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EXCLUSIVE

In this resource, we explore trends in the number of animals used in research in the U.S. and Canada, based on data tracked by government and non-profit agencies for the past several decades.

By some estimates, **190 million animals are used in research** globally each year. Despite th
miniscule compared to the **85+ billion animals killed for food** annually, animals used for ex

research often live horrible lives and are subjected to **extreme acts of violence**. Indeed, the Cana on Animal Care (CCAC) has **five categories** to classify the level of invasiveness of scientific proce animals, ranging from research on invertebrates and live tissues (which is itself problematic as **in can likely feel pain**), to little or no stress, and finally, severe pain. The United States Department ((USDA) has **similar** pain categories (see Table 1 below).

Table 1. Categories Of Invasiveness/Pain

Notes:

Quotation marks indicate that these are the exact terms used by the agencies responsible these categories: the Canadian Council on Animal Care (CCAC) and the United States Dep Agriculture Animal and Plant Health Inspection Service (USDA APHIS).

N/A = not applicable (Category A doesn't exist under the USDA APHIS)

In 2024, close to 3% of animals used in science at CCAC-certified institutions (just a little over 98 were subjected to the highest category of invasiveness (see Table 2). In the U.S., this figure was 7 55,500 animals; see Table 3). The percentages rise to 24% in the U.S. and to 30% in Canada wher the second-highest category in the same year (category D). However, these categories only cons protocols performed on an animal, which means they ignore the negative welfare impact of stan laboratory housing, which **increases** overall mortality and severity of disease in captive animals.

Table 2. Number Of Animals By CCAC Invasiveness Categor 2024

Notes:

Data were obtained from the Canadian Council on Animal Care (CCAC) annual data files. The r "TOTALS" reflects the sum of animals by category of invasiveness, as reported in the CCAC's " Animal Use and Invasiveness of Procedures" dataset. According to the CCAC, "animals can be than one protocol provided that they have not been previously subjected to pain and distress, some animals may be counted more than once in these totals.

In contrast, the column labeled "Totals" represents the total number of individual animals usec in the CCAC's "Total Numbers of Animals Used in Science" dataset, in which each animal is cou once. As such, differences between these totals are due to multiple uses of some animals acro categories of invasiveness.

The percentage tab shows the percentage of each animal group for each column (e.g., the per dogs used in categories B, C, D, and E; the percentage of total animals used in categories B, C etc.).

Supplemental Chart: Percentage Of Animals By CCAC Invas Category, 2021–2024

Table 3. Number Of Animals By USDA Pain Category, 2021

Notes:

Data were obtained from the United States Department of Agriculture Animal and Plant Health Service (USDA APHIS) annual summary reports.

The percentage tab shows the percentage of each animal group for each column (e.g., the per dogs used in categories B, C, D, and E; the percentage of total animals used in categories B, C, etc.).

In 2024, the USDA APHIS modified the "Other Animals" category by splitting it into two new c "Other Farm Animals" and "Other Mammals." Additionally, the USDA APHIS added "Birds" in 2 why no data are shown for these specific categories in the previous years.

Supplemental Chart: Percentage Of Animals By USDA P Category, 2021–2024

Indeed, the *quality* of animals' lives versus the *number* of animals used in research was the main q my PhD dissertation sought to answer: is it ethically more acceptable to use a greater number of each experiencing fewer procedures, or to use fewer animals with each experiencing more proce with many dissertations, I didn't come to a neat conclusion with my own data.

However, this debate is limited by black-and-white thinking as it doesn't allow for alternative ans complete replacement of animals used in research or at minimum, establishing universal ethical g non-human animals. For instance, the latter would only encourage animal research that would ha benefits for the individual animals involved, or studies in which the animal doesn't show signs of

There are annual reports by government agencies that show the number of animals used in scien species, and some academic research that shows the overall number of animals used over time, b a concrete, accessible resource that illustrates animal use by species and year. Because Canada a are among the top ten animal-using countries for science and research, and because both countr available for their animal use numbers (since 1973 for the U.S. and since 1985 for Canada), we set explore annual trends among both countries for a variety of species, such as cats, dogs, monkeys rabbits, and more.

