



Funding Needs for the US Fish and Wildlife Service's Endangered Species Programs: 2024

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Overview

Biodiversity is declining around the globe, with approximately one million species threatened with extinction in the coming decades,¹ and nearly three billion individual birds lost in North America alone since 1970². The U.S. Endangered Species Act is one of the strongest wildlife laws in the world and was created to combat this loss. The goals of the ESA are to prevent extinction and recover species, but these goals can only be met if the agencies tasked with implementing the law are fully funded. In 2019, the Center for Conservation Innovation at Defenders of Wildlife conducted an analysis to determine how much funding the US Fish and Wildlife Service (FWS) needed to implement the ESA as intended. **We found that FWS received only around 50% of the funding required to properly implement the ESA.**³ Here, we update that 2019 analysis with new more recent data and account for inflation⁴ over the past few years. This analysis is of the FWS only and does not include funding needed by other agencies to implement their ESA responsibilities, including but not limited to the National Marine Fisheries Service which is the primary implementing agency for the ESA as it relates to marine and anadromous species.

In our latest analysis, we found that for fiscal year (FY) 2024, the FWS needs \$841,370,000 to fully implement the ESA. This includes \$723.71M for Ecological Services (ES), with a program breakdown of \$66.34M for Listing; \$467.9M for Recovery; \$179.32M for Planning and Consultation; \$10.15M for candidate conservation through the Conservation and Restoration program. An additional \$117.66M is needed for listed species conservation through the Cooperative Endangered Species Conservation Fund (CESCF). Though recent years have seen a slight increase in appropriation funding, these are still substantial increases above the appropriations and budgets of past years. The drastic discrepancy between enacted funding and what is needed to implement the ESA as Congress intended serves to highlight the critical role the ESA plays in maintaining, preserving, and recovering imperiled species in the face of incredible challenges. Importantly, these recommendations include funding to address the dire need for sufficient staff to implement the law.

Cover image: California tiger salamander, credit: USFWS

¹ From the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 2019 report, summarized here: <https://zenodo.org/record/3553579>

² Rosenberg et al. 2019, *Science*, <https://doi.org/10.1126/science.aaw1313>

³ See the Center for Conservation Innovation's 2019 analysis at <https://defenders-cci.org/publication/esa-funding-needs/>

⁴ The U.S. Consumer Price Index was used to update 2019 costs to 2022 costs as of September 2022.

We identify the funding needs through two different mechanisms: funding appropriated for operations of Ecological Services, the Service department with primary responsibility for administering the Endangered Species Act, and the Cooperative Endangered Species Conservation Fund, a grant program to support states and territories in developing and implementing conservation programs for the benefit of resident listed, candidate, and at-risk species on non-federal lands:

ECOLOGICAL SERVICES

Program	FY24 Needs Analysis
Listing	\$66.34M
Recovery	\$467.90M
Planning and Consultation	\$179.32M
Candidate Conservation*	\$10.15M
Total	\$723.71M

**Candidate Conservation is housed under the larger Conservation and Restoration program*

COOPERATIVE ENDANGERED SPECIES CONSERVATION FUND

Program	FY24 Needs Analysis
CESCF	\$117.66M
Total	
GRAND TOTAL REQUEST	\$841.37M

Below, we present a detailed breakdown of the program responsibilities, allocations and costs to conserve and recover imperiled species listed on the tables above.

