

**Name:** Debbie Goodrich

**Organization:** Flight Club Foundation, a 501 c3 parrot humane society and networking organization.

**Article/Section Number:** HB 5214 concerning animals and animal husbandry—psittacine birds (LC932/1).

**Hearing:** House Committee on Corporations.

**Viewpoint:** Against.

**Statement:** As with Puppy Mill ban popularity that is currently occurring throughout many legislatures locally, statewide and nationally, we are seeing decreased ability for people to acquire quality pet dogs vs. behaviorally inadequate dog availability for young families.

When the first puppy mill ban was proposed to force sales of dogs, cats and rabbits to come solely from rescue, the state of California did not see a rise in adoptions, but instead saw a rise in street sales and closed market sales of puppies that could continue in that state. (See attachments to confirm this testimony below)

When testimony was given regarding the puppy mill ban that did pass in our state during only a closed-door session vs. public testimony, I heard a rescue testify they "rescue puppies from the auction block". Clearly, these animals came from a puppy mill. The very thing we were trying to stop.

No testimony served yet in "puppy mill bans" has ever regulated the sourcing of puppies at rescues or sanctuaries. Rescues have full, open access to getting puppy mill type puppies we are all steadfastly against.

Where are the rescues sourcing their parrots? Is there regulations on their sourcing like there is for the breeders breeding parrots including regulations by the USDA, the Animal Welfare Act and the Department of Health? The answer is, they requested and receive immunity in legislation over and over again.

What we are seeing is lack of enforcement when we call out "bad actors". The continued inaction of current Animal Welfare Law by animal control officers is horrific. I state this from our own animal hoarding and abuse case here in Washington of Lori Rutledge who allowed the starvation of over 400 parrots over the course of 20 years before she herself died and only one parrot survived. This is despite my own reporting against her and against a facility selling sick birds also in my state. Making a new law has yet to increase helping welfare.

Until rescues and sanctuaries receive the same scrutiny the breeders who are open to the public are in, then there is absolutely no welfare consideration happening when it comes to the purchase of a pet. This makes this legislation banning the sale of parrots in stores irrelevant about the "parrots' welfare".

If we elect to "destroy the ability to sell parrots, puppies, kittens, rabbits" in public forums legally, what we have witnessed is inability to enforce or even find where sales are taking place. Then, to see if animal cruelty is taking place or not. The black markets and dark web sales have increased.

Legitimate breeders of quality puppies are getting out of business due to over-regulation and no regulation at rescues and sanctuaries.

When people publicly sell animals at an open location to the public, the public is their police. The public is able to report any and all findings of abuse to the correct authorities including the department of health, the animal welfare act and more. It is critical that the enforcement agencies act to these reports. Unfortunately, we continue to see allowance of grievances to continue under current law. This is why this new law sits before your legislature currently.

Citizens feel the need to create new law thinking it is increasing welfare of animals that are "for sale". We profoundly respect and understand how many individuals think an animal should not be a "product" as they are in law currently. We feel as they do that they are sentient, living beings that have emotion, a mind and more.

In the same light, the requirement of the human-animal bond is a critical requirement to give people security, hope, love and therapy. It is currently being heavily jeopardized by ever-increasing laws preventing a secure relationship from reputable sources.

Remember, animals cannot tell us their genuine desire or need. We can merely guess at best. I am a professional trainer of animals having worked with thousands of individuals over the 30 plus years I have trained them. I can say I understand them. But I do not know what they are thinking any more than what members of the committee are thinking as they read my testimony.

There are many instances of international work with animals like the release of Keiko the orca that one half of the country thinks he died "happily". The science, however, has clearly indicated his process was not in his best welfare interests for his individual needs. He demonstrated clearly to me, a person who studied whales and dolphins at UC Santa Cruz for my degree, that he wanted human interaction when he was found in Norway allowing people to ride his back.

I utilize this point to ensure we are following the welfare of what the animals need and not propaganda some other motive.

That is our organizations' primary drive and concern. If we make the selling of parrots illegal in the United States, which this legislation is going to help start the process, the black market strengthens.

Breeders of parrots in the United States defunded black market sales and drove poaching out by over 40%. It's increasing again as we add more parrots to the Endangered Species Act making owning them more difficult. Do we want to go back to listing the Greenwing Macaw as endangered vs. the least concern they are currently listed as?

The welfare we have worked decades on improving for parrots through education driving consumer choices will be completely destroyed when we make public availability of parrots unavailable.

The majority of international funding for parrot protection in the wild is not our government with the Endangered Species Act. (See attached document below). The total grant money awarded to boots on the ground in Bolivia from the ESA was a one-time grant of \$20,000. That does not even cover the cost of a tractor to make fire breaks critical to saving the species.

The majority of international funding for parrot protection in the wild is also not coming from zoological institutions since their funding is divided to all species in their collections. Again, using the Blue Throated Macaw as an example, only one institution actually is funding Armonia's work and that is Houston Zoo because they have Blue Throated Macaws.

In the meantime, Blue Throated Macaws are bred by several breeders throughout the United States and sold. Their poaching rate in Bolivia right now is zero. Their reproductive success is increasing. The major funding helping is one major endowment located in Texas called Bird Endowment that was started by a private breeder of the species.

When Armonia first evaluated Blue Throated Macaw along with Birdlife International around 75 individuals were discovered in the wild. Because of us owning, breeding and selling blue throated macaws in the United States, the numbers in the wild are over 500 individuals, stable and growing.

Vote no on this new law as it does not help parrot welfare in the state of Rhode Island or on the international level.

Thank you.

Debbie Goodrich  
President and CEO

Flight Club Foundation  
[www.flightclubfoundation.org](http://www.flightclubfoundation.org)

For information about the Bird Endowment, please visit [www.birdendowment.org](http://www.birdendowment.org).

Attachments:

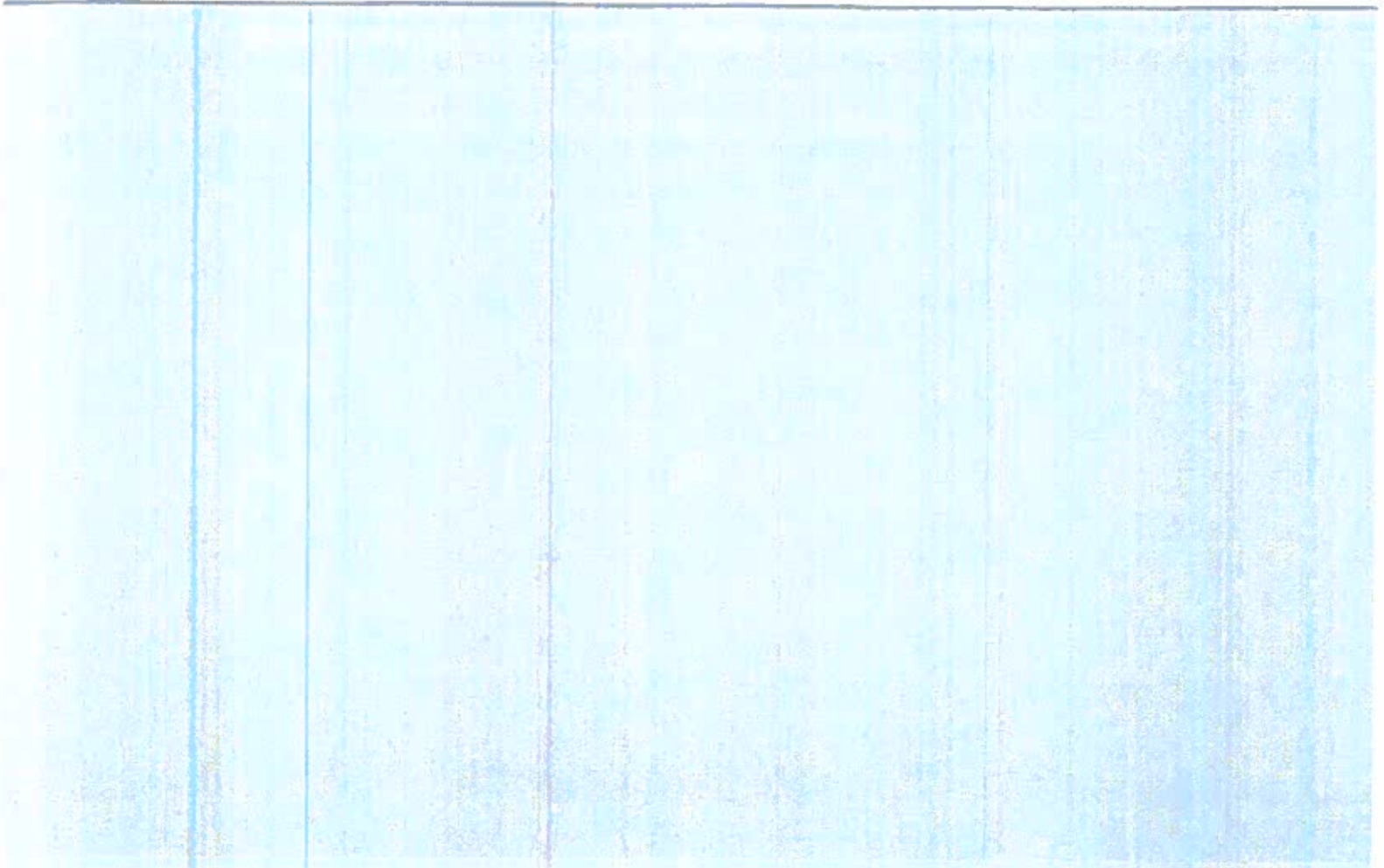
Articles regarding the affects of the LA Puppy Mill ban and my testimonies about the problems of the ban proposals.

Citations for what is really happening to parrots in the wild vs. the pet trade and poaching decline:

Paper I researched about parrots and wrote as to why we should have parrots with people:

Here is my abstract for a dolphin reintroduction paper I wrote in 1996 as my graduation thesis requirement. This is testament to the research I have done about Keiko:

Screen Shots of legislative pieces that occurred in 2023 regarding puppy mill bans which is exactly what this bill is. None of us who are legitimate animal people want any animal to suffer and breeders want successful animals and successful reputations for wonderful animals provided to families. This is what an agenda does to this in screen shot form from various puppy mill pieces that passed in states but continued over-arching legislation:



A-5214

**Question: Has the LA ban of retail dogs and cats in stores helped the following issues at hand?**

- 1. increased the number of adoptions vs. sales in LA? Answer: no. see City Watch June 2017.**
- 2. decreased number of bred dogs and cats for sale in LA? Answer: no. see City Watch increase in internet sales.**
- 3. increased enforcement against "puppy mills". Answer: no. See LA times concern on enforcement.**

**Source: City Watch. <https://www.citywatchla.com/index.php/los-angeles/13348-la-s-puppy-mill-pet-shop-ban-success-or-hypocrisy>**

### **"HAS THE INTERNET REPLACED PET SHOPS IN LA?"**

On June 3, 2017, an Internet search showed 1,004 private and commercial ads in the Recycler for puppies in the Los Angeles area, priced from \$450 to \$3,500. Some sellers said they could provide pups of various breeds, indicating a puppy broker or mass-breeding operation. None in the first few pages mentioned AKC registration.

Craigslist that day showed total ads for Los Angeles available pets (puppies, kittens, dogs and cats) at 1,998 -- some advertised as purebred, but of dubious origin.

A search for "pit bull breeders in Los Angeles" showed the disturbing figure of "about 909,000 results." Of course, not all were breeders. Some offered "stud service" and other options. But the overwhelming numbers of puppies and upcoming "breedings," kennel names, and descriptions of the animals (which are not included here in order to avoid advertising them further) were chilling.

The irony -- and hypocrisy -- of the "puppy mill pet shop ban" is that **anyone can get a breeders' permit for a dog from LA Animal Services by merely paying \$235, plus \$100 for an intact dog license/permit.** (Cats are not licensed by the City, but the LAAS website shows a required "in-tact" permit, plus breeder's fee.) **Or they can breed and sell pets without a permit without much fear of penalty.**

Also, breeding permits are issued without a zoning requirement or premises check. "

The City's Finance Office advised me that it does not enforce the requirement for a business license unless someone complains or they are notified by the State of possible unreported earnings.

According to Brenda Barnette's *Woofstat* report for February 2017, breeders' licenses sold by LA Animal Services increased by 44% from 466 to 669, and increased by 71% from the same period last year.

This makes the reported closing of 11 small pet shops in LA -- which were subject to the lengthy and detailed [CA Health & Safety Code § 122350 - 122361](#), plus the stringent [Polanco.-Farr, Lockyer Pet Protection Act](#), and [Penal Code Sections 597 and 597.1U](#) -- seem a paltry solution to LA's pet-overpopulation problem.

This is especially true since existing pet shops could merely board up their windows, transform to Internet puppy-sales brokers, and avoid all inspection or regulation by the City or State.

## **Review of House Bills HB 1640 and SB 5209**

(Regarding Washington State House Consumer Protection and Business Meeting Dated February 5, 2019 at 130pm.)

By: Debbie Goodrich, President, Flight Club Foundation (501 c(3) nonprofit EIN #35-2462010). [www.flightclubfoundation.org](http://www.flightclubfoundation.org)

Owner, Parrot Ambassadors, Educational Entertainment (2001-2019) [www.parrotambassadors.com](http://www.parrotambassadors.com)

Certified Parrot Behavior Consultant, International Association of Animal Behavior Consultants (2017-Present) [www.iaabc.org](http://www.iaabc.org).

With my diverse background, I humbly appear before the House Consumer Protection and Business Committee in defense of the continuation to sell retail dog and cat (pet) sales in the State of Washington. Equally to represent disfavor toward HB 1640 and SB 5209.

My tenure as a Washington State Resident from 1999 to present includes employment in the Animal Husbandry Workforce as Curator of Birds and Fish at Rainforest Cafe from 1999-2005. This included work in tandem with Seattle Aquarium, Point Defiance Zoo and Aquarium and development of educational outreach programs with parrots. It was also my responsibility to enforce and adhere to all codes of welfare and practice, health department inspection and requirements of the State of Washington, County of King and City of Seattle.

In addition to my work in the animal-related business, I also ran for National Democratic Delegate campaign in 2016, achieving Congressional District 8. I attended the Washington State Democratic Convention with parrots, advocating environmental stewardship. Met with Superintendent Chris Rykdal changing regulations regarding "Hookbills in Classrooms" 2017.

I'm here to testify before my State Legislature as a representative of the State as a constituent and as a licensed animal-related business, to state that HB 1640 and SB 5209 will result in negative fallouts not only for our State but for the welfare of our State's animals as well.

I am submitting references and testimony to the following issues:

1. The lack of enforceability that has occurred in LA when they banned retail cat and dog sales.
2. The increased animal sales in non-regulated avenues--social media as a result of the LA ban.
3. The decreased adoption rates in LA despite LA's pet sales ban/requirement for adoption.
4. The decreased ability of enforceability--unknown sources of dogs/cats.
5. Closure of small business sectors in LA (11 stores) .
6. The lack of prevention in LA in puppy mill cases or discovery.
7. The increase in rescues and adoption centers importing dogs from other countries.
8. The increased in importing dogs from other countries are not quarantined.
9. The importing of dogs from other countries has introduced new pathogens to US dogs/cats.
10. Due to threats in Animal Rights groups, registering breeder locations for public display has been problematic.

I believe it is our mutual goal to end abuse and abusive behavior as a whole. It is with great sadness that abuse persists despite our best intentions, laws to prevent said abuse.

Journals of Psychology, Anthrozoology, Animal Cognition, Animal Behavior, Animal Intelligence, Sociology, Criminology are all journals I continuously review. It is my goal to be a steward to ensure we do have laws and regulations in place to prevent cruelty to animals which includes regulation of sales in animals.

However, requiring all animals to come from adoption agencies has proven to do little to nothing to stop “puppy mills” from proliferating, now in less-regulated areas.

When we sell animals directly in stores, we offer opportunity for public scrutiny, access to Humane Officer Review, and easy enforceability. We should all prefer to purchase animals in ways that follow easier enforcement access. That access being the publicly open retail pet store.

I humbly request to deny the passage of both HB 1640 and SB 5209 in order to preserve our ability to enforce current laws within the ideology that animals are not only wanted by people, but needed. People will procure them regardless of law. It is my hope to provide the best means necessary to assure healthy pets for people, lawful pets for people and continuity toward improving abuses to the systems already in place.

#### **Table of Contents, Attachments:**

- 1. This Committee’s responsibility to Animal-Related Business Notification:**
  - a. PIJAC pet alert
  - b. May 15th tiny ad for retail sale of pets in Seattle.
- 2. Prior Testimony regarding Pet Sales in Washington State**
  - a. May 15th, 2018 alert Seattle City Council
  - b. February 2006, Pierce County
  - c. February 2015, Pierce County
- 3. Biography of Debbie Goodrich**
- 4. Los Angeles Ban of Retail Pet Sales Fallout**
  - a. Has the Ban of retail dogs and cats in stores helped?
  - b. City Watch article excerpt--failure to increase adoptions.
  - c. LA Animal Services Data base until 12-31-18.
  - d. copy of AB 485, banning retail dog and cat sales, CA 2019 pass.
- 5. Animal Rights Issues**
  - a. Behavior toward registered or known breeders (Zebra Case, Iowa)
  - b. Greyhounds arriving in three cities going direct to foster homes vs. quarantine.
  - c. Fox News report on Foreign Puppy Mill.
  - d. Rescuers need rescuing. LA.
  - e. Adopt Don’t shop Mantra.
- 6. Notes on Washington’s Proposed HB 1640 and SB 5290.**
  - a. Handwritten notes on bill proposals.
  - b. Online testimony against bills.
  - c. Pat Sullivan’s responses.
  - d. PIJAC statement posted to Debbie Goodrich FB page.



**Review of proposed ordinance by Jessica Warner, citizen of Tacoma, for the ban of retail dog and cat sales** (Council Meeting Dated February 26, 2015)

by **Debbie Goodrich**, President, Flight Club Foundation (501 c3 nonprofit EIN #35-2462010).  
Owner, Parrot Ambassadors, Educational Entertainment (2001-2015).  
Newsletter Editor, Northwest Exotic Bird Society.

