



September 24, 2019

The Honorable Jared Huffman
Chair
Subcommittee on Water, Oceans and Wildlife
Committee on Natural Resources
U.S. House of Representatives
1324 Longworth House Office Building
Washington, D.C. 20515

The Honorable Tom McClintock
Ranking Member
Subcommittee on Water, Oceans and Wildlife
Committee on Natural Resources
U.S. House of Representatives
2312 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Huffman and Ranking Member McClintock,

Please accept the following written testimony regarding the Subcommittee's September 24 legislative hearing on a number of wildlife protection bills, including H.R. 4348, the "Protect America's Wildlife and Fish in Need of Conservation Act of 2019," H.R. 2918, the "Extinction Prevention Act of 2019," H.R. 2854, the "Protect Our Refuges Act of 2019," H.R. 4340, the "SALAMANDER Act of 2019," and H.R. 4341 the "Critically Endangered Animals Conservation Act of 2019." We applaud the Subcommittee for holding this hearing and for recognizing the urgent need to act to save the world's biodiversity from extinction.

In May 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) released a landmark global assessment that alarmingly concluded that "around 1 million species already face extinction, many within decades, unless action is taken to reduce the intensity of drivers to biodiversity loss."¹ The report, backed by the United Nations and more than 130 countries around the world, reviewed around 15,000 scientific and government sources and drew from indigenous and local knowledge. It is the most comprehensive document ever prepared on biodiversity.

This massive extinction crisis is largely human-induced and is being driven by (1) climate change, (2) habitat destruction from logging, mining, and farming, (3) direct exploitation of species by poaching, hunting, and overfishing, (4) invasive species, and (5) pollution. Without swift action to address these threats and reverse negative population trends, our natural heritage as we know it could disappear forever.

¹ S. Diaz, J. Settele, E. Brondizio. 2019. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services available at: <https://www.ipbes.net/news/Media-Release-Global-Assessment>



Seventy-five percent of the planet’s terrestrial environments and 66 percent of the marine environments have been “severely altered” by human activity. Plastic pollution has increased tenfold since 1980. Fifty percent of agriculture expansion occurred at the expense of forests. Over 40 percent of amphibian species and more than 33 percent of marine mammals are threatened with extinction. The global rate of species extinction “is unprecedented in human history.”²

Thankfully, the United States arguably has the strongest conservation law in place to help combat the extinction crisis. The Endangered Species Act has not only prevented the extinction of 99 percent of the endangered and threatened animals and plants under its care, but it has put most of these species on the path to recovery.³ Had the Endangered Species Act not existed, scientists estimate that at least 291 species would have gone extinct since its passage in 1973.⁴

Unfortunately, on August 12, 2019, David Bernhardt and the Trump administration finalized three regulatory rollbacks that drastically weaken the Endangered Species Act. The final rules gut the interagency consultation process — often called the heart of the Endangered Species Act⁵— drastically cut protections for critical habitat, and make it harder to list species in the first place. In addition, the changes eliminate virtually all prohibitions on the take—injury, killing, or harm—of newly listed threatened wildlife. The changes will set back the recovery of virtually every endangered and threatened species across the nation.

Fortunately, last week Rep. Grijalva and over 20 other Democratic members introduced H.R. 4348, the “PAW and FIN Act,” which would overturn these regulations and ensure that the Act’s critical protections remain in place. Senator Udall, Ranking Member on the Senate Interior Appropriations Committee, introduced similar legislation in the Senate. The Center fully supports this legislation and thanks the Subcommittee for holding a hearing to review it.

The Center also supports H.R. 2918, the “Extinction Prevention Act,” which would establish four grant programs that would fund crucial conservation work for some of the most critically imperiled species in the United States—butterflies, Hawaiian plants, eastern freshwater mussels and southwest desert fish. While most animals and plants protected by the Endangered Species Act are improving, some species, including those covered by H.R. 2918, continue to decline primarily because of a lack of funding for conservation and recovery efforts. The Extinction Prevention Act would give these species the extra boost they need to get them on the road to recovery by creating four separate funds that each provide \$5 million per year for on-the-ground conservation projects to stabilize and save from extinction the most critically endangered species from each of the four groups of species.

