also logged



50%

of all listings were found on "specialist" platforms

**PARROT4SALE
TERRARISTIK**

**VOGELARENA
ENIMALIA**



25%+

of all listings were found on

FACEBOOK

40%

were posted on public user/business pages

60%

were posted on Facebook groups aimed at hobbyists



65

different sellers were observed posting listings



60% AMATEURS

most of these being hobby collectors and/or breeders

40% PROFESSIONAL /COMMERCIAL

professional breeders, pet shops, exporters/importers or animal centres/parks



THE NETHERLANDS



BELGIUM



GERMANY

Several sellers were aiming for the wider EU market by posting in different languages and offering delivery at major reptile and bird trade fairs, with face to face contact still appearing to be the main method of transfer of animals in Belgium and the Netherlands

PRIORITY TAXA AND LEGALITY

The majority of priority taxa included in this survey are listed in **CITES Appendix I/EU Annex A**

CAPTIVE BREEDING AND CITES



6

of the 49 bird listings only specified that the specimens were captive bred

12

of the 49 bird listings only mentioned CITES documentation



29

of the 42 reptile listings only specified that the specimens were captive-bred

26

of the 42 reptile listings only mentioned CITES documentation

<25%

of only online platforms provided clear information on relevant legislation and/or policies regarding trade in wildlife



**EXECUTIVE
SUMMARY**

EXECUTIVE SUMMARY

Illegal Wildlife Trade (IWT) is one of the largest transnational criminal activities, threatening species and presenting risks of spreading zoonotic diseases to humans. The European Union (EU) is considered one of the largest markets for wildlife in the world, playing an important role in international legal and illegal wildlife trade. Wildlife traders are increasingly moving online to reach a vast, global marketplace. Any wildlife species, even the most threatened and therefore the most protected ones can be found for sale online. Over the last decade, governments, international and non-governmental organisations (NGOs) and the business sector have started to recognise the important role of the internet in relation to illegal wildlife trade. For example, the EU Action Plan against Wildlife Trafficking¹ adopted in 2016 by the EU institutions includes objectives for tackling wildlife cybercrime. In the private sector, the world's major e-commerce, technology and social media companies have partnered with WWF, TRAFFIC and The International Fund for Animal Welfare (IFAW) to form the "The Coalition to End Wildlife Trafficking Online"², working on an industry-wide approach to reduce wildlife trafficking online.

The EU funded "EU Wildlife Cybercrime project"³ aims to support law enforcement authorities and online platforms in Europe in tackling wildlife cybercrime, in particular through improved research, analysis and capacity building. One of the project deliverables was to undertake an online wildlife trade survey targeting Belgium and the Netherlands for species protected under the EU Wildlife Trade Regulations and suspected to be sold illegally online. Survey objectives included identifying 1. any suspicious and possibly illegal offers of sale that may warrant further monitoring and investigation by the Belgian and Dutch authorities 2. the types of sellers involved and their modus operandi; 3. the key websites or social media platforms being used and any associated policies on wildlife trade. In consultation with wildlife experts, law enforcement and management authorities in both countries, live exotic birds and reptiles, in particular those threatened with extinction listed in Appendix I

of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) and Annex A of the EU Wildlife Trade Regulations, were selected as the focus for this survey. The scope of the survey was narrowed down to species which have the highest likelihood of being illegal if found for sale online, due to their high level of protection, rarity and because they are known to be found in illegal trade in the EU. The survey was made up of: two test phases (in order to identify suitable taxa and online platforms); systematic searches for priority taxa (26 bird and reptile species and two reptile genera) on 50 relevant online platforms between July and September 2019; and further research into specific cases of interest – all specifically, or potentially, relevant to Belgium and the Netherlands.

A total of 106 active listings for the priority taxa were found by surveyors between July and September 2019; 91 of these being unique (15 identified as duplicates). 49 listings were for birds, totalling at least 93 specimens, and 42 listings for reptiles, for at least 94 specimens. Approximately another 300 other posts (discussions of interest) were also logged. By narrowing the scope of the survey to very rare species with strong concerns over illegality, the number of listings found remained manageable to allow for more in-depth research into each listing and seller.

During this survey, over 50% of all listings were found on "specialist" platforms (i.e. sites specifically aimed at posting listings for live animals, in particular reptiles or birds). Of these, the most important were Parrot4sale, Terraristik, Vogelarena and Enimalia. Just over 20% were found on more general classified ads sites, with nearly half found on one site – Marktplaats. General classified ads sites tended to be used for the more common species, and also for scams. Over 25% of the 91 listings were found on Facebook. Facebook is a member of the Coalition to End Wildlife Trafficking Online and in 2019 prohibited the trade in all live animals aside from those from verified merchants. Many of the Facebook listings found in the first round of surveying in July were no longer available when re-visited at the end of August, suggesting either a high turnover or these listings having been removed by Facebook. 40% of the listings found on Facebook were posted on public user/business pages, 60% in Facebook groups aimed at bird or reptile hobbyists.

¹ https://ec.europa.eu/environment/cites/pdf/WAP_EN_WEB.PDF

² <https://www.endwildlifetraffickingonline.org/>

³ <https://wwf.be/fr/wildlife-cybercrime/>

Active 2019 listings were posted by 65 different sellers. Based on available information an attempt was made to split sellers into types. 60% of all sellers appeared to be amateurs, with most of these being hobby collectors and/or breeders. The remaining 40% appeared to be professionals/commercial sellers (i.e. professional breeders, pet shops, exporters/importers or animal centres/parks). 36 sellers (55%) were based in the Netherlands, 28 sellers (42%) in Belgium and one in Germany (this seller clearly targeting buyers in other countries). Several sellers were aiming for the wider EU market by posting in different languages and offering delivery at the major bird and reptile trade fairs, with face to face contact still appearing to be the main method of transfer of animals in Belgium and the Netherlands. The use of code words (that do not explicitly convey buying/selling, such as “exchange” or “re-homing”), abbreviations and other media/forms of communication such as WhatsApp, to avoid detection on platforms with clear wildlife trade policies (such as Facebook), was observed.

The majority of priority taxa included in this survey are listed in CITES Appendix I/EU Wildlife Trade regulations Annex A, which means their “commercial use” is only permitted under specific circumstances.

Such exceptions include trade in captive-bred specimens (these should be from proven legally acquired parental stock, however it is often very difficult to determine this is the case), wild-taken pre-Convention⁴ specimens (that were sourced from the wild prior to the species being listed in Annex A, in long-lived species this exception can potentially be used for many years), and specimens for personal or zoo purposes (non-commercial), and consequent breeding from these specimens for commercial purposes. In all cases sales must be accompanied by a certificate and specimens must be marked. These exceptions can result in legitimate trade of these species but also the abuse of “loopholes”, enabling illegal trade, in particular through fraudulent claims of captive-breeding.

When finding online offers for sale of protected species, it can therefore be very difficult to determine the legality of specimens for sale. Of the 49 active bird listings only six specified that the specimens were captive-bred. 12 mentioned the need for, or existence of, CITES documentation and 14 that specimens were marked. For the reptiles, a higher proportion mentioned that specimens were captive-bred (29 listings out of 42) and with CITES documentation (26). However, even if online listings state that specimens are correctly marked and have the appropriate CITES paperwork, this may not in fact be the case, and vice versa. There is usually no way of knowing whether the specimens have been legally sourced without extensive further research or investigation.

⁴ specimens that were acquired before CITES provisions applied to them

CATEGORISING SELLERS



CAPTIVE BREEDING



LEGALITY OF SPECIMENS



During the survey a number of possible cases of illegal trade were identified for some of the taxa. Such cases were shared with law enforcement and CITES authorities in Belgium and the Netherlands for further investigation.

For example, the only listing found for the Yellow-billed Amazon *Amazona collaria* was posted by a trader with previous convictions for illegal wildlife trade in the Netherlands. Very few wild-taken specimens of this species have been legally imported into the EU since its listing in 1981, due to EU trade suspensions. Three listings for Fiji iguanas *Brachylophus* spp. were found during this survey. There have been very few authorised legal exports of this species from range states since its listing on CITES (1981) and there are serious concerns over the legality of all parental stock in supposed captivity. The systematic ongoing illegal trade and possible links to organised crime have been raised at the CITES Standing Committee (SC65 Inf. 4, 2014).

Less than 25% of the online platforms monitored during this survey provided clear information on relevant legislation and/or policies regarding trade in wildlife and/or live animals, and in many cases it was difficult to find any policy information or terms of use on these sites.

Online platforms surveyed with the most comprehensive wildlife policies—Facebook and eBay—are members of the Coalition to End Wildlife Trafficking Online, demonstrating that a private sector approach is a critical step in aligning platforms to international and regional wildlife trade laws. Wildlife sales policies were, however, notably lacking from (or could not be easily found on) the major classified ads sites designed specifically for wildlife sales such as Terraristik and Parrot4sale.

A number of sites run by specialist collector associations, such as BVP (Belgian Association of Parakeet and Parrot Lovers) and DN (Dendrobatidae Nederland) have however developed private sector (non-legal) advice/guidelines in an attempt to address the issue of fraudulent claims of captive-breeding and illegal trade of specimens online and at trade fairs.



CONCLUSION

Online wildlife trade surveys can be useful tools for enforcement purposes. As per this study's objectives, they can help to identify possible cases of illegal trade that may warrant further monitoring and investigation by authorities. They can also provide information on new trends in trade and changes in global availability and demand of nationally protected species that may warrant international protection through listing in the CITES Appendices, and for planning enforcement action and operations. However, wildlife trade legislation is complex and includes a number of exceptions making it very difficult for researchers and enforcers to identify with a level of certainty whether the trade is legal or illegal, even for Appendix I/Annex A listed species. The legal burden for online traders is low, even for strictly protected species, with minimal apparent legal requirements to register personal data or provide evidence of compliance with the law. Targeted legislative improvements and the development of clear website policies with regards to online wildlife trade are therefore essential.

RECOMMENDATIONS

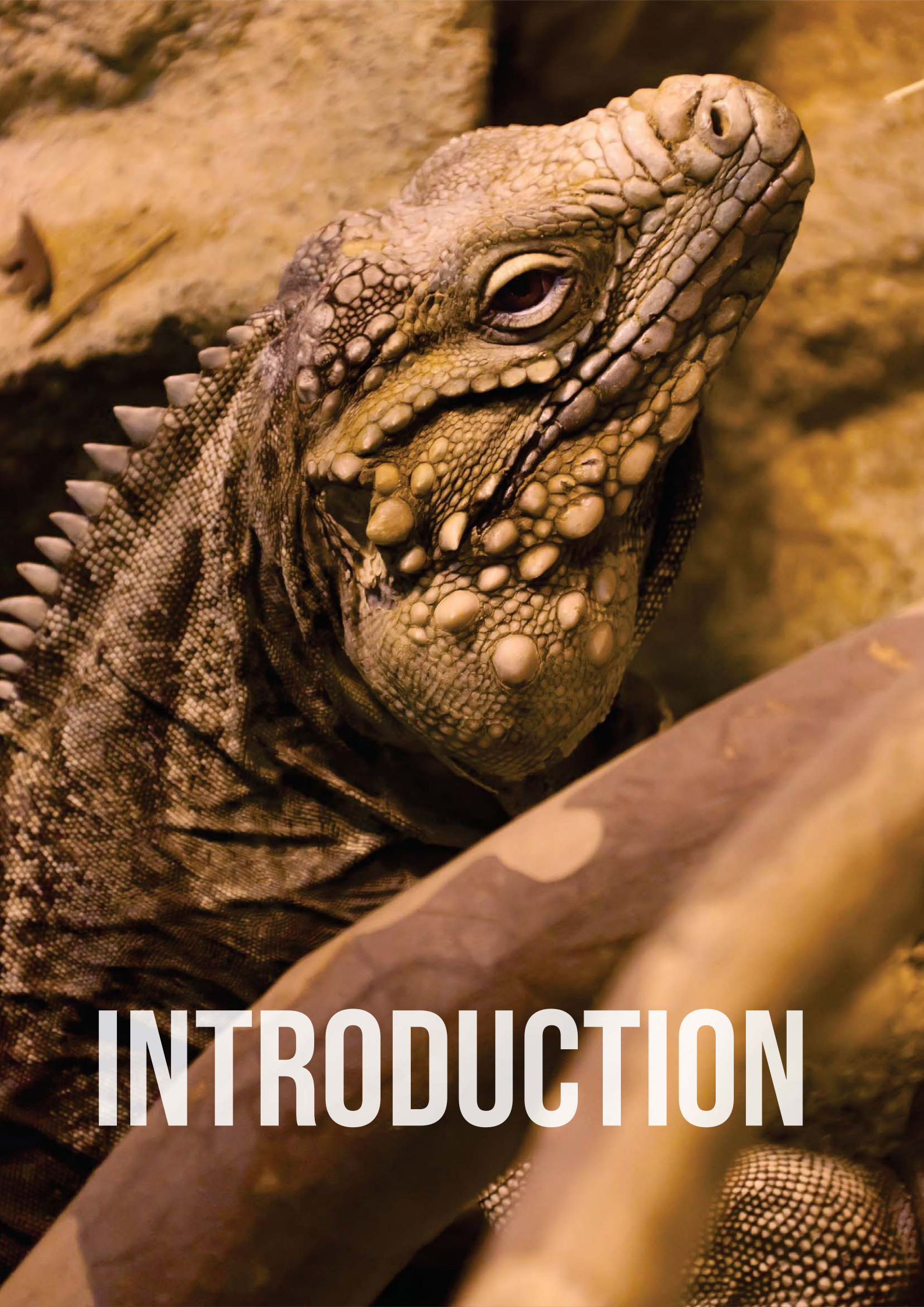
To policy makers and authorities in the EU: In order to ensure that there is a legislative framework fit for the purpose of fighting wildlife cybercrime it is recommended that policy makers, authorities and prosecutors in the EU explore possible legislative improvements on the conditions under which protected wildlife can be sold, advertised and purchased online. Such legislative framework should facilitate the identification of the legality of wildlife listings; enable the necessary "undercover" investigation; and ensure online platforms, sellers and consumers undertake their due diligence. In addition, authorities in EU member states shall be provided with the adequate capacity (human resources, tools and training) needed to fight wildlife cybercrime effectively. It is also suggested that authorities consider developing specific reporting mechanisms for civil society to flag cases of concern to authorities, where such mechanism does not exist already.