With my diverse background, I humbly appear before the council to offer testimony in defense of the ability to continue retail dog and cat (pet) sales in the City of Tacoma. I have performed for and assisted many citizens of this great city and have participated in previous ordinances regarding animals with this council. It is hoped my review and subsequent support documentation will provide enough evidence that the ban of retail pets (dogs and cats) in the City of Tacoma could result in the following fallout:

1. Lawsuits for unjust discrimination targeting privately-owned pet retailers vs. corporate retailers.
2. Loss of revenue for the City due to said lawsuits targeting the City.
3. Inability to truly monitor the private sales of pets. A ban in private retail sales does not stop so much as support backchannel purchases and other black market practice that is costly to discover or enforce.
4. Loss of private diversity and small business models, crucial to middle class support.
5. The banning of puppies or kittens sales does not prevent, whatsoever, the unlawful practices of "puppy-mills" or animal cruelty cases.
6. Supporting HSUS (Humane Society of the United States) by allowing their proposed ordinance may result in negative political repercussions.

The following discussion will allow Tacoma to continue to being "pet friendly" in addition to making sound decisions regarding animal welfare, public welfare, economic welfare and more.

Contents:

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Supporting Documentation from PIJAC, The Calvary Group.....10-11

Recent Loss of Charitable Status for HSUS.....12-13



### **Background of Debbie Goodrich:**

- Owner, Parrot Ambassadors, Educational Entertainment, a company that inspires people to care for each other, the environment and making positive change to help the animals of our world.
  - 14 years in operation
  - over 1,500 performances
  - many private and public performances in the City of Tacoma
  - Public: University Village, NW Family Expo, Duck Daze.
  - Private: assist in therapy for elderly, adult day care facilities and children
- Professional animal trainer and entertainer for 19 years total.
  - Train horses, dogs, guinea pigs, parrots (and even fish)
  - Have given lectures nationally about parrots, parrot welfare and fish enrichment topics.
  - Behavior advisor internationally through the use of social media.
- Curator and Animal Care Specialist at Rainforest Cafe 1996-2005
  - Involved in the creation of education programs--seeing over 26,000 students in 1 yr.
  - Management position understanding laws, restrictions, and welfare requirements of animals in a professional industry.
- Degree in Psychobiology, 1996 from University of California, Santa Cruz
  - Degree focuses on animal behavior and intelligence.
  - Received honors title for research paper on dolphin reintroductions.
- Professional or commercial member of the following organizations:
  - IAATE: International Association of Avian Trainers and Educators (10 years)
  - ABMA: Animal Behavior Management Alliance (7 years)
  - AFA: American Federation of Aviculture (2 years)
  - PIJAC: Pet Industry Joint Advisory Council (2 years)
- President, Flight Club Foundation, federal 501 c(3) non-profit connecting communities through parrots as ambassadors (2 years).
- Founder, creator and director: Seattle Parrot Expo, established 2013, over 2,000 in attendance. Featured Speaker series helping animals beyond parrots (200 paid registrants in 2 years).
- Supporter of Rescue, Sanctuary and needs for Adoption:
  - Macaw Rescue and Sanctuary (Carnation, WA): Volunteer grounds-worker and event coordinator/auctioneer
  - Zazu's House: Financial and Behavioral support.
  - Mollywood Sanctuary (Blair, WA) assist in cleanup groups.
  - NPRPF (National Parrot Rescue and Preservation Foundation) : financial support and attendance to their annual conference.

## Review of Jessica Warner's Letter of Intent:

Jessica Warner's letter of intent shows fatal arguments for the banning of retail pet sales in the city of Tacoma. I will point out some of her arguments' flaws.

Paragraph 2: "*Currently, there is but one store....*" This statement itself is showcasing **obvious discrimination which will give rise to a lawsuit** if this is the only store giving rise to the need of a ban on retail pet stores. **She does not provide any clear and justifiable evidence** that said store purchases their animals from "puppy mills" or if said store practices any form of objectionable animal welfare. Lastly, she is implying that only adopting an animal is justifiable and that any other form of animal intake is cruel. This is intended as a blanket statement against ALL breeding of animals which is the stance both HSUS and ASPCA concentrate on. **There is no evidence whatsoever that shows that ALL BREEDING OF ANIMALS IS CRUEL.**

Paragraph 3: "*I have included supporting documents that highlight the connection between stores that sell dogs and cats and commercial breeding facilities known as 'puppy mills'.*" **The Humane Society of the United States (HSUS) recently lost their non-profit status.** I have supporting documents that states HSUS does not assist in little to no financial help to the real welfare needs of animals in shelters. (see pg ). The research supporting her evidence is biased at best. HSUS defines "commercial breeders" to include very well respected breeders that have no history of cruelty, no fines, extreme care for the animals above and beyond national standards be labelled as "puppy mill breeders" due to their size alone. Responsible breeders do, in fact, sell their animals to REPUTABLE retailers they trust. The "research" HSUS has shown clear and unrefutable bias if one were to investigate the sources and results. If this particular targeted retailer producing the need for ordinance is indeed purchasing compromised animals, the animals would be returned to the retailer as they would be in poor condition, poor quality, etc. I know nothing about the history of the targeted store of Ms. Warner's letter.

Paragraph 4: "*...result in one of the puppy mills' largest buyers (retail pet stores) being removed from the equation.*" Firstly, not true. "Puppy Mills" (however HSUS defines it), will continue through backchannels. At least with retail sales continuing, we can keep a better eye on the conditions of animals that are for sale at these establishments. Period. In addition, the economic impact needs serious consideration. In accordance to APPA (American Pet Products Association) spending in pets is an estimated \$58.51 billion dollar industry a year with \$2.19 billion alone in live animal purchases. This includes **RETAIL ADOPTION!** We are replacing reputable breeding with retail sales of puppies that are not regulated due to the adoption process. Where are those puppies and kittens being adopted coming from? Often, abuse or neglect cases! Backchannel, unregulated breeding! This is not "pet friendly" as the other cities are cited as being. They are being sued as well (New York, Los Angeles, San Diego and Chicago).

My three paragraph reviews clearly indicate her conclusion does not, in any way, eliminate the chance that they will buy an animal that was a result of animal cruelty. Therefore, moving forward with this policy is not recommended.

**Recommended Course of Action to move forward:**

It is my recommendation and testimony for the City of Tacoma to continue to use their already-established means of regulation and control of the pet population within City Limits.

RCW 16.52.310 (Washington State Legislature) Dog Breeding--Limit Number of Dogs, clearly defines and is already adopted in to prevent "Puppy Mill Breeding".

RCW 16.52.207 (Washington State Legislature). Animal Cruelty Second Degree. Includes the need to avoid animal cruelty and if cruelty is found, by definition, the law can and will be enforced.

RCW 16.52.200. (Washington State Legislature). Animal Cruelty First Degree. Defines "animal" as every creature, alive or dead, other than a human being. Again, this is enforceable to prevent animal cruelty.

Title 17, Animal Control, in the Tacoma Municipal Code, has provisions already in place to prevent "Puppy Mills" or cruelty of animals.

17.01.010. DEFINITIONS

2. "Animal" means any nonhuman mammal, bird, reptile or amphibian.

12. "Commercial pet facility" is already defined and enforced in Tacoma.

17.01.160 "Prevention of cruelty to animals" is already enacted and enforced in Tacoma.

17.01.166 "Adequate care for animals" clearly includes retail pet stores when it states in part B. "It is a violation for an owner to fail to provide adequate care to his or her animal." And this code also defines what Adequate care is for all facilities.

## The Real Happenings of ASPCA

The ASPCA is a non-profit organization involved in many things regarding animal welfare. However, it is prone to quite a few problems that begs to question if the interests of the ASPCA are truly about the animals. This is in light of the 65 pages brought forward to the council in support of Ms. Warner's Letter of Intent.

From NY times investigative reporter, John Bernstein, in his article "Angst at the A.S.P.C.A.", the following issues were brought up:

1. Ed Sayer's salary was over 500K.
2. Over the last 7 years [until June 2013], 15 of the 20 board members were replaced.
3. Monies donated were mismanaged. (receiving \$774,541 in funds for a dog walk when the netted report of the dog walk was \$14,000.

(According to CBS Los Angeles May 4, 2011)

LIKE HSUS, the ASPCA does not support or supports very little the direct humane societies, shelters, etc, that work with the animals in their districts daily.

In California in 2011( according to HumaneWatch.org), the State Humane Society of California, representing 100 local shelters in CA filed a formal complaint about ASPCA mis-leading the public. Te complaint was filed by the California Attorney General. They stated, "ASPCA's unfair and deceptive fundraising practices harm local humane societies and SPCA."

By 1994, the ASPCA (located in New York)'s shelter had an over 50% kill rate of animals vs. finding other models and more humane avenues to adopt animals out. Then, they did not renew their animal shelter contract.

**Due to misrepresentation and misleading conduct, any materials created by the ASPCA should be disregarded.**

## **The Real Happenings of HSUS**

HSUS is far worse than ASPCA as far their overall objective. To remove the fundamental animal-human relationship. Directly from Director of Marine Mammals at HSUS, Naomi Rose, "I honestly don't think close acquaintance with animals physical proximity is necessary for people to feel empathy toward them or want to protect them. Effective education without using them as live props is perfectly possible, through other technologies (good nature shows, interactive displays at museums, etc.)" (Personal comm. email. March 12, 2010)

HSUS has attacked over 8 states the past year alone to pass a ban on no retail pet sales. Some municipalities have agreed to listen to this front based on prejudiced information about these sales leading to "puppy mill" conditions or abuse. Both these conditions exist with or without retail sales. Pages 7-10 show the various articles, bills, proposals on the ballot and the fallout already starting in those jurisdictions.

HSUS lost it's charitable status with Charity Navigator, the leading, impartial evaluator of publicly reported financial information. Once a 4-star rated charity, they no longer support the charitable acts of HSUS. They have now been listed as a Donor Advisory due to paying off a witness to state they saw cruelty when cruelty was not present. In addition, 6 members of the United States Congress are calling for an IRS investigation of HSUS as of April 2011.

**Therefore, listening to any of the documentation provided by HSUS should be disregarded due to their extreme form of bias.**

## Humane Society Of US Refuses To Release Documents, Sues Oklahoma AG

Posted: Jan 21, 2015 3:46 PM PST

Updated: Jan 22, 2015 11:59 AM PST

**NEWSON6.COM**

OKLAHOMA CITY -

Oklahoma Attorney General Scott Pruitt's Office has been sued by the Humane Society of the United States after the organization's refusal to release documents the Oklahoma official has requested.

The AG's office has called into question HSUS fundraising efforts.

According to a news release, Pruitt on Wednesday urged the HSUS to disclose documents that the group will not give to the Attorney General's Office pursuant to a civil investigative demand (CID). After several time extensions, HSUS failed to comply with the requests in a timely manner and instead has chosen to respond with a lawsuit, Pruitt says.

The AG said he is reviewing the solicitation practices of the HSUS in order to address concerns that the group's solicitations in Oklahoma may be misleading.

"The concern is that the HSUS projects heart-wrenching imagery of puppies and kittens in solicitations in order to extract donations from unsuspecting Oklahomans who believe their donations are going to help local animal shelters, but instead, their hard-earned money may go to high-powered lobbying and special interest campaigns that are determined to shape state and federal legislation that would harm farmers, ranchers and other Oklahomans," a statement from Pruitt says.

Pruitt says his office has the statutory authority to monitor and regulate charities operating in Oklahoma and has requested records from the HSUS through a CID.

"After multiple attempts by the Attorney General's office to acquire a good faith response, including extra time to comply with the CID, the group has responded with a lawsuit," Pruitt said.

HSUS released a statement to media on Wednesday, claiming Pruitt's requests amount to a "fishing expedition," that he doesn't have the authority to request the documents and that the documents his office seeks include confidential and proprietary information.

*"An Oklahoma state court will decide whether to limit Attorney General Scott Pruitt in his nearly yearlong campaign of political harassment and public vilification of The Humane Society of the United States," a HSUS statement says. "The HSUS filed a lawsuit today in Oklahoma County, alleging Pruitt has improperly sought privileged documents from the national charity. The complaint asks the court for a declaration and an injunction to stop Pruitt's actions."*

*Beginning in early 2014, Attorney General Pruitt called into question the reputation and fundraising practices of The HSUS through official government channels, in interviews, and on social media. Yet based on communications with The HSUS and its attorneys, Pruitt has not received a single complaint about deceptive fundraising practices from any HSUS supporter.*

*Pruitt made many of his incendiary, untrue remarks to members of the Oklahoma Farm Bureau, a private organization representing agricultural interests which has long been a political adversary of The HSUS. At Oklahoma Farm Bureau gatherings throughout 2014, Pruitt falsely stated that The HSUS raised money under the guise of pet assistance in the wake of the devastating tornadoes that struck Moore, Okla., taking 24 human lives. The HSUS provided information to Pruitt demonstrating that the organization conducted no fundraising for the response to the tornadoes' aftermath, and that its assistance was not requested by local authorities for tornado response."*

*Julie Bays, Chief of the Public Protection Unit, said she is perplexed why the HSUS chose to file a lawsuit rather than disclose documents that could prove transparency in the organization's charitable efforts.*

*"It's unclear to me why the HSUS would file a lawsuit rather than help us answer concerns that their solicitations in Oklahoma may be misleading," Bays said. "Instead of respecting the donations of generous Oklahomans by providing clarity that such donations were used for the purposes represented in solicitations, the HSUS has decided to sue the Attorney General's Office and wage a duplicitous war of misinformation against the people of Oklahoma. Our office will not tolerate any charity using misleading or untruthful solicitations to take advantage of the generosity of Oklahomans and will not blink in the face of this unwarranted lawsuit."*



## Activists take aim at Carlsbad pet store

By [Edward Sifuentes](#) 1:44 P.M.FEB. 25, 2015

CARLSBAD [California] — Animal rights activists say they plan to protest in front of a Carlsbad pet store on Saturday as part of an effort to get the city to adopt a ban on the sale of commercially bred pets that some call “puppy mill” dogs.

In 2013, the Carlsbad City Council waffled on an ordinance that would have banned retail pet sales.

Activists who recently convinced the Oceanside City Council to adopt such a ban want Carlsbad to take up the issue again.

“We’re hoping that Carlsbad will join with other cities in the county and pass similar legislation banning the sale of puppy mill puppies,” said activist Leslie Davis. She said a protest is planned Saturday afternoon outside the California Pets store at the Westfield Carlsbad mall.

The store owners could not be reached for comment on Wednesday.

Oceanside approved its puppy-sales ban last month on a split 3-2 vote. San Diego and dozens of cities throughout the country have also adopted bans targeting commercially bred animals in recent years.

Animal rights groups say the pets produced in profit-driven breeding facilities are kept in small cages and deprived of veterinary attention. They say the federal government, which is supposed to regulate the industry, doesn’t do enough to oversee breeders or correct problems.

In Carlsbad, council members initially adopted a ban in October 2013 but agreed to revisit the issue a month later because they couldn’t decide whether it should exempt the city’s only pet store, California Pets.

In the follow-up vote, Mayor Matt Hall, Councilman Mark Packard and former Councilwoman Farrah Douglas voted to overturn the ban. They said unscrupulous breeders were the problem, not pet stores.

Councilman Keith Blackburn and Councilwoman Lorraine Wood said they wanted to keep at least part of the legislation but were overruled by the majority.

Animal rights activists, who opposed allowing California Pets to remain in business, say closing pet stores would force more people to adopt dogs and cats from shelters and rescue organizations, putting puppy mills out of business.

The issue arose in Oceanside after a store called Oceanside Puppy moved into the city in 2013.

The then-council majority of Jerry Kern, Jack Feller and Gary Felien declined to support a ban. But Felien was unseated in the November election and replaced by new Councilman Chuck Lowery.

Last month, Lowery joined with Mayor Jim Wood and Councilwoman Esther Sanchez to approve the new ordinance, which prohibits the sale of commercially bred animals.

That ordinance allows pet stores to sell dogs and cats that come from animal rescue shelters or rescue organization.

Oceanside Puppy has until September to comply with the law or close down. Owner David Salinas said he is waiting on the outcome of lawsuits fighting similar bans elsewhere in the country to decide whether to sue the city.



## Humane Pet Sales Bill Clears Both Houses in General Assembly

By [ANNE MARIE MORGAN](#)

Sales of dogs and cats in **Virginia** would be governed by tougher restrictions under legislation that has passed both houses of the General Assembly. The bill limits pet shops to selling dogs that were obtained from humane societies, public or private animal shelters, and qualified breeders. One goal is to close the loopholes in state law that have allowed puppy mills some latitude to sell in the Commonwealth.

0:54 Anne Marie Morgan reports from Richmond. (WVTF Public Radio)

The bill requires pet shops to retain records to verify compliance and imposes a penalty for EACH dog in violation. Delegate Charles Poindexter said it will ensure that out-of-state breeders cannot sell to pet stores unless they meet the same qualifications as **Virginia** breeders.

“The second part of the bill will stop the puppy mills and others from selling dogs and cats at flea markets, parking lots, recreation centers, whatever. This is becoming a common practice for the puppy mill operators.”

That rule would not apply to shelters or humane societies. He also noted some exemptions:

“Dogs and cats that are sold primarily for use in commonly accepted hunting, livestock activities, and for hobby breeders for pre-arranged sales between the breeder and the purchaser.”

The House made a few changes, so the bill now heads back to the Senate.

***House Bill 645 will be debated in the Committee on Economic Matters on March 3<sup>rd</sup>.***

***Contact your State Legislator immediately and attend the Committee hearing on Thursday in Room 230, House Office Building, Annapolis, MD.***

### **The Issue:**

On February 12<sup>th</sup>, 2015, **Maryland** State Delegate Benjamin F. Kramer (D - District 19), submitted **HB 645**. This bill dictates that “a retail pet store may not sell or offer for sale a dog or a cat.” While this bill does make an exception for existing stores in order to try to blunt the protests sure to arise from outlawing responsible businesses, it also expressly states, and thus tacitly encourages, “local government to further restrict the sale of dogs or cats by a retail pet store.”