LISTING: \$66,337,100

Item	Amount	Quantity	Extension
New listing	\$329,450	191	\$62,924,950
Critical habitat designation	\$117,663	28	\$3,294,550
Uplisting reclassification	\$117,663	1	\$117,600
Total			\$66,337,100

The listing program of Ecological Services covers all new listings, uplistings (moving a species from a designation of “threatened” to “endangered”) and designating critical habitat. Under the FWS’s new Recovery Planning and Implementation framework (RPI), the creation of Species Status Assessments (SSAs) are also carried out as species are newly listed. The FWS has a five-year listing workplan that details how listing evaluations will be prioritized.⁵

According to the listing workplan for FY 2022-2027, 191 species are awaiting evaluation for listing under the ESA, and 28 require a critical habitat decision. With an estimated cost of \$329,450 per species for a final listing with critical habitat and the underlying SSA development,⁶ and an estimated cost of \$117,663 per species for status change determinations,⁷ **\$66.3M in funding is needed for listing, critical habitat, and uplisting reclassification decisions in FY 2024.**

RECOVERY: \$467,857,300

Item	Amount	Quantity	Extension
Recovery planning	\$352,990	387	\$136,607,150
Recovery planning (revisions)	\$178,005	890	\$158,424,450
Recovery action implementation (avg)	\$97,550	1666	\$162,518,300
Delisting/downlisting reclassifications	\$117,663	51	\$6,000,800
Five-year review	\$17,650	244	\$4,306,600
Total			\$467,857,300

The recovery program in the FWS budget includes planning for recovery, implementing recovery actions, and tracking recovery progress. Downlisting (moving a species from a designation of “endangered” to “threatened”) and delisting reclassifications are also under the recovery program. Funding for recovery programming has long been correlated with progress in conserving and recovering imperiled species⁸ and providing adequate funding for recovery can ensure FWS has a fighting chance in protecting biodiversity. While recovery funding has increased in recent years, FY

⁵ Available at <https://www.fws.gov/endangered/what-we-do/listing-workplan.html>

⁶ This estimate is based on information presented in the 2016 Candidate Notice of Review ([81 FR 87246](#)) and in-person meetings Defenders had with FWS in late 2016.

⁷ This is currently an informed guess, merging costs for five-year reviews, listing decisions, *Federal Register* notices.

⁸ Male and Bean, 2005, *Ecology Letters*. Available at <https://goo.gl/sLVHMn>

2022 saw only around \$100M enacted by Congress to put toward these efforts – far below what is needed for the program.

Recovery planning: \$295,031,600

Recovery plans are a key part of the strength and the ultimate goal of the ESA, detailing species biology, the threats they face, and the actions needed to prevent extinction and recover species⁹. However, hundreds of species are still without recovery plans, and hundreds more have plans that are decades out of date¹⁰. From the FWS’s online Environmental Conservation Online System (ECOS) database, around 387 species await a recovery plan under the Service’s Recovery Planning and Implementation (RPI) program.

Under RPI, FWS estimates it takes 1 FTE for two years, or an equivalent of \$352,990, to develop a species recovery plan. Extending this to all 387 species awaiting plans, this results in a need of around **\$136.6M for the development of new recovery plans**. In addition, many existing recovery plans are decades out of date, meaning they lack critical information about worsening threats like climate change and habitat destruction or changes in species’ status. According to the ECOS database, around 890 recovery plans are more than 20 years out of date¹¹. Assuming that updating an existing recovery plan will require about half the expense of developing a new plan, **FWS needs \$158.4M to update critically out-of-date recovery plans**.

Recovery implementation: \$158,424,450

Recovery planning for species is only part of the solution: actions outlined in the recovery plans must have the funding and resources essential to their successful implementation. Though collaboration across sectors is key to recovering species, FWS is the lead on coordinating efforts and ensuring the actions occur. The current administration’s Inflation Reduction Act includes a dedicated \$125 million allocated for endangered species recovery planning and implementation, adding much needed possible funding for programs such as the extinction prevention programs for critically endangered species, including Hawaiian plants, freshwater mussels, desert fish, and North American butterflies. While this is a step forward, hundreds of species receive less than \$1000 a year for their recovery, and many species receive no recovery funding at all¹². To recover these species and save them from the brink of extinction, more funding is needed for the implementation of key recovery actions outlined in recovery plans. Species cannot recover if there are no resources dedicated to moving them away from the extinction line. Given the continued decline or mere stabilization of many threatened and endangered species¹³ and the strong relationship between funding and status improvement¹⁴, it is clear that additional resources are required. Accounting for

