



AWI Quarterly

WINTER 2019 / VOLUME 68 / NUMBER 4

SPOTLIGHT

National Geographic Investigates Big Cat Trade

In Texas alone, there are more tigers in captivity than exist in the wild throughout the world.

A feature article in the December 2019 issue of *National Geographic* takes a hard look at the captive big cat problem in the United States. The article, replete with moving photos, examines how thousands of big cats are kept as household “pets” and on display at disreputable roadside zoos in the United States. The piece delves into the immeasurable animal suffering and appalling threats to human safety created by this situation.

AWI contributed to the article, and AWI President Cathy Liss is quoted concerning the US Department of Agriculture’s gutting

of Animal Welfare Act enforcement and its paltry efforts to monitor the welfare of big cats in private zoos. Author Sharon Guynup investigated these zoos, in particular those that offer public contact with the animals. “Small attractions that offer visitors a chance to pet tiger cubs for photo ops feed a cycle of abuse in which cubs are discarded when they’re no longer useful,” states Guynup. After they grow too large to be handled, many cubs are funneled into the exotic pet trade, kept in miserable conditions at roadside zoos, or killed.

Guynup uncovered evidence that some tigers who are killed become part of a black market trade in their parts. She says, “Dead tigers have been stuffed or sold off in parts: skins, teeth, claws, and skeletons. ... Tentacles of this U.S. trafficking network have reached into Asia.”

To alleviate the suffering of big cats who are used and abused in the United States, a federal law prohibiting cub petting and private ownership is a necessary first step. AWI supports the bipartisan Big Cat Public Safety Act (HR 1380/S 2561), which would do just that. For more information about this law and how to take action on it, turn to pages 4–5. 🐾

FOUNDER

Christine Stevens

DIRECTORS

Cynthia Wilson, Chair
Jill Carey, CPA
Caroline A. Griffin, Esq.
Mary Lee Jensvold, PhD
Cathy Liss
Chris Miller, DVM
William S. Stokes, DVM

OFFICERS

Cathy Liss, *President*
Cynthia Wilson, *Vice President*
Jill Carey, CPA, *Treasurer*
Caroline A. Griffin, Esq., *Secretary*

INTERNATIONAL COMMITTEE

Aline S. de Aluja, DVM, *Mexico*
Ambassador Tabarak Husain, *Bangladesh*
Angela King, *United Kingdom*
Agnes Van Volkenburgh, DVM, *Poland*

SCIENTIFIC COMMITTEE

Gerard Bertrand, PhD
Roger Fouts, PhD
Roger Payne, PhD
Samuel Peacock, MD
Viktor Reinhardt, DVM, PhD
Robert Schmidt, PhD
John Walsh, MD

STAFF AND CONSULTANTS

Nadia Adawi, Esq., *Executive Director/General Counsel*
Alexandra Alberg, *Senior Graphic Designer*
Nancy Blaney, *Director, Government Affairs*
Bethany Cotton, Esq., *Director, Terrestrial Wildlife Program*
Kate Dylewsky, *Senior Policy Advisor*
Sue Fisher, *Marine Animal Consultant*
Marjorie Fishman, *Public Relations Manager*
Allie Granger, *Farm Animal Policy Associate*

Joanna Grossman, PhD
Equine Program Manager

Johanna Hamburger, Esq.
Wildlife Attorney

Sydney Hearst
Digital Advocacy Manager

Dena Jones
Director, Farm Animal Program

Eric Kleiman
Researcher

Joanna Makowska, PhD
Laboratory Animal Advisor

Susan Millward
Director, Marine Animal Program

Carly O’Beirne
Membership Coordinator

Kate O’Connell
Marine Animal Consultant

Mary Lou Randour, PhD
Senior Advisor, Animal Cruelty Program

Naomi Rose, PhD
Marine Mammal Scientist

D.J. Schubert
Wildlife Biologist

Erin Sutherland, Esq.
Staff Attorney, Farm Animal Program

Regina Terlau-Benford
Executive Assistant

Dave Tilford
Writer/Editor

For subscription inquiries or other information, contact:

Animal Welfare Institute
900 Pennsylvania Avenue, SE
Washington, DC 20003
(202) 337-2332
awi@awionline.org
www.awionline.org

ISSN 1071-1384 (print)
ISSN 1930-5109 (online)

Tax ID# 13-5655952
CFC# 10474



Animal Welfare
Institute

www.awionline.org

AWI QUARTERLY WINTER 2019

ANIMALS IN LABORATORIES

- 6 How Many Former Research Chimps Will NIH Deem Unsuitable for Sanctuary?
- 8 Congratulations to This Year's AWI Refinement Grant Recipients
- 8 Clarification: Rats Playing Hide-and-Seek
- 9 Technician Spotlight: Jessica Brekke's "Rat Hammock" Design
- 10 A New Beginning for Retired Laboratory Rabbits

FARM ANIMALS

- 12 Faux Meat Finds Fertile Ground
- 13 Pig Flu in China Prompts Welfare Improvement in US
- 13 New Swine Inspection System Sparks Controversy
- 13 Fish Hatchery Investigation Reveals Cruelty
- 14 AWI Analysis Finds Weak Enforcement of State Farm Animal Welfare Laws

HUMANE EDUCATION

- 28 The Animal Welfare Institute Scholarship: Empowering Future Champions of Animal Welfare

MARINE LIFE

- 18 AWI Condemns Sea Lion Cull in Pacific Northwest
- 18 Mystic Aquarium Moves to Acquire Belugas from Canada
- 19 Save the Whales, Save the Planet
- 19 Norwegian Whaling: A Sinking Industry

- 19 South Atlantic Humpbacks Bounce Back
- 20 Experts Outline Needed Steps to Save Taiwanese White Dolphin
- 21 Noninvasive Computer Vision for "Tagging" Hawksbill Turtles

WILDLIFE

- 2 National Geographic Investigates Big Cat Trade
- 22 Reducing Grizzly Bear Agricultural Conflicts
- 23 EPA Reauthorizes Use of Cyanide Bombs
- 23 Huge Grey Parrot Import Sought
- 24 BLM Board Backs Senseless Wild Horse Surgery Scheme
- 24 NYC Commits to Bird-Friendly Building Standards
- 25 Steps You Can Take to Keep Birds on the Wing

GOVERNMENT AFFAIRS

- 4 House Natural Resources Committee Approves Animal Welfare Bills
- 5 PAW and FIN Conservation Act Introduced
- 5 PACT Act Becomes Law
- 5 USDA Seeks to Shield Scofflaws from Public Scrutiny

REVIEWS

- 26 *The Last Butterflies*
- 27 *The World Beneath*
- 27 *Dog Is Love*



ABOUT THE COVER

Nine billion land animals are raised and slaughtered for food in the United States each year, yet the laws protecting these animals are strikingly limited. No single federal law expressly governs the treatment of farm animals. Meanwhile, more than two dozen states have enacted farm animal welfare laws and regulations over the past 20 years. AWI recently conducted a first-of-its-kind in-depth analysis of how well those laws are being enforced. The answer: not very well. See page 14 for more on what we discovered. Photograph by linephoto.

f www.facebook.com/animalwelfareinstitute

🐦 @AWIonline 📷 @AWIonline

HOUSE NATURAL RESOURCES COMMITTEE APPROVES ANIMAL WELFARE BILLS

The Committee on Natural Resources in the House of Representatives has jurisdiction over many bills supported by AWI. Fortunately, Chairman Raúl Grijalva (D-AZ) is a champion of animal welfare and environmental protection. Under his leadership, several significant bills have been approved by the committee recently, including the following:

Big Cat Public Safety Act (HR 1380/S 2561) Big cats kept as pets are deprived of nearly everything that is natural and important to them. They are frequently abused and left to spend their entire lives in barren cages with little room to move around.

The Big Cat Public Safety Act would outlaw private ownership of big cats. It would also prohibit physical contact between the public and big cats, putting an end to cruel “cub petting” operations. Facilities that profit from these exploitative practices engage in rampant breeding to churn out cubs, who quickly grow too large to be handled and are often then funneled into the exotic pet trade, perpetuating the problem.

Shark Fin Sales Elimination Act (HR 737/S 877) Many shark populations are experiencing steep declines. Each year, an estimated 73 million sharks are killed purely for their fins. Once sharks are hauled aboard, their fins are often sliced off and the mutilated animals are thrown back into the sea to suffocate,

bleed to death, or be eaten by other animals. Unless the global demand for fins is curbed, shark populations will continue to decline.

The Shark Fin Sales Elimination Act would prohibit the import, export, possession, trade, and sale of shark fins (except for those of smooth and spiny dogfish, making enforcement potentially problematic) to ensure that the United States does not continue contributing so heavily to the slaughter of sharks around the world.

CECIL Act (HR 2245) There is no credible scientific evidence that trophy hunting benefits conservation. In fact, trophy hunting hurts the structure and viability of wild populations because big game hunters target the largest, strongest animals, often putting entire family units at risk. Furthermore, research has demonstrated that an animal belonging to a charismatic species is worth more alive than dead in tourism revenue.

The CECIL Act, introduced by Chairman Grijalva, would greatly limit the ability of sport hunters to import trophies of species that are under

threat. Its provisions promote greater transparency from the US Fish and Wildlife Service, reverse shortsighted policies, and reinstate crucial protections for imperiled species.

SAVE Right Whales Act (HR 1568/S 2453) North Atlantic right whales are highly endangered, with only about 400 animals remaining. At least 30 North Atlantic right whales have died since the beginning of 2017. Collisions with vessels and entanglement in fishing gear have been identified as the cause of death for the majority of these whales, and 85 percent of North Atlantic right whales bear entanglement scars.

The SAVE Right Whales Act would provide federal funding for collaborative efforts between states, nongovernmental organizations, and industry leaders to create and implement much-needed conservation efforts to protect these whales. The House version has been approved by the House Natural Resources Committee, and the Senate version has been approved by the Senate Commerce Committee.