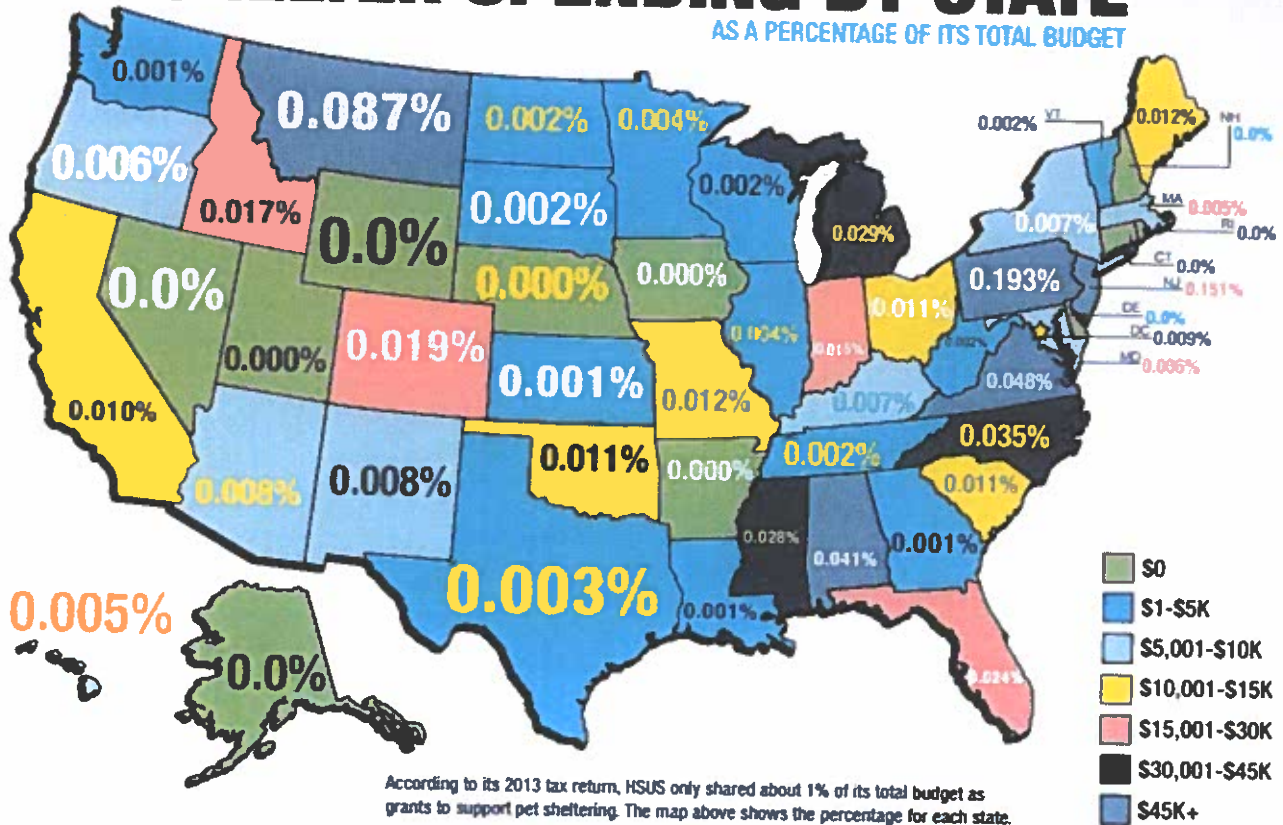
### **PIJAC position:**

PIJAC opposes House Bill 645. It is our position that pet stores are a good choice for consumers to buy healthy, well socialized puppies. We further feel that the justification for this bill, that commercial breeders mistreat their animals, is false and that being a good breeder is determined by the care provided to animals, not the number of animals in the kennel. Please do not hesitate to contact [bob@pijac.org](mailto:bob@pijac.org) for more information.

THE HUMANE SOCIETY OF THE UNITED STATES'

# SHELTER SPENDING BY STATE

AS A PERCENTAGE OF ITS TOTAL BUDGET



## “WE NEVER SAID WE FUNDED ANIMAL SHELTERS.”

— Wayne Pacelle, President of the Humane Society of the United States



### Where do their millions in donations go?

- HSUS recently deposited more than \$11 million in its executive pension fund
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- HSUS is using your donations for their defense against charges of corruption\* in federal court.

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### Michigan SB 28/29 will DESTROY animal ownership & animal businesses.

- **Overreach:** SB 28/29 defines "animal" as a "vertebrate other than a human being." This bill encompasses ALL animal species except humans.
- **Denigrates Animal Breeding and Breeders:** SB 28/29 vilifies those who breed animals "for profit," therefore, ALL animal enterprise — those making a living breeding and selling animals for food, fiber, and the pet industry.
- **Unconstitutional:** In the case of a pending criminal violation of *alleged* animal cruelty, SB 28/29 states that the prosecuting attorney can file a civil action forfeiting one's animals to animal control *before* the disposition of the case.
- **False Correlation:** SB 28/29 wrongfully states that animal cruelty indicates a predisposition toward abusing humans, for which there is zero proof or empirical evidence.
- **Unfunded Mandate:** SB 28/29 vastly expands the jurisdiction of regulatory enforcement and calls for impossible-to-monitor areas of oversight forcing more "gotcha" enforcement on animal owners and animal enterprise.
- **Misses the Target:** SB28/29 does **NOTHING** to address the problem of unlicensed, rogue, unethical breeders who are *already* in violation of existing laws. Enforce the laws already in place.
- **Dishonest:** SB28/29 defines local humane societies and local ASPCAs as "animal protection centers."
- **Job Killer:** SB28/29 will put animal breeders in your Michigan district out of business and will cost hundreds of jobs related to all animal enterprise.
- **No Veterinarian Expertise:** No where does this bill state that welfare standards were set or established by veterinarians.
- **Agenda-driven:** SB 28/29 is driven by the animal rights extremist's ideology which promoted regulatory reform based on emotion, NOT science.
- **The ONLY** groups supporting SB 28/29 have a radical animal rights agenda, such as ASPCA, HSUS, and ALDF.

Don't fall for the radical ANIMAL RIGHTS propaganda!  
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Charity Navigator has become aware of the following information in connection with this charity:

1. On May 15, 2014, Feld Entertainment ended its long running legal dispute with the Humane Society of the United States, the Animal Welfare Institute, the Fund for Animals and other non-profit animal rights groups who had accused the Ringling Brothers and Barnum & Bailey Circus of abusing its world famous elephants, in violation of the Endangered Species Act ("ESA").
2. The Fund for Animals and the Humane Society the United States, which merged in 2005 but operate separately, issued [this statement](#) in which they said: "Although The HSUS was never a plaintiff in the case against Ringling, we believe it was prudent for the parties to settle, because this court would never address the core claims of elephant abuse, and there would be significant cost to continuing to litigate. We expect that a substantial portion, if not all, of the settlement costs to The HSUS and The Fund for Animals will be covered by insurance, and in the end, that no donor dollars from The HSUS will go to Feld."
3. As described in [this February 20, 2014 decision](#): "The plaintiffs in the ESA action premised their case on the testimony of the late Tom Rider, who testified that he observed the mistreatment of the elephants when he worked for the circus. [The judge], however found that Rider was not credible and that he was essentially a paid plaintiff witness whose sole source of income throughout the litigation was provided by the animal advocacy organizations, which were his co-plaintiffs in the ESA action. [The judge] therefore concluded that Rider lacked standing and entered judgment for Feld, the defendant." Feld then [sued the plaintiffs](#) in the ESA case as well as their attorneys, arguing that the ESA plaintiffs' payments to Rider during the litigation violated the RICO Act. After Feld's RICO case [survived a motion to dismiss](#), and the animal rights groups were ordered to disclose the names of certain donors [in discovery](#), the defendants agreed to pay Feld \$15.75 million to settle Feld's [claim for attorneys fees](#) in the ESA case and the pending claims in the RICO action. Media coverage of the \$15.75 million settlement, in which none of the parties admitted liability, can be found [here](#), [here](#) and [here](#) and Feld's statement on the settlement is available [here](#).
4. On July 7, 2014, the Washington Examiner reported that on May 15, 2014 "when the [voluntary] settlement...' between Feld Entertainment and several non-profit animal rights groups "...was announced, officials at the Humane Society of the U.S. and the Fund for Animals, which were responsible for paying the \$15.7 million, defiantly claimed their insurance companies, not their donors, would pay



the money to Feld." The article goes on to note that "what the animal rights groups failed to disclose to the public was that they'd been told four years before that their insurance companies would not provide coverage." The article also states that "today, the groups are suing their insurers." In response, "Wayne Pacelle, the Humane Society's president and CEO, shrugged off the insurance companies' refusal to cover the settlement, saying in an interview, 'denial of coverage is a standard posture within the industry.' Pacelle... said they have a 'commitment' from one carrier 'to cover the bulk of what our responsibility is.' He said he hopes there can be settlements with the other two insurance carriers." For more information, please see [The Washington Examiner article](#).

Charity Navigator, as an impartial evaluator of publicly reported financial information, takes no position on allegations made or issues raised by third parties, nor does Charity Navigator seek to confirm or verify the accuracy of allegations made or the merits of issues raised by third parties that may be referred to in the Donor Advisory. However, Charity Navigator has determined that the nature of this/these issue(s) warrants making this information available so that donors may determine for themselves whether such information is relevant to their decision whether to contribute to this organization. (See [How we decide to post a Donor Advisory](#)).



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Policy analysis

# What drives the illegal parrot trade? Applying a criminological model to market and seizure data in Indonesia

Stephen F. Pires<sup>a,\*,1</sup>, George Olah<sup>b,1</sup>, Dudi Nandika<sup>c,d</sup>, Dwi Agustina<sup>d</sup>, Robert Heinsohn<sup>e</sup>

<sup>a</sup> Department of Criminology & Criminal Justice, Florida International University, Miami, FL 33199, USA

<sup>b</sup> Wildlife Messengers, Richmond, VA 23230, USA

<sup>c</sup> Bogor Agricultural University, Bogor, West Java 16680, Indonesia

<sup>d</sup> Perkumpulan Konservasi Kakatua Indonesia, Bekasi 17530, Indonesia

<sup>e</sup> Fenner School of Environment and Society, The Australian National University, Canberra, ACT 2601, Australia

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## ABSTRACT

High global and domestic demand for parrots (Psittaciformes) as pets, and consequent removal from the wild for the illicit trade have significantly contributed to their severe decline worldwide. While the trade is vast, not every parrot species is at equal risk of being traded, and there is controversy concerning the role of demand and the opportunity-based factors driving the illicit wildlife trade. The criminological model CRAAVED was used to analyze the factors associated with traded parrots in Indonesia, the country shown to have the highest priority for parrot conservation. We quantified the relative importance of CRAAVED components that drive trade risk by using advanced multivariate, phylogenetically controlled models. Three factors were significantly predictive of trade variation, whether the species was *disposable* (i.e. most legally exported species), *enjoyable* (i.e. most attractive), and *accessible* by people, suggesting that demand- and opportunity-based factors together can partially explain the illegal parrot trade in Indonesia. Our analysis has important implications for parrot conservation and the broader illegal pet trade, and is of considerable value for developing strategies at national and international levels for helping to control wildlife trade.

## 1. Introduction

The biological diversity of our planet is rapidly depleting due to the direct and indirect consequences of human activities. Direct global effects are habitat destruction, expanding urban and agricultural areas (Vergara-Tabares et al., 2020), and wildlife crime that includes the illegal killing, taking, possessing, or trading of plants and animals (Kurland et al., 2017). Wildlife trade and utilisation, whether legal or illegal, are also responsible for the potential emergence and spread of many zoonotic diseases (e.g. SARS, COVID-19, Avian flu) that can cause novel human diseases (Allen et al., 2017), which stresses the importance of regulating such activities. CITES has been regulating the international trade of threatened species since 1975 ([www.cites.org](http://www.cites.org)), and parrots (order Psittaciformes) have become the most traded animal taxon according to their database ([trade.cites.org](http://trade.cites.org)). Parrots may thus provide the best source of data for investigating the causes and consequences of animal trade. As a result of global and domestic demand for parrots as

pets, illegal trapping and removal of parrots from the wild has largely contributed to their decline (Clarke and Rolf, 2013). A global evaluation revealed that one-third of the nearly 400 parrot species are threatened by extinction, with Psittaciformes having higher aggregate extinction risk (IUCN Red List Index) than any other comparable bird group (Olah et al., 2016).

Southeast Asia is both a major hotspot for biodiversity and an epicenter for illegal wildlife trade world-wide (Nijman, 2010). Indonesia was identified as the highest priority country for parrot conservation because it has the greatest diversity of species (89 parrot species) and the highest proportion of threatened and endemic species of any nation (Olah et al., 2016). Before 2018, only 12 parrot species were listed as threatened in Indonesia and were, thus, regulated using catch-quotas (Republic of Indonesia, 1999). However, such quotas were rarely enforced and most parrot species were illicitly removed from the wild (Setiyani and Ahmadi, 2020) and trafficked to other provinces and countries (Aloysius et al., 2019). Although illicit removal from the wild

\* Corresponding author.

E-mail addresses: [Sfpires@fiu.edu](mailto:Sfpires@fiu.edu) (S.F. Pires), [george@wildlifemessengers.org](mailto:george@wildlifemessengers.org) (G. Olah), [Robert.Heinsohn@anu.edu.au](mailto:Robert.Heinsohn@anu.edu.au) (R. Heinsohn).

<sup>1</sup> These authors contributed equally to the manuscript.

is only the first step in the illegal wildlife trade, it is the primary activity that harms wild populations, and further understanding of its drivers is essential for understanding the broader issue of illegal trade of wildlife.

While the illegal parrot trade remains an active problem throughout Indonesia, it cannot be assumed that every species faces the same threat from illicit removal from the wild. Recent studies in the Neotropics have demonstrated that there is considerable variation among parrot species traded and sold in illicit markets (Herrera and Hennessey, 2007; Gastanaga et al., 2010). Using a criminological framework to understand variation in what is sold—and not sold—in these markets, Pires and Clarke (2011, 2012) have suggested that the illegal parrot trade is mostly an opportunistic crime. That is, species that are easier to remove from the wild are traded more frequently in illicit markets. The CRAAVED model (standing for *concealable, removable, accessible, abundant, valuable, enjoyable, and disposable*) was originally developed by Clarke (1999) for understanding theft variation of commonly stolen products and has been used to analyze variation of parrot species involved in the live pet trade (Pires and Clarke, 2011, 2012). CRAAVED analyses suggest that “hot products”, or those products that are stolen often and re-sold in illicit markets, tend to be highly attractive to thieves and consumers alike, but are often also the easiest to steal (Clarke, 1999). Univariate CRAAVED analysis of Neotropical parrots showed that species that were more common in the wild (i.e. *abundant*), had larger distributions especially in closer proximity to illicit markets (i.e. *accessible*), and were easier to remove from nests (i.e. *removable*), were traded significantly more often than other species (Pires and Clarke, 2011, 2012; Pires, 2015). Conversely, species that were more *enjoyable* (i.e. attractive) or *valuable* (i.e. rare), otherwise known as demand-side components, were traded significantly less often. Unfortunately, these studies suffered from data limitations and could not control for competing explanations using multivariate models.

Using a multivariate statistical model on CRAAVED variables, a study found that the most *attractive* and *valuable* species were actually captured more often when controlling for relative abundance and accessibility (Tella and Hiraldo, 2014). This study concluded that demand-side components were the main driving force behind illicit trade. In addition, a more recent study of parrot trade in Colombia also found wildlife crime to be driven by selective removal of attractive species from the wild, not opportunity (Romero-Vidal et al., 2020). These studies were limited, however, because they did not operationalize each component of the CRAAVED model in order to control for all competing explanations, nor did they account for phylogenetic relationships in their statistical models. Controlling for phylogenetic dependence among the studied species is important in these multivariate analyses in order to truly understand the driving factors behind trade without inflating the sample size due to multiple representation of similar species in the dataset (Olah et al., 2016).

Divergent results in studies to date suggest that it is not yet clear whether opportunity, demand, or both drive the illegal parrot trade. It is often assumed that offenders disproportionately target highly valuable and charismatic species, which is thought to be driving the anthropogenic Allee effect that hastens the risk of extinction (Courchamp et al., 2006). This theory predicts that under a critical population size (Allee threshold), the elevated value of rare species can provide financial incentives for targeted poaching and eventually lead to accelerated extinction (Holden and McDonald-Madden, 2017). At the same time, the finding that the illegal parrot trade is an opportunistic activity is consistent with a number of recent wildlife crime studies that can explain why particular species of flora and fauna are poached (Kurland et al., 2017; Haines et al., 2012; Maingi et al., 2012; Pires et al., 2016; Kurland et al., 2018; Petrossian, 2018). For example, Maingi et al. (2012) found bodies of water, roads, and abundance of elephants were spatially predictive of where elephant poaching occurred in south-eastern Kenya. This line of research suggests opportunity structures both in the built (e.g. roads) and natural environment (e.g. bodies of water) facilitate the illicit removal of species from the wild.

The present study has the broad objective of furthering our understanding of the forces driving the illegal parrot trade in Indonesia by quantifying the relative importance of opportunity and demand-based factors. We use sophisticated multivariate models, controlling for phylogeny, to assess all CRAAVED factors that could potentially drive the illegal domestic and international parrot trade originating from Indonesia, a task that has not been accomplished to date.

## 2. Methods

### 2.1. Trade data

This study used a combination of seizure data and previously published market surveys of parrots from Indonesia to gather information for species at risk of being removed from the wild. Six data sources were used in total to gather a complete picture of which species are more commonly traded within Indonesia. These data were obtained from six different provinces spanning the archipelago (Fig. 1). Species traded were shown to be consistent across data sources (ICC = 0.804, 95% confidence interval 0.732–0.861;  $F(89,356) = 5.104, P < 0.001$ ) giving us confidence these data are reliable and representative (Fig. 2).

Seizure data were obtained from the Natural Resource Conservation Center of the Ministry of Forestry (Balai Konservasi Sumber Daya Alam, BKSDA hereafter; Setiyani and Ahmadi, 2020) and the Regional Police of East Java (Reskrim Sus Polda Jatim). BKSDA confiscated illicitly obtained parrots between 2016 and 2018 in the provinces of North Maluku and Maluku, and the Regional Police in East Java in 2018 (District Court of Jember, Indonesia, 2019). Market survey data were obtained from four sources. The first was based on Shepherd's (2006) survey of three markets in Medan, North Sumatra, where monthly market surveys were conducted between 1997 and 2001, and again in 2005, finding a total of 27 parrot species for sale. The second was based on extended field surveys on Obi Island in North Maluku in 2012, where they found eight species for sale (Cottee-Jones et al., 2014). The third was a published report by TRAFFIC (Chng et al., 2015) that documented the number of birds per sale in three of the largest markets in Jakarta in 2014, registering 14 parrot species for sale. In the fourth study, Chng et al. (2016) surveyed the Sukahaji wildlife market in Bandung, West Java in 2016 and found nine parrot species for sale.

Given the wide time-scale of the source data (1997–2018), we divided the sources into two periods for the analyses: (1) a ‘past’ dataset with Shepherd's (2006) extensive survey between 1997 and 2005 containing 27 traded species, and (2) a ‘recent’ dataset with all the other sources recorded between 2012 and 2018 containing 23 parrot species in the trade (Fig. 2). Trade patterns may have changed over time in Indonesia and we wanted to isolate these two time periods as well as combine them to get a fuller picture.