Of all the endangered species in the United States, butterflies are one of the fastest-declining groups, with several species on the verge of extinction. The Mount Charleston blue butterfly,

² *Id.* at 5.

³ N. Greenwald, K.F. Suckling, B. Hartl, L. Mehrhoff. 2019. Extinction and the U.S. Endangered Species Act. *PeerJ*:e6803 available at: <https://peerj.com/articles/6803/>

⁴ *Id.*

⁵ See Fla. Key Deer v. Stickney, 864 F. Supp. 1222, 1226 (S.D. Fla. 1994)



Miami blue butterfly and Lange's metalmark, for example, all have worldwide populations of fewer than 100 individuals. Freshwater mussels are the most imperiled taxonomic group in the U.S.—70 percent are at risk of extinction and 38 species have already been lost. The Southwest's unique desert fish – found nowhere else on earth – have been decimated by a century of habitat degradation and nonnative fish introductions. Right now, 47 desert fish species are either endangered or threatened, and most have experienced drastic reduction in abundance and range.

Hawaii has more endangered species than any other state, including more than 400 plants that make up nearly one-quarter of all species protected under the Endangered Species Act. Many of these plants are barely hanging on in remote, difficult-to-reach cliffs and ravines. H.R. 2918 would help support programs like the Hawaiian Plant Extinction Prevention Program, which works to save critically endangered plant species, each of which have fewer than 50 plants remaining in the wild. Since the program's inception in 2003, no Hawaiian plants have gone extinct. Unfortunately, the Trump administration gutted nearly all funding for this successful program leaving the conservation of many plant species in serious jeopardy.

The Endangered Species Act has been severely underfunded for decades. A 2016 study found that Congress only provides approximately 3.5 percent of the funding that the U.S. Fish and Wildlife Service's own scientists estimate is needed to recover species.⁶ Roughly one in four species receives less than \$10,000 a year toward recovery. Despite this lack of funding, the Act has still been incredibly successful, which is nothing short of a miraculous accomplishment and a true testament to its effectiveness. There is no question many more species could be fully recovered if Congress fully funded the Endangered Species Act. The Extinction Prevention Act provides emergency funding for critically imperiled species, but the Center supports increased funding for species across the board.

Additionally, we would like to register our strong support for H.R. 2854, which would prohibit the use of neonicotinoids in national wildlife refuges, H.R. 4340, which would help conserve endangered salamanders around the world, and H.R. 4341, which would assist in the conservation of critically endangered species in foreign countries. These bills, along with the other pieces of legislation being considered at today's hearing, are crucial steps towards reversing the extinction crisis.

Furthermore, we would like to attach a letter we previously submitted to Rep. Calvert, Rep. Takano, and Rep. Aguilar regarding H.R. 2956 – the Western Riverside County Wildlife Refuge Act. While the Center supports the creation of wildlife refuges to protect endangered species, as currently written, this legislation contains several deficiencies that could undermine both the Endangered Species Act as well as the national wildlife refuge system. Specifically, the legislation fails to ensure the ongoing conservation obligations of the parties to the underlying Western Riverside County Multiple Species Habitat Conservation Plan are fairly met and fails to provide sufficient resources for the operation of this proposed wildlife refuge. We look forward to working with the Committee to address these deficiencies.

⁶ N. Greenwald, B. Hartl, L. Mehroff, J. Pang. 2013. Shortchanged. Available at: <https://www.biologicaldiversity.org/programs/biodiversity/pdfs/Shortchanged.pdf>



Sincerely,

Stephanie Kurose

Stephanie Kurose
Endangered Species Policy Specialist
Center for Biological Diversity

Additional Information and
Declarations can be found on
page 7

DOI [10.7717/peerj.6803](https://doi.org/10.7717/peerj.6803)

© Copyright

2019 Greenwald et al.

Distributed under
Creative Commons CC-BY 4.0

OPEN ACCESS

protections among members of the U.S. Congress. One
of the ESA in Congress and elsewhere is that the law
listed species have been fully recovered and delisted ([1](#))