To online platforms: It is recommended that online platforms which can be used to promote or sell wildlife provide clear and easy to find information on relevant wildlife legislation; adopt policies to actively combat the use of their platforms to sell illegal wildlife, such as the Coalition's Prohibited Wildlife Policy⁵; develop specific guidelines or requirements for sellers to declare the legal status of the species for sale; and review and apply lessons learned from existing initiatives developed by other online platforms to fight wildlife crime.

To wildlife consumers: wildlife consumers shall stop purchasing illegal wildlife; prior to buying wildlife, consumers shall be informed on relevant wildlife trade regulations and sustainability concerns for the species they intend to buy. It is highly recommended that they request relevant proof of legality to the seller they intend to purchase wildlife from. They can also report to online platforms listings which are in breach with the legislation or with the online platform wildlife policies.

⁵ <https://www.endwildlifetraffickingonline.org/coalition-prohibited-wildlife-policy>





INTRODUCTION

INTRODUCTION

Illegal wildlife trade is one of the largest transnational criminal activities, estimated to be worth up to 23 billion USD per year (Global Financial Integrity, 2017). It puts at risk the survival of thousands of species of animals and plants, accelerating the ongoing collapse of biodiversity and deteriorating ecosystem functions (World Bank, 2019). Furthermore, illegal wildlife trade encompasses a risk of zoonotic diseases as direct contact with wild animals exposes humans to contact with viruses and other pathogens hosted by those animals (WWF, 2020).

The European Union (EU) is considered one of the largest markets for wildlife in the world, playing an important role in international legal and illegal wildlife trade (Engler *et al.*, 2007; European Commission, 2016a; Sina *et al.*, 2016). In February 2016, the European Commission (EC) adopted the “EU Action Plan Against Wildlife Trafficking 2016–2020”, demonstrating political commitment to improve enforcement of relevant legislation, to enhance co-operation and to take measures to prevent illegal wildlife trade (European Commission, 2016b). The Action Plan was subsequently supported by the European Council and Parliament (Council of the European Union 2016; European Parliament 2016). In 2017, wildlife trafficking was recognised as an EU priority in the fight against transnational organised crime (Council of the European Union, 2017).

Over the last three decades, growing internet use and access have been accompanied by huge shifts in the world of commerce (Haysom, 2019). Both legal and illegal wildlife trade dynamics have naturally been affected by these changes, with traders increasingly moving online to reach a vast, global marketplace. The objectives of the EU Action Plan against Wildlife Trafficking include tackling cybercrime and building capacity in EU Member States to tackle online wildlife trade. The 2018 Action Plan progress report concluded that further emphasis should be placed on this issue (European Commission, 2018a). Belgian and Dutch

authorities have recently increased their capacity to further fight against wildlife trafficking online, with increased attention to the issue and human resources.

Wildlife crime linked to the internet has also received increasing attention from international and non-governmental organisations (NGOs) and the business sector over the last decade. Outputs include many studies of online wildlife markets, which provide essential qualitative and quantitative information on this evolving marketplace (e.g. TRAFFIC, 2019; Harris and Shiraishi, 2018; Hastie and McCrea-Steele, 2014; Haysom 2018; Hastie, 2018; Lau *et al.*, 2016; Morgan and Chng, 2017). In addition, the world’s biggest e-commerce, technology and social media companies have partnered with WWF, TRAFFIC and the International Fund for Animal Welfare (IFAW) to form in 2018 the Coalition to End Wildlife Trafficking Online, working on an industry-wide approach to reduce wildlife trafficking online, including harmonizing wildlife policies⁶ across the sector to prevent loopholes. Nevertheless, despite considerable work in this area, specifically identifying illegal online wildlife trade is still a major challenge due to the complexities surrounding wildlife trade legislation (Haysom, 2018).

In February 2019, WWF Belgium, INTERPOL, the Belgian Customs, IFAW, WWF France and WWF Hungary launched the “EU Wildlife Cybercrime project”, an initiative funded by the European Commission, and supported in-kind by TRAFFIC. The project aims to disrupt and deter criminals and organised criminal networks trafficking wildlife in or via the EU using the internet and parcel delivery services. In particular, the project intends to support law enforcement authorities and online companies in Europe in tackling wildlife cybercrime through improved research, analysis and capacity building. One of the project deliverables is to undertake an online wildlife trade survey and analysis in Belgium and the Netherlands for wildlife specimens protected under the EU Wildlife Trade Regulations and suspected to be sold illegally online. The survey results are aimed at stakeholders, primarily in Belgium and the Netherlands, but also more widely within the EU, with much of the information being applicable and relevant to all EU Member States.

⁶ <https://www.endwildlifetraffickingonline.org/coalition-prohibited-wildlife-policy>



The role of Belgium and the Netherlands in the EU's legal and illegal wildlife trade is well-documented – both countries are important destinations and transit hubs, with major international airports and ports, in addition to having flourishing domestic wildlife markets (Janssen and Blanken, 2016; Janssen and Leupen, 2019; Mundy-Taylor, 2013; Musing *et al.*, 2018). The EU is a major market for live animals for the exotic pet trade, and Belgium and the Netherlands both play important roles in this sector, importing, breeding and exporting live specimens of many protected species, in particular birds, reptiles and amphibians, and hosting important trade fairs (Engler *et al.* 2007; Altherr, 2014; European Commission 2016a, Janssen and Leupen, 2019).

SURVEY OBJECTIVES

- ✓ Highlight suspicious and possibly illegal offers of sale that may warrant further monitoring and investigation by the Belgian and Dutch authorities; This information has been shared with law enforcement authorities only and will not be described in the report.
- ✓ Identify the types of sellers involved and their modus operandi;
- ✓ Gain a better understanding of the different live bird and reptile taxa offered for sale online in Belgium and the Netherlands;
- ✓ Pinpoint the key websites or social media platforms being used and any associated policies on wildlife trade;
- ✓ Develop methods and identify suitable indicator species to try and overcome the many challenges associated with online wildlife trade surveys, in particular the difficulty of demonstrating illegality;
- ✓ Share information on trends with online companies to secure buy-in to address the threat of illegal wildlife trade on their sites/platforms; and
- ✓ Raise awareness of decision makers and the general public on the issue of wildlife cybercrime.



In consultation with law enforcement and management authorities in both countries, as well as wildlife experts, live exotic birds and reptiles, in particular those listed in Appendix I of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) and Annex A of the EU Wildlife Trade Regulations, were selected as the focus for this survey.



LEGISLATION

LEGISLATION

The *Reference Guide to the European Union Wildlife Trade Regulations* (European Commission and TRAFFIC, 2017) provides a comprehensive overview of the legislation governing wildlife trade in the EU. The following summary is taken from this source, focusing on the parts most relevant to this survey, including the CITES Appendices/EU Annexes and internal EU trade. For further details on EU and national laws, please refer to Crook and Musing (2016), European Commission and TRAFFIC (2017), TRAFFIC (2015), and the relevant EU Member State CITES authority websites.

CITES, THE EU WILDLIFE TRADE REGULATIONS AND APPENDICES/ANNEXES

Since 1984, the EU has been implementing the provisions of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) through a number of regulations, which are referred to collectively as the EU Wildlife Trade Regulations. Council Regulation (EC) No 338/97 (the Basic Regulation), lays down the provisions for import, export and re-export as well as internal EU trade in specimens of species listed in its four Annexes (A, B, C and D), which are updated as per listing decisions of the CITES Conference of the Parties through a new Commission Regulation.

Under CITES, animal and plant species are subject to different degrees of regulation by listing in three Appendices. Appendix I includes species threatened with extinction, for which trade is subject to strict regulation, and can only be authorised in exceptional circumstances. Appendix II includes species that are not necessarily now threatened with extinction but may become so unless trade is strictly regulated, and all trade must be accompanied by permits. Appendix III contains species that are subject to regulation within the jurisdiction of a CITES Party and for which the co-operation of other CITES Parties is needed to prevent or restrict their exploitation. In general, species listed in the three CITES Appendices are included in the corresponding EU Annex, i.e. Appendix I/Annex A, Appendix II/Annex B and Appendix III/Annex C (with some exceptions).

INTERNAL EU TRADE

Internal trade in the EU includes trade within one EU Member State and trade between individual EU Member States. Due to the establishment of the EU single market, generally wildlife goods can be moved and traded freely inside the EU. However, wild-taken specimens of species listed in Annex A (and any others that do not meet the formal definitions of captive-bred or artificially propagated, see below) are generally not allowed to be used for commercial purposes and their movement inside the EU is also regulated. Commercial purposes include the purchase, offer to purchase, acquisition or display to the public for commercial purposes, use for commercial gain, sale, keeping for sale, offering for sale, and transport for sale. The prohibitions applicable to specimens of Annex A-listed species also apply to specimens of species listed in Annex B for which it cannot be proven to the satisfaction of the competent authorities of Member States that they were acquired (and where applicable, introduced into the EU) in accordance with CITES, EU Regulations and relevant national conservation legislation.

As a general rule, no permits or certificates are needed for keeping or moving a specimen of a species listed in Annex B, C or D inside the EU. Likewise, permits are generally not required for commercial activities inside the EU involving specimens of species listed in Annex B (if they have been legally acquired and imported into the EU), C or D. However, in certain instances it will be necessary to provide documentary evidence showing that the specimens kept and/or used commercially were legally obtained or introduced. Therefore, traders are advised to keep copies of the import documents (i.e. import permits for Annex B, import notifications for Annex C and D) or other proof that the specimens were legally obtained (i.e. a certificate from a national CITES Management Authority).

CAPTIVE-BRED SPECIMENS AND MARKING

There are a number of specific exemptions from the trade prohibition for Annex A species and, under certain conditions, specimens are allowed to be traded internally within the EU—including for commercial purposes - through the issuance of a certificate. The main exemption applicable to live animal specimens is that they were born and bred in captivity in compliance

with the criteria laid down in Articles 54 of Commission Regulation (EC) No 865/2006. A certificate (for commercial use of animals born and bred in captivity) can only be issued if the applicant has satisfied the CITES Management Authority, the latter having consulted the CITES Scientific Authority, that the conditions are met.

For an animal specimen to qualify as “born and bred in captivity” it must comply with several conditions such as having been born in a controlled environment of parents that mated in a controlled environment and that the breeding stock was established in accordance with the legal provisions that applied in the place and time when it was first obtained (see Reference Guide for more details). It is important to note that due to concerns over avian influenza, in 2005 the EU temporarily banned the import of wild-taken birds, and this became a permanent measure in 2007

(Commission Regulation (EC) No. 318/2007). Under this legislation only captive-bred birds from approved breeding facilities and countries can be imported into the EU (with an exception for “pet” birds⁷). Therefore, since 2007, in the case for birds, the parental stock for EU captive-breeding operations must also have been established in accordance with this legislation.

Even if captive-bred, for internal and external EU trade control purposes, live specimens of Annex A-listed vertebrates have to be uniquely marked. These marking requirements have been developed to prevent fraud and to curtail illegal trade in specimens. The details of the mark, such as the unique number code, have to be provided on the permit or certificate to ensure that the specimens are indeed those referred to in the accompanying document. Marking provisions are as follows:

MARKING PROVISIONS FOR CAPTIVE-BRED SPECIMENS

- A. CAPTIVE-BORN AND BRED BIRDS** subject to marking requirements must be marked with a uniquely marked seamlessly closed leg-ring. In cases where this is not possible due to the physical or behavioural characteristics of the bird, an unalterable microchip transponder conforming to ISO Standards 11784:1996(E) and 11785:1996 (E) should be used.
- B. ALL OTHER LIVE VERTEBRATES** subject to marking requirements should be marked with an unalterable microchip transponder conforming to ISO Standards. In cases where this is not possible due to physical or behavioural characteristics of the animal, a ring, band, tag, tattoo or another appropriate method should be used.

The majority of the priority taxa for this survey are listed in Appendix I/Annex A, which means their “commercial use” is only permitted under specific circumstances, such as if they are captive-bred. In all cases, sales or transfer of ownership of live specimens of Annex A listed species both within and between EU countries must be accompanied by a certificate (and trade out of the EU must be accompanied by an export permit), specimens must be marked and according to Belgian and Dutch national law, owners must keep a register/inventory of the specimens they own. Furthermore, in relation to marking, the Netherlands has a national law specifically covering marking of birds with foot rings, and Belgium requires that juvenile tortoises with a plastron size >4.5cm be marked with microchip transponders (Crook and Musing, 2016).

⁷ Pet animals are defined in Regulation (EC) No. 998/2003 as: “animals of the species listed in Annex I4 which are accompanying their owners or a natural person responsible for such animals on behalf of the owner during their movement and are not intended to be sold or transferred to another owner”. Imports of “pet birds” under the EU bird ban are regulated by Commission Decision 2007/25/EC of 22 December 2006, which specifies that a consignment cannot consist of more than five birds, which must have undergone health tests, quarantine, or vaccination.

The background features a series of concentric, curved blue lines that create a sense of depth and movement. On the left side, there are several blue arrows of varying sizes, some pointing outwards and some pointing inwards, suggesting a process or a cycle. The overall aesthetic is clean and modern.

METHODS

METHODS

The survey was composed of six main stages:



1 PRE-TEST

to identify target websites and determine the species focus (priority taxa)



2 TEST PHASE

to trial survey methods (such as monitoring templates, tools, security measures)



3 MAIN SURVEY PART A

made up of systematic surveys of all offers for sale of priority taxa on websites and fora identified during stages 1 and 2



4 MAIN SURVEY PART B

to record discussions of interest (any mention of the availability/demand for priority taxa, such as “wanted” listings, old (prior to 2019) listings, breeding discussions in forums etc.), including accessing social media groups



5 DATA CLEANING

and identification of cases of interest and duplicates



6 FURTHER RESEARCH

into potentially “suspicious” offers for sale, including online investigation into sellers and email/social media contact.

Note:

“Listing” is used throughout the report to refer to either a user-generated sales offer (i.e. an advertisement/listing) or an organic post where an item is being offered for sale (i.e. non-paid/promotional activity on social media).