The purpose of this blog is to help advocates in these regions understand which species are mos used in science and why certain spikes and decreases happen over time. In it, we'll also analyze t

percentage of animals exposed to different levels of invasiveness/pain in recent years (2021 to 2(understand what happens to animals used in science in Canada and the U.S. (see Tables 2 and 3

We also examine the CCAC's "purpose of animal use" data (e.g., fundamental/basic science, med regulatory testing, product development, and educational purposes; see Table 4) to better under trends, although this type of information isn't available in the USDA datasets. The most recent "p animal use" datasets are available through the **CCAC's website** (they are named 'Sortable Excel F each year).

Table 4. Purpose Of Animal Use

Note:

These six categories are defined by the Canadian Council on Animal Care (CCAC).

Data Caveats

CCAC

The CCAC, a non-profit organization, only reports data from CCAC-certified institutions, which a universities. Thus, CCAC data excludes most private laboratories and companies unless they rece government funding for their research. Additionally, there might be **inconsistencies** between inst CCAC doesn't provide standardized methods or guidelines for institutions when they submit thei numbers. The CCAC also implemented changes to their data collection procedures — once in 19 in 2011 — which may present some inconsistencies in data reporting as well.

Further, while the CCAC presents data on the type of research being done, there are only five br categories (fundamental, medical, regulatory testing, development of products, and education), it difficult to track specific studies to explain animal usage.

Lastly, the CCAC doesn't differentiate between wild animals brought into a laboratory versus wil studied in the wild, so it's hard to identify which percentage of all animals reported to the CCAC outside of a lab.

USDA

The USDA, a government agency, reports data from USDA-registered research facilities, federal r facilities, and Veterans Affairs research facilities, as **required** by the *Animal Welfare Act* (AWA). S CCAC, the USDA data includes research conducted on wild animals, but doesn't differentiate bet animals brought into a laboratory versus wild animals studied in the wild.

The biggest limitation with the USDA data is that it excludes laboratory-bred mice, rats, birds, re amphibians, crustaceans, and fishes because the AWA doesn't protect them, and these animals n of animals used in research in the United States. As of 2024, birds not bred for research are now be reported (i.e., the new category, "Birds," could include birds captured from the wild and used but not those bred in captivity for research purposes).

The USDA summary reports also omit farmed animals and non-protected species (e.g., fishes, rep laboratory-bred mice and rats, etc.) reported by Agricultural Research Services facilities from the numbers. In 2024, the USDA updated its data collection **form** with new categories, including "Otl Animals," "Other Mammals," and "Birds," so long as these animals were not used for agriculture r bred specifically for research purposes. In other words, animals used in agricultural studies or bre specifically for research are not counted. As such, the U.S. charts below present an incomplete pi farmed animals used for research purposes, in addition to excluding non-protected species.

Despite these limitations, both agencies provide informative trends on animals used in science ov if liable to noise and errors.

Canada

Overall Use

Based on data from the CCAC, the graph below shows animal use in science over time in Canada different lines representing different animal categories, including total use.

Figure 1. Total Animals Used In Research In Canada*, 1985

Notes:

*** Data from 1985 to 2018 were obtained from Andrew Rowan (personal communication, 2025) obtained the data from the Canadian Council on Animal Care (CCAC). Data from 2019 to 2024 obtained directly from the CCAC's annual animal use data reports. The CCAC excludes non-ac laboratories.**

The total number of animals used in science in Canada has been steadily increasing, peaking in 2 dropping since, although the number recorded in 2024 is almost two times higher than it was in (approximately 3.7 million versus 2 million animals). Despite the limitations of the CCAC data, the number of animals used in science is increasing is alarming, especially considering the technolog over the last few decades that have been developed to replace animal testing with alternatives.