Cecil, a collared lion in Zimbabwe, was a popular tourist draw before he was killed by an American trophy hunter in 2015.

CRAIG TAYLOR

The PACT Act makes certain forms of egregious animal cruelty—in particular those depicted in videos torturing small animals—a federal crime.

PAW AND FIN CONSERVATION ACT INTRODUCED

New legislation has been introduced to reverse recent rule changes that limit the protections afforded to imperiled species under the Endangered Species Act. On November 19, AWI, in conjunction with other groups, hosted a briefing on Capitol Hill to highlight the urgency of passing the PAW and FIN Conservation Act (HR 4348/S 2491). The briefing featured remarks from Senator Tom Udall (D-NM), one of the bill's sponsors, as well as a panel discussion from a diverse set of speakers. The panel, which included a tribal leader, a filmmaker, a beekeeper, a wildlife photographer, and a spokesman for the company Patagonia, discussed the catastrophic effects of the mass extinction crisis on not only wildlife but also human well-being.

What You Can Do

Visit AWI's Compassion Index website at www.awionline.org/compassion-index to urge your US representative and senators to support the PAW and FIN Conservation Act and the bills described on the previous page. You can also contact them by calling the Capitol Switchboard at 202-225-3121 or writing to them at Honorable [insert name], US House of Representatives, Washington, DC 20515; or Honorable [insert name], US Senate, Washington, DC 20510.



MATT

PACT ACT BECOMES LAW

On November 25, the Preventing Animal Cruelty and Torture (PACT) Act passed by Congress was signed by President Trump. This new law extends federal jurisdiction to certain egregious forms of animal cruelty. John Thompson, executive director of the National Animal Care and Control Association and the most recent recipient of AWI's Schweitzer Medal, was present for the signing in the Oval Office and had this to say: "Animals are changing in our society. It used to be they were 'just animals'; now they are family members." Thompson added that the law provides "another tool in the tool box of the men and women in animal control who go out there and fight every day. Sooner or later we're going to put an end to this and the evil that comes with it."

USDA SEEKS TO SHIELD SCOFFLAWS FROM PUBLIC SCRUTINY

The US Department of Agriculture recently proposed new "routine uses" of records under the federal Privacy Act that determine disclosure of information outside the department.

The USDA seems determined to make permanent the drastic limitations on the information it makes available to the public regarding the compliance history of licensees under the Animal Welfare Act (AWA) and the Horse Protection Act (HPA). The department seems equally determined to ignore members of Congress who have urged it to restore public access to inspection and enforcement documents.

Specifically, the USDA proposes that public access be limited to "final adjudicatory AWA and HPA decisions or orders." The problem is that even though adjudication of cases that involve potential violations is often warranted, very few cases ever reach that stage.

AWI has joined others in reminding the USDA that the public has a right to see inspection and enforcement records in order to monitor the AWA and HPA compliance of commercial operations such as puppy mills, horse trainers, and roadside zoos. Even the USDA has acknowledged (in a document that is, unsurprisingly, no longer on its website) that such public access is necessary "in order to promote compliance."



How Many Former Research Chimps Will NIH Deem Unsuitable for Sanctuary?

Four years ago, Dr. Francis Collins, director of the National Institutes of Health (NIH), announced that all of the chimpanzees the NIH “owns” or supports financially would be eligible for retirement to Chimp Haven, outside Shreveport, Louisiana—the sanctuary established by federal law. This announcement followed the agency’s decision to end its support of any further experimentation on chimps. But the operative word in the proclamation was “eligible.”

As we feared, the NIH has begun announcing that many of the chimps are not eligible to be moved to sanctuary. Every one of the remaining forty-four chimps at the Alamogordo Primate Facility (APF) in New Mexico were identified as ineligible—a tragic precedent—particularly as the NIH has noted that chimps at other labs are likely to remain in place as well, although research won’t be done on them.

“Many hundreds of privately owned chimps have moved to sanctuaries, in many different stages of life, without incident,” states Dr. Mary Lee Jensvold, primate communication scientist and associate director of the Fauna Foundation, as well as a board member of AWI and Friends of Washoe. “Nonetheless, the NIH has deemed that moving these chimps

to a sanctuary—with diverse enrichment that includes grass and trees and an opportunity to build nests and socialize with other chimps, all while in the care of compassionate, well-trained caregivers and veterinarians—might kill them.”

While nearly 300 chimps formerly used for experimentation have been moved to Chimp Haven, many others have not. One chimp at APF died recently, leaving 43. Additional chimps still in labs include 58 at the Keeling Center for Comparative Medicine and Research (Bastrop, TX), and more than 70 at the Southwest National Primate Research Center (San Antonio, TX).

Collins said that an “independent” panel of veterinarians (all of whom work for the NIH) evaluated these apes and determined that it would be too risky to move them. The evaluation wasn’t even done by visiting the chimps or the sanctuary (only “virtual” visits were conducted). Apparently, the panel members did not consider it worthwhile to see any of the chimps for themselves. They relied instead on information provided by APF—which will receive approximately \$890,000 a year to care for the 43 chimps left there. If all these chimps were moved to the sanctuary, APF would go out of business.

The NIH panel published a short blurb on each of these chimps to explain why that individual was ineligible to move. Much of the text is the same for each one, with minor variations. Most are described as “geriatric.” Nearly all of the reports have an alarmist tone and claim a move “could trigger a fatal cardiac event.” Most of the 44 reports cite the “long standing socially bonded [group/pair] which, if disrupted, could negatively affect [his/her] psychological well-being.”

The age of the remaining chimps is from 29–57 years, so it is possible that many of these apes will live for another 10 to 20 years or even longer. All are in single-sex groups and many are in small groups, a far cry from an expert NIH panel’s recommendation of mixed sex groups comprised of at least seven animals. There is one group of just two chimps and several groups of just three. What will become of them over time when individuals in their group die? Ultimately, surviving group members will have to integrate with other chimps; thus, disrupting the social group is not avoided by keeping the chimps in place.

It’s not surprising that there is an effort to deny so many chimps the opportunity to thrive in a bona fide sanctuary, as this

comes from the same research industry that housed chimps for decades in small, barren cages. It also objected to the 1985 amendment of the Animal Welfare Act to mandate improvements for primates and then delayed implementation of the law for more than a decade. Yet now it claims to care about the best interests of these chimps.

Upon learning that all remaining chimps at APF were being left behind, Rana Smith, president and CEO of Chimp Haven, expressed disappointment, noting “the stellar track record Chimp Haven has with successfully transitioning hundreds of chimpanzees from research facilities to sanctuary retirement.” She added, “We’ve seen the health and behavior of many chimpanzees improve, including those who are geriatric, fragile and came to the sanctuary socially challenged.”

Spending the remainder of their lives at Chimp Haven is the kindest gift we can give to these apes who were used for myriad experiments while living in harsh laboratory confinement. We urge the NIH to reconsider and give these animals an opportunity to experience life away from the traumatic environment of the laboratory. 🐾

YOU CAN MAKE A DIFFERENCE!

Please write to NIH Director Collins and ask him to reconsider the decision to deny sanctuary to the 43 chimpanzees remaining at APF. His postal address is Dr. Francis Collins, Director, National Institutes of Health, 9000 Rockville Pike, Bethesda, MD 20892 and his email address is execsec1@od.nih.gov.

Following are points you may wish to make in your letter:

1. Respectfully request that the NIH establish a truly independent panel to assess the future of retired chimps still held at the three research facilities.
2. The panel should have chimp experts, including a veterinarian with chimp sanctuary experience, a behaviorist with chimp experience, and an ethicist, and it should NOT include anyone from the NIH or affiliated with the three facilities that are paid to hold the animals.
3. The review should include in-person assessments by each panelist of each chimp.
4. Chimp Haven is a sanctuary to hundreds of chimps of various ages and health conditions. The animals deserve the opportunity to experience life away from the lab in this significantly larger, more enriched facility whose very purpose, as established by federal law, is to provide sanctuary.

Life at Chimp Haven is vastly different from the life led by chimps at NIH research facilities. Left: Arden enjoys a view from on high. Top of page 6: Pearl, Jeff Lebowksi, and Daisy socialize. Page 3: At 55, Penny is one of the sanctuary’s grand dames.



CHIMP HAVEN



CONGRATULATIONS TO THIS YEAR'S AWI REFINEMENT GRANT RECIPIENTS

AWI advocates for improving the care, housing, and handling of animals in research facilities to spare them needless suffering. To help achieve this, we offer Refinement Grants of up to \$10,000 to develop and test innovative methods of improving the welfare of animals in research.

We congratulate this year's AWI Refinement Grant recipients:

Dr. Brianna Gaskill, Purdue

University: Analyzing social networks of group-housed laboratory male mice. Attempts to reduce mouse aggression—the leading cause of poor welfare in socially housed male mice—have not been very successful, perhaps because little is known about the social interactions between mice within the home cage. A social network analysis will be conducted using existing video to help identify effective interventions.

Dr. Lucía Améndola, University of

British Columbia: Assessing the welfare benefits of playpens for research rats. The goals of this project are (1) to

determine whether daily access to a large, enriched area where rats can play improves the welfare of laboratory rats and (2) to determine whether rats with playpen access produce consistent results in standard behavioral tests, since the implementation of environmental enrichment is often limited by concerns that these will negatively affect research results.

Dr. Nicole Herndon, University of Illinois Urbana – Champaign:

Looking into best practices for helping research dogs retire to forever homes. This project seeks to assess whether pre-adoption interventions help dogs better adapt to their new homes. Interventions include socializing the dogs in an enriched outdoor area and training them to walk on leash and eliminate outdoors.

Dr. Rachel Dennis, University of

Maryland: Optimizing environmental enrichment for research quail. Research quail are typically housed in barren environments, which leads them to exhibit high levels of stress, abnormal behaviors, and injuries. This study will assess the effectiveness of specific environmental enrichments—such as foraging mats, mirrors, tall grass, and escape huts—on quail welfare.