First, we analyzed the data separately in the two time-periods and then altogether as an ‘overall’ dataset. We measured CRAAVED components following the methods used by recent studies of illegal parrot trade (see Pires, 2015), summarized in Table 1, and details are given in the Appendix A. We conducted a Pearson correlation test among the components to explore potential multi-collinearity issues. The complete dataset is available in FigShare (<https://doi.org/10.6084/m9.figshare.13681393>).

### 2.2. Statistical analysis

Utilizing studies and data with different methodologies meant that the exact number of birds observed in markets or confiscated was not always comparable. For example, some market surveys were monthly, while others were conducted over a 3-day or 1-day period at wildlife markets. Hence, we treated our response variable as a binary measure to simply reflect whether the species was traded (‘1’) or not traded (‘0’). In addition, data were assembled according to which species were traded within the past, recent, and overall time-periods. First, we fitted a binary





Fig. 1. Locations of illicit markets and seizures used in this study along with the distribution of parrot species density in Indonesia.

logistic regression model using the 'GLM' function in R statistics (R Core Team, 2019) to calculate P values for the seven explanatory variables. Then, we compared the Akaike information criterion (AIC) of all combinations of the seven variables without interactions and selected the

best model with the lowest AIC (i.e. including features that maximize the predictive ability of the model) using the 'MuMIn' package in R (Barton, 2019). We repeated these steps for each of the time-periods.

For phylogenetic relatedness control, we downloaded 1000 possible

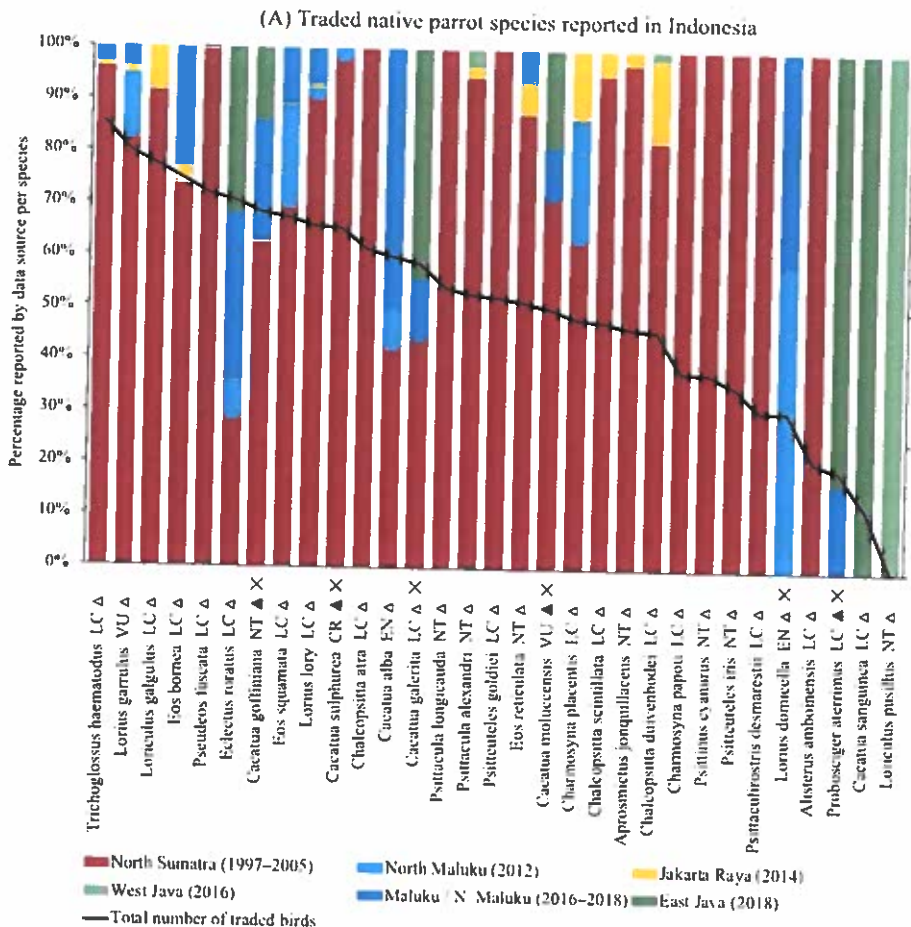


Fig. 2. Traded native parrot species reported by six sources in Indonesia for (A) an overall period of two decades (1997–2018), and (B) a recent time-scale between 2012 and 2018. Each column represents a species and its relative appearance in market/confiscation data sources (different colors indicate the percentage of total individuals reported by species; left axis). Species are sorted by the total number of individuals reported for trade shown by the continuous line and the right axis. After the species name are their IUCN RedList (2018) status (CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, and LC = Least Concern), CITES listing ( $\Delta$  = Appendix I and  $\triangle$  = Appendix II), and protection in the national level in Indonesia pre-2019 (X).

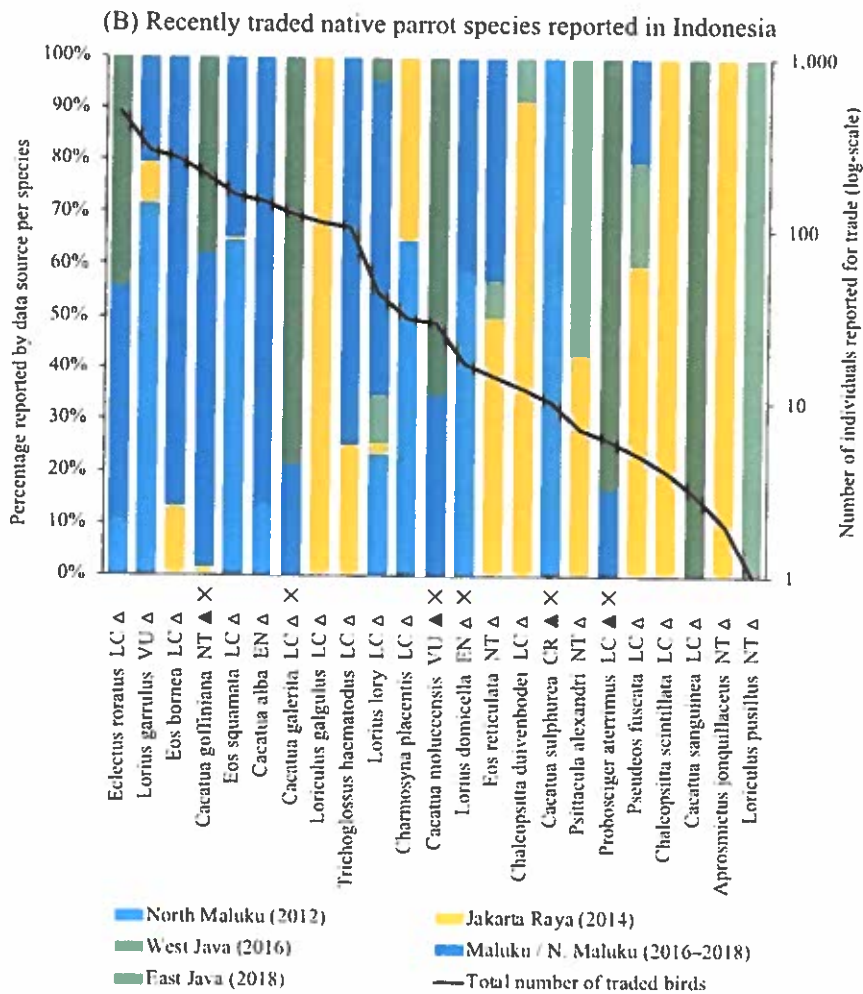


Fig. 2. (continued).

phylogenetic trees with the Ericson taxonomic backbone of parrot species distributed in Indonesia from birdtree.org (Jetz et al., 2014) to account for the branch lengths in addition to nodes separating species (available with our FigShare dataset). For each tree we ran a phylogenetic generalized least squares (PGLS) regression using the ‘caper’ package in R (Orme et al., 2018).

The explanatory and response variables were the same as those used in the logistic regression model. We ran the PGLS model with all seven variables in the three time-periods, and then with the variables represented in the best models from the previous step. For each explanatory variable, we report the modified  $P$  value accounting for phylogenetic relatedness, the estimates, and for each model we also report the  $\lambda$  transformation that improves the fit of phylogenetic data. Greater  $\lambda$  values indicate that the relationship between response and explanatory variables correlates with the phylogeny, and that the values of the explanatory variables are more similar for closely related species.

We used the random forest machine learning (RFML) algorithm (Breiman, 2001) in the ‘randomForest’ package of R (R Core Team, 2019), to model the relationship between the traded parrots and CRAAVED variables. RFML is a computational machine learning approach that fits multiple decision trees to our trade dataset using a random subset of the CRAAVED input variables for each tree constructed for the parrot species. For each model, we present the percentage of variance explained in traded species, and for each CRAAVED component the mean decrease in Gini (i.e. higher decrease meaning that a particular predictor variable plays a greater role in partitioning the data into traded/not traded) and their relative importance in each time-period.

### 3. Results

Indonesia hosts a total of 89 parrot species, of which two are Critically Endangered, four are Endangered, seven are Vulnerable, 16 are Near Threatened, and 60 are of Least Concern (IUCN, 2019). Based on the six data sources reviewed by this study, 31 parrot species (34% of total in Indonesia) were reported as traded species (one CR, two EN, two VU, eight NT, and 18 LC). Four species are listed in CITES Appendix I: *Cacatua goffiniana*, *C. moluccensis*, *C. sulphurea*, and *Probosciger aterrimus* (Fig. 2).

The best linear regression models explaining the likelihood of a parrot species being traded in Indonesia in the past (1997–2005) contained the CRAAVED components *disposable*, *enjoyable*, and *accessible*, while in a later time period (2006–2018), *concealable* was also highlighted alongside these other variables (Table 2). Species were significantly more prone to trading if they were more *disposable* in all of the time-periods analyzed (PGLS  $P_{\text{past}} = 0.003$ ,  $P_{\text{recent}} = 0.001$ , and  $P_{\text{overall}} = 0.009$ ; Fig. 3A). More *enjoyable* species were also traded significantly more in both the past and recent periods (PGLS  $P_{\text{past}} = 0.026$ ,  $P_{\text{recent}} = 0.014$ ; Fig. 3B) but this component was not significant when we pooled the two periods (PGLS  $P_{\text{overall}} = 0.065$ ). Species that were more *concealable* showed up as significant only in the linear regression model in the recent time-period (GLM  $P_{\text{recent}} = 0.04$ ) but this could not be confirmed when we controlled for phylogenetic relationships (PGLS  $P_{\text{recent}} = 0.927$ ). The full models with all CRAAVED components are presented in Appendix A.1.

Of the total variance between traded and non-traded species data, 21% was explained by the seven CRAAVED components in the overall

**Table 1**

CRAAVED components used in the study to evaluate the likelihood of Indonesian parrot species being traded in past (1997–2005), recent (2012–2018), and overall (1997–2018) time-periods.

Variable	Definition	Measure	Source
Concealable	Species that could not be legally trapped and are therefore harder to conceal from law enforcement. <i>Opportunity-based.</i>	Nationally protected (1) or unprotected (0) species in Indonesia.	Republic of Indonesia PP7/1999
Removable	How easy is it to remove species from the wild? <i>Opportunity-based.</i>	Easy (1) e.g. from nests near to the ground; medium (2) e.g. using glue or mist netting; difficult (3) e.g. high nests, noose techniques.	Dudi Nandika, Dr. La Eddy
Accessible	Species found in areas where there is a greater number of people may be at an increased risk of trade. <i>Opportunity-based.</i>	Human population size within the species range in the year 2000 (past), 2015 (recent), and the average of their sum (overall time-scale). To reduce variability between global and Indonesian estimates, average population sizes were converted to (1) 1–9999, (2) 10,000–49,999, (3) 50,000–99,999, and (4) over 100,000 individuals	IUCN, 2019; Schiavina et al., 2019
Abundance	How common species are. <i>Opportunity-based.</i>	(1) Least Concern, (2) Near Threatened, (3) Vulnerable, (4) Endangered, and (5) Critically Endangered. Composite values (4–8) from the sum scores of low (1) or high (2) of the colorfulness, percentage of body brightly colored, body length, and ability to mimic sounds.	Juniper and Parr, 1998; IUCN, 2019
Valuable	IUCN RedList categorization as a widely used proxy for value. <i>Demand-based.</i>	(1) Least Concern, (2) Near Threatened, (3) Vulnerable, (4) Endangered, and (5) Critically Endangered. Composite values (4–8) from the sum scores of low (1) or high (2) of the colorfulness, percentage of body brightly colored, body length, and ability to mimic sounds.	IUCN, 2019
Enjoyable	Species attractiveness to potential customers. <i>Demand-based.</i>	Number of exported parrot specimens between 1997 and 2005 (past), 2006–2018 (recent), and their sum (overall time-scale).	Juniper and Parr, 1998; Tella and Hiraldo, 2014
Disposable	The ease with which species can be sold in illicit or licit markets. <i>Demand-based.</i>		CITES trade database

analysis, while 19% in the past and 23% in the recent time-periods. Of the total effects (100%) of the components, *accessible* showed the highest relative importance in all time-periods (between 23% and 24%) followed by *disposable*, *removable*, *enjoyable*, *abundance*, *valuable*, and *concealable* (Appendix A.1, Fig. 4). When only the components from the best models were kept, 19% of the variance was explained by four variables retained in the overall analysis, while 18% in the past and 19% in the recent time-periods including three and four variables respectively. In these cases, the highest relative importance was again associated with the *accessible* component (38–41%; Table 2, Fig. 4). Some CRAAVED components were correlated (Appendix A.2); the highest correlation was between *abundance* and *valuable*.

#### 4. Discussion

The objective of this study was to determine whether illegal parrot trade patterns in Indonesia can best be explained by demand, opportunity, or both factors using the criminological model CRAAVED (Clarke, 1999). The drivers of the illegal wildlife trade have become a common theme in the literature and this paper addresses this with specificity to the live pet trade. It is often assumed that offenders target the most valuable and attractive wildlife species for the live pet trade and two recent parrot poaching studies have supported this view (Romero-Vidal et al., 2020; Tella and Hiraldo, 2014). Some coveted species for the pet trade may have large distributions, are in close proximity to urban populations and illicit markets, and may be easier to remove. Whether this finding holds true for wildlife products, is the basis of this study. Modeling all relevant factors that could influence the decision-making process of offenders is critical to understanding how the wildlife trade operates, and to inform preventive policies.

The contributions of this paper are twofold. First, this is the only wildlife crime study that operationalizes all CRAAVED components while utilizing sophisticated multivariate models and controlling for phylogeny. Previous conservation studies have either operationalized all CRAAVED components, but were limited to univariate analyses (Pires and Clarke, 2011, 2012; Petrossian and Clarke, 2014; Petrossian et al., 2015) or ran multivariate models without operationalizing all components (Tella and Hiraldo, 2014). Second, Indonesia is home to the largest number of parrot species—roughly a quarter of all Psittaciformes—and the largest number of genera of any nation (Olah et al., 2018). As a result, findings from this context are likely to be more generalizable to other Psittaciformes found elsewhere, especially considering findings from this study have been partially corroborated previously in Mexico, Peru, and Bolivia. Altogether, accumulating knowledge based on a collection of nation-based studies is a suitable method to generalize factors that drive the illegal parrot trade more globally.

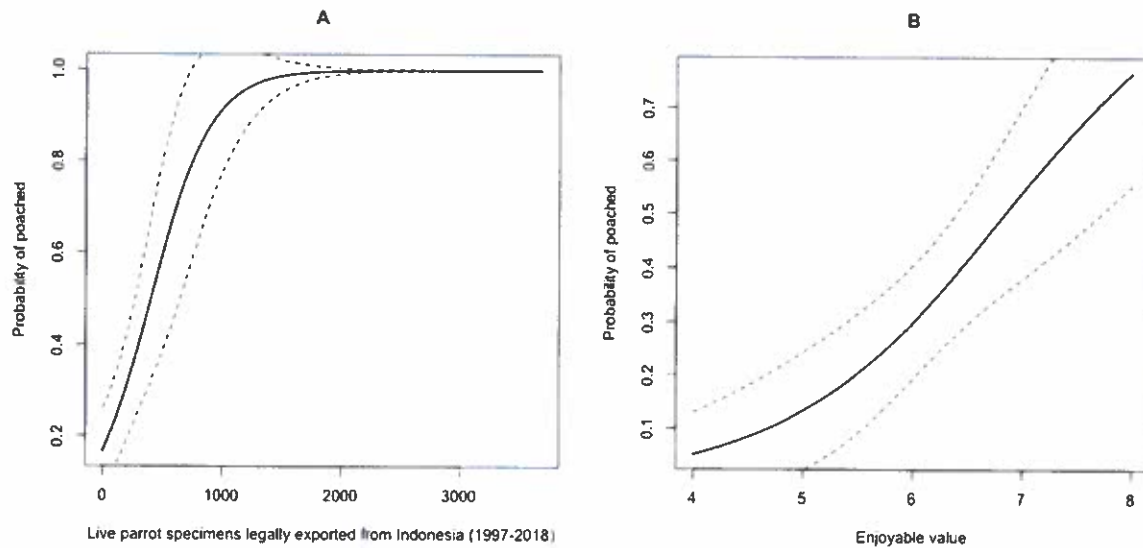
As a result of operationalizing all components of CRAAVED and using multivariate models, it is not surprising that our study draws

**Table 2**

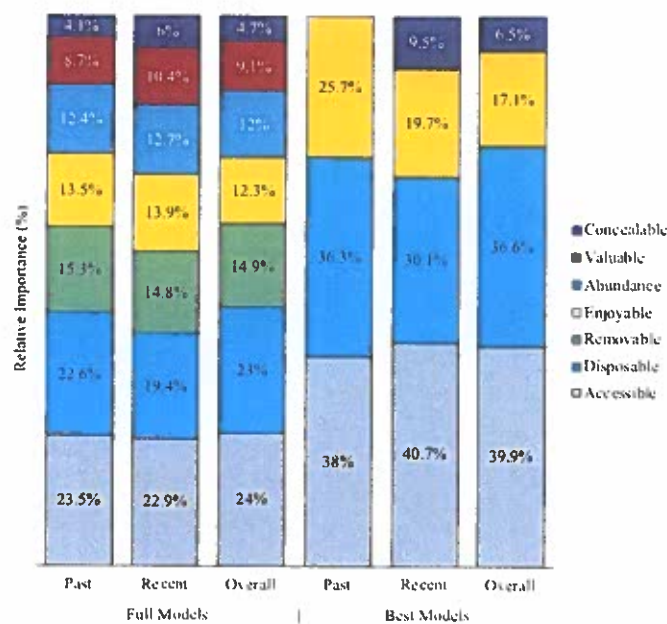
Best models explaining the likelihood of Indonesian parrot species being traded in different time-periods: past (1997–2005), recent (2012–2018), and overall (1997–2018). Presented are results from the best models (selected based on AIC) evaluating the importance of each CRAAVED variable: the Wald statistic and chi-square  $P$  values ( $P_{GLM}$ ) from logistic regression (GLM) models;  $P$  values ( $P_{PGLS}$ ), estimates, and lambda ( $\lambda$ ) values from phylogenetic generalized least squares (PGLS) regression models with corresponding standard deviation values (SD); and mean decrease in Gini and relative importance of each variable from random forest machine learning (RFML) models.  $P$  values lower than 5% are presented in bold.