The number of delistings, however, is a poor measure
most species have not been protected for sufficient time
to have recovered. [Suckling et al. \(2016\)](#), for example,
birds had been protected just 36 years, but their federal
average of 63 years for recovery. Short of recovery, a nu
is effectively stabilizing or improving the status of spe

How to cite this article Greenwald N, Suckling KF, Hartl B, Mehrhoff LA. 2019. [PeerJ](#) 7:e6803 DOI [10.7717/peerj.6803](https://doi.org/10.7717/peerj.6803)



assessments produced by the U.S. Fish and Wildlife Service for Congress and abundance trends (*Male & Bean, 2005; Taylor, Suckling & Rachlinski, 2005; Gibbs & Currie, 2012; Suckling et al., 2016*).

In addition to recovering species, one of the primary purposes of the ESA is to prevent species extinction. Previous studies indicate the ESA has been successful in this regard (*McMillan & Wilcove, 1994; Scott et al., 2006*). As of 2008, the ESA was estimated to have prevented the extinction of at least 227 species and the number of species delisted due to recovery outnumbered the number of species delisted for extinction by 14–7 (*Scott et al., 2006*). In this study, we identified all ESA listed species that are extinct or possibly extinct to quantify the number of species for which ESA protections have failed and use these figures to update the estimated number of species extinctions prevented. This is the first study in over 20 years to compile data on extinction of ESA listed species, providing an important measure of one of the world's strongest conservation laws (*McMillan & Wilcove, 1994*).

METHODS

To identify extinct or possibly extinct ESA listed species, we examined the status of all 1,747 (species, subspecies and distinct population segments) U.S. listed or formerly listed species, excluding species delisted based on a change in taxonomy or new information showing the original listing to have been erroneous. We determined species to be extinct or possibly extinct based on not being observed for at least 10 years, the occurrence of adequate surveys of their habitat, and presence of threats, such as destruction of habitat of the last known location or presence of invasive species known to eliminate the species.

To differentiate extinct and possibly extinct species we relied on determinations by the U.S. Fish and Wildlife Service, IUCN, species experts and other sources. In most cases, these determinations were qualitative rather quantitative. Species were considered extinct if surveys since the last observation were considered sufficient to conclude the species is highly likely to no longer exist, and possibly extinct if surveys were conducted after the last observation, but were not considered sufficient to conclude that extinction is highly likely (*Butchart, Stattersfield & Brooks, 2006; Scott et al., 2008*).

Source information included 5-year reviews, listing rules and critical habitat designations by the U.S. Fish and Wildlife Service (for aquatic and terrestrial species) or NOAA Fisheries (for marine species), published and gray literature, personal communication with species experts and classifications and accounts by NatureServe, IUCN and the Hawaiian Plant Extinction Prevention program. For each species, we identified year of listing, year last seen, NatureServe and IUCN ranking, taxonomic group, and U.S. Fish and Wildlife Service region. For species last seen after listing, we also searched for abundance estimates at time of listing in order to give a sense of likelihood of survival regardless of ESA protection.

Following previously developed methods, we estimated the number of species extinctions prevented by the ESA by assuming that listed threatened and endangered species have a comparable extinction risk to IUCN endangered species, which was estimated as an average of 67% over 100 years (*Mace, 1995; Schwartz, 1999; Scott et al., 2006*). We believe this estimate of extinction risk is conservative based on similarity of IUCN criteria to factors

considered in ESA listings, observed low numbers for species at time of ESA listing and observed correspondence between ESA listed species and species classified as endangered or critically endangered by the IUCN (Wilcove, McMillan & Winston, 1993; Wilcove & Master, 2005; Harris et al., 2012). Presumed extinction risk was then multiplied by the number of extant listed species and the proportion of a century in which species were protected by the ESA. Previous studies used the length of time the ESA has been in existence (1973-present) for the proportion of a century species have been protected (Schwartz, 1999; Scott et al., 2006), but because many species have not been protected the entire 45 years the law has existed, we instead used the more conservative average length species were protected (25 years). This corresponds to the following formula:

$$\text{Expected extinctions} = (\text{spp.} \times 100 \text{ year extinction risk} \\ \times \text{average proportion of a century with protection}).$$

RESULTS

We identified a total of 97 ESA listed species that are extinct (23) or possibly extinct (74). Of these, we found 71 extinct (19) or possibly extinct (52) species were last observed before they were listed under the ESA and thus are not relevant to determining the Act's success in preventing extinction (Table S1). These species were last seen an average of 24 years before protection was granted with a range of one to more than 80 years prior.