PRIORITY TAXA

Considering that there are more than 35 000 species protected under CITES (and consequently the EU Wildlife Trade Regulations), a major challenge for online wildlife trade monitoring is defining priority taxa for surveys. 26 bird and reptile species and two reptile genera (in brief 28 taxa) have been chosen as the focus for this survey. Belgium and the Netherlands both play important roles in importing, breeding and exporting live specimens of birds and reptiles. This choice was based on suggestions from Belgian and Dutch Enforcement and Management Authorities, lists drawn up by EU enforcement authorities, discussions in the EU Wildlife Trade Enforcement Group⁸ and with other wildlife experts, previous analyses/reports of trade and seizures data, knowledge of breeding/rarity/price, IUCN Red List categories (taking into consideration conservation concern), and previous online wildlife trade monitoring studies (such as those carried out by IFAW, Monitor and TRAFFIC).

Emphasis was placed on species which have the highest likelihood of being illegal if found for sale online, due to their high level of protection, rarity and because they are known to be found in illegal trade in the EU. The majority of the taxa are listed in EU Annex A; those in Annex B have been/are under stricter controls through past and/or current EU trade suspensions/decisions.

By narrowing down the scope of the survey to these 28 taxa, the surveyors intended to limit to number of listings found in order to allow more time for more in-depth research into each case. The primary objective was to collect as much information as possible on cases of illegal trade online that may warrant further investigation from authorities and not to undertake a broad survey on any protected species for which there are little concern over illegal trade.

MARKET FOCUS AND ONLINE PLATFORMS

The survey aimed to identify offers for sale and discussions of interest that were specifically, or

potentially, relevant to Belgium and the Netherlands, through monitoring:

- ✓ Online platforms aimed specifically at Belgian or Dutch markets, such as national classified advertisement sites;
- ✓ Sellers/traders residing in or/with shops in Belgium/the Netherlands (these could be posting on "international" sites, social media or sites with domains in other countries);
- ✓ Sellers/traders offering services to Belgian or Dutch residents (e.g. with shops in other countries, but publishing listings specifically in Dutch/French and/or offering delivery to these countries);
- ✓ Interested buyers/persons resident in Belgium/the Netherlands (wanted listings).

A total of 50 open access online platforms were identified during stages 1 and 2, and these formed the focus of the systematic surveys.

Facebook is the most widely used social media platform in Belgium and the Netherlands⁹, and therefore was the main social media focus of this survey. Public Facebook pages¹⁰ and Facebook groups¹¹ were monitored by surveyors to identify suspected illegal wildlife activities, modus operandi and conversations of interest.

SURVEY PERIOD AND EFFORT

The initial main survey, carried out during July 2019, logged all 2019 listings still active at the time. The repeat survey, carried out between the end of August and mid-September 2019, checked whether listings found previously were still available or not, and also logged new listings. The repeat survey helped to assess whether there was an increase in online listings after the summer holiday period and prior to large bird and reptile fairs such as Zwolle (Netherlands) and Hamm (Germany) in September 2019. The total

⁸ https://ec.europa.eu/environment/cites/eg_en.htm.

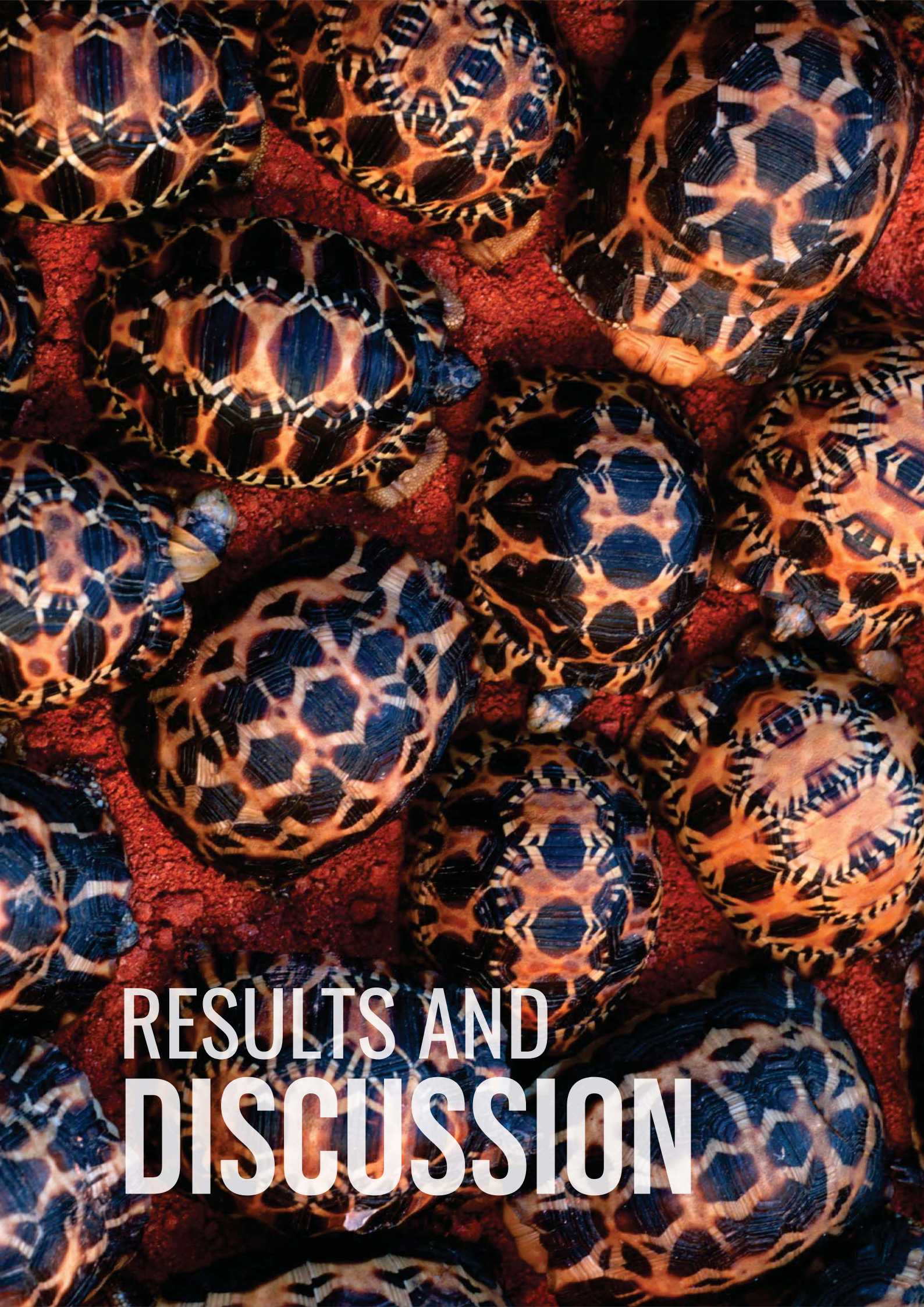
⁹ Digital 2019 reports available at <https://datareportal.com/reports>

¹⁰ Facebook profile of an entity such as a company, visible to anyone searching on Facebook.

¹¹ Place for group communication and for people to share their common interests.

time spent monitoring sites for offers for sale of the priority taxa for both countries by all surveyors was 100 hours. In addition, at least 100 hours were spent to carry out additional research such as collection of additional information, discussions of interest and interacting with sellers.

It was ensured that all work carried out complied with the General Data Protection Regulation (EU) 2016/679.



RESULTS AND DISCUSSION

SURVEY RESULTS OVERVIEW

A) TOTAL NUMBER OF LISTINGS

Between July and September 2019, surveyors found 106 active listings from 2019 for specimens of priority taxa with a link to Belgium and/or the Netherlands.

91 listings were unique, with 15 identified as clear duplicates, i.e. either sellers were posting similar listings cross-posting the same specimens on different sites or they were re-posting the same listing every few days/week or month. In addition, 26 wanted listings, 52 past listings (posted prior to 2019) and over 200 other posts (discussions found in forums, listings in other countries, breeder information, stocklists etc.) relevant to the priority taxa were recorded.

58 unique listings were found during the first phase of the survey in July. 33 new listings were found at the end of August/in September. 60% of the listings found in July were still available at the end of August/in September. The remaining 40% were no longer available or active, with the majority of these having been posted on Facebook. Reasons for these listings no longer being accessible could include specimens being sold/no longer available, listings having been removed by the online platforms themselves if in breach with their policies or listings expiring. For example, listings on the site Marktplaats expire automatically after four weeks if sellers do not extend the period.

B) LISTINGS BY TAXA AND NUMBER OF SPECIMENS

Of the 91 unique listings from 2019, 49 were for birds, totalling at least 93 specimens¹², and 42 for reptiles, for at least 94 specimens.

The most listings and specimens for birds were found for Blue-throated Macaw *Ara glaucogularis* (13 listings/35 specimens) and Hyacinth Macaw *Anodorhynchus hyacinthinus* (11 listings/23 specimens). Only one listing

¹² The number of specimens included in these listings were estimated based on the text and/or photos provided

LISTINGS STATISTICS

106 Active Listings
(91 unique, 15 duplicates)

26 WANTED LISTINGS

52 PAST LISTINGS

>200 OTHER POSTS

 **49** BIRD
listings, ≥93 specimens

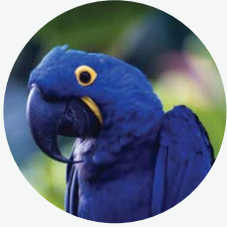
 **42** REPTILE
listings, ≥ 94 specimens

was found for each of: Black-billed Amazon *Amazona agilis* (2 specimens), Yellow-billed Amazon *Amazona collaria* (2 specimens) and Palm Cockatoo *Probosciger aterrimus* (1 specimen) and no listings were found for Red-browed Amazon *Amazona rhodocorytha* or Philippine Cockatoo *Cacatua haematuropygia*.

It is important to note that parrots, in particular high value species such as Hyacinth Macaw, are commonly used in scams (see Section 4c, Scams). Of the priority reptile taxa, the most readily available species in the Belgian and/or Dutch market appeared to be Williams' Dwarf Gecko *Lygodactylus williamsi* (12 listings, 27 specimens), Mexican Beaded Lizard *Heloderma*

horridum (4 listings, 15 specimens), Radiated Tortoise *Astrochelys radiata* (7 listings, 13 specimens) and Chinese Crocodile Lizard *Shinisaurus crocodilurus* (8 listings, 11 specimens). Only one listing was found for each of Rock iguanas *Cyclura* spp. and Spider Tortoises *Pyxis arachnoides* (plus one offer to swap for another species) and none for the following species: Antsingy Leaf Chameleon *Brookesia perarmata*, Psychedelic Rock Gecko *Cnemaspis psychedelica*, Malagasy Flat-tailed Tortoise *Pyxis planicauda*, San Esteban Island Chuckwalla *Sauromalus varius*, Agra Monitor *Varanus griseus*, Komodo Dragon *Varanus komodoensis*, Clouded Monitor *Varanus nebulosus* and Gray's Monitor *Varanus olivaceus*.





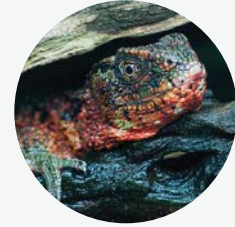
HYACINTH MACAW
13 listings, 35 specimens



WILLIAMS' DWARF GECKO
12 listings, 27 specimens



BLUE-THROATED MACAW
11 listings, 23 specimens



CHINESE CROCODILE LIZARD
11 listings, 23 specimens

	SCIENTIFIC NAME	COMMON NAME	CITES/EU ANNEX	IUCN RED LIST	NO. OF LISTINGS	NO. OF SPECIMENS
BIRDS	<i>Amazona agilis</i>	Black-billed Amazon	II/B	VU	1	2
	<i>Amazona collaria</i>	Yellow-billed Amazon	II/B	VU	1	2
	<i>Amazona pretrei</i>	Red-spectacled Amazon	I/A	VU	2	3
	<i>Amazona rhodocorytha</i>	Red-browed Amazon	I/A	VU	0	0
	<i>Amazona ventralis</i>	Hispaniolan Amazon	II/B	VU	5	6
	<i>Anodorhynchus hyacinthinus</i>	Hyacinth Macaw	I/A	VU	11	23
	<i>Ara glaucogularis</i>	Blue-throated Macaw	I/A	CR	13	35
	<i>Cacatua goffiniana</i>	Goffin's Cockatoo	I/A	NT	7	9
	<i>Cacatua haematuropygia</i>	Philippine Cockatoo	I/A	CR	0	0
	<i>Cacatua moluccensis</i>	Moluccan Cockatoo	I/A	VU	5	5
	<i>Cacatua sulphurea</i>	Yellow-crested Cockatoo	I/A	CR	7	7
	<i>Probosciger aterrimus</i>	Palm Cockatoo	I/A	LC	1	1
REPTILES	<i>Astrochelys radiata</i>	Radiated Tortoise	I/A	CR	7	13
	<i>Brachylophus spp.</i>	Fiji Iguana	I/A	EN-CR	5	13
	<i>Brookesia perarmata</i>	Antsingy Leaf Chameleon	I/A	EN	0	0
	<i>Cnemaspis psychedelica</i>	Psychedelic Rock Gecko	I/A	EN	0	0
	<i>Cyclura spp.</i>	Rock iguana	I/A	VU-CR	1	2
	<i>Heloderma horridum</i>	Mexican Beaded Lizard	I & II/ A & B	LC	4	15
	<i>Lygodactylus williamsi</i>	Williams' Dwarf Gecko	I/A	CR	12	27
	<i>Pyxis arachnoides</i>	Spider Tortoise	I/A	CR	2	3
	<i>Pyxis planicauda</i>	Malagasy Flat-tailed Tortoise	I/A	CR	0	0
	<i>Sauromalus varius</i>	San Esteban Island Chuckwalla	I/A	VU	0	0
	<i>Shinisaurus crocodilurus</i>	Chinese Crocodile Lizard	I/A	EN	8	11
	<i>Testudo kleinmanni</i>	Egyptian Tortoise	I/A	CR	3	10
	<i>Varanus griseus</i>	Agra Monitor	I/A	Not assessed	0	0
	<i>Varanus komodoensis</i>	Komodo Dragon	I/A	VU	0	0
	<i>Varanus nebulosus</i>	Clouded Monitor	I/A	Not assessed	0	0
	<i>Varanus olivaceus</i>	Gray's Monitor	II/A	VU	0	0

TABLE 1

Priority taxa and the number of unique listings and specimens found for sale online during the survey period

Note:

Three bird listings were offering more than one of the priority species for sale. Specimen numbers are estimates. IUCN Red List Categories: CR – Critically Endangered, EN – Endangered, VU – Vulnerable, NT – Near Threatened, LC – Least Concern.