Rachel van Vliet, McGill University:

Investigating the use of species-specific behavior by animal care staff as a source of enrichment for nonhuman primates in laboratories. The purpose of this study is to determine whether the use of species-typical behaviors for macaques and marmosets—for example, affiliative and submissive behaviors, such as crouching and averted gaze—will improve the relationship between animals and caregivers.

CLARIFICATION: RATS PLAYING HIDE-AND-SEEK

In the last issue of the *AWI Quarterly*, we reported on a study recently published in the journal *Science* (Reinhold et al., 2019). In that study, researchers who were examining the neural underpinnings of decision-making and motivation taught rats to play hide-and-seek, a game they indicated was enjoyed by the rats. Our intent was to describe this novel approach (playing a game with free-ranging rats) as a refinement to the traditional method of studying neurobiology by confining rats to a small chamber in which they have to perform a mundane task, like lever pressing. We also aimed to highlight how rats are intelligent animals with whom we can form a relationship.

However, we should have been more explicit about the implications of this study: Because the goal was to understand rat neurobiology, five of the six rats used in the study were implanted with brain electrodes. Researchers recorded the animals' brain activity while the rats played hide-and-seek. At the end of the study, the rats were killed and their brains were analyzed. It is never our intent to gloss over animal suffering and loss of life in research, and we should have included this additional information in our original piece.

Technician Spotlight: Jessica Brekke's "Rat Hammock" Design

The heart of any laboratory animal facility is its animal care staff. Dedicated and compassionate animal care technicians can make a tremendous difference in the quality of the animals' lives. One such committed individual is Jessica Brekke, registered laboratory animal technician working at the Mayo Clinic campus in Rochester, Minnesota.

Brekke is always on the lookout for new enrichment ideas to use with the animals in her charge. Not satisfied with the wood gnaws and paper twists available to the rats she worked with, she searched online for other items with which the rats could interact. She came across a mouse swing, which she

thought would be ideal because rats like to climb; a swing would also not take up valuable cage floor space. To Brekke's surprise, she could not find anything similar that was designed for rats.

"This got my wheels churning," said Brekke. She took thick cardboard tubes that were already used with rats at her facility and cut them in half lengthwise. She then drilled a hole into each corner and inserted shower curtain hangers to suspend the resulting "rat hammock" from the wire lid. After getting the green light from the facility veterinarians, Brekke tried out her invention with the sentinels (animals in a lab who are not used in research projects, but who are closely monitored to quickly identify any potential pathogens in the colony). "Within two minutes, both of the rats were climbing onto it and checking it out; when I came back later that day, I found them both sleeping together in the hammock," she said. "I spent the next week observing the way they interacted with the hammock and found that they would not only sleep

in it, but also groom themselves, play, take and eat treats, and look out at their neighbors and activity in the room."

Satisfied that rats seemed to like the hammock, Brekke updated the design to be more durable and more cost effective. The shower curtain hangers caused the hammock to swing too much when the rats played in it, so she replaced the hangers with 6-inch pieces of 16-gauge galvanized steel wire. She replaced the cardboard tubes with 3-inch diameter, 6-inch long sections of PVC pipe. With her dad's help, Brekke used a table saw to cut the PVC pipe, a drill to make holes in each corner, and pliers to attach the wire. She and her son used a belt sander to smooth any jagged or sharp edges on each piece of PVC and wire. Hammocks were cleaned in the cage washer.

Brekke obtained veterinarians' approval for the new design, and the principal investigators' permission to try them out with their animals. All rats started to use the hammocks within the first day, and used them in the same way as the sentinels: to sleep, groom, play, and look out. "The feedback from the investigators was positive," said Brekke. "They like the new form of enrichment and they said the rats seemed to enjoy having an elevated platform."

The hammocks have become an unofficial part of Brekke's enrichment program for rats. She uses the hammocks with the sentinels and with rats on active protocols, as long as the rats' health status allows them to use the hammocks safely. We applaud not only Brekke for her creativity and dedication to animal welfare, but also her facility for supporting its animal care staff in their endeavors. 🐾

Rats take advantage of the hammock designed especially for them by laboratory animal technician Jessica Brekke.



JESSICA BREKKE

A New Beginning for Retired Laboratory Rabbits

Healthy laboratory animals who are no longer needed in research deserve the chance to be rehomed. The practice of rehoming retired laboratory animals is more common with dogs, but other species are also deserving of this opportunity. A few months ago, 10 female New Zealand white rabbits were granted a new beginning thanks to a collaboration between an animal rescue organization and the research institution where they had been living for approximately three years.

The Small Animal Rescue Society of British Columbia—a volunteer-run organization specializing in the rescue and rehoming of small animals such as rabbits, guinea pigs, rats, and hedgehogs—offered them a new home at its private shelter. Prior to the rabbits' release from the laboratory, veterinarians and staff at the originating research institution offered to spay and vaccinate the animals, which would have cost the rescue organization more than \$3,000. The research institution also shared the animals' full medical records with the Small Animal Rescue Society.

The 10 rabbits, who had been living in pairs or trios at the research institution, now all live together in a pen measuring 10 feet by 8 feet. As anyone experienced with rabbits will know, unfamiliar rabbits must be carefully introduced to each other to avoid aggression. Taking newly acquainted rabbits

for a car ride together is a proven method of bonding them, so the rescue organization took advantage of this method during the drive between the research institution and the rabbits' new home: Although individual carriers were brought for each rabbit (just in case), the animals were placed in the van together so they could huddle and seek comfort from each other during the ride (see photo bottom left).

Upon their arrival at the shelter, the rabbits' pen was outfitted with an abundance of hiding boxes to ensure that each animal had her own space to retreat to. The rabbits were getting along well, so after a few hours, many of the boxes were removed to further encourage them to interact as a group. Lisa Hutcheon, co-founder and executive director of the Small Animal Rescue Society, said that the rabbits have been getting on well from the beginning. She noted that former laboratory pen mates tended to rest with each other at first, but that now the whole group mingles together. Only one former pair—who were friendly in the laboratory—now actively avoid each other; perhaps with more friends to choose from, they realized they were not so fond of each other after all! With 15 years' experience running the rescue and shelter, Hutcheon has found that it is much easier to bond larger groups of rabbits (10+ individuals) compared to pairs or trios.

Hutcheon describes this group of girls as “busy, busy, busy.” Compared to other domestic rabbits residing at the shelter—most of whom were found abandoned or surrendered by caretakers no longer willing or able to keep them—these former laboratory animals are unusually curious and active. They love to chew on any objects placed inside their pen, especially their cardboard hiding boxes, which need to be replaced every three days. These youthful rabbits are always on the move, nudging noses, hopping around, and showing interest in everything that happens at the shelter.

Hutcheon was surprised at how quickly the rabbits settled into their new life. Within one week, they had fully adapted to their new routine; for example, just like the other rabbits residing at the shelter, they circle in excited anticipation of the daily delivery of fresh vegetables and dried cranberry treats.

Despite the rabbits' relatively recent arrival, shelter volunteers can already recognize individuals by their unique personalities.



MARIA ROSA



Former research rabbits explore their surroundings at the Small Animal Rescue Society of British Columbia as they await adoption into private homes.

One doe has a habit of grooming her companions around the eyes, and another, nicknamed Big Mamma due to her size, can always be seen sitting on top of a box. One rabbit always pokes her nose through the pen gate to socialize with the neighboring bunnies, while another is incredibly curious about people.

Before taking in these rabbits, Hutcheon was unsure how well they would adjust; she was open to the possibility that they would need to continue to live together at the shelter with other rabbits who may not do well in a private home. However, these girls have surpassed all expectations: They are friendly, outgoing, and will do well with a human family of their own. The rabbits will be up for adoption once the staff get to know each rabbit properly and can be certain of the type of home best suited to each one—for example, whether they will do well with another type of animal or young children in the home. What is certain, however, is that they will capture the heart of any person fortunate enough to take them in.

For tips on bonding groups of rabbits, Hutcheon encourages readers to contact the Small Animal Rescue Society of British Columbia at smallanimalrescue@gmail.com. Donations to support the care of these rabbits are also welcome. 🐾





OLIVER SJOSTROM

Faux Meat Finds Fertile Ground

The link between animal agriculture and greenhouse gas emissions is increasingly a key focus of the debate over how to reduce global warming. An August 2019 report by the United Nations Intergovernmental Panel on Climate Change highlights this connection and recommends a shift toward plant-based diets as one approach to solving the climate crisis.

This recommendation comes at a time when plant-based meat alternatives are popping up everywhere. Recently, KFC teamed up with the company Beyond Meat to test plant-based “chicken.” Hundreds of customers flocked to a one-day trial event in Atlanta, where “Beyond Fried Chicken” menu items sold out within five hours.

KFC is not the only major restaurant chain responding to the increased demand for faux meat. Impossible Burgers have made their way onto the menus of the Cheesecake Factory and Red Robin. Yard House offers a generous selection of plant-based options that include Gardein “chicken.” And several fast-food chains, including Burger King, Subway, Dunkin’, and McDonald’s, have also jumped on the meatless meat wagon.

The explosive popularity of a new generation of plant-based alternatives is disrupting the meat industry, setting the stage for start-ups like Impossible Foods and Beyond Meat to become major players in this growing market. Using proteins from soy, peas, potatoes and other plant ingredients, these companies have developed products that replicate the taste, texture, and even the “bleeding” characteristic of beef, attracting both vegetarians and carnivores. In the last eight years, Impossible Foods has pulled in roughly \$750 million in investments, while Beyond Meat is currently valued at \$9.2 billion. Overall, the retail market for plant-based foods is

worth almost \$4.5 billion, and total investment in the industry has reached roughly \$17 billion, according to the Good Food Institute. These numbers are only expected to grow as more meat-eaters transition to “flexitarian” or “reducetarian” diets.