+ Birds

+ Mice

+ Fishes

+ Rats

+ Guinea Pigs

+ Rabbits

+ Monkeys

+ Dogs & Cats

+ Cows

+ Pigs

+ Amphibians & Reptiles

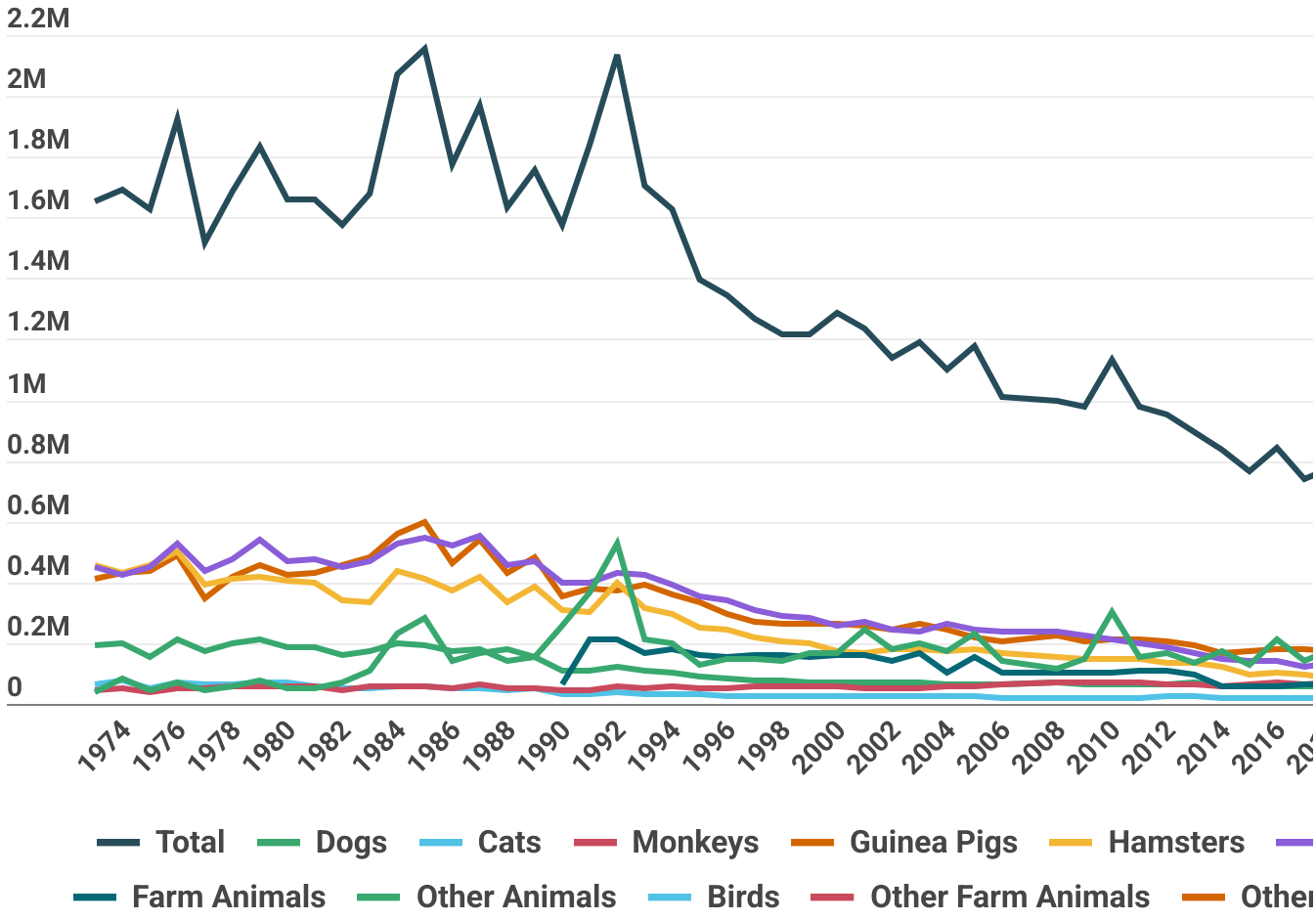
+ Other Animals

United States

Overall Use

Based on data from the USDA, the graph below shows animal use in science over time in the U.S. different lines representing different animal categories, including total use. Please note that the U amended the “Other Animals” category in 2024, splitting it into “Other Farm Animals” and “Othe while also adding “Birds,” which is why no data exist for these categories prior to 2024.