C) ONLINE PLATFORMS

52% of listings were posted on “specialist” platforms (“classified ads” sites specifically aimed at posting listings for live animals, in particular reptiles or birds, hobbyist forums and private pet shop homepages), 26% on Facebook and 22% on more general classified ads sites (see section 2 for further details). 75% of all listings were found on only five platforms: Facebook (28), Parrot4sale (15), Marktplaats (13), Terraristik (11) and Vogelarena (10).

There are a number of differences between the results found during this survey and previous studies carried out by IFAW on Belgian and Dutch sites by Hastie and McCrea-Steele (2014). In the 2014 study, two sites dominated trade in Belgium: 2ememain.be (50% of the total) and 2dehands.be (31%), both offering a wide range of live animals and wildlife products (Hastie and McCrea-Steele, 2014). In the current survey, only two

listings for the priority taxa were found on 2ememain and none on 2dehands. This is to be expected due to the different focus of the current survey; searching only for live animals of priority taxa, many of which are specialist and rare species. When carrying out broader searches (using more general terms/common names such as “kaketo”, “ara”, “papegai” or “perroquet”), many listings for live birds were still found on both sites. On the other hand, for the Netherlands, Marktplaats and Vogelarena were important sites in both the 2014 and the 2019 surveys. Many of the listings found on Marktplaats in 2019 were for more common/widely available species such as Williams’ Dwarf Gecko or possible scams (Hyacinth Macaw).

See Section 2 Use and policies of online platforms for a more detailed discussion on the different websites being used by wildlife traders and any information or policies they may have related to wildlife trade online.

ONLINE PLATFORM	ONLINE PLATFORM TYPE	MARKET	NO. OF LISTINGS
facebook.com	Social Media (General)	Global	28
parrot4sale.com	Classified Ads (Birds)	EU	15
marktplaats.nl	Classified Ads (General)	Netherlands	13
terraristik.com	Classified Ads (Reptiles)	EU	11
vogelarena.com	Classified Ads (Birds)	Belgium/Netherlands	10
enimalia.com	Classified Ads (Reptiles)	EU	6
aanbod.be (dieren.aanbod.be)	Classified Ads (General)	Belgium	4
hobbyreptiles.com	Private Homepage (Online reptile supplier)	Belgium/France	4
marktplaza.be	Classified Ads (General)	Belgium	3
vogelmarkt.net	Classified Ads (Birds)	Belgium/Netherlands	3
2ememain.be	Classified Ads (General)	Belgium	2
shop.mikesreptipark.be	Private Homepage (Pet Shop - Reptiles)	Belgium	2
heewis.nl	Private Homepage (Pet Shop - Reptiles)	Netherlands	1
lftshop.com	Private Homepage (Pet Shop - Reptiles)	Belgium/France	1
reptilienserver.de	Classified Ads (Reptiles)	Germany/EU	1
reptimania.com	Classified Ads/Interest Group Forum (Reptiles)	Belgium/France	1
toutypasse.be	Classified Ads (General)	Belgium	1
TOTAL			106

TABLE 2

Online platforms monitored during the survey with offers for sale for priority taxa.

Note:

This table shows the total number of listings found, including duplicates. The platform type includes in brackets any specialisms relevant to this survey (i.e. birds or reptiles), however, many of these sites offer for sale other taxa for aquaria (fish and invertebrates) and terraria (amphibians, insects, arachnids).

SELLERS STATISTICS

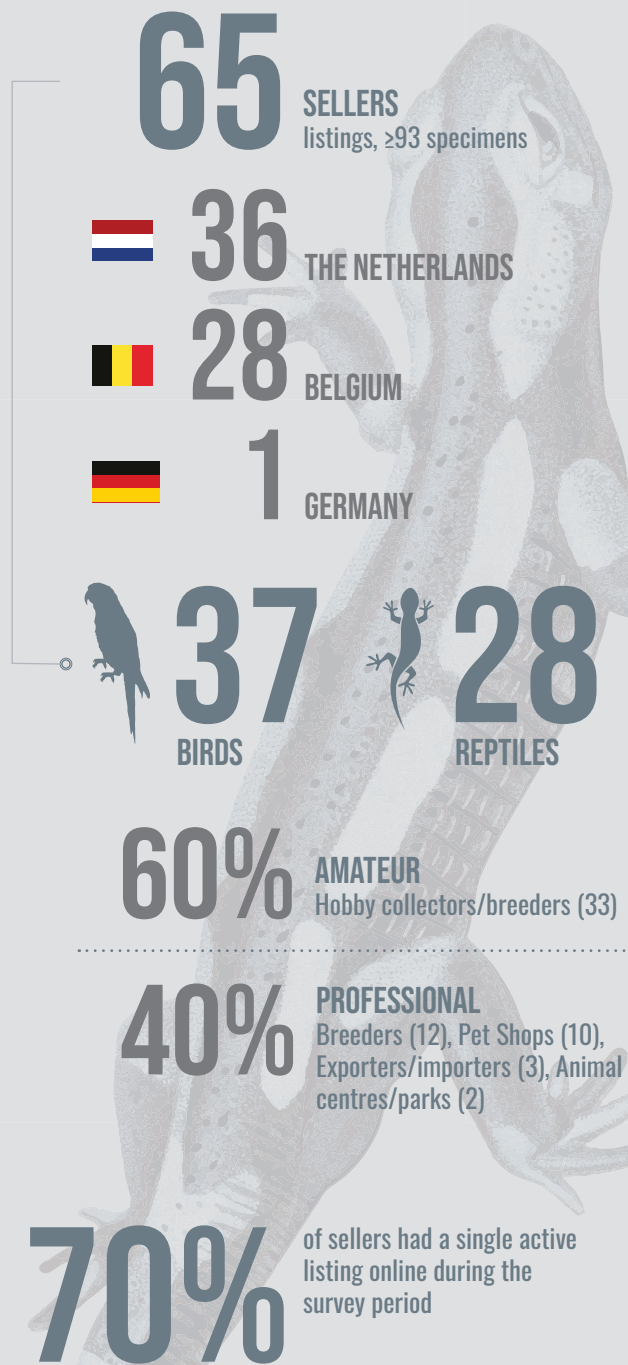
D) SELLERS

Active 2019 listings for the priority taxa from 65 different sellers were logged during the survey from 37 for birds and 28 for reptiles. 36 sellers (55%) were based in the Netherlands, 28 sellers (42%) in Belgium and one in Germany (included as this seller was clearly targeting buyers in other countries including Belgium and the Netherlands with listings in different languages and on various sites, see section *modus operandi* below).

Based on the number of specimens for sale, information provided in the listings and some additional research online, an attempt was made to split the sellers into seller types. Over 60% of all sellers appeared to be amateurs, with most being classified as hobby collectors and/or breeders (33). Only five listings appear to have been posted by private persons owning an animal as a pet, and with no interest in “collecting” or breeding these animals. The remainder (nearly 40%) were professionals/commercial sellers, i.e. either professional breeders (12), pet shops (10), exporters/importers (3) or animal centres/parks (2).

There is some overlap between categories, with several pet shops and exporters/importers also being professional breeders, for example, and it is often difficult to determine whether someone is an amateur or professional in this field. Based on information on their websites, many of the pet shops/professional breeders appear to have started collecting animals as a hobby, progressed on to amateur breeding and then made it their living. Runhovde (2018) recently reviewed the types of reptile sellers online, highlighting that according to many different studies into online trade in Malagasy reptiles (such as Morgan and Chng, 2017) a large proportion are private individuals, regularly described as hobbyists, and are not connected to wider structured or organised (criminal) groups.

The majority of breeders/traders appeared to specialise in one taxonomic group. Several traders were also offering limited quantities of other wildlife, or appeared to have branched out from their initial specialisms. For example a trader previously convicted of illegal trade is principally a bird specialist, but also offers several mammal species for sale (see example of case of interest for Yellow-billed Amazon). Around 40% of



listings were posted by “commercial” sellers, either professional breeders, pet shops, exporters/importers or animal centres/parks. Existing traders involved in legal trade will have the most connections and likely be given the most opportunities to diversify and source new specimens (including possibly illegally sourced), therefore should be priorities for further research. During this survey, most offers for sale found of the very rare, expensive and/or particularly difficult to source legally species had been posted by professional traders; in several cases further research into these sellers showed that these traders had been previously convicted for wildlife trafficking or other related crimes.

E) MODUS OPERANDI

Most listings found were in Dutch (53); 21 were in English, 16 in French and one in German. In a number of cases it was clear that sellers were aiming for the wider EU market by posting in different languages and offering delivery at the major trade fairs.

Most listings did not provide specific information on payment or shipping options, and face to face contact still appears to be the main method of transfer of animals in Belgium and the Netherlands. A number of sellers were offering delivery at the next specialist trade fair – nine sellers offered delivery/handover at Hamm and/or Houten (for reptiles) and four at Zwolle (for birds). Some sellers specified that live animals are not shipped and must be collected in-store, but others appeared to offer shipment. Many sellers specify that they will only provide additional information by private message (e.g. WhatsApp) or by phone (see Section 3, Online challenges and solutions).

Facebook has a clear wildlife trade policy (see Website policies below), however sellers/groups appear to be finding ways of getting around checks by using words that do not explicitly convey buying/selling, such as “exchange” or “re-homing” or by moving to other media/forms of communication. For example, the wording in the description of a closed Facebook group was changed to include re-homing in 2019. Group administrators also post messages to ensure members do not “openly” discuss buying or selling and sellers provide links to WhatsApp groups for further discussion of sales. In addition, in many cases offers

of sale are disguised by using just a photo and very little text (possibly just the species name, and no prices) or abbreviations/code words.

F) SOURCE, CITES DOCUMENTATION AND MARKING

Most of the priority taxa are currently listed in CITES Appendix I/EU Annex A which means they can only legally be traded if they are captive-bred, are accompanied by CITES documentation and are appropriately marked.

Many listings did not specifically state the source of the specimens for sale. For the birds, only six listings stated the specimens were captive-bred (or “CB”) and one stated the specimen was wild-caught (for Moluccan Cockatoos). For the reptiles, 29 out of 42 listings mentioned that the specimens were captive-bred. Many of the listings for both taxonomic groups, however, did provide years, suggesting they were (captive-) born/bred then. However, it is very difficult to establish the true source of any of these specimens for sale without more details.

CITES documentation was mentioned in only 42% of listings (53). Of the 49 listings for birds, only 12 (24%) specifically mentioned that the specimens were accompanied by CITES documents. Another five listings stated that the specimens had the “required paperwork”, but in several cases this specifically referred to medical certificates/bird passports. 14 listings described a form of marking, either a ring (with two listings specifying this being a closed ring) or microchip.

Of the 42 listings for reptiles, 26 (62%) specified the existence of or requirement for CITES documentation.

Three of these provided detailed information on the cost and time for requesting a CITES certificate and that this must be done prior to purchase. Only three listings stated that the animals were chipped.

During this survey, of all listings found for the priority species, only three (including one duplicate) provided details of ring or chip numbers.

In relation to marking, there was one 2018 listing of particular interest and linked to markets in the Netherlands. An offer for sale on Parrot4sale from

SOURCE/CITES MARKINGS

Slovakia for Yellow-headed Amazon *Amazona oratrix* and Blue-cheeked Amazon *Amazona dufresniniana* (not priority species) mentions the possibility of supplying birds without rings (“zonder cirkel”) to Germany and the Netherlands. This may indicate a case of illegal trade.



49

BIRD LISTINGS

with a specific mention of:

SOURCE: CB

“Captive-bred”, with many more potentially the same given year of hatching was also provided

6

12

CITES

Accompanied by relevant CITES documentation

14

MARKINGS

two with number details



42

REPTILE LISTINGS

with a specific mention of:

SOURCE: CB

“Captive-bred”, with many more potentially the same given year of birth was also provided

29

26

CITES

Accompanied by relevant CITES documentation

3

MARKINGS



EXAMPLES OF

CASES OF INTEREST

G) EXAMPLES OF CASES OF INTEREST

Yellow-billed Amazon *Amazona collaria*

SYNONYMS	<i>Psittacus collarius</i>
OTHER COMMON NAMES	Amazone de la Jamaïque, Amazone sasabé, Geelsnavel Amazone, Jamaica-amazone
RANGE	Jamaica
THREATENED STATUS	Vulnerable, Population Decreasing (2016) https://www.iucnredlist.org/species/22686209/93102664
CITES/EU LISTING	Appendix II/Annex B (1981):

A single listing for the Yellow-billed Amazon from the Netherlands was found during the survey. Yet this was being offered for sale by a Dutch trader who was previously convicted several times for illegal wildlife trade including for large-scale illegal animal trade within a criminal organisation. This previous case proved that this trader smuggled many rare bird species into the Netherlands and traded them within the EU, using various methods including “legally” importing animals via zoos or the personal/pet exemption and forging documents.

Based on the 2019 offer for sale for the Yellow-billed Amazon, this trader is currently still trading in rare species. The Yellow-billed Amazon listing was posted in June 2019 and the trader said that the birds have paperwork, one with chip, another with ring, and cost EUR7,000. He also had an Instagram account with pictures of all sorts of animals, that had already been exported in 2019 according to the trader in Figure 1.



Background information: Since the Yellow-billed Amazon was listed in CITES Appendix II/EU Annex B in 1981, according to data in the CITES Trade Database, total reported global exports range from 131 specimens (exporter data) to 155 specimens (importer data). EU Member States have reported importing 39 live captive-born and captive-bred specimens for commercial or breeding purposes from Canada, the United States of America (USA) and Switzerland, with the majority of this trade occurring in the 1990s; only six specimens have reportedly been imported over the last 10 years (from the USA to the Czech Republic).

Germany, the Netherlands and the United Kingdom have reported commercial (re-)exports of 27 captive-bred (or non-specified source) specimens since 1981, with no reported (re-) exports over the last 10 years.