Time-period	Variable	Wald test	$P_{GLM}$	$P_{PGLS}$ (SD)	PGLS Estimate (SD)	$\lambda$ (SD)	Gini	Relative Importance
Past	Accessible	1.71	0.088	0.213 (0.045)	0.002 (0)	0.127 (0.058)	10.4	38%
	Enjoyable	2.24	0.025	0.026 (0.005)	0.147 (0.002)		4.9	25.7%
	Disposable	3.67	<0.001	0.002 (0)	0.009 (0)		14.9	36.3%
	Concealable	2.05	0.04	0.927 (0.061)	0.003 (0.015)		2.8	9.5%
Recent	Accessible	1.88	0.06	0.218 (0.026)	0.002 (0)	0.360 (0.041)	11.2	40.7%
	Enjoyable	2.24	0.025	0.013 (0.002)	0.152 (0.004)		4.6	19.7%
	Disposable	3.44	0.001	0.001 (0)	0.016 (0)		13	30.1%
	Concealable	1.83	0.067	0.752 (0.112)	-0.04 (0.021)		1.3	6.5%
Overall	Accessible	1.86	0.062	0.292 (0.037)	0.002 (0)	0.414 (0.083)	13.1	39.9%
	Enjoyable	1.76	0.078	0.065 (0.012)	0.133 (0.005)		4.6	17.1%
	Disposable	3.75	<0.001	0.009 (0.004)	0.008 (0)		19.1	36.6%





**Fig. 3.** Predicted effects of (A) *disposable* and (B) *enjoyable* components of the CRAAVED model on the probabilities of Indonesian parrot species being traded in the overall analysis. Continuous lines are predicted values, and dashed lines represent 95% CI upper/lower bounds.



**Fig. 4.** Relative importance of CRAAVED components in explaining the variance of parrot species traded in Indonesia by the random forest machine learning (RFML) models in past (1997–2005), recent (2012–2018), and overall (1997–2018) time-periods. Results from full and best models (based on AIC values) are presented.

different conclusions to those of previous studies. Our results reveal that both demand-side and opportunity-based factors can explain variation in trade in Indonesian parrots with approximately 20% of the variance explained in all models. While this variance statistic may seem low, it is consistent with explanatory power results published in criminology outlets (Weisburd and Piquero, 2008). More specifically, our regression models found the most *disposable* and *enjoyable* species were significantly more likely to be traded while controlling for all other potential explanations and the phylogenetic relationships of the birds (Table 2, Fig. 3). In addition, using a random forest model, the results suggest the relative importance of *accessibility*—an opportunity-based factor (Table 1)—is greater in explaining trading variation than the other

components in all models (Table 2, Fig. 4), with *disposability* also highly supported by this model.

#### 4.1. Demand-side factors

The finding that demand-side factors—*enjoyability* and *disposability*—were found to be significant suggests that people are targeting attractive species that are easier to sell in licit markets, partially supporting Tella and Hiraldo (2014). The most attractive species in Indonesia, according to our *enjoyable* metrics, were the Chattering Lory *Lorius garrulus*, Eclectus Parrot *Eclectus roratus*, and Salmon-crested Cockatoo *Cacatua moluccensis*. All three were traded in multiple provinces indicating their popularity in the trade over time. Conversely, only four of 20 species scoring the lowest on our *enjoyable* metric were traded. Related, the most *disposable* species (exported from Indonesia) were significantly more likely to be traded in Indonesia in all three models. This suggests that there is a cross-cultural preference for particular parrot species, especially ones that have been historically overexploited (Tella and Hiraldo, 2014). Similar findings have been shown for boid snakes (Frynta et al., 2011). Separately, our analysis of live psittacines exported from Indonesia between 1997 and 2018 showed a substantial decline since 2006 (mean = 1640/y) as compared to pre-2006 (mean = 6271/y), which may be due to the 2007 EU ban on imports of wild-caught birds (Reino et al., 2017).

At the international level, only four Indonesian parrot species are listed on CITES Appendix I and the remaining species are on Appendix II (Fig. 2). These four species only represent 13% of all parrot species reported from trade in this study. Many CITES Appendix II parrot species regularly appear in recent confiscation datasets and often in large quantities (Fig. 2B). For example, the Chattering Lory is one of the most traded parrots in Indonesia (Fig. 2) and it is listed as Vulnerable by IUCN with the justification that “this species is undergoing a rapid population decline that is projected to continue as a direct result of habitat loss and human exploitation for the cagebird trade” (BirdLife International, 2017). However, the species is listed under CITES Appendix II only, even though it falls into the criterion C of CITES Appendix I with “a marked decline in the population size in the wild, which has been observed as ongoing or as having occurred in the past” (www.cites.org). Indeed, the Chattering Lory was reportedly overharvested in rural areas (Tamalene et al., 2019), sold in the close locality, and was registered as the most kept pet species in North Maluku (Rosyadi et al., 2015). An urgent re-evaluation is required of the 27 parrot species traded in Indonesia that

are currently listed under Appendix II of CITES.

Incidentally, the significant overlap between the domestic and international trade of certain Indonesian parrot species also suggests the possibility that a high number of wild-caught birds in Indonesia are purposefully mislabeled as 'captive-bred' in order to be legally exported. Recently, many parrots of Indonesian origin (including Sulphur-crested Cockatoo *Cacatua galerita*, Palm Cockatoo *Probosciger aterrimus*, Eclectus Parrot, Pesquet's Parrot *Psittichas fulgidus*, Red-and-blue Lory *Eos histrio*, Rainbow Lorikeet *Trichoglossus haematodus*, Black-capped Lory *Lorius lory*) were confiscated in the Philippines and repatriated in Indonesia, including the Maluku and Papua regions (D.N. and D.A. unpublished data, 2020). Two studies have also shown a substantial number of wild-caught reptiles from Indonesia are 'laundered' via breeding facilities for the legal international trade (Nijman and Shepherd, 2009; Lyons and Natusch, 2011). In total, 420 parrots confiscated by the Regional Police of East Java—data first used in this study—were for the purpose of wild bird laundering for international trade. In this case, the owner of these parrots was unable to prove that the traded birds were captive bred, nor could they show pedigree data for the breeding facility either (District Court of Jember, Indonesia, 2019). Auditing of captive bred parrot facilities in Indonesia should follow to prevent laundering of wild-caught birds.

#### 4.2. Opportunity-based factors

With respect to the opportunity-based components of the CRAAVED model (Table 1), only *accessibility* appears likely to be an important predictor based on the consistent results of the random forest models (Fig. 4). Prior studies in Mexico, Bolivia (Pires and Clarke, 2011, 2012), and Peru (Pires, 2015) found that *accessibility* was one of the leading factors explaining trade variation. Species that are disproportionately targeted are often the ones closer to more humans and open-air illicit markets. This consistent finding across nations and regions suggests that illicit removal of parrots from the wild is partly an opportunistic crime. This idea that crime is an opportunistic activity is long-standing in the discipline of criminology. Both routine activity (Cohen and Felson, 1979) and rational choice theories (Cornish and Clarke, 1986) posit that crime is a function of suitable opportunity structures. That is, crimes that are easier and less risky to commit will be committed more often, especially in certain places and times. As it relates to the parrot trade, these birds nest in predictable areas and often in specific trees, generally during the same time of year, every year. Predictable behavior and proximity to offenders make foraging for parrots and their nests relatively easy (Pires and Clarke, 2011).

Nevertheless, many opportunistic factors that were previously significantly related to trade variation were found to be unrelated in the present study. *Abundance*, or the number of estimated wild parrots, was not significantly related to the probability of being traded in Indonesia. This result could be due to the nature of our binary outcome measure or because abundance was correlated with other components (Appendix A.2). Our study also showed no significant effect of *removability* from the wild, which is supported by three previous studies (Pires and Clarke, 2011; Pires, 2015; Tella and Hiraldo, 2014). This may be because there was little variability in how parrots nested in Indonesia as in many cases they are captured on roosting trees using glue (Jepson et al., 2001).

The extent that species were *concealable* (i.e. non-protected) was also found to be unrelated to the probability of being traded, and consistently showed up as the least informative component in the random forest models (Fig. 4). This indicates that Indonesian market sellers are not fearful of law enforcement encounters and their outcomes if protected species are no less likely to appear in wildlife markets compared to non-protected species. Finally, *value* was not statistically related to being traded. This may be a result of using a proxy for monetary value (IUCN RedList status) because a limitation in the data was the absence of market prices for 83 of the 89 Indonesian parrot species.

The finding that both demand and opportunity-based factors can

explain variation in parrot trade is supported by studies of other taxa. With respect to illegal, unreported, and unregulated (IUU) fishing, CRAAVED research has shown both demand and opportunity-based factors influence target choices. Petrossian and Clarke's, 2014 analysis of fish caught illegally for commercial purposes fish found that all CRAAVED components were significantly predictive of illegal fishing. In addition, Petrossian et al. (2015) found illegally caught crabs and lobsters were significantly associated with *abundant*, *valuable*, and *enjoyable* measures. Altogether, these findings indicate that the decision-making process of wildlife offenders is influenced by the ease of capturing targeted species as well as their perceived value and desirability.

#### 4.3. Conservation and policy implications

During the period of this study, 19% of the parrot species appearing in our trade database were protected by national law, hence their trade was considered to be illegal. Although many parrot species were not protected during this period (1997–2018), our results hold important implications for their conservation especially now, that new national legislation protects all 89 native parrot species (Republic of Indonesia, 2018). In addition to protecting a greater number of species, two main strategies should be implemented to reduce the illegal trade of parrots in Indonesia.

First, interventions should focus on the species that are commonly targeted for the trade, including non-threatened species that score high on *enjoyability*, *disposability*, and *accessibility*. While such species are typically not prioritized for protection, they are at potentially greater risk of becoming threatened given their existing numbers in the trade and propensity to be targeted. For example, the Eclectus Parrot is of Least Concern (IUCN, 2019), but scored highest on *enjoyability*, is frequently exported to other countries, has a range that overlaps a population of over 7.1 million people, and was found traded in 5 of the 6 provinces in our dataset. Strategies to reduce the trade of such species could take the form of nest protection, educational awareness campaigns targeting children and consumers, and using the power of media (e.g. films) in science communication (Fernandez-Bellon and Kane, 2020). Such strategies should be evidence-based and micro-target known hot spots and potentially even 'hot times' when nest poaching is likely to occur for particular species (Pires et al., 2016).

Second, place-specific illicit markets have been found to facilitate theft, and thus increase crime, by allowing illicitly obtained products to be quickly and easily exchanged for cash (Eck, 2005). Eliminating open-air illicit wildlife markets can theoretically reduce illicit removal of wildlife as offenders would be unable to dispose of parrots as easily. Some displacement to online or non-public markets could be expected if open-air markets were shut down, but a net reduction in crime should follow (Pires and Clarke, 2011).

#### 4.4. Conclusion

The wider implications of this study suggest the criminological model CRAAVED, is suitable for analysis of other taxa commonly found in the illicit pet trade. More specifically, a CRAAVED analysis could be applied to lizards, snakes, songbirds, cacti, orchids, primates, tortoises, and turtles, which all exhibit large variation in illicit removal and trafficking among species (see Kurland and Pires, 2017). In doing so, the factors that are driving the illicit trade in pets and plants along with the *modus operandi* of offenders could be better understood across taxonomic groups. For such analyses to be conducted, more data on poaching and trafficking at the local, regional, and national levels needs to be published (e.g. by relevant NGOs), and informed by a variety of data collection methods (i.e. market surveys, offender interviews, seizure data, field observations). Our study provides a robust framework to analyze such wildlife trade data using various methods and timeframes.



## Declaration of competing interest

The author(s) declare that they have no competing interests. This manuscript has not been published elsewhere and that it has not been submitted simultaneously for publication elsewhere.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.biocon.2021.109098>.

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**Stephen F. Pires** is an Associate Professor in the Department of Criminology & Criminal Justice at Florida International University in Miami, FL. He studies the illegal wildlife trade with a particular focus on commonly poached species (i.e., hot products), illicit markets, and the organization of the illegal trade, and has co-authored the book, "Wildlife Crime: An Environmental Criminology and Crime Science Perspective" (2018).

**George Olah** studies tropical ecology, conservation genetics, and conservation management. His research mainly focuses on the conservation genetics of wild parrot populations in the context of interacting environmental and anthropogenic threats. At the wider community level, George is a passionate science communicator and wildlife documentary filmmaker.

**Dudi Nandika** is the chairman of the Indonesian Parrot Project (Konservasi Kakatua Indonesia), and he completed the first ever cockatoo census in the extremely remote Masalembu Archipelago in Indonesia. He is the manager of the Parrot Rehabilitation and Release Center in Seram. Dudi is an experienced field researcher of parrot ecology, with a great knowledge of the local parrot species and the trade. He was elected as the coordinator of Indonesian National RedList for parrots in 2018.

**Dwi Agustina** is a qualified biology teacher with a great skill to educate local children and their parents for nature conservation. She is the program coordinator of Konservasi Kakatua Indonesia, developing an ecotourism community project in North Seram since 2017. She also manages their Conservation Awareness and Pride program.

**Robert Heinsohn** is Professor of Conservation Biology at the Fenner School, Australian National University. He has studied the evolutionary biology and conservation status of a variety of vertebrates over the last 30 years, with a special emphasis on endangered parrots. He runs long term field sites in Queensland and Tasmania, and collaborates extensively on international projects in New Guinea and South-east Asia, Africa and South America.



H-5214

Grants by USFWS that directly affect Macaw or other parrot conservation in the world:

CA1725 Grant # F17AP00769 Miskito people of Honduras: Saving themselves, saving their endangered wild macaws. In partnership with Fundación en Ciencia para el Estudio y Conservación de la Biodiversidad. The purpose of this project is to improve wildlife security in the Moskitia, Honduras by strengthening conservation capacity of governmental entities, indigenous communities, and other key stakeholders to reduce the illegal killing and trafficking of parrots. The project is intended to conserve the two most endangered parrots in Honduras, the Central American scarlet macaw and the great green macaw, by addressing the impact of illegal wildlife trade. Specific activities include: (1) publishing a National Parrot Conservation Protocol and conducting workshops and trainings to authorities on how to confiscate, care for, and liberate parrots caught in illegal trade; (2) supporting an indigenous ranger patrol system to monitor and protect wild nest sites of macaws; (3) carrying out a public campaign to grow support for the species among local indigenous communities, deter illegal trade centered in semi-urban areas, and raise national awareness of the impact and consequences of illegal wildlife trafficking; and (4) performing population monitoring at key point count locations at the end of the breeding season. USFWS: \$98,651 Leveraged Funds: \$72,351

GUATEMALA CA1703 Grant # F17AP00771 Strengthening multi-sectoral alliances, binational collaboration, and rural livelihoods in the Adjacency Zone to conserve the Chiquibul-Maya Mountains Biosphere Reserve. In partnership with Asociación Balam. The purpose of this project is to reduce agricultural encroachment on broadleaf and coniferous forests of the Chiquibul-Maya Mountains landscape by consolidating strategic alliances, improving rural livelihoods of communities in critical conservation areas, and strengthening public and private participation through the Inter-sectoral Roundtable for Land and the Environment for Southern Petén. The project is intended to conserve part of Central America's largest intact blocks of tropical forest that harbor emblematic species such as jaguars, scarlet macaws, and Baird's tapirs. Specific activities include: (1) ground monitoring and patrolling for wildlife trafficking and illegal forest clearing for agriculture; (2) developing and training appropriate protocols for patrols and law enforcement actions to prevent conflict; (3) holding coordination meetings between Guatemalan and Belizean authorities to improve application of the law and disruption of organized crime networks operating in and across the Adjacency Zone; (4) expanding sustainable livelihood and agroforestry projects for hotspot border communities and governance platforms to ensure their long-term management; and (5) conducting a social, economic, and environmental evaluation to measure the project's impacts on reducing forest loss, strengthening governance, and improving human well-being in the region. USFWS: \$49,313 Leveraged Funds: \$21,846

HONDURAS CA1711 Grant # F17AP00847 Strengthening conservation management of the Río Plátano Biosphere Reserve. In partnership with Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida. The purpose of this project is to strengthen park management in the Río Plátano Biosphere Reserve of Honduras by supporting park guards from the national wildlife authority. This protected area, a World Heritage Site in Danger, has long suffered from instability and incursions for illegal natural resource and wildlife use. The project is intended to conserve a highly diverse array of distinct ecosystems and key species such as jaguars, Baird's tapirs, giant anteaters, West Indian manatees, macaws, and harpy eagles by reducing threats from poaching, wildlife trafficking, and habitat destruction. Specific activities include: (1) recruitment

and training of additional park rangers in operations, law enforcement monitoring tools, and forest fire management and control; (2) education and outreach activities with local communities; and (3) biological monitoring of key landscape species. USFWS: \$90,000 Leveraged Funds: \$20,000

EAI404 Grant #F14AP00800 Addressing the illegal trade of threatened species of parrots in Paraguay. In partnership with Guyra Paraguay, this project will increase effective conservation of globally threatened parrots by reducing the threat of illegal trade, and raising public awareness regarding their conservation needs. Specific activities include: (1) determining the volume, economics and geographic scale of trade in the target species and other threatened wildlife; (2) building the capacity of law enforcement agents and strengthening existing enforcement measures; and (3) developing and implementing outreach and education programs to discourage both demand and trade. FWS: \$24,399 Leveraged Funds: \$125,435

Amendments to existing projects MULTIPLE COUNTRIES – BELIZE, COSTA RICA, GUATEMALA, HONDURAS, NICARAGUA, AND PANAMA LAC1543 Grant # F15AC00990 Five-year cooperative agreement for the conservation of Mesoamerica's last wild places. In partnership with the Wildlife Conservation Society. The purpose of this project is to secure the protection of Mesoamerica's five largest wild places by 2020, including viable populations of wide-ranging species such as the jaguar, Baird's tapir, white-lipped peccary, and macaws. Through a five-year cooperative agreement, project activities will reduce threats to the Maya Forest, Moskitia, Indio-Maiz-Tortugero, La Amistad, and Darien Gap to ensure regional connectivity and protection of the core wildlife strongholds within the Mesoamerican Biological Corridor. Key objectives of this project relate to the development of a coordinated approach to conservation amongst Mesoamerican partners, elaborating a regional conservation vision, strengthening the management and protection of core sites, and building the capacity of relevant local stakeholders. Specific activities planned for the third year of implementation include: (1) designing a report card system on the state of Mesoamerica's five largest forests and their wildlife; (2) providing regional support for implementation of the Spatial Monitoring and Reporting Tool (SMART); (3) consolidation and sustainable funding for jaguar-friendly ranch management techniques in the Maya Biosphere Reserve Buffer Zone and beyond; and (4) increasing law enforcement and monitoring capacity in the Moskitia of Honduras and Nicaragua. USFWS: \$124,980 Leveraged Funds: \$53,898

#### ESA LISTED PARROTS

Red Necked Parrot

### » Conservation Plans

No conservation plans have been created for Red-Necked parrot.