A total of 26 species were last seen after listing, of which four are confirmed extinct and 22 are possibly extinct (Table S2). On average, these species were last seen 13 years after listing with a range of 2–23 years. We were able to find an abundance estimate at the time of listing for 19 of these species, ranging from one individual to more than 2,000 with an average of 272. In several cases, these estimates were based on extrapolations from very few sightings.

The distribution of extinct and possibly extinct species was non-random with 64 of the 97 species from Hawaii and other Pacific Islands, followed by 18 from the southeast (Fig. 1). This was also the case for taxonomy. A total of 40 of the 97 species were mollusks dominated by Hawaiian tree snails and southeast mussels, followed by birds (18) and plants (17) (Fig. 2).

We identified several other species that have been missing for more than 10 years, but for which there has not been any effective surveys and thus classifying them as possibly extinct did not seem appropriate, including two Hawaiian yellow-faced bees (*Hylaeus facilis* and *Hylaeus hiliaris*) (K. Magnacca, 2018, personal communication) and Fosberg's love grass (*Eragrostis fosbergii*) (U.S. Fish and Wildlife Service, 2011). If indeed extinct, all three were lost prior to protection under the ESA.

Including updated figures for number of listed species, time of protection and species extinctions, we estimate the ESA has prevented the extinction of roughly 291 species in its 45 year history. Based on the number of confirmed extinctions following listing, we further estimate that the ESA has to date prevented the extinction of more than 99% of species under its protection. To date, a total of 39 species have been delisted for recovery compared to four species that are extinct and 22 that are potentially extinct.

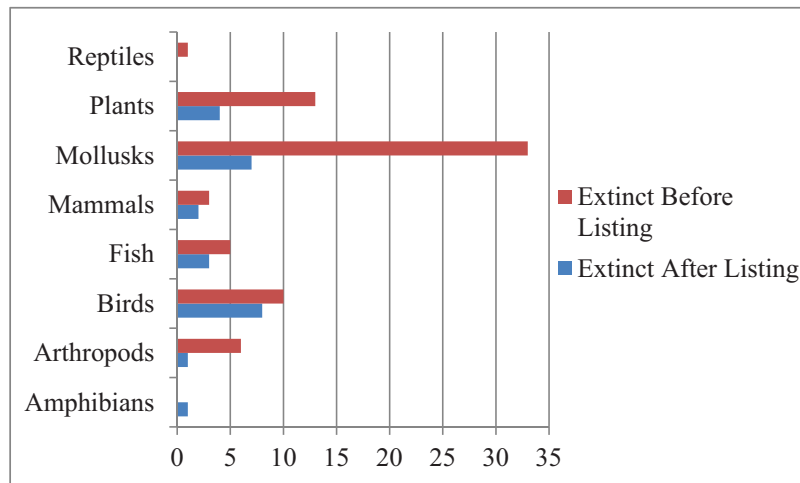


Figure 1 Extinction and taxonomic group. Extinct or possibly extinct listed species by taxonomic group. [Full-size](#) DOI: 10.7717/peerj.6803/fig-1