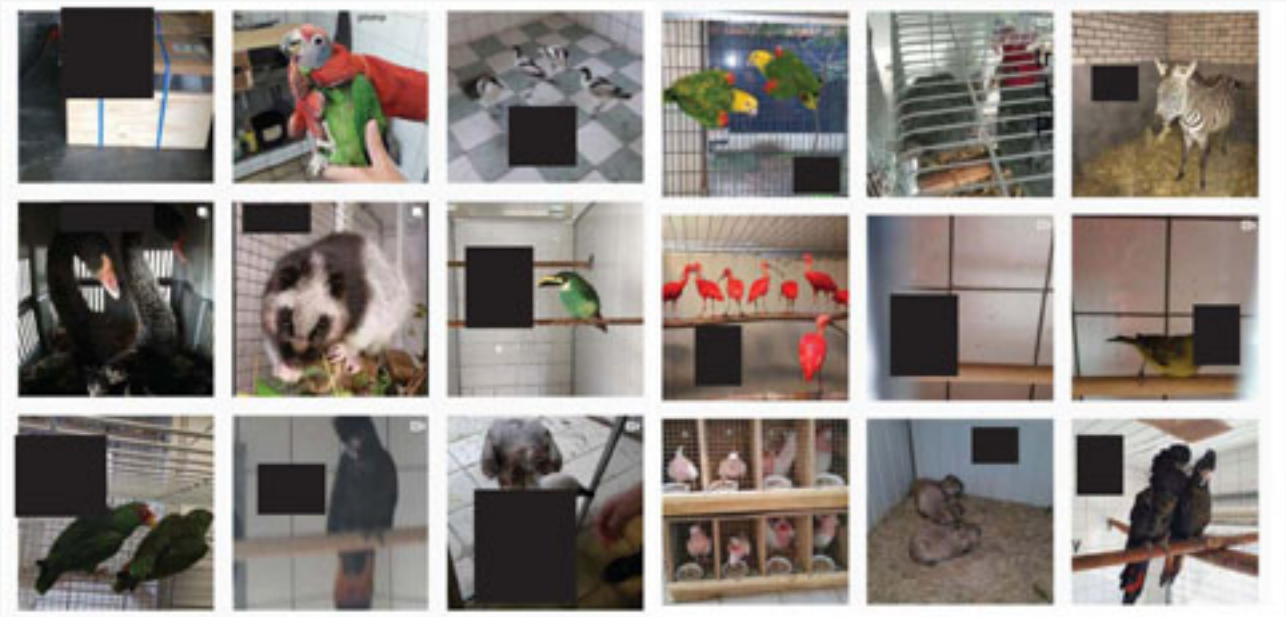


FIGURE 1: Instagram pictures of some of the animals exported in 2019 by the Dutch trader

Fiji Iguanas *Brachylophus* spp.

OTHER COMMON NAMES	<i>Iguane des Fidji, Fiji leguaan</i>
RANGE	Fiji
THREATENED STATUS	Three species are threatened (Endangered – Critically Endangered), <i>B. gau</i> not assessed (only described in 2017) https://www.iucnredlist.org/search?query=Brachylophus%20&searchType=species
CITES/EU LISTING	Appendix I/Annex A (1981): https://speciesplus.net/#/taxon_concepts/7256/legal

Three listings for Fiji Iguanas (four specimens each of Fiji Banded Iguana *B. fasciatus* and Central Fijian Banded Iguana *B. bulabula*) were found during this survey targeting the Belgian and Dutch markets (two from Belgium and one from the Netherlands), plus an additional two posts showing breeding/eggs, suggesting that specimens will be for sale in the future (see figure 2).

In addition, when searching on Terraristik, there were a total of twelve 2019 listings offering Fiji Banded Iguanas and two offering Central Fijian Banded Iguanas, from sellers in Germany, Spain, Latvia



and the Czech Republic. Several listings specify that the specimens are strong, with no problems, with three listings saying that the specimens are offspring from two unrelated parents. Discussions on online forums suggest that in-breeding is a problem in particular for these species, due to the limited parental stock. There has been considerable demand, therefore, for new bloodlines sourced illegally from the wild. One listing by a German seller on Terraristik from August 2019 described the specimen as “FB2015”, indicating

that this was born in captivity from wild-caught parents. Considering that no legal trade in wild-caught specimens has been permitted since 1981, this is likely to have been derived from illegally sourced parents.

Prices were rarely provided, however listings found on Reptilienserver ranged from EUR400 for young males, to EUR1,100 for a young couple, and to EUR1,500 for a pair of adults.

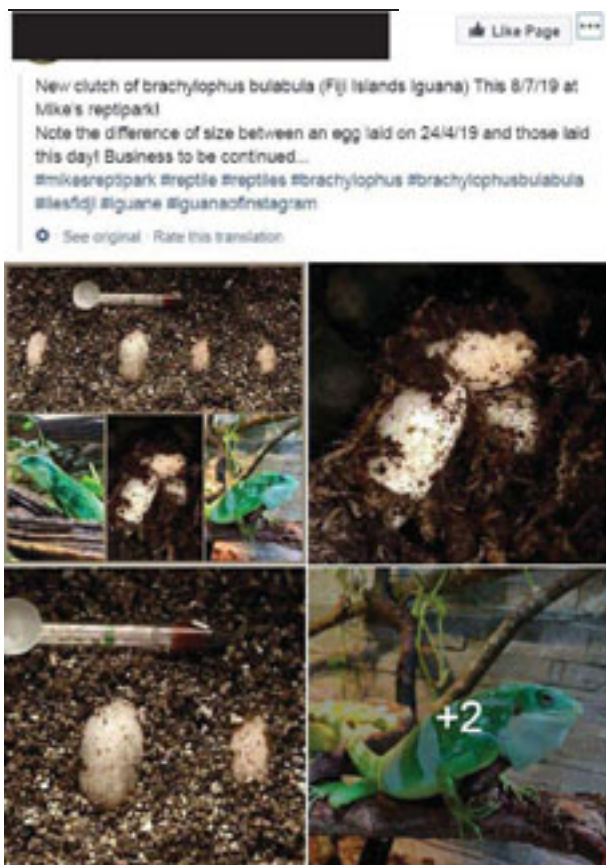


FIGURE 2

Background information: The Fiji iguana genus contains four species – Central Fijian Banded Iguana *B. bulabula*, Fiji Banded Iguana *B. fasciatus*, Gau Iguana *B. gau* and Fiji Crested Iguana *B. vitiensis*. For all species, there are serious concerns over smuggling.

Of the 77 trade records for live Fiji Iguanas in the CITES Trade Database for 2008–2017, all but 10 involve EU Member States. There are only two reported EU imports: two captive-bred Fiji Banded Iguana specimens by the



FIGURE 3

Netherlands from Switzerland in 2010 and 2011 for zoo purposes. According to exporter records, Mali also exported 30 captive-bred specimens of Fiji Crested Iguana to Austria in 2009–2011 for commercial purposes. Mali is a non-range State for these species, with no reported imports; despite CITES permits having been issued for these specimens there are serious concerns over the legality of these shipments (J. Jansen, Monitor, in litt., September 2019). On the other hand, the EU reported exporting 168 captive-

bred Fiji Iguanas specimens during the same period, mainly for breeding and commercial use. The majority were Fiji Banded Iguana specimens (109).

According to EU-TWIX¹³, there were six reported seizure records for the Fiji iguanas between 2014 and 2018; five for the Fiji Banded Iguana (6 live and three bodies), and one for Fiji Crested Iguana (46 live specimens, and 5 bodies).

¹³ The European Union Trade in Wildlife Information Exchange <https://www.eu-twix.org/>





USE AND POLICIES OF **ONLINE PLATFORMS**

ONLINE PLATFORMS

Online marketplaces are constantly evolving, as are the different media being used for selling wildlife (both legally and illegally). These changes are the result of many factors, including user preferences, changes in legislation and/or increased enforcement, pressures from non-governmental organisations, new website policies or simply the development of easier to use/more accessible platforms. Results and observations from this survey, as well as the different types of website policies, terms of use and information provided on legislation are described below.

A) SOCIAL MEDIA - FACEBOOK

During this survey, over 25% of the 91 listings were found on Facebook. Facebook is a member of the Coalition to End Wildlife Trafficking Online and in 2019 prohibited the trade in all live animals aside from those from verified merchants (see Website policies below). Interestingly, however, many of the Facebook listings found in the first round of surveying in July were no longer available when re-visited at the end of August, suggesting either a high turnover or these listings having been removed by Facebook.

Some listings on Facebook (and on other sites) may have been missed when using scientific and common names as search terms, as sellers are increasingly adapting their offers for sale to avoid detection by website algorithms by using code words or posting images only (see *modus operandi*, Section 1e). To the extent that bird and reptile traders make an effort to avoid detection, this appears to be more an attempt to avoid having their profiles or listings removed by the platforms, rather than any fear of legal consequences (Haysom, 2018; J. Janssen, Monitor, in litt, September 2019).

40% of the listings found on Facebook were posted on public user/business pages and 60% in Facebook

groups aimed at bird or reptile hobbyists. 35% of the unique listings found on Facebook were posted in one group on reptiles and amphibians which mentioned in its title “for sale”. When re-visited in October 2019, this group had changed its name and removed the words “for sale”.

The importance of social media, and increasingly the use of limited access groups such as closed and secret groups on platforms such as Facebook to sell wildlife, have been discussed at length in the literature. Based on this survey, it is clear that sellers are still publishing offers for sale on “open pages”, i.e. their own private pages or in open groups, in order to draw a large audience. It seems there are fewer discussions or comments associated with posts, however, if there are any, the seller generally responds with a direct message request, suggesting further discussions and final transactions occur in private messages. Closed social media groups may provide sellers with more privacy, and therefore potentially less chance of being detected if they are involved in illegal activities; however, their marketing has a more restricted reach (Haysom, 2018).

Previous research has shown, however, that closed and secret Facebook groups may be increasingly used for rarer species and those that can potentially have an illegal origin, to make it harder for enforcement and civil society to access these listings (J. Janssen, Monitor, in litt., September 2019). A move to more restricted access groups is more likely to occur after a species/taxa has received a lot of attention in the conservation sector and/or the media. For example, after the genus *Naultinus* was listed in Appendix II CITES CoP16 in 2013, there was a significant increase in focus on illegal trade of New Zealand geckos and trade in most of these species went underground for a while. At the time, there was a closed Facebook group for European *Naultinus* keepers, but this changed to a secret group, only accessible by invite (J. Janssen, Monitor, in litt, September 2019).

B) SPECIALIST AND CLASSIFIED ADS SITES

During this survey, over 50% of all listings were found on “specialist” websites, i.e. classified ads sites specifically aimed at posting listings for live animals,

in particular reptiles or birds; hobbyist forums and private pet shop homepages. Of these, the most important were Parrot4sale, Terraristik, Vogelarena and Enimalia. The remaining listings (just over 20%) were found on more general classified ads sites, with nearly half found on one site – Marktplaats. As noted in Section 1, more general classified ads sites tend to be used for more common species, and also for scams, and therefore, when searching for indicator species, although some potential listings of interest can be found on these sites, they are not likely to lead to as many positive results as the specialist sites. Furthermore, it is important to note that sellers appear to use more common names on general classified ads sites (in some cases making it hard to identify the species in question), whereas scientific names are generally used on specialist sites.

C) WEBSITE POLICIES/INFORMATION ON LEGALITY

Less than 25% of the platforms monitored during this survey provided clear information on relevant legislation and/or policies regarding trade in wildlife and/or live animals, and in many cases it was difficult to find any policy information or terms of use on these sites. Online platforms with the most comprehensive wildlife policies – eBay and Facebook – are members of the Coalition to End Wildlife Trafficking Online, demonstrating that a private sector approach to tackling wildlife trafficking online is a critical step in aligning platforms to international and regional wildlife laws. Wildlife sales policies were, however, notably lacking from (or could not be easily found on) the major classified ads sites designed specifically for wildlife sales such as Terraristik and Parrot4sale.

eBay has a clear policy¹⁴ on wildlife and live animal sales, describing what can be sold, with everything else being excluded. It seems that these policies, in particular for live animals, have been effective. No listings for the priority species were found on either eBay.be or eBay.nl during the survey.

Facebook also has a clear wildlife policy¹⁵, specifying non-verified sales of live animals are permitted from “non-verified physical stores”; and no sales of endangered species and their products are permitted across the platform. However, the results of this survey show that

¹⁴ <https://www.ebay.nl/pages/help/policies/wildlife.html>

¹⁵ https://www.facebook.com/policies/commerce/prohibited_content/animals

WEBSITES AND LEGALITY

< 25% of online platforms provided clear information on relevant **legislation and/or policies regarding trade in wildlife**

Online platforms with most comprehensive wildlife policies – eBay and Facebook – are members of the **COALITION TO END WILDLIFE TRAFFICKING ONLINE**

Websites specialised in wildlife trade were largely lacking wildlife sales policies

wildlife sales on Facebook are still ongoing, and sellers/groups are finding ways to avoid detection (see *modus operandi*). Facebook has recently activated user reporting pathways for Marketplace and Pages specifically for the sale of live animals and endangered species products, so that users can report directly to Facebook staff for review. Additional monitoring will be helpful in quantifying the effectiveness of such functionalities.

A number of classified ads sites specifically mention restrictions on trade in ivory (e.g. Netmarkt¹⁶) or state that sales of items against the law is not permitted, including protected species, but do not go into more detail (e.g. Zoekertjes¹⁷). Marktplaats has specific guidance¹⁸ on posting listings for animals (mainly for domestic dogs) including references and links to national laws such as the Dutch Animals Act of 2013. The information provided is very general, however, and the site states that it is the responsibility of the users to comply with, and fully understand, the legislation. Since 2019, Marktplaats has a Memorandum of Understanding in place with the Netherlands Food and Consumer Product Safety Authority (NVWA) to facilitate cooperation when it comes to the prevention and removal of illegal advertisements focusing on prohibited consumer products amongst which protected animals and plants.