Some large agribusiness corporations that are heavily invested in the production of animal protein are responding to this market shift by diversifying into the plant-based space. Tyson Foods was a key investor in Beyond Meat before rolling out its own line of plant-based nuggets and patties dubbed “Raised & Rooted.” Another large meat processing giant, Cargill, announced in August an additional \$75 million investment in the largest North American pea-protein producer supplying Beyond Meat. Recognizing the market opportunities outside of animal foods, Danone, known for its dairy products, now has a diverse line of plant-based yogurts and beverages.

The rapid rise of plant-based alternatives has predictably sparked a backlash from other stakeholders in the agricultural industry, who are now focused on restricting the marketing of these products. This year alone, legislators in nearly 30 states have proposed bills to prohibit companies from using words such as meat, burger, sausage, jerky, or hot dog unless the product came from an animal that was born, raised, and slaughtered in a traditional way. Arkansas, Louisiana, Mississippi, Missouri, North Dakota, Oklahoma, South Dakota, and Wyoming have already enacted such laws, sparking immediate legal challenges by plant-based food advocates.

Whether consumers are turning to plant-based alternatives to save the planet, protect animals, or simply live a healthier lifestyle, the market for meat alternatives will likely continue to thrive. 🌱

PIG FLU IN CHINA PROMPTS WELFARE IMPROVEMENT IN US

Opportunities for US producers to export pork have skyrocketed recently following a massive outbreak of African swine fever in China, responsible for killing up to half the country's 400 million pigs. However, China—along with all European Union countries and Russia—won't accept meat from pigs treated with a drug called ractopamine. Ractopamine, which is commonly used in pork production in the United States and Canada, is a feed additive administered to promote leaner meat. The drug has adverse effects on animal health and welfare—particularly in high doses—including hoof problems and an increase in the likelihood of pigs becoming injured or fatigued during transport and slaughter. Looking to take advantage of the disaster unfolding in China, US meat production giants Tyson Foods and JBS USA have announced they are ending the use of ractopamine throughout their supply chains. Adding these names to the list of pork producers that already shun the feed additive will result in 78 percent of the US pig population being ractopamine free, according to agricultural economists.

NEW SWINE INSPECTION SYSTEM SPARKS CONTROVERSY

The US Department of Agriculture has declined to grant AWI's petition asking the department to end the cruel practice of slaughtering nonambulatory disabled pigs. The USDA decided that its current regulations are "sufficient and effective" in ensuring that these pigs are handled humanely at slaughter. What's worse, the petition was denied even as the department is finalizing a controversial new rule, the

New Swine Inspection System (NSIS). The USDA is claiming the NSIS will modernize standards for pig slaughter and meat inspection. The "modernized" standards, however, allow pig slaughter plants to operate at unlimited line speeds, with the vast potential to increase incidents of inhumane handling of pigs, especially those who become disabled at the plant or during transport. The rule is also concerning to workers, who assert that the increased line speeds put their safety at risk. In response to the rule's publication, a coalition of worker groups sued, claiming that the USDA violated the Administrative Procedure Act.

FISH HATCHERY INVESTIGATION REVEALS CRUELTY

An investigation into a Maine salmon hatchery owned and operated by one of the largest seafood companies in the world, Cooke Aquaculture, has provided a behind-the-scenes look into the horrors of fish farming. Video footage captured at the hatchery by

the organization Compassion Over Killing revealed salmon suffering from deformities, disease, and injuries as a result of cannibalism, as well as living conditions so filthy and overcrowded the fish have to be vaccinated. Workers were shown violently slamming fish against the ground, stomping on their heads, and tossing them into buckets to suffocate and die.

This investigation—the first of its kind—raises serious questions about the impacts of fish farming on animal welfare, a topic that has received little attention to date. There are currently no laws or regulations in place governing the care and treatment of farmed fish, leaving a limited number of state animal cruelty statutes as the only potential source of legal protection.

An undercover investigation of a salmon hatchery in Maine revealed filthy, overcrowded conditions and fish that were diseased, injured, and—as shown here—deformed.



COMPASSION OVER KILLING

AWI Analysis Finds *Weak Enforcement* of State Farm Animal Welfare Laws

No single federal law explicitly addresses the treatment of animals raised for human consumption on farms in the United States. Due to growing public concern, many states have taken action to improve the welfare of these animals. In fact, during the past 20 years, more than two dozen state laws and regulations have been enacted to protect farm animals. Until now, however, no in-depth analysis has been made regarding enforcement of these laws.

State laws protecting farm animals fall into three main categories: (1) on-farm minimum animal care standards, (2) bans on the sale of products that do not meet certain animal care standards, and (3) laws prohibiting specific conventional industry practices, such as intensive confinement and physical alterations. Animal care standards provide minimum guidance for the care and treatment of animals raised on farms. In Ohio, for example, rules affecting the care of cattle, pigs, turkeys, hens, sheep, goats, alpacas, llamas, and equines went into effect in 2011. Generally, such laws provide state governments the authority to investigate farms for violations when complaints are filed by citizens.

Two states (California and Oregon) have passed bans on the sale of food products from production systems that do not meet certain minimum animal care standards. In both cases, the laws were passed by the state legislature and cover the sale of eggs only.

Anti-confinement laws prohibit extreme confinement of animals that can lead to pain and distress. For example, a number of states have banned or limited the use of gestation crates for pregnant sows. Other laws include those that ban the use of hen battery cages and prohibit or limit the use of veal crates. In addition, a few states have enacted limits or bans on tail docking of cattle, which is sometimes performed to facilitate close confinement of the animals.

Many anti-confinement laws were created by ballot initiative, a process that allows citizens in certain states to place a measure on the statewide ballot and give voters a chance to approve either a statute or constitutional amendment. To date, all ballot initiatives relating to farm animal welfare have been instigated by animal advocates. Anti-confinement laws have also been enacted through legislation drafted by animal advocacy groups, by industry groups, or through collaborations between the two.

Thus far, most state minimum animal care standards have been developed by livestock care standards boards that were established through state legislation. Some livestock care boards have been required to produce animal care standards that are then codified into law, while in other cases the development of standards has been at the board's discretion. Either way, a primary motivation for establishing these boards appears to be to ward off more restrictive standards through legislation or ballot measure.

AWI surveyed each state that has enacted on-farm animal protections to determine whether the provisions of those laws and/or regulations are being enforced and, if so, to what degree. To conduct this research, AWI submitted public records requests for documents related to the enforcement of 31 state farm animal protection provisions in effect as of January 2019 (see table at right).

Of the 16 states that have implemented farm animal protection laws, eight provided AWI with evidence of enforcement, and AWI was able to locate documentation of enforcement by one additional state. The following is what we were able to uncover concerning eight of these nine states. (We are awaiting records from Rhode Island.)



FOTOKOSTIC

Enforcement of State Farm Animal Protection Laws¹

STATE	TYPE OF PROTECTION	YEAR EFFECTIVE	HOW ENACTED	EVIDENCE OF STATE ENFORCEMENT?
Alaska	Animal care standard	2017	Legislation/Regulation	Yes
Arizona	Sow gestation crate ban	2013	Ballot measure	No
	Veal calf crate ban	2013	Ballot measure	No
	Hen housing standards	2009	Legislation/Regulation	No
California	Sow gestation crate ban	2015	Ballot measure	? ²
	Veal calf crate ban	2015	Ballot measure	? ²
	Hen battery cage ban	2015	Ballot measure	Yes
	Battery cage egg sale ban	2015	Legislation	? ²
	Cattle tail docking ban	2010	Legislation	No
Colorado	Sow gestation crate ban	2018	Legislation	No
	Veal calf crate ban	2012	Legislation	No
Florida	Sow gestation crate ban	2008	Ballot measure	No
Indiana	Animal care standards	2011	Legislation/Regulation	Yes
Kentucky	Animal care standards	2014	Legislation/Regulation	No
	Veal calf crate ban	2018	Regulation	No
Louisiana	Animal care standards	2013	Legislation/Regulation	No
Maine	Sow gestation crate ban	2011	Legislation	No
	Veal calf crate ban	2011	Legislation	No
	Hen housing standards	2010	Legislation	Yes
Michigan	Veal calf crate ban	2012	Legislation	No
New Jersey	Animal care standards	2011	Legislation/Regulation	Yes
Ohio	Animal care standards	2011	Legislation/Regulation	Yes
	Veal calf crate limitations	2018	Regulation	No
Oregon	Sow gestation crate ban	2012	Legislation	No
	Hen housing standards/egg sale ban	2012	Legislation/Regulation	Yes
Rhode Island	Sow gestation crate ban	2013	Legislation/Regulation	? ²
	Veal calf crate ban	2013	Legislation/Regulation	? ²
	Cattle tail docking ban	2012	Legislation/Regulation	? ²
	Animal care standards	2014	Legislation/Regulation	? ²
Washington	Hen housing standards	2012	Legislation	No
West Virginia	Animal care standards	2015	Legislation/Regulation	Yes

1. Covers enforcement of state laws and regulations in effect as of January 2019. 2. State did not formally respond to requests for records.

ALASKA

Alaska has enacted specific care standards for several animal species—dogs, horses, pigs, and cattle and other ruminants, which became effective in 2017. Records received from the state were very limited, consisting only of email communications related to six investigations. Only one of the cases pertained to potential violations of the state's animal care standards, and it involved horses. In that case, after numerous complaints, a veterinarian was sent to evaluate the animals, and the records indicate follow-up was provided by the vet for several months. The remaining cases were animal cruelty investigations that did not involve farm animals.

CALIFORNIA

California has enacted the largest number of legal protections for farm animals. The state notified AWI that it had no records related to its cattle tail docking ban. It indicated it did have records related to its confinement bans, but we have received none as of the writing of this article. In February 2017, the San Bernardino County District Attorney's Office announced that it had charged an Ontario, California, egg producer with 39 counts of violating the state's Prevention of Farm Animal Cruelty Act (passed as the Proposition 2 ballot measure in 2008).