More Popular St. Vincent's Amazon

# ECOS Environmental Conservation Online System

*Conserving the Nature of America*

1. [ECOS](#) Species Profile for St Vincent parrot (*Amazona guildingii*)

[Search for images on  
digitalmedia.fws.gov](#)

## St Vincent parrot (*Amazona guildingii*)

[Range Information](#) | [Federal Register](#) | [Recovery](#) | [Critical  
Habitat](#) | [Conservation Plans](#) | [Petitions](#) | [Life History](#)

Taxonomy: [View taxonomy in ITIS](#)

**Listing Status: Endangered**

**Where Listed: **WHEREVER FOUND****

### General Information

No description available.

### **Current Listing Status Summary**

**Status**

**Date Listed**

**Lead Region**

**Where Listed**

**Endangered**

06/02/1970

Foreign (Headquarters)

Wherever found

- **Wherever found**  
**Listing status: Endangered**
  - **Countries** in which this population is known to occur:  
Saint Vincent and the Grenadines

## » Federal Register Documents

### Federal Register Documents

Show 102550100 entries

**Date**

**Citation Page**

**Title**

06/02/1970

35 FR 8491 8498

[Part 17 - Conservation of Endangered Species and Other Fish or Wildlife \(First List of Endangered Foreign Fish and Wildlife as Appendix A\)](#)

04/14/1970

35 FR 6069

[Notice of Proposed Rulemaking \(Endangered Species Conservation\): 35 FR 6069](#)

Showing 1 to 2 of 2 entries

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[Previous](#)

[1](#)

[Next](#)

## » Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

No recovery information is available for the St Vincent parrot.

## » Critical Habitat

No critical habitat rules have been published for the St Vincent parrot.

#### » Conservation Plans

No conservation plans have been created for St Vincent parrot.

#### » Petitions

No petitions have been received for this species.

#### » Life History

No Life History information has been entered into this system for this species.

#### » Other Resources

NatureServe Explorer Species Reports -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

ITIS Reports -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

FWS Digital Media Library -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publica

No grants from Wildlife Without Borders were given to parrot conservation whatsoever in 2014.

BOLIVIA Applying animal health and genetic tools to maximize survival of wild blue-throated macaw populations in the savannas of Moxos (Beni, Bolivia). EA-0401 Wildlife Conservation

Society Grant# F12AP00958 FWS: \$24,948 Leveraged funds: \$24,949 Location: Beni, Bolivia  
This project will support conservation efforts for the blue-throated macaw (*Ara glaucogularis*) in Beni, Bolivia, by identifying and reducing health risks. Specific activities include: surveillance of pathogens in domestic poultry and four areas within the species' range; genetic analysis to identify relationships between fitness, chick mortality and malformations, and adult reproductive success; improving poultry husbandry and health care on ranches within the species range; and overseeing government and veterinary school outreach to train staff and promote collaboration in the effort to improve husbandry practice.

This is the only money seen for the Blue Throated Macaw Conservation despite being on the ESA and affecting breeding...

No parrots given grant in 2012.

(2010)Mexico EA-0156: Specific Actions for the Protection, Conservation, and Recovery of Endangered Parrots in the State of Colima, Mexico. In partnership with Entorno Biotico, A.C. This grant will promote alternative ways to conserve highly endangered Psittacidae birds (parrots) in western Mexico through ecotourism and environmental education. FWS: \$18,270.00 Leveraged Funds: \$19,795.00

<b>Critically Endangered Animal Conservation Funding 2015</b>	
<b>Total Number of Grants Awarded</b>	<b>14</b>
<b>Total Funds Distributed Through Grants</b>	<b>\$376,169</b>
<b>Total Partner Contributions Leveraged by Grants</b>	<b>\$931,042</b>
<b>*Funding for this program is no longer available*</b>	

“The Importance of Parrots”  
American Federation of Aviculture Convention 2016—Connecticut  
August 4-6, 2016.

By Debbie Goodrich, CPBC IAABC  
BA Psychobiology, UCSC  
Owner, Parrot Ambassadors  
[www.parrotambassadors.com](http://www.parrotambassadors.com)

Why are parrots important? According to Merriam-Webster, “important” means “serious meaning or worth or deserving of serious attention”. Parrots, as an entire Order, deserve this attention for many reasons: their order is the hardest hit order of birds in the world; their decline is primarily due to human activities; they have survived for millions of years despite vast climate change; they are the third most owned pet in the United States; they are extremely intelligent and we are facing losing them as the ambassadors they should be. Parrots consorting with humans in any fashion is under serious attack from Animal Rights groups who are backed with lawyers and legislators without viewing a parrots’ entire story. This has caused vast disparity in our community. Given what is going on in the environment, we can no longer engage in disparity and instead need to use the parrots we have to address sustainability at all levels. Parrots can save us all, if we choose to make them important.

Historically, all birds have been saving us all for quite some time. It has been proven birds are far superior at detecting environmental issues before we are aware of them ourselves (Mitchell 2014). Take DDT, PCB’s, Teflon, and hormone disruption as examples. Birds gives humans the unsurpassed ability to identify and quantify chemical threats across time and space around the globe (Mitchell 2014). Despite this amazing synergy we have discovered for our own health and protection, we continue to ignore the blaring message of birds to humans: human activity is destroying them, not a natural cycle of the planet. Since the year 1500, we have lost over 150 bird species according to BirdLife International. Nearly all the cases are catastrophic devastation of lands birds need to survive. Nobel Peace Prize Earner for his work in Physiology, Immunology and Microbiology, Peter Doherty, best described the exact connection we must identify with in the title of his book, “Their Fate is Our Fate: How Birds Foretell Threats to our Health and our World.” (Doherty 2013)

“Parrots as a whole face a higher rate of extinction than any other comparable bird group. Indeed, 56% of all parrot species are in decline,” said Dr. Stuart Buchart, Head of Science at BirdLife International (Parnell 2016). According to many statistical, scientific programs studying the decline of Psittaciformes, or the Order Parrot, the number one reason the order continues to decline is humans living near them. In order of significance, their demise is due to agriculture, habitat destruction (exotic woods, mining and the like), hunting (food, feathers, etc), invasive species introduced by us, and finally the pet trade (Olah et al. 2016). Humans’ inexhaustible needs for resources will continue their demise well beyond pet ownership which is why parrots require far more importance and priority in our everyday lives.



After all, parrots, as well as all modern birds, have been around far longer than humans. According to David Watterhouse (2006), modern parrots evolved in the Australasia area around 26 million years ago with the Cockatoo family being the oldest (see also Encyclopedia Britannica, "Psittaciformes"). The physiological success of the parrot form —zygodactyl feet, articulating jaw, curved beak, prehensile tongue, remaining relatively unchanged (Foreshaw 2010). Ice core data reveals that ancient global temperatures shifted 10 degrees or more (GERG 2015). This is of notable importance because it clearly shows a parrots' ability to adapt to massive climate changes far larger than the imminent one facing modern history. A threat humanity holds high importance to. The true threat to humanity, however, is our extreme overuse of resources and pollutants. Parrot declination is inextricably connected to this overuse. If they cannot adapt to it and they have adapted to far worse threats, what does it say about our future survival?

Often, the natural cycle of global climate temperatures is cited to void people of the responsibility to become sustainable or that we have negative impact on the environment. Parrots tell another story that we do. Written History of Man has yet to experience a serious global temperature shift that parrots have experienced over millions of years. Our current shifts of 1-2 degrees in the past 20,000 years have been unusually moderate vs. the entire global history (GERG 2015). Humans have little evolutionary experience to a planet with previously vast temperature changes evolving only some 200,000 years ago (Trinkaus 2005).

That is why parrots must be at the forefront to our first world leaders in addressing the changes humans need to make to survive in the long run. Deeply rooted economic systems, belief systems and dependence on convenience drive people not to change. This lack of desire of first world countries to address and practice sustainability is destroying all environments intra-personally and internationally. Parrots are the ultimate ambassador to bring to light what we are doing and present them in a way that can be palatable due to their beauty, charm and mannerisms.

*"Nevertheless, they remain amongst the most popular and best-loved of all bird families, and it is hard to reconcile the enormous economic and social contributions they make to human society with the fact that we continue to know so little about them." —Nigel Collar, Birdlife International.*

In addition to charm and mannerisms, parrot distribution is worldwide, so nearly every human civilisation have the ability to establish direct connection. Essentially, where parrots are, people end up unlike other charismatic conservation animals such as tigers, elephants or polar bears. Parrot and people cohabitation heavily exists, yet we know little about parrots' needs. Currently, 393 species with 92 genera of parrots live on our planet ("Parrot" wikipedia). Parrots occupy 5 of the 7 continents of the world as a singular order. Fossil parrots were even found in England, the order has been so widespread (Dyke 2000). Despite the possibility of cohesion of two orders worldwide, we are seeing parrots declining and people increasing. Two whole continents that had parrots have now lost them. The European parrots disappeared before human encroachment whereas North America lost our last endemic species only 20 years ago.

Our first endemic parrot species loss was the Carolina Conure 100 years ago. Solely due to human-related activity and not a natural cycle. They were shot and destroyed for feathers throughout the Eastern Seaboard of the United States. James Audubon himself stated in his book, "Birds of America", "Parakeets are destroyed in great numbers, for whilst busily engaged in plucking off the fruits or tearing the grain from the stacks, the husbandman approaches them with perfect ease, and commits great slaughter among them."—Plate 26. From millions of birds to extinction in 200 years post colonisation. They were not taken into captivity for pets until it was far too late to save them from their fate.

The Thick Bill Parrot was a second endemic species of the United States. Unlike the Carolina Conure, this species continues breeding successfully in captivity. Wild populations continue south of our jurisdiction in Northern Mexico's Sierra Madre Occidental. The primary threat for the Thick Bill parrots remains destruction of their resources despite calls for their conservation. The primary issue—cattle grazing and shooting. The last known flocks of American Thickbills left the United States in the 1990s (BirdLife International, Thick Billed Parrot).

The last endemic, American Parrot is the Puerto Rican Parrot. This bird, out of the three, was the only one truly threatened by poaching for pets which fragmented their population (BirdLife International, Puerto Rican Parrot). When poaching became under control, we continued to wipe them out with settlements that pushed the population into areas exposed to hurricanes that nearly caused their extinction. It has been the ability of people that have saved this bird from total destruction. The recovering population of Puerto Rican Parrots began with only 13 individuals. Now nearly 400 animals are reported between wild and captive animals. This is important because people can save parrots, if they only try.

There are numerous cases of parrot species recovering or have recovered from our mistakes of the past—The Golden Conure, the Yellow Eared Parrot, the Cape Parrot, to name a few. Nearly all the currently successful parrot conservation programs involve the local community investment and protection. Parrots are an amazing animal who's intelligence, sentience, charm and more enjoins the typical differences we find in human culture, religion or ethnicity. Nearly all who experience a parrot, care about a parrot.

Where we divide is how. The idea of parrots as pets only became popular during the time of Alexander the Great who introduced them to Europe in 327 BC (Page 1868). Often, owning parrots as pets has been cited as their only form of significant demise (See Parrots Confidential, HSUS website, PETA website and more). It is the ownership of parrots that creates the strongest, most dedicated advocates for their care to the point of the advocacy taking over their lives.

A great example of this dedicated advocacy is the work Dr. Patricia K. Anderson who has devoted years of study on the Human-Avian bond alone. Studies in Anthrozoology, Ethology, Behaviorology, Psychology, Psychiatry have all clearly shown that humans need connection to nature for psychological well being. The primary conduit to develop

that connection has been the presence and understanding of animals (see Human-Animal Bond Research in Google Scholar). Yet, animal rights leaders such as HSUS' Director of Marine Mammals Dr. Naomi Rose, state that videos and museums alone are enough for people to bond to or advocate for animals in the future. This clearly defies thousands of proven, peer reviewed journals stating the importance of animal bonds and building empathy (studies in empathy/animals in Google Scholar). Much less the very definition of Reciprocal Altruism— for a being to expend the highest energetic cost towards acts of helping others, the being must first experience them (Trivers 1985).

The majority of the relationships we build with animals come from animals we experience in captivity. We often embrace common needs for ourselves and the animals in our care. We find out what kind of people we are through the mannerisms of animals who do not have perceptions blocked by labels, biases, and intellect. Therefore, it is not at all surprising to read the recent New York Times Article, "What Does a Parrot Know about PTSD" by Charles Siebert January 2016. Varying parrot personalities picked similar personalities in humans to interact with. Matt Simmons, a veteran benefitting from parrot therapy at Serenity Park said:

*"So in order to have a relationship with a parrot, that parrot has to select me. In order for that to happen, that parrot has to be comfortable. I have to come in open and quiet and calm."*

Parrots are able to detect emotional episodes mounting and abate them; able to detect oncoming epileptic episodes and alert their owners; able to subdue emotional outbursts; able to fetch things and return things; able to manipulate or open things for us. Yet, they are not considered service animals nor are recognised by the American Disabilities Association. Imagine being able to have the same service animal for a person's entire life. Despite recent articles of parrots becoming Emotional Support Animals, credibility for this movement cannot move forward without organisation or possible licensing. A parrots' ability to do things things for humanity like this needs recognition. This helps us advocate why parrots are important for people.

Parrots are important as pets because they can prevent people from falsely believing they can do nothing in regards to changing their behavior toward environmental concerns. A common acronym, NIMBY—not in my back yard—describes people who don't care about these concerns. Parrots' charisma, intelligence, exotic nature, similar social structures, beauty, ability to talk, or ability to fly have changed many "NIMBY" minds. To many, they are the embodiment of freedom and beauty in one animal. They well liked by the general public, making them great ambassadors for people to learn from.

People feel deeper connection with something that is firstly so alien and unlike us yet so much like us (Siebert 2016). Parrots have feathers, we do not; they have beaks, we do not; they have flight, we do not; they appear not to age, we do not. The qualities of parrots are qualities we often find lacking in ourselves and desire to have. Parrots

seem to provide a way to see beyond ourselves or further into ourselves to find beauty or freedoms we did not imagine previously without them.

*“The answer seemed to lie precisely in the fact that parrots are alien intelligences: parallel, analogously wounded minds that know and feel pain deeply and yet at a level liberatingly beyond the prescriptive confines of human language and prejudices.”—Matt Simmons, NY Times Magazine.*

It's no wonder parrots have this amazing capacity to connect to our own complicated thought processes, for they, too, possess a brain capable of doing so. For 100 years, bird brains were thought to be primitive and unable to possess intelligence. That changed in 2004 when the work of Dr. Erich Jarvis, Professor of Neurobiology at Duke Institute for Brain Science and Howard Hughes Medical Institute investigator, argued that the avian brain has cortical-like areas and other forebrain regions similar to mammals but organised differently called the pallium (Neuroscience News 2013). This discovery critically changes all notions of the origins of intelligence as a whole. Studies in brain sciences appear to find any way to show human brains are superior to all other brains. Yet, animals continue to prove human theories wrong. First, it was the size of the brain—whales have bigger ones. Then it was the brain to body size ratio Gorillas are superior. Then, it was encephalisation quotient. Now, in light of the recent studies in avian intelligence, it's neuron density (Oklowicz et al. 2016).

*“...brains of songbirds and parrots contain very large numbers of neurons, at neuronal densities considerably exceeding those found in mammals... Avian brains thus have the potential to provide much higher “cognitive power” per unit mass than do mammalian brains.”—Oklowicz et al, 2016.*

What is even more astounding is the work of Chakraborty et al, 2015's discovery that parrots, of all birds, have a brain structure that is unique. Not only do they have the high density sets of neurons in their pallium that rivals mammals like other birds, but they equally demonstrate a “song within a song system” of neural densities that is unique to the order. This suggests even further differences in cognitive abilities found in parrots that occur nowhere else.

*“However, it will be argued that certain aspects of corvid and parrot socioecology, neurobiology and life history, such as sociality, large relative forebrain size, and long developmental period, are pre-requisites for intelligence in birds, as they appear to be in primates.” (Emery 2006)*

Cognitive tasks were never previously accepted as possible in birds: seeing optical illusions, forming concepts, understanding the mental state of another individual, using and manufacturing tools, and communicating specific meanings to achieve specific goals (Kaplan and Rogers 2005). Abilities such as: episodic memory and theory of mind, the ability to attribute mental states, like intention, desire and awareness, to yourself and to others where thought to be exclusively human (Siebert 2016). The

significance of intelligence of these studies fundamentally cause people to care that much more about them.

The issue about the intelligence and comparisons to human similarities often runs into the problem of being anthropomorphic or attributing human traits to animals. Anthropomorphism derives negative review in scientific circles despite the need for humans to convey messages to other humans using labelling systems. Using anthropomorphic terminology is often hotly debated as to its effectiveness in communicating thought processes and behavior observed in animals to other humans. Developing unnatural labelling systems that are not accurate toward an animal's intentions or behavior is equally problematic. That is why the work of Dr. Susan Friedman, PhD and others about the science of behavior, Applied Behavior Analysis, is so critical. The science helps us break down behavior into fundamental units which equally prevents assigning feeling towards each other that may not be there. ([www.behaviorworks.org](http://www.behaviorworks.org)).