Although policy information could not be found on the Vogelmarkt website, the “Frequently Asked Questions” section provides details regarding legislation covering bird leg rings (including reference to the EU Wildlife Trade Regulations)¹⁹. According to this post, the site requires sellers to provide a breeder and ring number for all protected species, due to concerns over fraudulent claims of captive-breeding. The website for the Belgian Association of Parakeet and Parrot Lovers (BVP) requires all transactions (exchanges or sales) to be accompanied by a BVP certificate, which includes information necessary to prove the origin of the birds,

in line with CITES legislation. BVP certificates are only sold to BVP members who agree with the BVP Code of Conduct²⁰. The Netherlands Dendrobate Society (Dendrobatidae Nederland²¹) website is a specific example of an organisation recognising the serious issue of fraudulent claims of captive-breeding and illegal trade of specimens online and at trade fairs, and trying to address these concerns through private sector (non-legal) advice/guidelines. Dendrobatidae Nederland have created a detailed list of poison arrow frog species they allow and do not allow for sale at their events and on their forum, due to the likelihood of illegal sourcing, based on expert opinion (see further details below). Many of the classified ads sites (such as 2dehands²² and Enimalia²³) refer to general legality issues in their terms of use, i.e. that advertisers must ensure that the products or services offered/requested by them are in accordance with applicable laws. In its terms of use, 2dehands states that “in case of doubt, we recommend that you obtain further information or advice from the competent authorities”. Enimalia, which is hosted by a company in Slovakia, specifies that the user is fully responsible for the content of their published listings and that they “may advertise only objects whose sale is permitted in the Slovak Republic and their acquisition was in accordance with the laws of Slovak Republic”.

Most of the specialist wildlife sale sites did not appear to have any (readily accessible) specific policies regarding the posts permitted, although a number require users to register and provide detailed contact information prior to being able to post listings, meaning there is at least a certain level of traceability of users. For example, registration to place listings on Terraristik requires full name, address and phone number, and in the English language version of the site it says a copy of an identification document is also required. The terms of use on Vogelarena appear to have been last updated in 2004 – to publish listings, sellers require a star account which costs only EUR5 a year, however

¹⁶ <https://www.netmarkt.be/home/terms>

¹⁷ <https://www.zoekertjes.net/algemenevoorwaarden/>

¹⁸ https://help.marktplaats.nl/help/veilig_handelen_internetoplichting/regels_beleid/i/regels-met-betrekking-tot-aanbieden-dieren

¹⁹ <https://www.vogelmarkt.net/faq.asp>

²⁰ <https://www.parkieten-revue.be/GedragscodeCertificaten.php>

²¹ <https://www.gifkikkerportaal.nl/>

²² https://help.2dehands.be/HelpContentList?tab=X2dehands_be&cate=Gebbruiksvoorwaarden

²³ <https://www.enimalia.com/terms-of-use/>

this needs to be paid by Paypal or bank transfer. It is likely that many of these measures are in place to avoid scammers using these sites. On some sites, such as Parrot4sale, it was not possible to find any website policy information/terms of use, even when registered. Other sites such as Reptilien Server have a number of pages dedicated to advertising guidelines and terms of use, however none could be viewed without being logged in.

Considering the important role these specialist sites play in online wildlife marketing, as a minimum they should provide clear and easy to find information on the relevant EU legislation governing commercial use of protected species and also consider developing some specific requirements, such as for sellers to declare the legal status of the species for sale, and the CITES document, source, marking numbers and breeder details for specimens. If more detailed

information is required, and there are consequences from providing false information/declarations, some illegal traders may be deterred. An increased level of detail provided in listings is also beneficial to law enforcers and other surveyors and for identifying cases of potential interest.

Finally, there were a number of private homepages that provided detailed information on CITES/the EU Wildlife Trade Regulations, such as Hobby Reptiles²⁴. Hobby Reptiles, clearly states that, being a Belgian Company, it complies with Walloon and European laws regarding Internet sales and live animal trading and that “we can inform you about Walloon laws, but are not specialised in regulations applicable to other regions/countries”. It was easy to find the relevant legislation information on these sites, and links to the main pages were provided on all listings.

²⁴ <https://www.hobbyreptiles.com/fr/content/26-legislation>

AN EXAMPLE OF ONLINE PLATFORM SELLING POISON ARROW FROGS

Dendrobatidae

Poison arrow frogs (family Dendrobatidae) represent one of the most sought-after group of amphibians in the international pet trade (Auliya *et al.*, 2016b). The whole Dendrobatidae family has been listed in CITES Appendix II/Annex B of the EU Wildlife Trade Regulations since 1987.

Although trade in these species is reported and supposedly all legal (all species are currently listed in Appendix II/Annex B and therefore trade in wild-taken specimens is legal internationally, provided that a CITES export permit is issued), there are many concerns over the illegal sourcing of specimens, from range states that either prohibit harvest or have quotas in place. Furthermore, the reported levels of successful breeding (or “ranching”) of a number of species, such as *Oophaga pumilio* and *Dendrobates auratus* in Panama, has been questioned by the CITES Standing Committee (SC66, 2016).

Poison arrow frogs are very popular in Europe, and several online suppliers specialising in these taxa were found for the Netherlands when carrying out a simple Google search. The reported source of specimens is a mixture of wild-taken and captive-bred. Due to the taxonomic complexities and difficulties in identifying legally sourced specimens in this family, and pressure from its members to help identify the legality of certain frog species/specimens in trade, Dendrobatidae Nederland (DN) has created the “DN toetsingslijst”²⁵. This list specifies which frogs may and may not be traded on DN Frog Days and the DN Forum, based on expert knowledge concerning the likelihood of these species being in legal trade.

The organisation notes that they are not a legislative authority and cannot legally assess the status of any frogs for sale, however, through this list they have attempted to provide some clarity to members.

²⁵ <https://www.gifkikkerportaal.nl/Artikelen/dn-toetsingslijst>



Ameerega	<i>macero</i>	CITES	Not allowed	
	<i>maculata</i>	CITES	Not allowed	Nomen Dubium
	<i>munduruku</i>	CITES	Allowed	Previously in the hobby as <i>A. picta</i> . Although the animals have no legal origin, they have slipped through the loopholes of the law because of their former naming (a species that has a legal origin).
	<i>parvula</i>	CITES	Not allowed	Tolerated animals probably all disappeared from the hobby.
	<i>pepperi</i>	CITES	Allowed	Import
	<i>petersi</i>	CITES	Not allowed	Origin of animals in the hobby unknown. Possibly all disappeared from the hobby.
	<i>picta</i>	CITES	Allowed	Import from Bolivia. Possibly all specimens of this species have disappeared from the hobby. If they reappear, proof of origin is crucial.
	<i>planipaleae</i>	CITES	Not allowed	
	<i>pongoensis</i>	CITES	Allowed	Origin legally provided that it is demonstrably from Understory Enterprises
Excidobates	<i>captivus</i>	CITES	Not allowed	Paperwork must correspond to the information we have about this.
	<i>condor</i>	CITES	Not allowed	
	<i>mysteriosus</i>	CITES	Not allowed	illegal import
Minyobates	<i>steyermarki</i>	CITES	Not allowed	illegal import
Oophaga	<i>anchicayensis</i>	CITES	Allowed	Allowed if traceable to import from Tesoros de Colombia, often still in the trade as <i>O. histrionica</i> 'Anchicaya'
	<i>andresi</i>	CITES	Allowed	Allowed if traceable to import from Tesoros de Colombia, often still in the trade as <i>O. histrionica</i> 'Tado', but also other variants from this region are now attributed to this species.
	<i>arborea</i>	CITES	Not allowed	illegal import
	<i>granulifera</i>	CITES	Not allowed	Tolerated / imported animals probably all disappeared from the hobby. One recent German breeding line is considered legal. Paperwork must correspond to the information we have about this.
	<i>histrionica</i>	CITES	Allowed	Only allowed if the origin of Tesoros de Colombia can be proven!
	<i>lehmanni</i>	CITES	Allowed	Only allowed if the origin of Tesoros de Colombia can be proven!

ONLINE SURVEY
CHALLENGES



CHALLENGES

Online monitoring is very labour and time intensive. It is important to note that there are a number of automated systems (such as web scraper software) available reduce the effort associated with online wildlife trade monitoring. A specific report titled – Tackling Wildlife Cybercrime in the EU: Where Technology Can Help - on software options is published in parallel to this report as one of the deliverables of the EU Wildlife Cybercrime Project. However, expert (human) knowledge is still essential to overcome a number of challenges and to analyse results.

A) DETERMINING LEGALITY

The terms “wildlife trafficking online”, “wildlife crime linked to the Internet”, “cyber-enabled wildlife crime” and “wildlife cybercrime” are regularly used in the titles, or to describe results, of online wildlife trade surveys. However, one of the most complicated aspects of online wildlife trade is determining the legality, or illegality, of the specimens in question.

The majority of priority taxa included in this survey are listed in CITES Appendix I/EU Annex A, which means their “commercial use” is only permitted under specific circumstances. Such exceptions include trade in captive-bred specimens (these should be from proven legally acquired parental stock, however it is often very difficult to determine this is the case), wild- taken pre-Convention specimens (that were sourced from the wild prior to the species being listed in Annex A, in long-lived species this exception can potentially be used for many years), and specimens for personal or zoo purposes (non-commercial), and consequent breeding from these specimens for commercial purposes. In all cases sales must be accompanied by a certificate and specimens must be marked.

These exceptions result in legitimate trade of these species and also the abuse of these “loopholes”, enabling illegal trade, in particular through fraudulent claims of captive-breeding. There are a number of

mechanisms in place to try and prevent illegal trade through mis-declaration of source, including the requirement for marking of captive-bred specimens with closed rings or micro-chips. However, illegal traders have found ways to get around these measures so that illegally sourced specimens enter into “legal” trade. For example, wild-taken bird eggs are smuggled into the EU and closed leg rings are added to the birds when they hatch, so they appear to have been bred in captivity; or by moving a microchip from a dead animal and using the associated paperwork for a newly acquired wild-taken specimen. False CITES paperwork has also been known to be in circulation.

Even if online listings state that specimens are correctly marked (with rings or microchips) and have the appropriate CITES paperwork, this may not in fact be the case, and vice versa; and an informative website, with information on legislation, contact details and photos, does not necessarily mean the company is operating according to the regulations.

As a minimum, further interaction with sellers is required to fill any gaps in the information provided in the listing, and ultimately the specimen and accompanying paperwork must be viewed in person (and possibly tested) to establish its legal status.

Using relatively clear cut cases for trying to identify illegal trade, such as species for which all trade is banned and for which there are no (or very few and clear) exceptions, may appear to be the ideal online monitoring scenario, in particular for surveyors.

However, traders are likely to be more careful when offering these species/commodities for sale, and many are commonly used in scams. Most EU Member States have stricter domestic measures prohibiting the keeping and sale of live primates and big cats (Crook and Musing, 2016).

Therefore any offers for sale of these taxa would most likely be illegal; however these species, together with parrots, are those most commonly used by scammers (see Section 3c, Scams). It may still be worthwhile keeping an eye out for these species, however. In

August 2019, in Belgium, a member of the public found a listing for a Red-handed Tamarind *Saguinus midas* on 2ememain, called the police and the sellers were arrested when trying to finalise the transaction (Anon, 2019a).

For other less clear cut cases, there are a number of “red flags” which can help surveyors identify possible cases of interest or illegality; Surveyors require a good background knowledge of the trade, legal status, breeding and/or conservation characteristics of the target taxa, however, in order to identify these red flags.

Some species make better “indicators” of illegal trade than others, depending on these characteristics. Careful selection of “indicator species”, in keeping with researcher and enforcer goals and capacity, can help to overcome some of the challenges associated with determining legality of specimens being offered for sale online. Sellers involved in illegal activities rarely focus their efforts on a single species, and therefore indicators may help to identify a specific seller, who may be working with other traders/involved in the illegal trade of many other species for which it is much harder to determine illegality based on the information provided in online offers for sale. Depending on survey objectives, different indicator species can also be useful for monitoring commercial trader activities when a country is an important source for captive-bred or imported specimens of certain taxa.

The results and observations from this survey, combined with information on legal and illegal trade, legislation and breeding capacity of the priority taxa, were used to determine which of the species selected for this survey were likely to make the best indicators for future monitoring, and were shared confidentially with law enforcement authorities.

Finally, it is important to note that “rarity” has been an important consideration for this survey. The specialist bird and reptile market is predominantly an “enthusiasts” market in which the ownership of rare species is a prized factor (Runhovde, 2018). Elevated threat status and trade restrictions, far from being deterrents against further exploiting a protected species, can be major incentives to collect specimens

as they underline the rarity of the species in question and the prestige it may confer on the buyer (Runhovde, 2018)..

B) NATIONAL, EU AND GLOBAL ONLINE MARKETS

Online markets have not replaced offline markets for live species and many offers for sale are linked to physical locations/events such as pet shops, breeding companies and trade fairs. Nevertheless, sales online have a global reach and it is important to highlight how difficult it is to separate the Belgian and Dutch online markets (the focus of this survey) from those in the rest of the world, in particular in the EU. For more specialist and rare bird and reptile species, in particular, it was clear from survey observations that interested buyers will/need to search for listings in different languages and cross borders to find specimens of their choice, which is facilitated in the EU by the common market.

When searching on international sites such as Terraristik and Parrot4sale, this survey recorded only those offers for sale from Dutch or Belgian residents, however, buyers visiting these sites will likely view all listings for the taxa they are interested in, and in several cases sellers are clearly targeting markets outside their own countries, posting in different languages, and often in English to reach as many potential customers as possible. Wanted listings posted on these sites are also aimed at all users. There were many examples of cross-border purchases discussed in online forums.

Furthermore, it appears that some trader premises are in strategic locations which can be easily accessed by residents of neighbouring countries, such as in central-west Germany, close to the Belgian and Dutch borders. The situation is complicated by the fact that live animals, in particular birds, reptiles and amphibians, although offered for sale online, are often delivered to buyers at trade fairs. The large fairs such as Hamm (Germany), Houten (the Netherlands) and Zwolle (the Netherlands) appear to play a very important role in this, and enthusiasts will travel from many different countries to go to these fairs.

Dangers and IFAW reports (Haysom, 2018 and Hastie, 2019). Scams are fake advertisements that most commonly offer live birds, primates and big cats for

sale, particularly on websites that run free classified listings, with the aim of soliciting money from a buyer who receives no animal in return (Hastie, 2019). Scams may falsely inflate the number of actual listings found in online monitoring studies.