Figure 15. Total (Regulated) Animals Used In Research In Tl 1973–2024



Notes:

*** Data from 1973 to 2019 were obtained from Andrew Rowan (personal communication, 2025) obtained the data from the United States Department of Agriculture (USDA).**

Data from 2020 were obtained from the USDA's annual reports search, while data from 2021 t obtained from the Animal and Plant Health Inspection Service (APHIS) annual summary report is the U.S. government agency responsible for enacting the U.S. *Animal Welfare Act* (AWA).

Data exclusions: The AWA excludes laboratory-bred mice, rats, birds, reptiles, amphibians, cru fishes. No data were available for the year 2007 and no data were reported for "Farm Animals to 1989. No data are presented for "Birds," "Other Farm Animals," and "Other Mammals" prior these were newly added in 2024 (likewise, no data are shown for "Other Animals" in 2024 due changes made by the USDA). The USDA also excludes farmed animals used for agriculture rese birds bred for research from these categories.

Supplemental Chart: Total Estimated Animals Used In Rese The U.S., Including Mice & Rats*, 1973–2024

Notes:

*** Because rats and mice make up approximately 99.3% of all laboratory animals in the U.S., the "Totals" by the USDA represent 0.7% of all laboratory animals. To adjust for rats and mice, we original total by the USDA by 0.007 to estimate "Totals (Adjusted For Mice & Rats)," and then those numbers by 0.993 to estimate mice and rat numbers.**

It cannot be emphasized enough: the majority of research animals are exempt from this dataset of legal protections. With that caveat in mind, the use of *regulated* animals in science has been d over time in the United States. The total number of animals reported to the USDA went from aro in the 1980s and 1990s to just under 1 million since 2011. This is in sharp contrast to the use of 10 rodents annually in the U.S., a conservative **estimate**, while others estimate the number to be **ove**

The decline in regulated animals in the U.S. could be due to **one or more factors**: 1) new scientific that reduced or replaced animal use; 2) animal welfare concerns led to changes in regulations; 3) became more expensive; and 4) pharmaceutical companies no longer depend on large numbers their drug discovery programs.

Indeed, when unregulated animals (such as mice and rats) are included, there is an **upward trend use**, at least during a 15-year period (between 1997 and 2012), based on research fund data in the States. Therefore, while regulated species are declining, they're likely being replaced with unregu like rodents and fishes.

+ Rabbits

+ Guinea Pigs & Hamsters

+ Dogs & Cats

+ Monkeys

+ Farm Animals

+ Other Animals

Key Takeaways

Prioritize species that are used in the most painful procedures (ca D and E), which include fishes, mice, hamsters, guinea pigs, rabbit pigs.

In Canada, fishes were the most frequently used animal in the most painful type of procedure fro 2024 (4–7% of all fishes: ranging from 64,000 to over 88,000 individuals), while mice were the m frequently used animal in the second-highest category of invasive research from 2021 to 2024 (6 mice: ranging from 700,000 to over 900,000 individuals).

It's also likely these trends **exist** in the U.S., but fishes and mice are exempt from the USDA as the aren't protected under the AWA. Keeping this in mind, hamsters and guinea pigs were the most f used species in the most painful type of protocol in the U.S. between 2021 and 2024 (14–17% of a ranging from 24,000 to over 34,000 individuals; and 24–26% of all hamsters, ranging from appro 18,900 to over 26,000 individuals). Rabbits and pigs were also top contenders for animals used i highest most painful protocols in the U.S. from 2021 to 2024: 30–36% of rabbits (ranging from ap 35,500 to over 45,000 individuals) and 66–71% of pigs (ranging from approximately 32,100 to ov individuals).