The functions of behavior we observe in parrots, despite their alienness of scales and feathers, mirror so many of our own. From using their feet to eat with to their tongue acting as a finger for prehensile manipulation (Forshaw 2010). Vast-bipedalism, social complexity, verbal complexity, potty training, first words and similar developmental pathways compete for accurate behavior responses from us as caretakers (Anderson 2014). The issue is that a parrot is not a human, it is a parrot. The way the parrot perceives the world is often not the way we may imagine it. After all, they are prey, we are predators, they can see in the UV spectrum, we cannot, they can fly, we cannot, they have independently moving mandibles, we do not and more.

This lack of appropriate behavior response to parrots created unhealthy relationships with parrots during the heyday of importation (1970-1990). We created co-dependent vs. independent animals that are unable to cope with change. Sally Blanchard became famous for her term, "Bappy" or baby bird which is seldom used today (Blanchard, 1999). We were told to hand raise babies away from their parents. Told to hand-feed the baby to bond only to us. Told bonding to one person was expected. Told never get another parrot or lose the bond. Told we had to spend hours with them and not leave them. We created the co-dependency nightmare we experience today: a world of plucking, screaming, biting parrots in our homes.

It's time we address these issues we created. Firstly, to stop feeling guilty for having a parrot in our lives. We are not bad people unless we do bad things. Abuse is rampant in human society regardless of parrot ownership or not. If anything, we've already seen, parrots help us be more empathetic, not less. In fact, owning a pet has shown to reduce blood pressure, release anxiety, and foster empathy. Being prey species, neophobia, or fear of new things, is high. Given this natural tendency and compound it with our developmental history with parrots, we need to address a parrot's ability to accept changes. For any relationship, the number one "enemy" is time.

More than half of the parrots given up today are due to this idea that "we are not giving

the right amount of time” for our parrots every day. Let’s face it, we don’t even give our children the right amount of time each day. Are we going to give up on them, too? We read very public articles that parrots lead miserable lives when they live with us (Charles Bergman 2013). Movies like *Parrots Confidential* drive further guilt into the consciousness of the public. The voice of reason is often silenced as the ability of decent parrot programs are not “viral” or have high “viewership” which is our modern standard of importance. Either that or are blocked entirely through legislation (Selenky and Bergeson 2003). These wrongful groups continuously symbolise that life in the wild is perfect and life with humans is slavery or cruelty.

Cruelty is evident in the wild. Chicks are found abandoned and dead despite high amounts of resources (Drake 2014). Chicks are thrown out of the nests by other macaws to their death (Bird Talk July 2003). Some starve to death. Some die of dehydration. Some die a slow death from disease and are slowly abandoned by the rest of the flock in the need to reduce attention toward predators (see *Wild Parrots of Telegraph Hill* the movie). The Wild is cruel, hard and testy. The world of captivity can be convenient, easy and wonderful if we work together as the human race to make it so.

When researching numbers of captive parrots online, the search results lead me to anecdotal blogs, animal rights groups like the HSUS, PETA, Born Free, In Defense of Animals, For the Love of Parrots Refuge Society, etc. The only notable source of actual data-driven or empirical evidence I found came from the AVMA (American Veterinary Medicine Association). According to them, we owned pet at 3.6 million parrots (out of 14.3 million birds according to APPA). They used the 2012 US Pet Ownership and Demographics Sourcebook.

Parrots have been traded in greater numbers and for far longer than any other group of wild animals according to the IUCN Status Survey and Conservation Action Plan. Animal Rights groups, who are greatly harming our ability to have parrots as pets, ambassadors, educators, and research corroborators, routinely cite international demand being parrots’ greatest demise. Parrots being bred in the United States and Europe has supplied enough animals that local poachers are selling to local markets instead (Pires 2011).

Rampant poaching of parrots in third world countries continues unabated despite two historic, international bans from the US (1992) and Europe (2010) (Herrera and Hennessy 2007). It is true that the poaching of rarer species significantly dropped since the bans became law. Accessible and abundant parrots vs. rarer or charismatic animals are more susceptible to poaching (Tella et al, 2014). In fact, the current trend in poaching parrots is not international pressures for parrots as pets so much as internal interests (Pires 2012). Cantú et al. (2007) estimated that 65,000–78,500 parrots are poached annually in Mexico, 86–96% of them being sold domestically.

Poaching and local owning of parrot species is thousands of years old dating back to the ancient Aztecs, Romans, Egyptians, and Indians. Many of which poach them for

only parts such as feathers, feet or meat, as is the case commonly for Great Green Macaws to this day. That is why the success of conservation programs must meet the needs of the local community. When conservation groups help local villagers learn and develop strategies that are sustainable, parrots and people both win out. Businesses such as Zeke's Tree ([www.zekestree.com](http://www.zekestree.com)) and other Fair Trade organisations and businesses abound tying connections to the needs of nature and people to survive together. After all, it's not organised crime that are poaching the largest percentage of parrots, it's the local villager (Pires 2011).

Most people lack any knowledge of this this local poaching scheme and the subsequent international decline of rare species trade from the WBCA (Wild Bird Conservation Act). Instead, large populations of people are falsely motivated to protect charismatic species using tools that have no jurisdiction and no ability to protect said species. The United States Endangered Species Act (or ESA) does not have the authority or the jurisdiction to designate critical habitat in foreign countries nor the ability to prevent the jeopardy of the continued existence of endangered and threatened species in foreign lands (FAQ, Parrots USFWS 5-9-14). These are the primary means of conservation protection for any species.

The only current parrot species under the jurisdiction of the ESA is the aforementioned Puerto Rican Parrot. Despite this flawed understanding, charismatic species such as the Scarlet Macaw (*Ara macao*) have recently been discussed for listing in the Federal Register (Federal Register/Vol. 81, No. 67). According to Piers (2011), the Scarlet Macaw is traded less internally than are species like Orange Wing Parakeets. In over 20 states, species listed on the ESA only serves to make that species illegal to own, to trade, to sell or to breed within our jurisdiction. This is despite the observation of scientists that breeding in captivity of charismatic species is continuing to reduce their numbers being poached (Pires 2011). In addition to this atrocity, Scarlet Macaws are not even on the IUCN Redlist of Endangered Species that is often required for being listed on the ESA. This is due to their widespread range and ability to be reintroduced (IUCN Redlist Scarlet Macaw).

The Endangered Species Act (ESA) is an important piece of legislation passed in 1963 by the Nixon administration to help animals facing extinction in the United States. It has helped several critically endangered species rise from the brink of extinction. The success of the program has lead many species to be delisted such as the Bald Eagle, the Grey Wolf, the American Peregrine Falcon, amongst others (see US Fish and Wildlife Delisting report).

Using the USFW and the ESA to resolve poaching related to parrots only removes needed funding from species we do have jurisdiction on. The Center for Biological Diversity (CBD) recently released a lawsuit for the failure of the USFW to provide the programs necessary to protect the remaining 54 Red Wolves in South Carolina. According to CBD, USFW has blatantly violated their own charter. With USFW funds and resources being as limited as they are, the unwarranted parrot listings in the ESA due to their protection by the WBCA, hinders the USFW from doing the right job.



It remains unclear as to the scientific reasoning for the need any exotic bird species being listed on the ESA—the governing body that can only deal with internal trade. The costs for confiscations, legal actions, enforcement and more for the thousands of cases that exist currently due to previous legal ownership is overwhelming. Therefore, it leaves it open to subjective vs objective scrutiny that should not exist if truly our goal is to save Endangered Species.

The true, number one threat to Psittaciformes as an order is agriculture followed closely by deforestation for many reasons (exotic lumber, mining, agriculture), then hunting, introduced species and finally poaching (Olah et al. 2016). It has been shown in study after study that if we have active in-situ conservation, poaching of said species is significantly reduced. According to USFW, their international partner, Wildlife Without Borders (WWB) assists exotic species. This governing body submitted only \$24,000 once to save the extremely charismatic Blue Throated Macaw. The primary US based ongoing support comes from the work of the pet parrot industry. Laney Rickman of The Bird Endowment, a private parrot breeder, World Parrot Trust, chiefly funded by pet parrot owners, and Parrots International, a conservation group created from pet ownership in the US.

Upon investigation of all grants awarded by WWB, only 9 grants in total have been awarded to listed parrot species in all searches. The WWB utilizes a Fund called The Critically Endangered Animals Conservation Fund or CEACF. Species, such as the Scarlet Macaw, were funded despite the fact the IUCN classifying the Scarlet Macaw as Least Concern (see IUCN Redlist, Scarlet Macaw). This belies the tenant of the ESA—which is designed to protect Endangered Species. Species such as the orange bellied grass parakeet (*Neophema chrysogaster*) whose imminent extinction is within 5 years.

Within CEACF's grants, only 7 species of parrots have actually been funded between 2001 to the present. In 2001 and 2002 the Great Green Macaw was the first parrot species to receive any compensation from the ESA-listed status and programming. In total, only \$21,000 in conservation money has been given to this species to date. The other species were the Phillipine Cockatoo, Scarlet Macaws (sharing funding with Sea Turtles), the Ground Parrot, The St. Vincent Amazon, the Puerto Rican Amazon and the Blue Throated Macaw. The ground parrot received funding last in 2014.

Total funding for all parrot species listed under the Endangered Species Act from the US Fish And Wildlife Services official associates was: \$149,089. Divided by the number of parrots listed on the service, the average amount of money given to a listed parrot species is a mere \$6,777 dollars. Then divide that again for 15 years (2001-2016) and we have \$451 for 7 species of endangered parrot for in-situ conservation per year from USFW partners. Yet, their claim is that listing parrots on ESA helps parrots in the wild.

Contrast this to just one US-based NGO, Parrots International. They devote thousands of dollars every year to many in-situ conservation programs. They physically visit the in-situ programs to ensure they are working and helping local communities. They visit in

person with peoples of State and Governace to help them better understand the importance of parrots. All of that work coming from one family's passion for parrots that have them as pets, Mark and Marie Stafford. Yet, on the Federal Register it was found that pet parrots contribute nothing toward saving parrots in the wild. (Federal Register/ Vol. 81, No. 67) This is important to note because pet parrots have done more to save wild parrots than the ESA and its officiant, the USFWS.

Pets are important to people. According to the [2015-2016 APPA National Pet Owners Survey](#), 65% of U.S. households own a pet, which equates to 79.7 millions homes. There is a need and niche for people to feel empathy, love and companionship with beings that desire our care. Parrots, unlike our most common pets, are not bred to accept anyone. Instead, we have to earn their trust to interact with them. They are not fully wild animals as is claimed on many websites just as equally as they are not fully domesticated or "tame" as is claimed yet on other websites. Parrots seem to fall in the crack of not really having a true place to be when it comes to regulation or legislation. Most likely due to the idea that parrots are "HUMANIZED" which means they cannot go back to the wild as they accept humans as a part of their routine and life.

Parrots' importance are not just in the numbers owned by people, but are equally embedded in cultures and religions around the world with nearly all older depictions of parrots being highly elevated above the common man or considered extremely valuable. Parrots have been depicted as messengers of gods, deliverers of good fortune, heroes, protectors of fertility, prophets and even associated with the Virgin Mary and Christ Himself (Hanley 2009). Parrots have been owned by Roman Emperors, Chinese Emperors, Kings, Celebrities and even a President of the United States.

The first mention of parrots in human history hails from India in 1400BC (Juniper pg 36). In fact, India presents many intriguing possibilities about the relationship and subsequent impact between humans and parrots. After all, India retains the highest overall human population in the world with approximately 1.3 billion people. Yet, their native species of parrots, totalling 12 species, are not listed as endangered on the IUCN Redlist. This is despite ongoing trade in the animals, internal ownership and destruction of native areas. Then again, parrots show a resiliency of becoming adept at living in urban areas ([www.cityparrots.com](http://www.cityparrots.com)) amongst people. If the largest population in the world can live with parrots and parrots can live with the largest population in the world, how come they cannot in the rest of the world?

Does religion have something to do with it? In India, the primary religion is Hinduism. Hinduism believes in the spiritual connection between people and animals on this world. That both share a common connection and deserve respect. After all, parrots are adored by the goddess Meenakshi, the goddess of life and beauty, and Andal, the God of love. In Hindu culture, parrots are the deliverers of love, passion and fertility. Parrots are used as vehicles or vahanas to reach mankind on earth with messages of love. Worshippers offer gifts to Meenaski at Madurai in Tamil Nadu where parakeets still fly from open lofts (Krishna 2010).

Ancient China also worshipped parrots and heralded them as tidings of good luck, of fertility, of love and even lust. The Emperor Xuanzong in the Tan Dynasty kept a parrot and it became The Divine Bird. Parrots represented freedom and long life with parallels in life experience that comes with old age. Parrots are seen as wards of fidelity and deep, enduring love. (Hurley, Ancient Chinese Pottery) During the Qing Dynasty, parrots were so revered, the account of "The Precious Scroll of the Parrot" was created (Idema 2002). In Chinese Feng Shui, the decoration of a parrot symbolises a warning to stay faithful in a relationship.

Native Americans worship parrots in the same ways ancient China and India have perceived them—as positive elements for humanity from fertility (Pueblo Tribes) to directional guardian (The Hopi). The Hopi created a parrot Kachina called the Kyash, a divine spirit. Parrots are clan animals for the Hopi, Zuni and Pueblo tribes. Parrots were so important to these ancient tribes, the German explorer Alexander Von Humboldt was able to discover the lost language of the Atures tribe (Boehrer pg.178).

The role of parrots transcended humanity in these cultures yet here we push our own agenda on parrots instead of the reverence of our human ancestry. Many of us in the Modern, Western Era have lost site of the importance of parrots to people. We honestly cannot know what is best for them because we are not them. According to Nigel Collar, the natural history of parrots is poorly known (Collar 1998). How do we know what is best for them if we don't even know what they do in the wild most of the time?

Many reach out in query to do the right thing are met with ferocity of opinion that divides us as a group. Yet, it's parrots who transcended us, who have brought us together here today. Who crossed physical, mental, cultural, spiritual boundaries. We created entire economies and cultures of people who defend parrots, raise parrots, sell parrots, create parrot products, create parrot art, are parrot vets, are parrot sanctuaries, are parrot conservationists.

We have learned through this process that parrots are important. They are older than us, they have survived cataclysmic climate changes, they have been revered, they are important to us as pets, they are important for us to save. It is time for this importance to be known. To meet common ground. To end that which destroys them the most, our differences and inability to decide what to do next to change us all. We love parrots because we experienced them. According to Trivers, to fully invest altruistically toward another being, we must first experience what it's like to be that being. We cannot learn that from a video tape. We can only learn it from the parrots we see, hear, feel and touch both with our minds and our hearts. The importance of parrots is that if we save them, we truly will save ourselves.

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## The Critical Role Parrots Play In Addressing Global Carbon Crisis

By Debbie Goodrich

President, Flight Club Foundation

[www.flightclubfoundation.org](http://www.flightclubfoundation.org)

2nd Place Poster Presentation, IMATA 2022

Parrots have survived nearly 28 million years of natural climate change processes with minimal losses in diversity and no evidence of morphological change (Waterhouse 2006). However, the Order, Psittaciformes, now suffers the largest diversity decline of all bird species since the advent of the industrial revolution (Tabares, et al 2020). This order of animal exemplifies the nature of the climate crisis created by industry we must address—the over-production of carbon dioxide never seen in natural systems previously and destruction of natural carbon sink ability. Continuing utilizing the vernacular climate change in educational settings from zoos to governance has only created conflict in understanding a natural, planetary process vs. the man-made problems that carbon dioxide production does. Utilizing the vernacular "climate change" to now describe the man-made crisis causes confusion offering no measurable means to a solution. This article introduces a measurable name to this specific problem, Global Carbon Crisis, and offers a measurable solution that offers a successive-approximation approach to address the problem, Global Carbon Index.

Climate change is a natural planetary process, driven primarily by the carbon cycle that takes roughly 100,000 years to complete called Millennial Cycles and are based on solar radiation at Earth's poles with CO<sub>2</sub> influencing lag time (USDA 2021). This process can further be broken down into Century Cycles that are direct interactions between CO<sub>2</sub> production and the Deep Sea Current ranging around 1500 years. The current carbon dioxide levels in the atmosphere are far beyond any measure we have seen historically as seen by this graph from NOAA from GERM ICE CORE DATA and more (Fig. 1)

### CARBON DIOXIDE OVER 800,000 YEARS

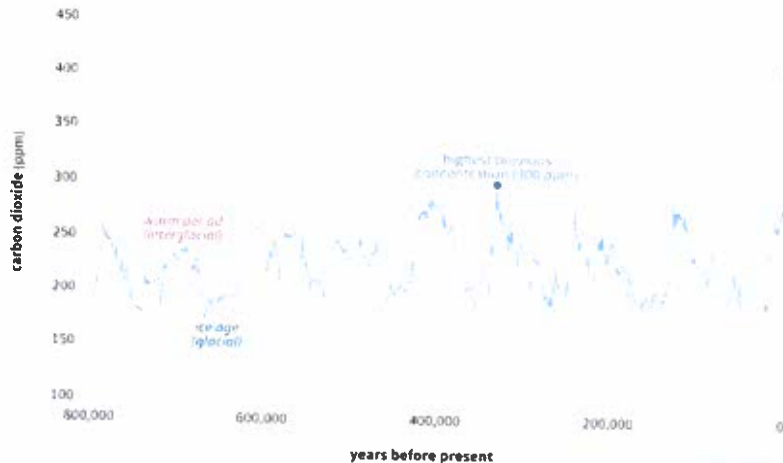
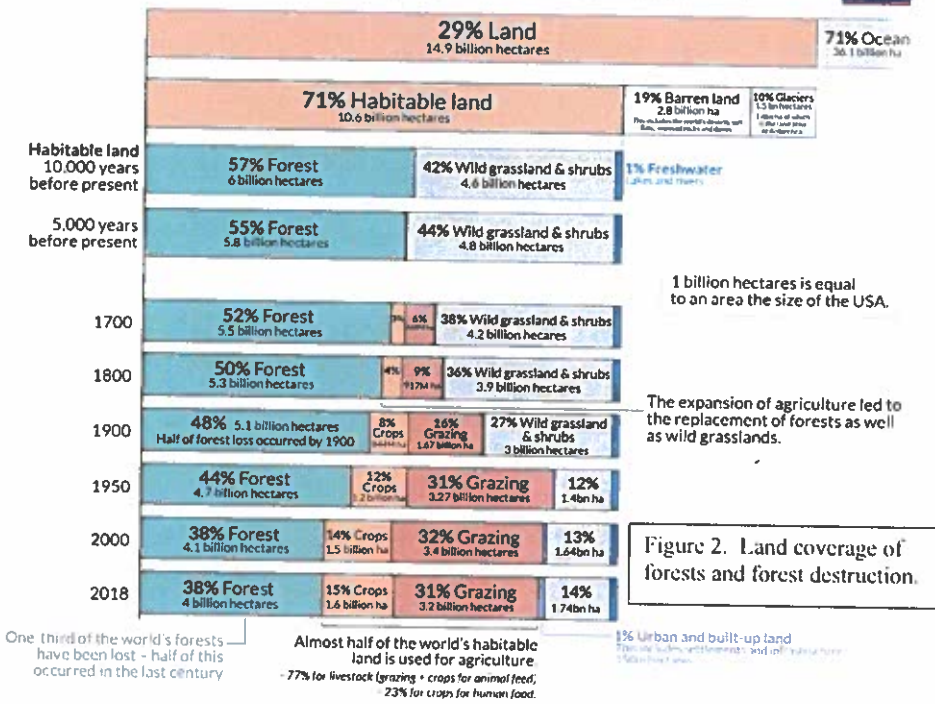


Fig 1. Historical CO<sub>2</sub> production, conglomerated, NOAA

Carbon dioxide is the primary driving force of natural climate change that creates other cascading events such as methane release, droughts, atmospheric destabilization, etc. The amount absorbed or "scrubbed" is dependent on the carbon sink capacity of the planet. This capacity on Earth lies primarily in the process of creating sedimentation both in water and on land. The capacity to "scrub" changes as climate changes. Currently, the ocean holds 50 times more carbon than the atmosphere and 20 times more than land and plants (Brusseler 2022). The ocean removes up to one third total excess carbon through natural carbon absorption processes. Excess carbon dioxide, however, disrupts calcium carbonate creation leading to a more acidic ocean with less ability to remove atmospheric carbon dioxide. By contrast, the largest land-based carbon sink the world, the Amazonian forest, is now producing CO2 in many areas that have been deforested (Gatti et al 2021).