SAN BERNARDINO COUNTY DISTRICT ATTORNEY



Thousands of hens in inhumane conditions at an Ontario, CA, egg farm.

INDIANA

Farm animal care investigations are conducted by the Indiana State Board of Animal Health (BOAH). AWI received compliance reports prepared by BOAH that included a brief description of the investigation, source of the complaint, species and number of animals involved, and resolution of the case. During 2018 and the first half of 2019, BOAH responded to 39 complaints involving farm animals. Little detail was provided about the nature of each investigation, but one complaint was referred to another agency and seven resulted in written warnings.



WE ANIMALS. JO-ANNE MCARTHUR

Investigations documented inadequate food, water, and veterinary care.

MAINE

In response to an undercover investigation of an egg-laying facility, the Maine legislature passed a bill in 2009 requiring the commissioner of agriculture, food and rural resources to develop best management practices (BMPs) for large egg producers. The BMPs address hen health, space allowances, food and water, lighting, ventilation, and transport conditions. Only one egg establishment is currently being audited under the program. According to Maine's state veterinarian, the facility's records are reviewed annually, and BMP inspections are performed periodically. Although Maine provided only one report from the past few years, AWI has seen evidence that inspections are conducted more frequently.

NEW JERSEY

New Jersey appears to have a formal process for investigating and documenting animal care violations based on the records received. From January 2017 through August 2019, the New Jersey Department of Agriculture's Division of Animal Health performed 22 humane field investigations, a majority of which were the result of anonymous complaints forwarded from local law enforcement and the (now disbanded) New Jersey Society for the Prevention of Cruelty to Animals (NJSPCA). Of these investigations, nine involved severe violations of the state animal care standards. In total, 15 cases were referred to the NJSPCA or other state and local officials for enforcement action.

OHIO

The Ohio Department of Agriculture provided AWI with documents related to 56 animal welfare investigations conducted between October 2017 and November 2019. In addition, a total of 146 investigations were conducted from January 2012 through March 2016, according to a March 2016

Farm and Dairy article. In the article, the executive director of Ohio's Livestock Care Standards Board credited about half of the investigations to complaints from local humane societies and said that most cases involve "backyard, small operations" raising cattle and horses.

OREGON

The Oregon Department of Agriculture (ODA) says it has conducted two investigations to date into the purchase and distribution of out-of-state eggs that do not comply with Oregon's minimum space standards for hens. Both investigations were initiated as a result of a complaint received from an in-state producer. In the first case, the ODA sent a cease and desist letter to an Iowa supplier. The second case involved a California-based egg wholesaler that purchased noncompliant eggs from a producer in Pennsylvania and then resold them to a distributor in Oregon. After an investigation, the California wholesaler was fined \$8,750 for violation of the state's sales ban.

WEST VIRGINIA

Records from West Virginia document two farm animal care investigations in 2018 and 2019 involving a livestock auction facility and a small hobby farm. The investigation into the auction was prompted by a complaint regarding pen conditions, lack of food and water, and frequent animal deaths. Documents from this investigation reveal confusion regarding the West Virginia Department of Agriculture's enforcement authority and the failure of local and federal officials to assist with investigating the auction. The other investigation concerned potential animal care violations for failure to provide cattle with adequate food, but there was no indication that officials intended to follow up to ensure compliance.



WV DEPT. OF AGRICULTURE

Cattle confined under poor conditions at a West Virginia livestock auction.



FARM SANCTUARY

We found no evidence of enforcement of gestation crate bans in seven states.

Animal protection advocates have generally opposed the creation of minimum state animal care regulations due to concerns that they will be weak and will present an obstacle to obtaining higher-level husbandry standards. However, AWI's survey reveals that a majority of states (7 of 12) that have enacted these minimum standards are conducting some type of enforcement activity, primarily investigating complaints received from humane societies, neighbors, and members of the public. While a majority of the investigations to date have focused on the treatment of animals on small hobby farms, some commercial operations have been inspected as well.

Two states have passed bans on the sale of food products that were produced in violation of minimum animal care standards; as noted above, one of the two (Oregon) has provided evidence of enforcement.

Unlike the case with minimum care standards and sale bans, AWI has received no enforcement evidence for 17 of 18 state anti-confinement laws covered by the survey. One possible explanation for the lack of enforcement of these laws is that a mechanism to facilitate enforcement was not included in the measures. Examples of enforcement mechanisms include producer reports or affidavits, third-party audits, and departmental inspections. There is also no evidence that animal protection advocates are filing complaints and/or requests for investigation with state agencies, possibly because access to animals held in intensive confinement settings is extremely limited. It is assumed that a vast majority of producers comply with anti-confinement laws by the time they go into effect, but there is currently no way to confirm this.

To make meaningful use of these state laws, humane organizations and the general public should report to the appropriate agency any suspected mistreatment of farm animals. 🐾

AWI CONDEMNS SEA LION CULL IN PACIFIC NORTHWEST

Despite the opposition of AWI and other groups, a federal bill passed last year that allows a cull of sea lions within the Columbia River basin in Washington, Oregon, and Idaho, in a misguided effort to save endangered salmon. The first request for a permit under the new provisions has been submitted and the public comment period just closed. AWI's action alert on this proposal prompted an impressive response—thousands of protest letters were sent to the federal agency responsible for deciding the sea lions' fate.

Our own comment letter was extensive. AWI opposes lethal predator control, as it rarely (if ever) works. The purpose is to protect prey animals, but often this “solution” backfires. Sea lions also prey on fish that feed on young salmon, so killing these top predators may have counter-intuitive impacts on salmon recovery. In addition, at least one of the proposed capture methods would be inhumane (humane methods are legally required). The permit applicants propose darting

animals on land and in the water, which could result in those individuals who escape capture later becoming incapacitated and drowning.

Regardless of the outcome of this permit application, AWI will continue to do all we can to protect the sea lions' lives and welfare. We will also continue to press for true solutions to the decline in salmon, including removing dams in spawning habitat.

MYSTIC AQUARIUM MOVES TO ACQUIRE BELUGAS FROM CANADA

Mystic Aquarium in Mystic, Connecticut, has long displayed beluga whales and conducted extensive research on them. However, the facility has now embroiled itself in a controversial request to import five captive-born belugas from Marineland in Ontario, Canada, a facility that has long been the target of protests for its overcrowded exhibit conditions. Marineland holds more belugas than any other facility in the world—over 50, with some wild-caught and many captive-born.

This importation request is especially problematic because the wild-caught belugas at Marineland were captured from a population that has been designated as depleted under US law. This means importing these animals and their descendants for public display is illegal. There is an exemption for research, but they will *also* be on display, as Mystic Aquarium has no dedicated research facilities. Mystic says it will also allow the whales to breed (not for research, which means the offspring will be for display).

In addition, Mystic Aquarium may send some of these five belugas or their offspring to Georgia Aquarium eventually. Georgia Aquarium infamously attempted to import 18 wild-caught belugas from Russia several years ago and actually went to court in an attempt to overturn the government's decision to deny its importation request. The aquarium lost, with a blistering ruling from the judge chastising this supposed conservation organization for trying to spin the data that show the source population was well below historical levels. It is disturbing that Mystic Aquarium is partnering with this facility.

AWI has mounted a coordinated campaign to stop Mystic Aquarium from opening a loophole that will almost certainly be exploited by facilities who really want belugas for breeding and display, but will claim they want them for research. The United States should not trade in live belugas at all, let alone those from a depleted population, and certainly not by abusing legal exemptions.



CAROL MUNRO

The Endangered Salmon Predation Prevention Act scapegoats sea lions while ignoring real solutions that would help salmon recover.



MONTEREY DIVER

SAVE THE WHALES, SAVE THE PLANET

As whales go about the business of being whales—feeding, defecating, migrating, and breeding—they provide vital ecological services to the planet. This includes fertilizing the plankton that provide half of all oxygen on Earth and sequestering millions of tons of carbon from the atmosphere in their massive bodies. The economic value of these services was the topic of a groundbreaking recent report by Dr. Ralph Chami, an International Monetary Fund economist. Estimating the worth of an individual whale (including from economic drivers such as whale watching) at more than \$2 million over a lifetime, Chami concluded that, even at their current depleted levels, the world's population of whales is worth more than \$1 trillion.

Arguing that effective whale conservation could lead to a breakthrough in the fight against climate change, Chami called for coordinated global efforts to maximize whales' ecological services. He estimated that if whale populations were restored to their pre-exploitation levels—from around 1.3 million to 4–5 million—they would remove 1.7 billion tons of CO₂ each year from the atmosphere. Urging that “all we need

to do is let the whales live,” he called on leaders to save whales by supporting and funding efforts to eliminate threats to their survival.

NORWEGIAN WHALING: A SINKING INDUSTRY

A recent poll co-funded by AWI and other animal protection and conservation organizations paints a bleak picture for the Norwegian whaling industry's future. Only 4 percent of Norwegians surveyed said they ate whale meat “often.” In the 18–29 age group, no one said they ate whale meat often, and 75 percent said they never eat it. The head of the Norwegian Whalers' Association has acknowledged that the 2019 whaling season was especially poor, with a total of 429 minke whales killed out of a self-allocated quota of 1,278. Yet, the same quota has been allocated for 2020.

The Norwegian government has long subsidized the struggling industry, funding marketing campaigns that have failed to convince the public that whale burgers are a “must have” menu item. For years, the Norwegian whaling industry supplemented its income by selling whale blubber, organs, and scraps to domestic fur farms for use as

AWI is working with whale ecologists to increase understanding of the ecological services provided by whales.

animal feed. However, new legislation banning fur farming in Norway will soon shut down that income source.