Leverage the lack of human applicability in basic research to dem phase-out of invasive procedures on these species.

In Canada from 2023 to 2024, 25–64% of salmon subjected to the most painful protocols (aroun 8,000 individuals), 68–78% of zebrafishes exposed to the second-most invasive protocols (aroun 66,000 individuals), and 57–59% of mice exposed to the second-most invasive protocols (aroun 430,000 individuals) were purposely put through stressful and painful procedures for the sake o discovery. This type of scientific discovery is hard to justify, so advocates can start here to ask fo

Leverage peaks of animal use to highlight opportunities for chang

The number of monkeys used in Canada for science reached its highest peak in 2023, which is **tie** demand of cynomolgus monkeys for COVID research — and the wildlife trafficking that ensued a the heightened demand. With future pandemics likely, advocates can push for an end to wildlife monkeys by demanding a **ban** on the importation of monkeys from countries with the highest ex Cambodia. Advocates can also push to close **loopholes** that allow U.S. companies, such as Charle obtain monkey samples from Canada, which may inadvertently increase the incentives for faciliti to import monkeys.

Furthermore, monkeys were the most frequent type of animal to be stockpiled (i.e., not part of a study) in the U.S. from 2021 to 2024. In other words, 36–42% of all monkeys reported to the USD time period, ranging from 41,000 to over 44,000 individuals per year, were held in a facility but r any study. This type of captivity is hard for researchers to justify because keeping animals in cap breeding purposes goes against the "**3 Rs**" principle of animal research: it's not reducing or repla animals, and there are major welfare (refinement) **concerns** when it comes to monkey confineme

These welfare concerns are further compounded by **government cuts** to the USDA's Animal and Inspection Service, which has lost over one-third of its inspectors in recent years, leaving only ab individuals to oversee more than 17,000 facilities. This means that each inspector would have to i 220 facilities per year in order to cover them all. Consequently, the welfare of these 44,000 stock monkeys is likely going largely unmonitored, drastically increasing the risk of unchecked sufferin

Demand more transparency from these agencies, specifically calli mandatory, publicly accessible, and species-specific data on all ar

For the CCAC in particular, better transparency would help explain what the undisclosed large-sc are that influence peaks for some species (e.g., almost 2.3 million chickens were used in one proc development study in 2020, but no additional information was disclosed).

For the USDA, advocates can ask for full data disclosure, which means asking the USDA to stop e agricultural research animals breathed, official counts in the annual summary reports as that give incomplete picture of animal use, especially given the ties between animal agriculture and univer animal research. Similarly, U.S. advocates can demand that the AWA be updated to include prote vertebrates, including birds, rats, and mice — species that currently make up the vast majority of but remain unprotected, and uncounted, under the law.

Meet the Author: Andrea Rolanda

Andrea is a social science researcher at Faunalytics with a PhD in animal welfare science from the University of Guelph. With both an academic background and experience in grassroots advocacy, Andrea is passionate about how research can inform and strengthen the animal advocacy movement—from understanding the psychological factors that shape people's attitudes and behaviors toward animals, to examining equity within the movement itself. She is driven by a belief in collective liberation (the idea that no group can be free while others are oppressed) and seeks to align her research and advocacy

U.S. advocates should also recognize that the USDA is currently facing an **impossible workload** c significant inspector shortages and new legal restrictions on enforcement. As such, demands for

protection must be coupled with real oversight and capacity to ensure these … actually enforced, … and relaxing with her cat companion Zupa/Sopa ('soup').

Expose this often-overlooked connection: animal agriculture and … testing are deeply intertwined.

Tags:

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United States

… massive industrial trials, such as one 2020 study that used nearly 2.3 million chickens. Such trend… … highlights the … the Canadian Pou… Council, which is composed of industry groups like Chicken Farmers of Canada, has committed $… welfare research since its formation in 2001.

Advocates can broaden their impact by educating the public on how the agriculture industry util… laboratory system to optimize production — often at the expense of animal welfare. Connecting …

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