⁹ Malcom and Li, 2015, *Conservation Letters*. Available at <https://goo.gl/4xSMn3>

¹⁰ Malcom and Li, 2018, *Conservation Letters*. Available at <https://doi.org/10.1111/conl.12601>

¹¹ Data available at <https://ecos.fws.gov/ecp/report/species-with-recovery-plans>

¹² See the FWS’s most recent Expenditure Report from 2018 at <https://www.fws.gov/sites/default/files/documents/endangered-and-threatened-species-expenditures-fiscal-year-2018.pdf>.

¹³ Evans et al., 2016, *Ecological Applications*. Available at <https://goo.gl/bwoQmy>

¹⁴ Male and Bean, 2005, *Ecology Letters*. Available at <https://goo.gl/sLVHMn>

inflation, Ecological Services requires a total of **at least \$158,424,450 for recovery action implementation in FY 2024 to prevent extinction and recover species.**

Five-year reviews: \$4,306,600 FY 2024 (\$5.7M / year thereafter)

The ESA requires a systematic review of species status be conducted once every five years, which both ensures species conservation remains on-track and that species are correctly classified (that is, threatened, endangered, or not listed). A consequence of the lack of resources for the FWS's Ecological Services program is that FWS has fallen behind on the development of 5-year-reviews for listed species.

In recent years, FWS has made data available on species with 5-year-reviews on ECOS, which contains the date of the most recently completed review, as well as notice on the progress of additional 5-year-reviews in the works¹⁵. From this data, there are around 244 species due for a 5-year-review. FWS previously estimated an average of \$17,650 per review¹⁶, meaning **FWS requires \$4,306,600 for FY 2024 to complete the outstanding list of 5-year reviews.** Further, because five-year reviews are a recurring expense, Congress should be prepared to appropriate at least \$6.2 million per year for the approximately 350 five-year reviews that must be completed each year to avoid again falling behind schedule.

PLANNING AND CONSULTATION: \$179,324,000

Item	Amount	Quantity	Extension
Consultation FTE	\$176,500	900	\$158,850,000
Pesticide FTE	\$176,500	7	\$1,235,500
ECOSphere FTE	\$176,500	24	\$4,236,000
Voluntary Conservation FTE	\$176,500	75	\$13,237,500
Compliance FTE	\$176,500	10	\$1,765,000
Total			\$179,324,000

The Planning and Consultation element of the ES budget includes several key conservation components, including consultations under section 7 of the ESA and private lands conservation work permitted under section 10.

Base consultation needs: \$158,850,000

Section 7 of the ESA directs federal agencies to use their authorities to conserve listed species and ensure they don't jeopardize species or adversely modify their critical habitat. This includes basic protections afforded through the interagency consultation process. While the consultation program has functioned well overall, it is strained by resource limitations. Adding to this workload is the passing of the Infrastructure Investment and Jobs Act in November of 2021, which will see an

¹⁵ See the ECOS database at <https://ecos.fws.gov/ecp/report/species-five-year-review>

¹⁶ Based on conversation with FWS in November, 2016.

increased focus on infrastructure projects throughout the U.S. These projects, which promise to rebuild America's roads, bridges, and expand drinking water, among others, will drastically increase the number of consultations needed to ensure these projects do not jeopardize listed species or adversely modify their designated critical habitat¹⁷. For example, one part of the bill authorizes \$110 billion to repair 5 miles of highways and major roads as well as 45,000 bridges that are in poor condition, all of which must go through consultation under section 7 of the ESA. In FY 2023, the FWS requested a total of 806 FTEs for the Planning and Consultation program, 194 over their FY 2022 enacted total, with the request for 93 additional FTEs to focus on the Bipartisan Infrastructure Law (BIL), 51 to focus on planning and consultation activities, 47 to focus on energy, and 3 for pesticide consultations¹⁸. However, given the projected increase in infrastructure consultations around the country, this increase will still fall short of their needs. With the subsequent passage of the Inflation Reduction Act even more consultations will be needed, but FWS will not have the staff to meet these additional needs. **FWS requires an increase in consultation funding for an additional 94 FTEs above their FY 2023 request, for a total of 900 FTEs at \$158,850,000.**