The difficulty of separating national markets from the wider EU and global online markets extend to implementing and enforcing relevant legislation with regards to online crime. As highlighted in the Digital Dangers report (Haysom, 2019), the individuals involved may provide false address details to online platforms, and may or may not be nationals of the location where the crime is committed. The species being traded may or may not be from, or located in, that same jurisdiction and may or may not be legally traded in the jurisdiction where they are offered or purchased; and the online platforms supporting the sale may be headquartered in an entirely different jurisdiction and different from the one in which the hosting servers containing the evidence may be physically located.

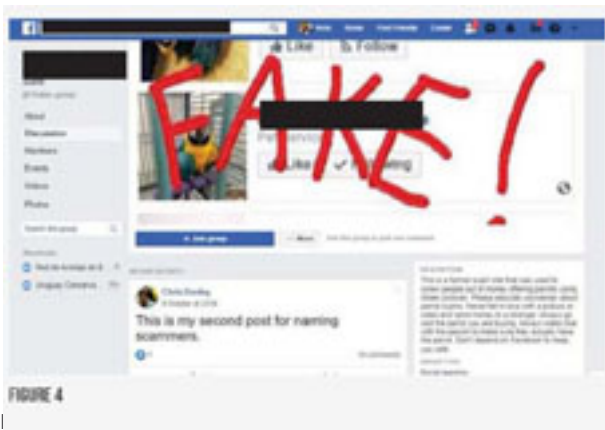


FIGURE 4

C) SCAMS

Several previous online wildlife trade studies have highlighted the issue of scams, most recently Digital Dangers and IFAW reports (Haysom, 2018 and Hastie, 2019). Scams are fake advertisements that most commonly offer live birds, primates and big cats for sale, particularly on websites that run free classified listings, with the aim of soliciting money from a buyer who receives no animal in return (Hastie, 2019). Scams may falsely inflate the number of actual listings found in online monitoring studies. Online parrot

scams appear to be very common, with new pages and posts regularly appearing, and disappearing. There are several discussions online concerning the modus operandi used by these scammers (stock photos, poor language due to using Google translate and very low/unrealistic prices); a previous scammer page on Facebook (Macawforsale) is now being used to highlight this issue (Figure 4). Hyacinth Macaws, in particular, seem to be used by scammers in the EU. A 2015 post in a Dutch Facebook group discussed the variation in price of Hyacinth Macaws being offered for sale online, with some sellers offering them for less than EUR1,000 or even for free. Members confirmed that any Hyacinth Macaws for sale for less



FIGURE 5

than EUR10,000 were being posted by scammers. When specimens are being offered for free (under the pretence of being up for adoption), interested parties are then told they must pay for transport and/or travel insurance. The names and contact details of authorised animal courier companies in the EU are reportedly now being used in some of these scams²⁶. A number of listings for Hyacinth Macaws, offering specimens either for adoption (free) or for around

²⁶ <https://www.animalcouriers.com/protect-yourself-from-animal-scams/>

EUR300 were found during this survey, in particular on classified ads sites. In some cases they were obvious fakes with photos being of other species. In other cases, the images matched the species, however the text was very unclear and there were many inconsistencies. For example, one listing from June 2019 was offering two animals with chips for free, for “adoption”, but the same listing stated that “We have baby-sexed male / female Macaw Hyacinths and sometimes we sell young, mature, proven breeding pairs”. Although these sellers are very unlikely to actually have any endangered species for sale, they are clear examples of cybercrime and fraud, and may warrant further investigation by the relevant authorities.



CONCLUSIONS AND

RECOMMENDATIONS

RECOMMENDATIONS

Online wildlife trade surveys can be useful tools for enforcement purposes. In line with the study objectives, this survey focused on species for which trade in the EU is strictly regulated (the majority being listed in CITES Appendix I/EU Annex A), and which are known to be in illegal trade, with the aim of identifying possible cases of illegal trade that may warrant further monitoring and investigation by the Belgian and Dutch authorities.

There are a number of other potential uses for online research with regards to combatting illegal and/or unsustainable trade. These include identifying new trends in trade and monitoring changes in global availability and demand for nationally protected species that may warrant international protection through listing in the CITES Appendices. This is especially relevant in the context of Objective 1.1 of the EU Action Plan against Wildlife Trafficking (Reduce the demand for and supply of illegal wildlife products), Action 3 “Reduce or ban unsustainable imports into the EU of endangered species by proposing their listing in CITES Appendices (e.g. rare reptile species)” (European Commission, 2016).

Online monitoring can also help when planning enforcement action and operations. If existing intelligence on specific traders already exists, further research into their activities online can help to build a case/prepare enforcement for physical checks. Many traders appear to offer an increased number of specimens online prior to trade fairs – collecting information from online sources prior to these fairs can help to target checks at borders and of sellers during fairs.

There are a number of specific challenges associated with online wildlife trade monitoring, however. Online

monitoring is labour and time intensive, and although automated systems can help to reduce effort, they can by no means replace human experience and knowledge. Wildlife trade legislation is complex and includes a number of exceptions making it very difficult for researchers and enforcers to identify with a level of certainty whether the trade is legal or illegal, even for Appendix I/Annex A listed species. The legal burden for online traders is low, even for strictly protected species, with minimal apparent legal requirements to register personal data or provide evidence of compliance with the law.

CITES Resolution Conf. 11.3 (Rev. CoP18) on Compliance and enforcement²⁷ was amended at the most recent CITES Conference of the Parties (CoP18) in August 2019 recommending governments set up online monitoring schemes targeting Appendix II species, due to enforcers having identified that a high level of non-compliance regarding internet trade is likely to be in Appendix II/EU Annex B species. It will be even harder for researchers and investigators to form an accurate picture of whether online trade in these species is legal or not. Targeted legislative improvements and the development of clear website policies with regards to online wildlife trade are essential for this purpose.

This report concludes with recommendations aimed at policy makers and authorities in charge of developing and implementing national, EU and international policies on wildlife trade; the business sector whose online platforms can be used to sell wildlife online; and consumers interested in purchasing wildlife online.

²⁷ <https://www.cites.org/sites/default/files/document/E-Res-11-03-R18.pdf>

RECOMMENDATIONS TO POLICY MAKERS AND AUTHORITIES IN THE EU INCLUDING IN BELGIUM AND THE NETHERLANDS

In order to ensure that there is a legislative framework fit for the purpose of fighting wildlife cybercrime and that adequate enforcement capacities are in place it is recommended that:

1

POLICY MAKERS AND AUTHORITIES IN CHARGE OF IMPLEMENTING AND ENFORCING THE WILDLIFE TRADE REGULATIONS IN THE EU EXPLORE LEGISLATIVE IMPROVEMENTS

In order to provide a framework on the conditions under which wildlife can be sold, advertised and purchased online. Such legislative improvements would facilitate the identification of legality of wildlife listings and ensure online platforms, sellers and consumers undertake their due diligence.

2

UNDERCOVER INVESTIGATIONS

Considering that cyber-patrols may involve “under-cover investigations” (such as interactions with sellers and entering closed social media groups), policy makers, enforcement authorities and prosecutors should analyse and recommend changes to the relevant national legal frameworks in place to ensure they are suitable for tackling wildlife cybercrime.

3

ENSURE ADEQUATE LAW ENFORCEMENT CAPACITY

Fighting wildlife crime, and more specifically wildlife cybercrime, is a crime area which deserves more attention and capacity from law enforcement authorities in the EU to be tackled effectively. Adequate staffing resources, tools and training are necessary to address the complexity of fighting wildlife cybercrime. Belgium and the Netherlands have recently increased their capacity in this field and should continue intensifying their efforts alongside with the other EU Member States

4

DEVELOP SPECIFIC REPORTING MECHANISMS

Belgium and the Netherlands have specific mechanisms in place for civil society to report suspicions of wildlife crime cases²⁸. Other countries in the EU should also consider developing such specific reporting mechanisms to flag cases of concern, to ensure timely investigation and/or action by enforcement

²⁸ Reporting mechanism in Belgium: <https://www.health.belgium.be/fr/animaux-et-vegetaux/animaux/cites-et-especes-menacees/que-faire-si-vous-etes-temoins-ou-suspectez> Reporting mechanisms in the Netherlands: <https://www.meldmisdaadanoniem.nl/wildlifecrime> <https://www.endwildlifetraffickingonline.org/coalition-prohibited-wildlife-policy>

RECOMMENDATIONS TO ONLINE PLATFORMS WHICH CAN BE USED TO PROMOTE AND SELL WILDLIFE

In order to comply with national, EU and international legislation and provide further clarity to users and enforcers with regards to online wildlife trade, it is recommended that online platforms:

1 PROVIDE CLEAR INFORMATION

on the relevant international, EU and national legislation governing commercial use of protected species, that is easy to find and understand, linking to relevant government sites to ensure the necessary detail is accurate and up to date.

2 ADOPT AND INFORM USERS OF PLATFORM POLICIES

to actively combat the use of their platforms to promote and sell illegal wildlife, such as the Coalition's Prohibited Wildlife Policy²⁹.

3 DEVELOP SPECIFIC GUIDELINES OR REQUIREMENTS FOR SELLERS

to declare the legal status of the species for sale, the source, and where relevant, CITES permit/certificate number, marking and breeder details for each specimen; as well as to disclose health and welfare requirements for the species traded.

4 REVIEW AND APPLY LESSONS LEARNED FROM EXISTING INITIATIVES

developed by other online platforms to fight wildlife crime, including positive or negative lists to guide users, such as those established under the Coalition to End Wildlife Trafficking Online³⁰ and by specialised wildlife trade platforms, for example that hosted by Dendrobatidae Nederland (DN)³¹.

²⁹ <https://www.endwildlifetraffickingonline.org/coalition-prohibited-wildlife-policy>

³⁰ <https://www.endwildlifetraffickingonline.org/coalition-prohibited-wildlife-policy>

³¹ <https://www.gifkikkerportaal.nl/Artikelen/dn-toetsingslijst>

RECOMMENDATIONS TO WILDLIFE CONSUMERS

In order to curtail wildlife cybercrime, consumers have a major role to play. It is recommended that consumers:

1 STOP PURCHASING ILLEGAL OR UNSUSTAINABLY SOURCED WILDLIFE
by proactively looking for legality and sustainability information on the species or wildlife product they intend to buy. Before buying wildlife specimens or products, consumers should seek information on applicable legal provisions (including on the species Annex listing) from available sources, for example from the national CITES Management Authorities.

2 QUESTION SELLERS ON THE SOURCE AND LEGALITY OF THE SPECIMEN OFFERED FOR SALE
Consumers should request the sellers to provide the necessary information to prove the legality of the specimen they intend to buy, namely:

1. On the source of the specimen: Where does the specimen come from, where was it sourced, where was it bred, from which parental stock?
2. On legal acquisition: What legal documentation is required for this specimen? Is a CITES document/certificate needed? Is there evidence showing that the specimen was legally obtained?
3. On marking: What is the number on the marking of the specimen (if any)? Does that correspond to the number provided on related documents?

In addition, welfare and health requirements are also recommended to be checked.

3 REPORT DUBIOUS LISTINGS TO ONLINE PLATFORMS AND AUTHORITIES
If confronted with a listing which seems to be illegal or in breach of the online platform wildlife policy, report that listing to:

- The online platform through its reporting mechanism where applicable
- The relevant enforcement authorities through their reporting mechanism³² in case of serious concern over a wildlife crime case. This requires thorough knowledge of the wildlife trade regulations.

³² Reporting mechanism in Belgium: <https://www.health.belgium.be/fr/animaux-et-vegetaux/animaux/cites-et-especes-menacees/que-faire-si-vous-etes-temoins-ou-suspectez>
Reporting mechanisms in the Netherlands: <https://www.meldmisdaadanoniem.nl/wildlifecrime>

REFERENCES

- Altherr, S. (2014). *Stolen Wildlife Why the EU needs to tackle smuggling of nationally protected species*. Report by Pro Wildlife. Munich, Germany: https://www.prowildlife.de/wp-content/uploads/2016/02/2014_Stolen-Wildlife-Report.pdf
- Angeli, S. (2011) "*Horridum Angeli*" Reptiles, accessed October 2019: <http://www.helodermahorridum.com/index.php>
- Anon (2019a) Une personne interpellée à Jette, elle voulait revendre son singe sur Zেমemain, *Metro*, 22.08.19: <https://fr.metrotime.be/2019/08/22/actualite/belgique/une-personne-interpellee-a-jette-elle-voulait-revendre-son-singe-3-800-e-sur-2ememain/>
- Auliya, M., Altherr, S., Ariano-Sanchez, D. *et al.* (2016a) Trade in live reptiles, its impact on wild populations, and the role of the European market, *Biological Conservation* 204 (2016) 103–119: <https://www.sciencedirect.com/science/article/abs/pii/S0006320716301987>
- Auliya, M., García-Moreno, J., Schmidt, B. R. *et al.* (2016b): The global amphibian trade flows through Europe: the need for enforcing and improving legislation, *Biodiversity Conservation* 25:2581–2595: https://www.researchgate.net/publication/308042363_The_global_amphibian_trade_flows_through_Europe_the_need_for_enforcing_and_improving_legislation
- Budiani, I. and Raharningrum, F. (2018) *Illegal online trade in Indonesian Parrots, The Global Initiative against Transnational Organised Crime*, Digital Dangers, September 2018: <https://globalinitiative.net/wp-content/uploads/2018/09/TGIATOC-ParrotsTrade-A4-Web.pdf>
- Coalition to End Wildlife Trafficking Online (2017) *Wildlife-Friendly Online Trade: A Harmonized Policy for e-Commerce and Social Media Companies*: <https://www.worldwildlife.org/publications/wildlife-friendly-online-trade-a-harmonized-policy-for-e-commerce-and-social-media-companies>
- Council of the European Union (2016) Council conclusions on the EU Action Plan against Wildlife Trafficking of 20 June 2016. 10512/16: <http://data.consilium.europa.eu/doc/document/ST-10512-2016-INIT/en/pdf>
- Council of the European Union (2017) *Draft Council conclusions on setting the EU's priorities for the fight against organised and serious international crime between 2018 and 2021*: <http://data.consilium.europa.eu/doc/document/ST-8654-2017-INIT/en/pdf>
- Crook, V. and Musing, L. (2016) *Analysis of EU Member State CITES Biennial Reports 2013–2014*. Report prepared for the European Commission: https://ec.europa.eu/environment/cites/pdf/analysis_2013-2014.pdf
- Engler, M., and Parry-Jones, R. (2007). *Opportunity or threat: the role of the European Union in global wildlife trade*. TRAFFIC Europe, Brussels, Belgium: https://www.traffic.org/site/assets/files/3604/opportunity_or_threat_eu_imports.pdf
- European Commission (2014) Commission Regulation (EU) No 1320/2014 of 1 December 2014 amending Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein, *Official Journal of the European Union*, 17.12.2014: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOL_2014_361_R_0001
- European Commission (2016a). Commission Staff Working Document: *Analysis and evidence in support of the EU action plan against wildlife trafficking*. Accompanying document for the EU action plan against wildlife trafficking: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0038&from=EN>
- European Commission (2016b). *EU Action Plan against Wildlife Trafficking*. COM 87 final, Brussels: https://ec.europa.eu/environment/cites/pdf/WAP_EN_WEB.PDF
- European Commission (2018a) *Progress report on the implementation of the EU Action Plan against Wildlife Trafficking*. SWD 452 final, Brussels: https://ec.europa.eu/environment/cites/pdf/progress_report_EU_action_plan_wildlife_trafficking_en.pdf
- European Commission (2018b). *Overview of important seizures in the European Union - January to December 2017*. Briefing prepared by TRAFFIC for the European Commission. [https://ec.europa.eu/environment/cites/pdf/reports/Overview%20of%20seizures%20in%20the%20EU%202017_FINAL%20\(March%202019\).pdf](https://ec.europa.eu/environment/cites/pdf/reports/Overview%20of%20seizures%20in%20the%20EU%202017_FINAL%20(March%202019).pdf)