In light of these difficulties, Norwegian whalers have turned to exports. In October 2019, the Myklebust whaling company shipped 200 metric tons of whale meat to Japan, one of the largest such shipments from Norway in decades. But with Japan's resumption of commercial whaling earlier this year, this desperate attempt to keep Norwegian whaling afloat seems unlikely to succeed.

SOUTH ATLANTIC HUMPBACKS BOUNCE BACK

Commercial whaling decimated global whale populations, causing the extirpation of some populations and leaving others on the precipice of extinction. At least 300,000 humpback whales were killed between the late 1700s and mid-1900s worldwide. Numbers of western South Atlantic humpback whales plummeted from nearly 27,000 in 1830 to only 450 by the mid-1950s. A study recently published in *Royal Society Open Science*, however, indicates that protections afforded humpback whales over the past half century have helped reverse the decline. The study authors predict that this population may be fully recovered by 2030 but caution that ongoing monitoring is necessary to evaluate how these whales respond to modern threats, particularly entanglement in fishing gear, and to climate-driven impacts to their habitat.



CLARYANA ARAÚJO, CETASIA

Experts Outline Needed Steps to Save Taiwanese White Dolphin

Scientists identified a distinct population of Indo-Pacific humpback dolphins in 2002, off the west coast of Taiwan. Locals knew dolphins were there, but were unaware that they were unique to Taiwan, rather than migrants from the coast of China. In 2015, this population was confirmed as a subspecies, now known as the Taiwanese white dolphin. The Eastern Taiwan Strait is a geographic barrier to these dolphins, who prefer shallower water, and therefore this population had evolved separately from those along the Chinese coast for thousands of years.

The International Union for Conservation of Nature listed the Taiwanese white dolphin as critically endangered (fewer than 75 individuals remain) soon after its discovery and retained this designation once it was confirmed as a subspecies. In 2016, AWI and other groups petitioned to have the subspecies listed as endangered under the US Endangered Species Act. Our petition was granted, and the listing was finalized by the National Marine Fisheries Service in May 2018.

The Taiwanese white dolphin urgently needs tangible actions to halt its decline and promote recovery. Taiwan's west coast is one of the most degraded and industrialized in the world, and the dolphins are facing multiple threats. Experts in humpback dolphin biology and international and Taiwanese policy, including AWI's Dr. Naomi Rose, participated in a workshop in Ontario, Canada—where several of the humpback dolphin experts reside—in August 2019 to prepare a recovery plan, in the hope that the Taiwanese central government would adopt it and move forward with actions that will allow this subspecies to persist into the future.

The workshop participants concluded that available knowledge is sufficient to justify moving forward with six immediate actions:

1. Establish a ban on gill and trammel nets in dolphin habitat (the entire west coast of Taiwan).
2. Locate any new development and related impacts away from dolphin habitat.
3. Establish mandatory routes and speed limits for vessels to reduce both noise and the risk of vessel strikes in dolphin habitat.
4. Reduce pollution (air, water, and soil).
5. Increase natural river flows.
6. Establish regulations to limit human-caused underwater noise levels in dolphin habitat.

These actions are all related to the known threats these dolphins face, which were identified in previous workshops. The most significant threat is entanglement in fishing gear. The workshop participants agreed unanimously that the gear most dangerous to the dolphins must be eliminated from dolphin habitat as soon as possible.

The benefit to dolphins of a ban on nets would be immediate, removing the subspecies' primary source of human-caused mortality. The majority of workshop participants agreed on all of the other actions, which would reduce the negative impacts of pollution, habitat degradation, vessel strikes, and noise. However, they noted that, unlike the net ban, the benefits of these actions would take time to be realized. This recovery plan is now being shared with relevant authorities in Taiwan. 🐬

NONINVASIVE COMPUTER VISION FOR “TAGGING” HAWKSBILL TURTLES

by Jason Holmberg and Colin Kingen

Beneath the surface of Hawaii’s blue ocean waters, Wild Me and Hawaiian Hawksbill Conservation are using photographs and computer vision technology to help protect Hawaiian hawksbill sea turtles. Photographs are commonly used to identify individual animals such as whales, zebras, and tigers for research and conservation purposes. Could they also be used to identify individual sea turtles?

Typically, mark-recapture surveys involve physically tagging and later recapturing or resighting animals to determine distribution and movements and for developing population abundance estimates. The noninvasive method employed in this project would permit the study of these turtles using mark-recapture survey methodologies without the necessity of capturing, handling, and equipping turtles with physical tags attached to their shells or flippers.

For the project, Wild Me and Hawaiian Hawksbill Conservation developed a computer algorithm that could search photographs of sea turtles to find matching individuals, satisfying the project’s goal of modernizing and speeding mark-recapture efforts for Hawaiian hawksbills to reliably and repeatedly identify individual sea turtles from photographs taken from various perspectives in their natural habitat.

This innovative project involved sea turtle photographs collected by Hawaiian Hawksbill Conservation that were loaded into the Internet of Turtles (IoT) Wildbook platform (iot.wildbook.org), allowing the computer vision system to automatically zero in on the turtles in the photographs. Once a turtle was detected, the IoT Wildbook for Hawaiian hawksbill sea turtles applied a trained deep convolutional neural network (technology similar to that used in facial recognition software) to focus on unique patterns on the turtles’ bodies and heads while determining the viewpoint

(which side of the turtle it was seeing). The computer then searches other photographs to find matches, providing the researcher with a ranked list of potential matches.

Through other co-funding opportunities that integrated with the Christine Stevens Wildlife Award, Wild Me is now able to offer the capabilities of the IoT platform for hawksbill and green sea turtles to a global research audience. To date, the IoT is now supporting 36 users across the globe, who have entered 9,133 sightings of more than 3,700 individual turtles thus far. The Wildbook platform that the IoT is based on is designed to offer computer vision on a global scale to collaborating networks of researchers, providing a high tech, inexpensive, and humane platform to coordinate research efforts, especially across projects and borders. Thanks to the generosity of AWI, the IoT is a free platform that has moved beyond a concept and prototype and into a growth phase, offering time and cost-saving computer vision to noninvasively “tag” sea turtles in Hawaii and across the globe. 🐢



“Neural network” computer software homes in on swimming turtles and finds unique patterns to identify turtles without physically tagging them.

REDUCING GRIZZLY BEAR AGRICULTURAL CONFLICTS

by Dr. Andrea Morehouse

Facilitating coexistence between humans and large carnivores is a pressing challenge to those tasked with managing human-wildlife conflicts globally. Although problems and solutions tend to be site-specific, the general premise of human-wildlife conflict is consistent: Where people and wildlife share the landscape, challenges arise.

Although grizzly bears are listed as provincially threatened in Alberta, the Rocky Mountain subpopulation of grizzly bears, which includes the bears in southwestern Alberta, is increasing. In southwestern Alberta, conflicts between grizzly bears and agricultural activities have increased over the last 15 years, and the distribution of conflicts is spreading east.

Generally, the scientific literature lacks examples of program evaluation aimed at addressing conflicts between people and carnivores, particularly from the perspectives of people directly participating in such endeavors. Evidence-based decisions to help design and implement programs that promote coexistence between people and carnivores is required. With help from a Christine Stevens Wildlife Award, we used a case study approach to evaluate the effectiveness of conflict mitigation efforts by the Waterton Biosphere Reserve Association's Carnivores and Communities Program (CACP).

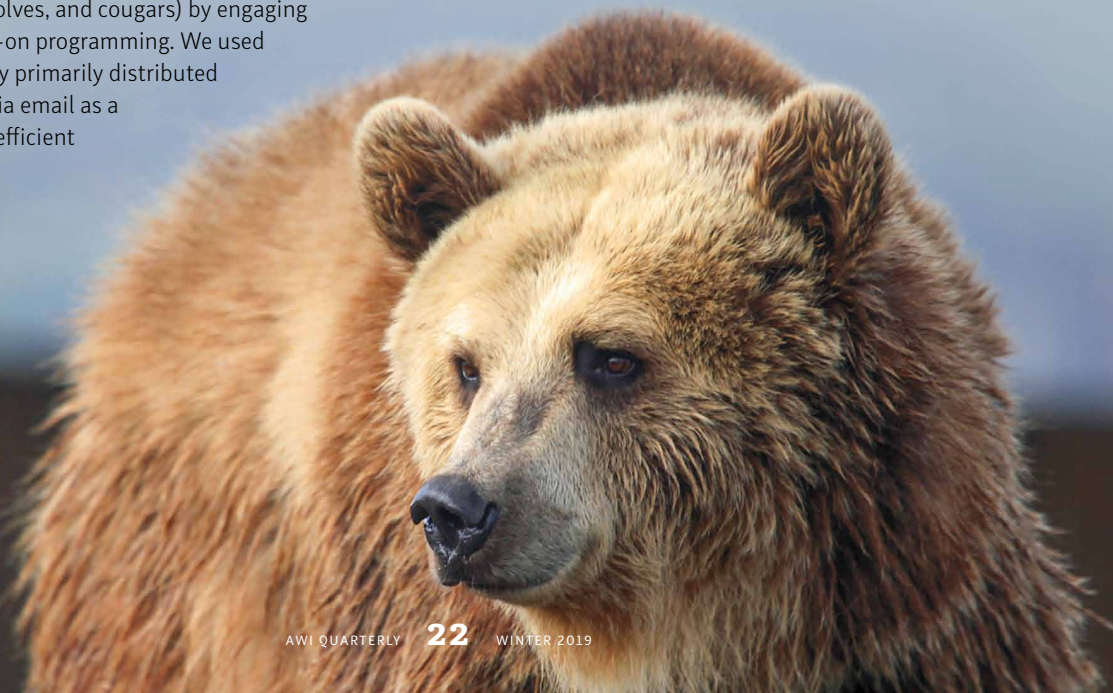
The CACP's goals include reducing livestock or crop loss and addressing safety risks from large carnivores (grizzly and black bears, wolves, and cougars) by engaging residents in hands-on programming. We used a web-based survey primarily distributed to local residents via email as a cost-effective and efficient

data collection technique. We collected information on human demographics; perspectives on the efficacy of, or programming needs for, attractant management projects, removal of deadstock (i.e., livestock who have died), and bear safety workshops; and motivations or barriers to participation in human-carnivore conflict mitigation programs.