Pesticide consultations: \$1,235,500

One of the biggest challenges for the section 7 consultation program is evaluating whether EPA registration of pesticides will jeopardize ESA-listed species or harm critical habitat. In January of 2022, the Environmental Protection Agency (EPA) announced their Endangered Species Act Protection Policy for New Pesticides with the intention to evaluate and register the potential effects of all active pesticide ingredients on federally threatened and endangered species, their designated critical habitats, and initiate ESA consultation with the Services.¹⁹ In addition, the EPA will apply this new policy to all new conventional active ingredient applications for pesticides already submitted to the EPA that have yet to be completed²⁰. Though the FWS partners with the EPA to assess the ecotoxicology and potential dangers of pesticide ingredients, this increased workload will mean more FWS FTEs will need to focus primarily on the issue of pesticide consultations. Because ecotoxicology is highly technical, a single consultation on the effects of just three organophosphates on 77 species was more than 3,700 pages long²¹. FWS will need a more reasonable staffing level to keep up with this work. With the majority of pesticide consultations being national in scope, **FWS requires \$1,235,500 in funding for an additional seven FTEs at HQ dedicated to the pesticide consultation process.**

ECOSphere: \$4,236,000

ECOS, the FWS's Environmental Conservation Online System, provides a central point of access to data on ESA-listed species, including data on species ranges, species reports, and web-based tools like the Information for Planning and Consultation (IPaC) system that helps improve the efficiency of the consultation process. These tools are extremely helpful to stakeholders; in FY 2020, the IPaC

¹⁷ See the White House Press Release at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/06/fact-sheet-the-bipartisan-infrastructure-deal/>

¹⁸ See the FWS FY2023 Budget Justification at <https://www.doi.gov/sites/doi.gov/files/fy2023-fws-greenbook.pdf>.

¹⁹ For a press release on this topic, see <https://www.epa.gov/newsreleases/epa-announces-endangered-species-act-protection-policy-new-pesticides>

²⁰ <https://www.epa.gov/system/files/documents/2022-01/esa-policy-new-active-ingredients-qa.pdf>

²¹ Available at <https://goo.gl/j91tSo>

system delivered over 17,000 expeditious consultation documents and helped generate over 100,000 official species lists for consultation projects²². Currently, FWS is expanding their ECOS platform into “ECOSphere”, which will allow users to query a host of data related to the ESA, including expanding the use of e-permitting systems for things like Habitat Conservation Plans (HCP). In addition to the expanded use of IPaC and other permitting systems, ECOSphere will use a singular data architecture, rather than the previous system of over 37 modules, submodules and web applications²³. To develop and maintain this new framework, **FWS will need 3 FTEs per FWS region, for a total of 24 FTEs at \$4,236,000.**

Voluntary conservation: \$13,237,500

Section 10(a)(1)(B) of the ESA provides the framework for conservation on non-federal lands, including Habitat Conservation Plans (HCPs) and Safe Harbor Agreements (SHAs). Holders of HCPs and SHAs receive permits to harm ESA-listed species in one area in return for taking conservation measures. Over half of ESA-listed species--and higher proportions in regions such as the Southeast--spend at least some portion of their lifecycle on non-federal lands.