### The world has lost one-third of its forest since the last ice age



We have lost over one-third of our global forest coverage (Ritchie 2021). This removes a major ability for the planet to absorb atmospheric CO2. Forests also help collect moisture over land to produce the rain needed to produce more forests and fresh water. Figure 2 shows the drastic reduction vs. the overall, current planetary landmass. We can see how the pressure to

utilize crops vs. grazing is increasing but has not prevented or allowed forest growth to return as well.

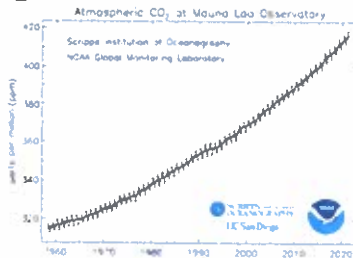
It is clear for humanity to survive, forests are needed. According to George Olah et al. (2016), the number one contribution to the loss of species diversity in Parrots as a global perspective is overall human in nature: large scale agriculture first, deforestation, urbanization, logging, invasive species and finally capture. Where are parrots found? In the places, the resources, the forests humanity will need for utter survival, places humans prefer to live due to diverse opportunity parrots utilized for millions of years. Parrot conservation pushes humanity back and does so with small successes as seen in programs like Armonia increasing blue throat macaw populations while increasing cattle ranching on the same property (Armonia 2021)(1).

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The working paper from the Overseas Development Institute in 2015 puts in perspective the driving forces of deforestation clearly and precisely. It states the practice of reducing the price of natural resources below the marginal cost to societies effects investment and consumption practices. If price is low to degrade those resources, it allows resource inefficiency, overcapitalization and overconsumption and pushes out incentives to support sustainable management. The two primary areas of forest loss are equally the two highest levels of diversity and density in parrot populations: Brazil (with soy, cattle ranching) and Indonesia (with palm oil production).

Thus, the relationship between parrots and Global Carbon Crisis is born. It truly remains a fact that if parrot populations can remain stable in these high-pressure areas, the future ability of the planet to absorb atmospheric carbon on the land-based sinks will remain as well as we see in Figure 3. Currently, our measurement is over 420ppm, a level of dissolved CO2 are now

## CO 2 production– link with parrot destruction?



This graph depicts the upward trajectory of carbon dioxide in the atmosphere as measured at the Mauna Loa Observatory, Baseline Observatory by NOAA and the Scripps Institution of Oceanography. The annual fluctuation is known as the Keeling Curve. Credit: NOAA Global Monitoring Laboratory

SOURCE: Lindsey, R. 2009. Climate Change: Atmospheric Carbon Dioxide. <https://research.noaa.gov/article/ArjMD/581/ArticleID/2764/CarbonDioxideResponseBarelySlowingCarbonDioxide>. Retrieved 6/28/21

- Parrot's primary decline in number came to an unprecedented head since the industrial revolution (1500's or so)(Birdlife 2017)
- At the same time period in human written history, CO2 began it's journey to record highs (1750 or so) of over 300ppm.
- Pre-industry times record 280 ppm in the ICE CORE data.
- ICE CORE data derived during the naturally occurring interglacial cycles due to the planet's wobble in space as water weight changes.
- CURRENT ESTIMATED CO2 in atmosphere projected to be over 900ppm. (according to [climate.gov](https://www.climate.gov))

Figure 3. Correlations with parrots and CO2 production. (NOAA 2022)

comparable to the Pliocene Climatic Optimum when forests occupied what is now the Tundra. Before the advent of the Industrial Revolution, CO2 levels remained consistently around 280ppm (NOAA 2022).

*Psittaciformes* lived through many climate changes including the Pliocene Climatic Optimum survived catastrophic levels of CO2 that occurred at the time (over 400ppm). They have survived massive planetary volcanic events as well. In fact, those who state our anthropogenic factors are not at play, blame volcanic activity on our current CO2 levels instead.

So, let us take a quick peek into that history. The worst volcanic events in the history of planet reside in what are known as super-volcanoes. Episodes such as Mt. St. Helens eruption in 1980, while significant, pale in contrast to the events of the Yellowstone Explosions that occurred 2.1 MYA, 1.4 MYA and 640,000 years ago much less that of the even more massive Toba explosion 74,000 years ago. Figure 4 gives a rough idea of how much ash covered the United States. Keep in mind, volcanic activity produces significant CO2 levels. The larger the event, the more CO2 ejects into the atmosphere that you see in Figure 5.

## Global Carbon Crisis vs. Volcanic Production in Supervolcanoes.

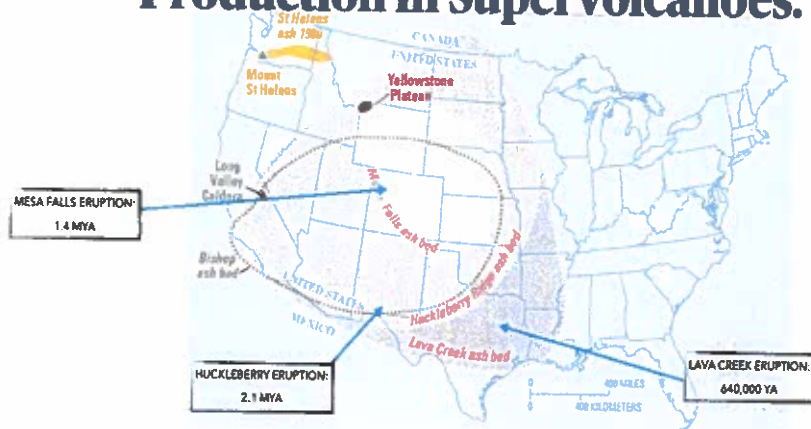


Figure 4. How Ash fell over geographic space for 3 Yellowstone Super-volcanic events. Source: <https://www.usgs.gov/volcanoes/yellowstone/modeling-ash-distribution-a-yellowstone-supereruption-2014>



Figure 5. The largest super-volcanic events of the world amount of Magma production. Source: <https://www.usgs.gov/media/images/comparison-eruption-sizes-using-volume-magma-erupted>

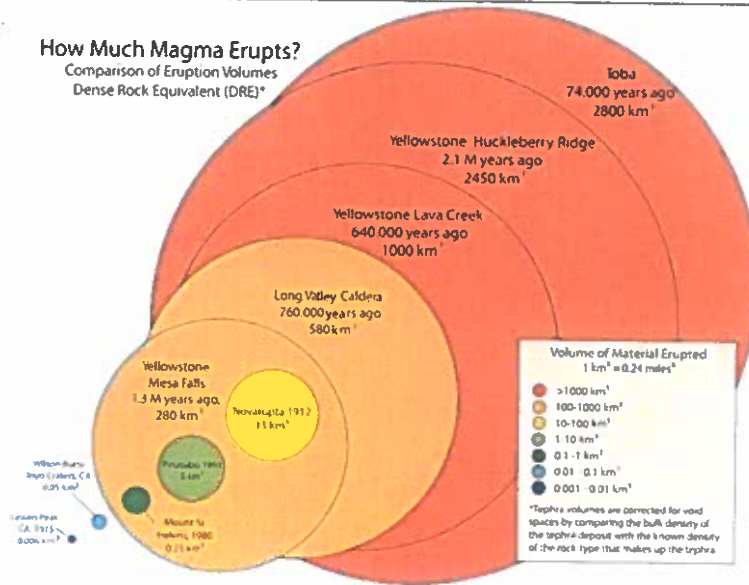
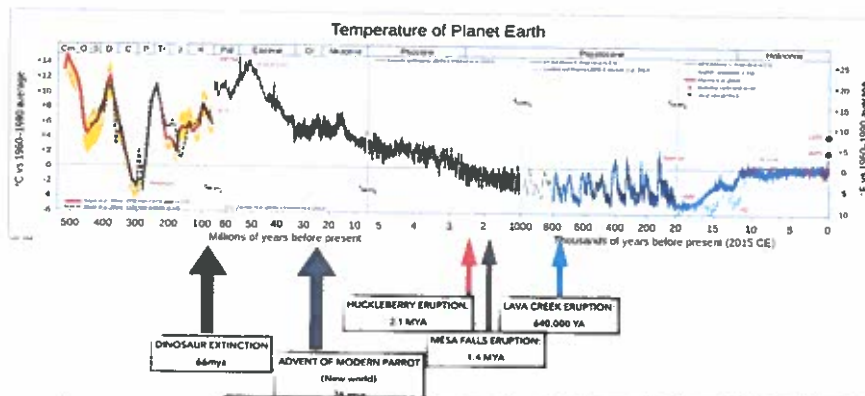


Figure 6 looks at the overall global temperature changes over time that include the volcanic events and the relative time when the modern blue and gold evolved. The amount of dissolved CO<sub>2</sub> in the atmosphere often correlates with increased global temperatures we are seeing now. Birds are disappearing as seen in Figure 5 with forest and grasslands. According to Nobel



Graph Source: [http://qerqs.net/all\\_palaetemps/](http://qerqs.net/all_palaetemps/)  
 DATA DERIVED FROM DEEP SEA MARINE ORGANISMS

Figure 6. Temperature fluctuations of the planet with GERG ICE CORE DATA pointing out the volcanic activity and advent of parrots. Source: [http://qerqs.net/all\\_palaetemps/](http://qerqs.net/all_palaetemps/)

Peace Prize immunologist, Peter Doherty (2013), birds foretell the fate of the human race. They have helped us identify DDT hazards, teflon hazards, and protected miners. According to Kenneth Rosenberg et al. in 2021, we lost over 3 billion birds in the United States alone and we are one of the top producers in the world of dissolved CO2. The correlation between the decline of *Psittaciformes* and the production of CO2 should be used as the litmus test of human survivability in Global Carbon Crisis.

**NET LOSS of 3 BILLION BIRDS of relatively common species in N. America since 1970**

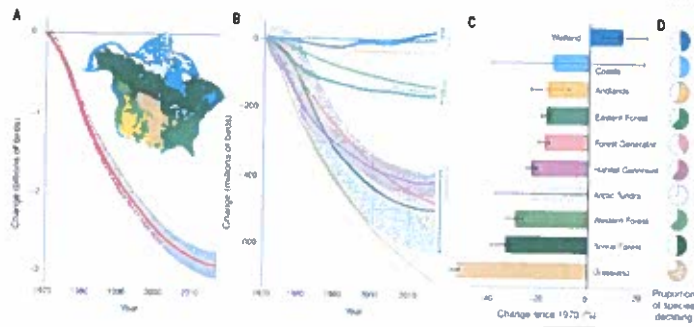


Figure 7. Bird losses in N. America since 1970. (Rosenburg 2021)

<https://www.sciencemag.org/content/364/6441/123>. Retrieved July 27, 2021. Decline of North American avifauna. Kenneth V. Rosenberg et al. October 04, 2019. Vol 366. Issue 6441. pp 120-124. American Association for the Advancement of Science Magazine.

Now that the role of parrots in Global Carbon Crisis has been discussed and identified, we need to determine how to achieve the approximal goals discussed at the beginning. To do this, we need a unit of measure for Global Carbon Crisis, the Global Carbon Index.

The Global Carbon Index (GCI) is a unit of measure that looks at the overall production of dissolved Carbon Dioxide gas into the atmosphere vs. a targeted producer of CO2 emissions. Technology already contains the ability to target CO2 emissions on many scales from companies to cities to countries. The global carbon atlas, carbon budget, interactive tool looking at carbon production at these levels is found at [www.theconversation.com/mapping-global-carbon-emissions-32040](http://www.theconversation.com/mapping-global-carbon-emissions-32040). Highlighted are Figures 8 -10 looking at production first in all countries and then with a concentration in the United States.

The Global Carbon Index (GCI) measurement would look much like this:

$$GCI = \frac{\text{Targeted CO2 gas Emitter Measurement at X moment}}{\text{Total Global CO2 Emission Measurement at X moment}}$$

From this calculation, we can create a percentage and ask for approximal percentage change over time. CGI is a measurable, approximal way to ask for change that everyone can understand perhaps starting with small percentage requests at first vs. large, sweeping steps that do not consider impacts of their solution. The ability to deliver this calculation does not require new infrastructure nor actual investment as Figures 8-10 once more clearly show how well we can target CO2 tracking system already (source: <https://theconversation.com/mapping-global-carbon-emissions-32040>)

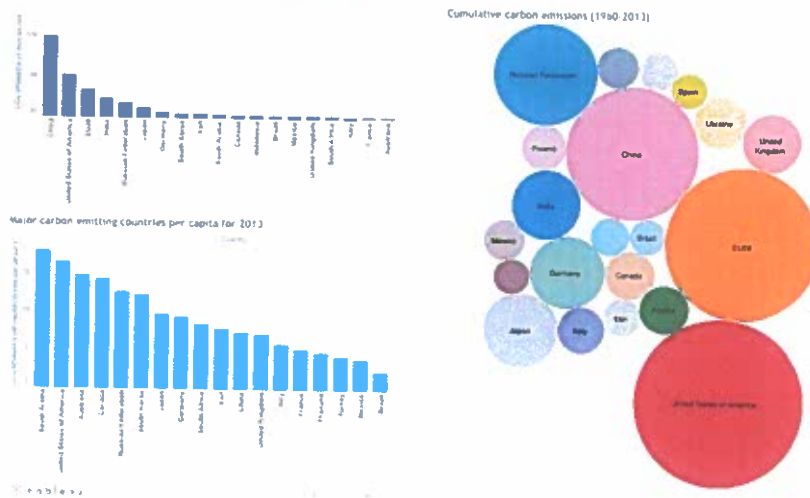


Figure 8 -10: Global Carbon Emissions as determined by CDIAC, Global Carbon Budget 2014 and the Global Carbon Atlas.

## Top CO2 producers...an interactive map



SOURCE: <https://theconversation.com/mapping-global-carbon-emissions-32040>.

This approach allows conversations to address reduction on the level of a company, city or country. Perhaps start with a low approximation like we do in training, one that is achievable: 1% GCI reduction a year. This small approximation toward lowering CO2 output sounds achievable vs. "stop climate change". GCI must be used without loopholes to incentivize or punish emitters.

Incentivization would look like a subsidy. A government or other agency would pay the emitter or give them other economic incentive for achieving their GCI reduction goal. Reduction possibly taking the form reduced CO2 emission directly or increase CO2 scrubbing capacity. Punitive action would tax the target emitter to pay for the subsidy for those that maintain or increase their GCI.

We have seen subsidies create problems as mentioned. Perhaps, now, they can be the tool to finally control the resource problem of CO2 over-production and CO2 scrubbing destruction called Global Carbon Crisis. The Global Carbon Index measures this exact problem and can provide the subsidy potential to save mankind and parrots alike. It begins with calling the problem the correct problem and using the tools to drive solutions.

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## ARE REINTRODUCTIONS A VIABLE OPTION FOR MANAGING LONG TERM CETACEANS IN HUMAN CARE?

Debbie Goodrich  
President and CEO, Flight Club Foundation

501 c3 Parrot Humane and Networking Organization, Auburn, WA USA

With release of Keiko and the push for release of Tokitae, two long term *Orcinus orca* in human care, the relevance and need of documentation to demonstrate true animal welfare of long term cetaceans within this subject of discussion is required. This presentation aims to utilize the work I began in 1996 under Dr. Terrie M Williams, PhD and Dr. Daniel P. Costa, PhD at UC Santa Cruz for my graduation thesis requirement with updated release projects to conclude with evidence long term cetacean releases do not improve target animal welfare. Literary data in this presentation looks at the following areas for review and discussion: ensuring true reintroductions are utilized vs. releases, if reintroductions are necessary or needed, determining welfare improvements for target subject, defining a "successful release", and finally addressing societal concerns.

Reintroduction programs are the introduction of captive-bred animals to their native habitat from which the animal has disappeared in order to establish a new, viable population (Stuart, 1991 and Price, 1991). Limitation of scope discusses only animals in "long term cetaceans" will be defined as animals living 2 years or more in human care or were born in human care. Due to most cetacean releases to date do not fit the reintroduction definition of Price and Stuart, all known work to date are merely releases with all subjects being introduced to a population already present.

Knowing the total number of long term cetacean releases to date is unknown and poorly documented with the majority of the research into the subject older or anecdotal accounts in print in popular magazines or news outlets. Therefore, this presentation will focus on the attempts that have a minimum of anecdotal evidence from at least 3 sources and the sources previously utilized during the first 1996 investigation.

This presentation investigates 5 areas to determine reintroduction viability given the poor scientific rigor on the subject: 1) The reasons why this management is under consideration; 2) Wild vs. human care comparison of "welfare standards"; 3) Defining "success" of a release; 3) Impact considerations on individual, indigenous population and environment; 4) Criterion for candidacy to release; 5) Case studies of long-term cetacean releases documented to date. The need for scientific rigor on the subject is warranted as pressure to release these types of animals increases over time.

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