Survey results indicated that participants in the CACP felt the program effectively reduced human-carnivore conflicts, increased their sense of security living with large carnivores, and helped them learn skills and gain confidence in using mitigation tools (e.g., bear spray).

We also evaluated temporal trends in large carnivore conflicts using provincial carnivore-human complaint data from 1999 through 2016 to identify trends in incidents (e.g., property damage, access to human food sources, kills or attempts to kill livestock or pets). We focused on incidents related to the CACP's deadstock removal and attractant management programs and conducted a statistical analysis to evaluate whether the 2009 commencement of the CACP altered the trend in human-carnivore conflicts. The data demonstrate that both attractant and deadstock-based incidents changed from increasing to decreasing after the CACP implementation in 2009.

Taken together, the results demonstrate the effectiveness of a contextually specific, community-based approach to addressing human-carnivore conflicts. The success of such efforts depends on reducing conflicts, engaging people in learning opportunities, and crafting innovative solutions. More broadly, our evaluation and lessons learned from implementation of the CACP provide a useful framework for addressing human-carnivore or other wildlife conflicts for conservation organizations nationally and globally. 🐾



The pet trade has taken a heavy toll on wild grey parrot populations. Breeding these birds in captivity will not reverse the decline.

EPA REAUTHORIZES USE OF CYANIDE BOMBS

Despite significant public outcry and prolific evidence of the inherent dangers of the devices, the Environmental Protection Agency reauthorized the use of M-44 sodium cyanide bombs in early December. The federal wildlife-killing program, Wildlife Services, and certain states are allowed to place the devices on private and sometimes public lands.

M-44s are generally set to kill coyotes, but any animal attracted to a baited lure may fall victim, including domestic dogs, wolves, black and grizzly bears, and bald eagles. M-44s have injured people, killed family pets, and maimed and killed threatened and endangered species.

The EPA's reauthorization includes three minor improvements to the labeling restrictions on these deadly devices: (1) an expansion of the distance from trails and roadways where M-44s may be placed from 100 to 300 feet, (2) a requirement for a second sign to be placed notifying people that an M-44 is in the area, and (3) a prohibition on placement of M-44s within 600 feet of a residence without written permission of the homeowner. However, the new limitations do nothing to alleviate the risks to nontarget wildlife.

The new restrictions also fail to address the clear issue that the former labeling guidelines were not being followed by those using the cyanide bombs. The way to keep people, wildlife, and companion animals safe is via a total ban.



IAN DZIUK

HUGE GREY PARROT IMPORT SOUGHT

The US Fish and Wildlife Service recently received an application submitted under the Wild Bird Conservation Act requesting authorization to import 4,000 grey parrots from South Africa to establish a grey parrot cooperative breeding program in Florida. The applicants claim that their proposed breeding program is necessary to satiate the alleged high demand for these birds in the United States and that it will have no adverse impacts on wild grey parrot populations. AWI opposes this application and finds that it is driven by a single motive—commercial profit.

In 2016, in response to increasing threats to the African grey parrot from the international pet trade and habitat loss in West and Central Africa, parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) moved grey parrots from Appendix II to Appendix I of the treaty. This new designation generally prohibits commercial trade in the species with some exceptions,

including one for birds bred in captivity. Instead of helping to conserve the species, however, this exception harms it by permitting the laundering of wild-caught parrots as captive bred or legally acquired.

Reversing the decline of grey parrots in the wild will not be accomplished through increased breeding of grey parrots in captivity. Grey parrot breeding mills have no conservation value, and the high cost of captive breeding creates incentives to capture and trade wild-caught birds to meet demand.

The proposal to establish a new grey parrot breeding mill in Florida suffers from numerous deficiencies, including significant welfare concerns for the wild-caught birds captured, transported, and then used for captive breeding, as well as for their descendants, many of whom will suffer from improper care. Saving grey parrots in the wild requires protecting their habitat in Africa and enforcing laws prohibiting their capture and trade.

wildlife



BLM BOARD BACKS SENSELESS WILD HORSE SURGERY SCHEME

At the end of October, the Bureau of Land Management's National Wild Horse and Burro Advisory Board met in Washington, DC, to consider a wide range of issues pertaining to wild horse management. AWI was present to deliver remarks to the board on the need to humanely manage horses on the range through proven immunocontraceptive vaccines, rather than pursue risky and unsafe methods to curb population growth.

As expected, a major topic of discussion during the three-day meeting was the BLM's proposed surgical sterilization experiments. Since 2016, the agency has aggressively pursued the use of an outdated procedure known as "ovariectomy via colpotomy," in which a metal rod-like tool is blindly inserted through a vaginal incision in order to sever the ovaries of wild mares while they remain conscious. The surgery is rarely performed on domestic mares and carries risks of trauma, infection, and even death. AWI successfully sued the BLM last year to stop the prior iteration

of the proposed experiments. (See *AWI Quarterly*, winter 2018.) The BLM is attempting to revive the research plan, which would entail quantifying the incidence of complications and mortality rates among mares subjected to ovariectomies.

In advance of the board meeting, AWI commissioned a national survey by The Harris Poll, which found that 77 percent of Americans oppose the BLM's surgical sterilization experiments. We also submitted a letter to the Department of the Interior signed by 80 veterinarians outlining the numerous and serious welfare concerns associated with the procedure. And dozens of lawmakers in the House and Senate signed congressional letters objecting to the experiments. During the meeting, one board member representing the livestock industry asked agency officials why the BLM doesn't pursue research into noninvasive fertility control options.

Even so, the board, which is heavily stacked with representatives of ranching and other agricultural industries, voted in favor of two recommendations that promote the

The BLM is bent on performing risky, stressful surgeries on wild mares, despite the availability of effective, humane birth control options.

use of surgical sterilizations on wild horses. AWI will continue to press for humane management strategies; we are prepared to return to court should the BLM move forward with the ovariectomy experiments.

NYC COMMITS TO BIRD- FRIENDLY BUILDING STANDARDS

On December 10, the New York City Council approved a measure that would make the Big Apple and its obstacle course of vertical structures a bit easier for birds to navigate. Proposed Initiative 1482B, introduced by City Council member Rafael Espinal, requires that at least 90 percent of the exterior of the first 75 feet of all new buildings or major renovations be constructed with glazed glass and other materials more visible to birds.

Each year, according to New York City Audubon, an estimated 90,000 to 230,000 birds die from collisions with NYC buildings, as birds mistake reflections in glass for open sky. Prior to the bill's passage, Council Speaker Corey Johnson stated, "Unfortunately, our buildings have become a death trap for thousands of birds each year. ... This bill will help protect our feathered friends and reduce the number of bird mortality due to collisions."

San Francisco, Oakland, and several other California cities have adopted similar rules. A federal bill aimed at public buildings—the Bird-Safe Buildings Act—has been introduced in the House of Representatives.

Steps You Can Take to Keep Birds on the Wing

A truly shocking study published in the journal *Science* in September reveals a net loss of nearly 3 billion birds in North America since 1970—a 29 percent drop in under 50 years. This precipitous population decline is a clear warning for us about the serious impacts borne by wildlife from human activities, including habitat destruction, artificial lighting, pesticide use, and climate change. Experts at the Cornell Lab of Ornithology recommend seven actions you can take to help native birds:

Make windows safer. Up to 1 billion birds die after hitting windows in the United States and Canada *every year*. During the day, birds may perceive reflections in windows as trees or other areas they can fly into. At night, migratory birds are drawn to city lights and collide with windows. To make your windows bird safe, experts recommend installing screens or breaking up reflections using film, paint, decals, or strings on the outside of windows (e.g., Acopian BirdSavers).

Corral your cat. It is hard to talk about cats vs. birds without, shall we say, ruffling some feathers on one side or getting some backs up on the other. Tens of millions of cats are beloved companions in this country. But cats are natural hunters, and every year an estimated 2.6 billion birds are killed by free-roaming cats in the United States and Canada. Keeping companion cats inside prevents them from adding to the toll. To give cats the sights and sounds of the outdoors, consider creating a screened patio area for them or training them to walk on a leash.

Cut (out) the grass. Monoculture grass lawns and pavement fail to provide shelter or food for birds. Reduce the percentage of space devoted to lawn and add native plants to your yard. You will help birds by providing natural foods and shelter and your space will be more beautiful.

Set aside pesticides. Each year, over 1 million pounds of pesticides are applied in the United States. Neonicotinoids—the most widely used—are lethal to birds and the insects on which they feed. Others, including glyphosate (marketed as Roundup) are toxic to birds. Pesticides also make life more difficult for birds indirectly by reducing insect populations—a key food source.