According to the ECOS website, there are over 1,400 HCPs in implementation with many more of varying complexity and size being developed. Safe Harbor Agreements, while less common, are still present in almost every FWS region. With the passing of the Infrastructure Investment and Jobs Act, the workload for the development of HCPs and SHAs is projected to increase. **FWS requires \$13,237,500 in funding for eight FTEs for each of the FWS eight regions and six in HQ for the Habitat Conservation Planning part of voluntary conservation, and an additional five FTEs at HQ to focus on Safe Harbor Agreements.**

Compliance monitoring: \$1,765,000

Compliance monitoring and enforcement are integral to ensuring the ESA, and other laws, are implemented as designed. Unfortunately, the dramatically insufficient funding has meant that monitoring ESA compliance has been ignored or left on the backburner. A 2009 Government Accounting Office report found that 63% of consultations surveyed did not have all of the required monitoring reports available, and 40% had no reports at all.²⁴ HCPs face some of the same issues with monitoring reports being sparingly available, of varying detail, and sometimes completely missing.

To close this implementation gap, FWS needs **\$1,765,000 to fund one FTE in each of the eight FWS regions and two FTE in headquarters in FY24** whose portfolio focuses on issues of ESA compliance. These full-time employees would be solely dedicated to working on issues of compliance with ESA sections 6, 7 and 10.

²² More available at <https://www.fws.gov/budget/2022/fy2022-fws-budget-justification.pdf>

²³ More information available at <https://www.doi.gov/sites/doi.gov/files/ecos-pia-final.pdf>

²⁴ Available at <https://www.gao.gov/new.items/d09550.pdf>

CONSERVATION AND RESTORATION: \$10,150,000

Item	Amount	Quantity	Extension
Candidate species	\$441,235	23	\$10,150,000
Total			\$10,150,000

Candidate Conservation: \$10,150,000

Habitat destruction is one of the leading threats to biodiversity conservation, and the Candidate Conservation program under the Conservation and Restoration element of Ecological Services provides funding for protecting and restoring key habitat spaces. Candidate Conservation also covers collaborative species conservation efforts, several of which extend beyond ESA listed species. Within the bounds of the ESA, the central role of this funding element is to protect species that are candidates for listing under the ESA and preclude the need to list.

Currently, there are 23²⁵ candidate species for FWS to review. Assuming that conserving candidate species is less expensive than recovering listed species²⁶ and that proactive work is ½ the cost of recovery, we can use half of the estimated per species cost of recovery²⁷ to calculate the expense of conserving candidate species and preventing listing. Thus, we estimated a cost of \$441,235 per species to calculate the expense of preventing the listing of these candidate species. This results in an estimated cost of around **\$10.15M for candidate conservation in FY 2024**.

COOPERATIVE ENDANGERED SPECIES CONSERVATION FUND: \$117,660,000

Item	Amount	Quantity	Extension
CESCF	\$117,660,000	N/A	\$117,660,000
Total			\$117,660,000

Congress recognized the need for the federal government to coordinate with the states and others to conserve species. Section 6 creates the framework of that cooperation, including federal-state agreements and funding (section 6(b)). The Cooperative Endangered Species Conservation Fund (CESCF) is a significant source of funding for states and conservation on private lands. The Cooperative Endangered Species Conservation Fund (CESCF) provides funding for states and conservation on private lands, on which half of all listed species depend. CESCF funding includes funding for key HCP land acquisition grants, as well as HCP planning grants to states, counties, and private landowners.

²⁵ Available at <https://ecos.fws.gov/ecp/report/candidate-species>

²⁶ See, for example, Dreschler et al., 2011, *Biodiversity and Conservation*. Available at <https://goo.gl/eD3GM9>

²⁷ Recovery needs per year calculated from Gerber (2016) as an average \$730,000 per year (\$1.21B / 1660 spp).

The CESCOF budget is still recovering from recent years in which the administration budget request zeroed out CESCOF funding, but it has thankfully increased again in recent years. For private landowners to continue to carry out conservation for listed species on their land, particularly as the development of HCPs are projected to increase, the CESCOF budget must be maintained to provide key grant funding. **FWS requires a minimum of \$117,660,000 for CESCOF FY 2024.**