- European Commission and TRAFFIC (2017). *Reference Guide to the European Union Wildlife Trade Regulations*. Brussels: https://ec.europa.eu/environment/cites/pdf/referenceguide_en.pdf
- European Parliament (2016) European Parliament resolution of 24 November 2016 on EU action plan against wildlife trafficking. 2016/2076(INI): http://www.europarl.europa.eu/doceo/document/TA-8-2016-0454_EN.html
- European Union and Viet Nam (2016) Include *Cnemaspis psychedelica* in Appendix I, CoP17 Prop. 29: <https://cites.org/sites/default/files/eng/cop/17/prop/060216/E-CoP17-Prop-29.pdf>
- Flecks, M., Weinsheimer, F., Boehme, W., Chenga, J., Loetters, S. and Roedder, D. (2012) Watching extinction happen: the dramatic population decline of the critically endangered Tanzanian turquoise dwarf gecko, *Lygodactylus williamsi*. *Salamandra* 48, 23–31: https://www.researchgate.net/publication/258507615_Watching_extinction_happen_The_dramatic_population_decline_of_the_critically_endangered_Tanzanian_Turquoise_Dwarf_Gecko_Lygodactylus_williamsi
- Furnell, S. and Jain, A. (2019) *Strengthening CITES processes for reviewing trade in captive-bred specimens and preventing mis-declaration and laundering: A review of trade in Southeast Asian parrot species*, TRAFFIC: https://www.traffic.org/site/assets/files/12341/a_review_of_trade_in_southeast_asian_parrot_species.pdf
- Gerling, M. (2015) Megaproces van start tegen dierenhandelaar uit Woerden, *AD*, 22.04.15: <https://www.ad.nl/binnenland/megaproces-van-start-tegen-dierenhandelaar-uit-woerden~ac315ef4/?referrer=>
- Global Financial Integrity (2017), *Transnational Crime and the developing world*: <https://gfintegrity.org/report/transnational-crime-and-the-developing-world/#:~:text=This%20March%202017%20report%20from,trillion%20to%20%20242.2%20trillion%20annually.>
- Gray, J. (2018) Turtle Survival Alliance launches rescue mission to nearly 11,000 Critically Endangered radiated tortoises discovered in massive poaching bust, 18.04.18: <http://www.turtlesurvival.org/blog/1-blog/538-radiated-tortoise-press-release-2018#>
- Grismer, L.L., Wood, P.L., Anuar, S., Riyanto, A., Ahmad, N., Muin, M.A., Sumontha, M., Grismer, J.L., Onn, C.K., Quah, E.S.H. et al. (2014). Systematics and natural history of Southeast Asian Rock Geckos (genus *Cnemaspis* Strauch, 1887) with descriptions of eight new species from Malaysia, Thailand, and Indonesia. *Zootaxa*, 3880(1): 1 147.
- Harris, L. and Shiraishi, H. (2018). *Understanding the global caviar market. Results of a rapid assessment of trade in sturgeon caviar*. TRAFFIC and WWF joint report: https://www.traffic.org/site/assets/files/9805/global_caviar_market-1.pdf
- Hastie, J. (2019) *Disrupt: Wildlife Cybercrime*, IFAW: <https://www.ifaw.org/uk/news/disrupt-wildlife-cybercrime>
- Hastie, J. and McCrea-Steele, T. (2014) *Wanted - Dead or Alive, Exposing Online Wildlife Trade*, IFAW: <https://www.ifaw.org/resources/wanted-dead-or-alive-report>
- Haysom, S. (2018) Digitally Enhanced Responses: New horizons for combating online illegal wildlife trade. The Global Initiative against Transnational Organised Crime, *Digital Dangers*, September 2018: <https://globalinitiative.net/wp-content/uploads/2018/06/TGIATOC-Digital-Responses-Report-WEB.pdf>
- Haysom, S. (2019) In search of Cyber-enabled Disruption: Insights from the Digital Dangers project. The Global Initiative against Transnational Organised Crime, *Digital Dangers*, February 2019: <https://globalinitiative.net/wp-content/uploads/2019/02/TGIATOC-FinalSynthesis-Web.pdf>
- Hruby, D. (2019) This Amazon bird's eggs are black-market gold. Here's why. *National Geographic*, June 2019: <https://www.nationalgeographic.com/animals/2019/06/hyacinth-macaw-egg-laundering-for-pet-trade/>
- IFAW (2008) *Killing with Keystrokes: An Investigation of the Illegal Wildlife Trade on the World Wide Web*: <https://www.ifaw.org/news/killing-with-keystrokes>.
- Janssen, J., and Blanken, L. (2016) *Going Dutch: An analysis of the import of the live animals from Indonesia by the Netherlands*. TRAFFIC, Petaling Jaya, Malaysia: <https://www.traffic.org/site/assets/files/2334/indonesia-netherlands-live-animal-trade.pdf>
- Janssen, J. and Krishnasamy, K. (2018) Left hung out to dry: How inadequate international protection can fuel trade in endemic species –

The case of the earless monitor. *Global Ecology and Conservation*
Volume 16, October 2018: <https://www.sciencedirect.com/science/article/pii/S2351989418303986>

Janssen, J. and Leupen, B.T.C. (2019) *The role of the Netherlands in the reptile trade*. Monitor Conservation Research Society:
https://mcrsociety.org/pubs/Role_of_Netherlands_in_the_reptile_trade_2019.pdf

Janssen, J. and de Silva, A. (2019) The presence of protected reptiles from Sri Lanka in international commercial trade. *TRAFFIC Bulletin*
Vol. 31 No. 1 (2019): https://www.traffic.org/site/assets/files/12036/bulletin-31_1-final-web.pdf

Lau, W., Crook, V., Musing, L., Guan, J. and Xu, L. (2016) *A rapid survey of UK ivory markets*. TRAFFIC, Cambridge, UK:
<https://www.traffic.org/site/assets/files/2385/uk-ivory-markets.pdf>

Morgan, J. and Chng, S. (2017) Rising internet-based trade in the Critically Endangered ploughshare tortoise *Astrochelys yniphora* in Indonesia highlights need for improved enforcement of CITES, *Oryx*: https://www.researchgate.net/publication/317664475_Rising_internet-based_trade_in_the_Critically_Endangered_ploughshare_tortoise_Astrochelys_yniphora_in_Indonesia_highlights_need_for_improved_enforcement_of_CITES

Mundy-Taylor, V. (2013). *Illegal Wildlife Trade and the European Union: an analysis of EU-TWIX seizure data for the period 2007–2011*. Report prepared for the European Commission:
<https://ec.europa.eu/environment/cites/pdf/reports/Analysis%20of%20EU-TWIX%20seizure%20data%202007-2011.pdf>

Musing, L., Norwicz, M., Kloda, J. and Kecse-Nagy, K. (2018). *Wildlife trade in Belgium with a focus on CITES-listed species*. TRAFFIC and WWF report: <https://www.traffic.org/publications/reports/belgium-wildlife-trade-hub/>

Outhwaite, W. and Vique, I. (2019) *Proving Legality: The Trade in Endemic Caribbean Reptiles*:
https://www.traffic.org/site/assets/files/12341/trade_in_endemic_caribbean_reptiles.pdf

Roberts, D.L. and Hernandez-Castro, J. (2017) Bycatch and illegal wildlife trade on the dark web. *Oryx*, 51, 3:
https://www.researchgate.net/publication/317596397_Bycatch_and_illegal_wildlife_trade_on_the_dark_web

Runhovde, S. R. (2018) Illegal online trade in reptiles from Madagascar. The Global Initiative against Transnational Organised Crime, *Digital Dangers*, September 2018: <https://globalinitiative.net/wp-content/uploads/2018/09/TGIATOC-ReptileTrade-A4-Web.pdf>

SC65 (2014) *Report on the smuggling of Bahamian Rock Iguanas*: CITES 65th Standing Committee, Information Document 4:
<https://cites.org/sites/default/files/eng/com/sc/65/Inf/E-SC65-Inf-04.pdf>

SC66 (2016) *Concerns identified by the Standing Committee in the examples on trade in specimens claimed to be derived from captive breeding or ranching, as referred to in Decision 16.63 a) i) and iii)*; Implementation of the Convention relating to captive bred and ranched specimens, Document 41.1 Annex 1: <https://cites.org/sites/default/files/eng/com/sc/66/E-SC66-41-01x.pdf>

Sina, S., Gerstetter, C., Porsch, L., Roberts, E., Smith, L.O., Klaas, K. and de Castillo, T.F. (2016). *Wildlife Crime. Policy Department A: Economic and Scientific Policy. Directorate General for Internal Policies*:
http://www.europarl.europa.eu/RegData/etudes/STUD/2016/570008/IPOL_STU%282016%29570008_EN.pdf

TRAFFIC (2011) *Illegal trade in Birds*. Internal Briefing prepared for EU Enforcement Authorities.

TRAFFIC (2015). *Compilation of EU Member State CITES Biennial Reports 2013–2014*. A TRAFFIC Report for the European Commission, Brussels, Belgium: https://ec.europa.eu/environment/cites/pdf/compilation_2013-2014.pdf.pdf

TRAFFIC (2018) *Philippine bird trade targets Indonesian species*, 16.03.18:
<https://www.traffic.org/news/philippine-bird-trade-targets-indonesian-species/>

TRAFFIC (2019) *Combating Wildlife Crime Linked to the Internet*
<https://www.traffic.org/site/assets/files/12352/combating-wildlife-crime-online-chinas-experiences.pdf>

van Schingen, M., Schepp, U., Pham, C.T., Nguyen, T.Q. and Ziegler, T. (2015). Last chance to see? Review on the threats to and use of the crocodile lizard. *TRAFFIC Bulletin*. 27, 19–26:
https://www.traffic.org/site/assets/files/3008/traffic_pub_bulletin_27_1_crocodile_lizard_trade.pdf

World Bank (2019) *Illegal logging, fishing and wildlife trade: the costs and how to combat it*:
<http://pubdocs.worldbank.org/en/482771571323560234/WBGRReport1017Digital.pdf>

WWF (2020) *The loss of nature and rise of pandemics*: https://d2ouvy59p0dg6k.cloudfront.net/downloads/the_loss_of_nature_and_rise_of_pandemics___protecting_human_and_planetary_health.pdf

Ziegler, T., Rauhaus, A., Nguyen, K.V. & Nguyen, T.Q. (2016) Building of a conservation breeding facility for the Psychedelic Rock Gecko (*Cnemaspis psychedelica*) in southern Vietnam. *Der Zoologische Garten*, 85, 224–239.
<https://doi.org/10.1016/j.zoolgart.2016.05.002>

Ziegler, T., Rauhaus, A., Nguyen, K.V. & Nguyen, T.Q. (2016) Building of a conservation breeding facility for the Psychedelic Rock Gecko (*Cnemaspis psychedelica*) in southern Vietnam. *Der Zoologische Garten*, 85, 224–239:
https://www.researchgate.net/publication/303781130_Building_of_a_Conservation_Breeding_Facility_for_the_Psychedelic_Rock_Gecko_Cnemaspis_psychedelica_in_Southern_Vietnam

IMAGE CREDITS

Unless otherwise stated all images are Non-attribution CC2.0. Listing screengrabs were taken by surveyors.

PAGE	CREDIT
3	Staffan Widstrand / naturepl.com
6	<i>(bottom)</i> Bella Roscher / WWF Switzerland
12	<i>(bottom right)</i> Roger Leguen / WWF
20, 22	E. John / TRAFFIC
23	<i>(top right)</i> Roger Leguen / WWF



JULY 2020

This document has been compiled by WWF-Belgium with financial support from the European Commission and in-kind support from TRAFFIC.

WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption

TRAFFIC is a leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

For further information contact:
TRAFFIC
Global Office
David Attenborough Building
Pembroke Street
Cambridge CB2 3QZ
UK

+44 (0)1223 277427
traffic@traffic.org
traffic.org

UK Registered Charity No. 1076722,
Registered Limited Company No. 3785518.



TRAFFIC
the wildlife trade monitoring network



© 1986 Panda symbol WWF – World Wide Fund for Nature (Formerly World Wildlife Fund) ® "WWF" is a WWF Registered Trademark. E.R.: Antoine Lebrun. WWF-Belgium, Bd E. Jacqmain 90, 1000 Brussels. For contact details and further information, please visit our website at www.wwf.be