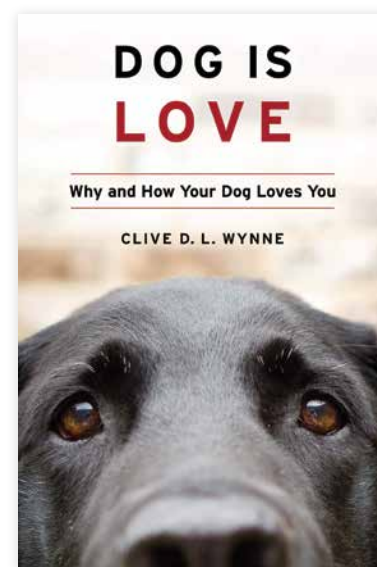
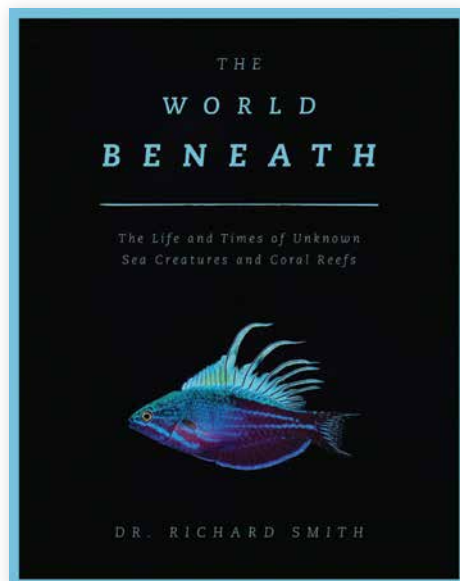
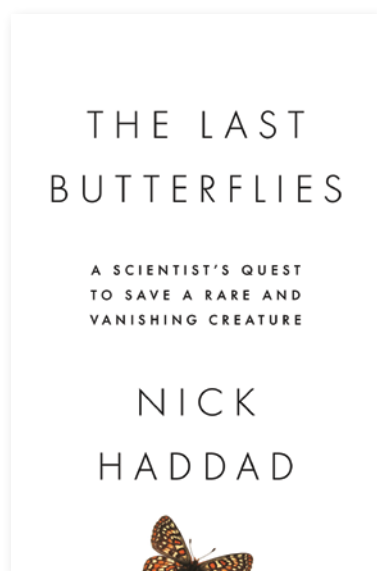
Choose bird-friendly coffee. Most coffee is grown in the sun, meaning the forest canopy was cleared to make way for coffee plants. Choose shade-grown certified coffee, which requires fewer pesticides and protects habitats for at least 42 species of migratory songbirds, including thrushes, warblers, and orioles.

Reduce plastic use. Plastic in landfills and the ocean is often ingested by birds, or they may become tangled in the waste. Only 9 percent of plastics worldwide are actually recycled. Avoid single use plastics such as grocery bags, take-out containers, polystyrene, and straws.

Watch and record. Monitoring birds is essential to helping protect these vulnerable species. You can be a citizen scientist by joining eBird to assist bird inventories or participating in one of several annual bird count days. Cornell's Ornithology Lab offers a free online course for using eBird to record your sightings and discover new places to birdwatch.

Of course, we must lean on our elected officials to support broad policies to reduce threats and protect wild birds and their habitats. But in “walking the talk,” we can all pitch in to stop the silencing of our yards, forests, and meadows. 🐦





THE LAST BUTTERFLIES

Nick Haddad / Princeton University Press / 264 pages

In *The Last of the Butterflies: A Scientist's Quest to Save a Rare and Vanishing Creature*, Dr. Nick Haddad explores his journey to becoming a butterfly biologist and discusses how butterflies are the proverbial canary in the coal mine for species decline. The book is divided into eight sections, one each for the six butterfly species or subspecies Haddad deems to be the most imperiled globally, one for a butterfly already lost to extinction—the British large blue—and one for the monarch, which is still relatively common but under threat.

The six other featured butterflies are likely not those with which most people are familiar: the bay checkerspot, Fender's blue, crystal skipper, Miami blue, St. Francis' satyr, and Schaus' swallowtail. Most of them have very limited ranges and have disappeared from much of their historic habitat. The threats to their survival vary, but all can be traced back to human activity.

Haddad profiles several of the scientists working to identify, understand, and address the threats faced by these disappearing butterflies and the efforts being undertaken to

halt their decline. Throughout, he uses scientific terminology, taking the time to define and explain core principles of conservation biology. For those uninterested in science, these asides could be deemed superfluous, but for the many of us seeking to learn more about the study of wildlife and recent scientific developments, that information is welcome and aids in fully grasping Haddad's thesis.

Haddad is also abundantly honest that the plight of these specific butterflies, as well as butterflies generally, leaves him deeply concerned and also, paradoxically, hopeful, given that some of these species have shown remarkable resilience in the face of near destruction. Haddad sums up his experience: "I have discovered that the rarest butterflies in the world are emblematic of the consequences of a range of global environmental changes and of the modern challenges in biodiversity conservation more generally By stringing together observations that connect biology to global change to conservation, I have come to know with more intimacy the diversity of life on earth and its need for protections."

THE WORLD BENEATH

Dr. Richard Smith / Apollo Publishers / 312 pages

The World Beneath: The Life and Times of Unknown Sea Creatures and Coral Reefs, by Dr. Richard Smith, is a fascinating description of the aquatic life in coral environments. Smith's engaging narratives concerning a multitude of species are only surpassed by his amazing photos. Although I have dived the coral reefs of the Great Barrier Reef, Yap, Palau, Guam, and Hawaii, I was immediately envious of the more expansive and impressive list of dive sites that Smith has visited. What's more, Smith's forays into the vast and diverse array of miniature life in the reefs made me realize that I had likely overlooked many opportunities to spot marine life.

Smith combines his personal studies of each species with an assessment of unique behavioral patterns that only a skilled biologist could deliver in such a captivating manner. He is a renowned expert on seahorses, and the variety of seahorses, pygmy seahorses, and sea dragons he showcases will leave you wanting to book a trip to Indonesia. Perhaps most interesting is his chapter on marine parasites and their relationship with their host species. Once again, his photos depicting these animals are brilliant. He also describes in great detail the more commonly known cleaning functions performed by some species on other forms of marine life.

The World Beneath culminates with a compelling case for awareness of the vast damage to these fragile ecosystems that humans cause through a combination of carelessness or apathy.

— Robert Tomiak, Vice President, Monitor Caribbean

DOG IS LOVE

Clive D.L. Wynne / Houghton Mifflin Harcourt / 272 pages

Dr. Clive Wynne, a canine behaviorist and founding director of the Canine Science Collaboratory at Arizona State University in Tempe is the author of *Dog Is Love: Why and How Your Dog Loves You*. As both a skeptic and a scientist (one more at ease with emotionless terms such as “exceptional gregariousness” and “hypersociability” than “love”), Wynne questioned whether dogs could have a strong love for people. But he is willing to investigate. He reviews existing research, conducts his own studies, and weaves his direct observations into discussions with others in the field. He looks at evolution, behavior, biology, and physiology. Ultimately, Wynne finds that a gene mutation

coupled with early life experiences has created this intense capacity for love that he sees as unique to dogs.

In a chapter near the end of the book titled, “Dogs Deserve Better,” Wynne describes various ways that dogs suffer because of all-too-common barbaric practices by people, and he calls for change because there are sensible, scientifically sound alternatives, and we owe it to the dogs who love us. He criticizes use of force intended to exert dominance over dogs, including use of choke chains, prong collars, shock collars, kicking the dog's soft underbelly, and use of alpha rolls (an alpha wolf-like behavior where a dog is forcefully rolled onto his or her back, grasped firmly by the neck and scolded).

Wynne objects to the practice of keeping a dog—a highly social individual—home alone all day while the owner is at work. Dogs should receive social interaction at least every four or five hours, and this can be provided by the owner or a neighbor or sitter. Regarding homeless dogs, he notes the tragedy that about a million dogs a year are either euthanized or held long term in no-kill shelters. He offers sound, documented means to improve adoption rates, including ceasing the practice of identifying the breed of the dog on a kennel card. Speaking of breeds of dogs, Wynne also objects to the intensive inbreeding of purebred dogs to ensure a certain look and a lineage tied to the Victorian era. He notes that this type of selective breeding has shortened the life expectancy of these dogs and caused them to suffer from a wider range of health issues than those of mixed breeds.

In the end, Wynne—skeptic, scientist, reluctant convert—effuses, “To be loved by a dog is a great privilege, perhaps one of the finest in a human life. May we prove ourselves worthy of it.”

Bequests

If you would like to help assure AWI's future through a provision in your will, this general form of bequest is suggested: *I give, devise and bequeath to the Animal Welfare Institute, located in Washington, DC, the sum of \$ _____ and/or (specifically described property).*

Donations to AWI, a not-for-profit corporation exempt under Internal Revenue Code Section 501(c)(3), are tax-deductible. We welcome any inquiries you may have. In cases in which you have specific wishes about the disposition of your bequest, we suggest you discuss such provisions with your attorney.



Animal Welfare Institute

900 Pennsylvania Avenue, SE, Washington, DC 20003

Return Service Requested

Non-Profit Org.
US Postage
PAID
Washington, DC
Permit No. 2300

f www.facebook.com/animalwelfareinstitute

t @AWIonline i @AWIonline



THE ANIMAL WELFARE INSTITUTE SCHOLARSHIP: EMPOWERING FUTURE CHAMPIONS OF ANIMAL WELFARE

Over the nearly seven decades that AWI has been advocating for animals, much progress has been made. And yet, there is so much more to be done; long-running battles remain, and—despite greater awareness and changing attitudes—new issues and new battles emerge every year. If we are to continue to take a stand against the needless suffering of animals at the hands of humans, we must encourage the youth of today to take up the mantle.

Fortunately, many young people seem all too eager to do so. Every year, hundreds of students enter the AWI-cosponsored “A Voice for Animals” contest (entering its 30th year!) to share stories of their own efforts to make the world a better place for animals. Many of these individuals are keen to continue the work professionally, and AWI wants to help. That is why we are launching the Animal Welfare Institute Scholarship.

Through this scholarship program, we are investing in the education of exemplary students who have demonstrated a

commitment to animal welfare through volunteer work and/or advocacy and intend to pursue a career that will seek to reduce animal suffering and safeguard vulnerable species. On December 16, we began accepting applications from high school seniors in the United States who meet this criteria. Applications will be accepted through February 16, 2020, when a committee from AWI will begin reviewing them in order to choose recipients with an impressive and clear plan to continue working to protect animals. Each applicant who submits a completed application will receive a complimentary subscription to the *AWI Quarterly*. Up to 12 applicants will be chosen to receive scholarships, worth \$2,000 each.

So if this sounds like you, apply now! Or if someone you know fits the bill, please share the news. To learn more about the scholarship and application process, see www.awionline.org/scholarship. 🐾