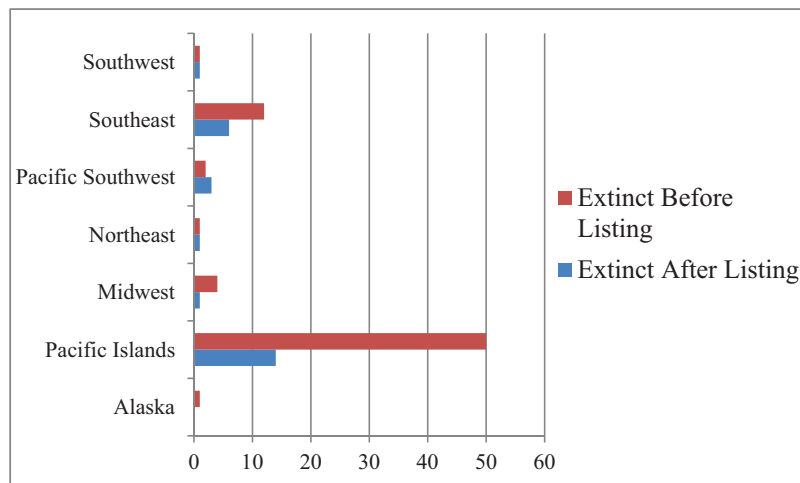


Figure 2 Extinctions by region. Extinct or possibly extinct listed species by U.S. Fish and Wildlife Service Region. [Full-size](#) DOI: 10.7717/peerj.6803/fig-2

DISCUSSION

The few number of listed species that have gone extinct following protection combined with an estimated 291 species for which extinction was prevented demonstrate the ESA has achieved one of its core purposes—halting the loss of species. We will not attempt to catalog them here, but numerous individual examples provide further support for this conclusion. Well known species like the California condor (*Gymnogyps californianus*), black-footed ferret (*Mustela nigripes*) and Hawaiian monk seal (*Neomonachus schauinslandi*), as well as lesser known species like the yellowfin madtom (*Noturus flavipinnis*), are but a few of the species that likely would have been lost were it not for the ESA.

The madtom is a case in point. Wrongly presumed extinct when described in 1969, individual madtom were found in the Powell River in Tennessee and Copper Creek in

Virginia and the species was protected under the ESA in 1977 (*U.S. Fish and Wildlife Service, 1977*). Following protection, federal and state officials worked with a non-governmental organization, Conservation Fisheries Inc., to discover additional populations and repatriate the species to rivers and streams in its historic range and there are now populations of the yellowfin madtom in three different watersheds (*U.S. Fish and Wildlife Service, 2012a*). The history of the ESA is replete with similar such stories.

The distribution of extinct or possibly extinct listed species largely tracks those regions with the highest rates of species endangerment, including Hawaii and the Northern Mariana Islands with 64 of the 97 extinctions or possible extinctions, and the Southeast with 18 of the extinctions or possible extinctions, mostly freshwater species. The fragility of Hawaii's endemic fauna to introduced species and habitat destruction and high degree of species imperilment is well recognized (*Duffy & Kraus, 2006*). Similarly, the extinction and endangerment of freshwater fauna in the southeast is well documented (*Benz & Collins, 1997*). To avoid further extinctions, these areas should be priorities for increased funding and effort.

Protection under the ESA came too late for the 71 species last seen prior to listing. It's possible that some of these species survived undetected following listing, but we find this unlikely for most if not all of the species. It is very difficult to document extinction, but all of the species were the subject of survey both before and after listing, which is described in the listing rules and subsequent status surveys. In addition, the 71 species were last seen an average of 24 years prior to listing, providing a long window for detection prior to listing. If some of these species did survive after listing it was likely at very low numbers, such that recovery would have been difficult at best.

That these 71 species were lost before protections were applied clearly highlights the need to move quickly to protect species. Indeed, *Suckling, Slack & Nowicki (2004)* identified 42 species that went extinct while under consideration for protection. Since that analysis was completed, the U.S. Fish and Wildlife Service has determined five additional species did not qualify for protection because they were extinct, including the Tacoma pocket gopher (*Thomomys mazama tacomensis*), Tatum Cave beetle (*Pseudanophthalmus parvus*), Stephan's riffle beetle (*Heterelmis stephani*), beaverpond marstonia (*Marstonia castor*) and Ozark pyrg (*Marstonia ozarkensis*), meaning there are now 47 species that have gone extinct waiting for protection (*U.S. Fish and Wildlife Service, 2012b, 2016, 2017, 2018a*).

The U.S. Fish and Wildlife Service currently faces a backlog of more than 500 species that have been determined to potentially warrant protection, but which await a decision (*U.S. Fish and Wildlife Service, 2018b*). Under the ESA, decisions about protection for species are supposed to take 2 years, but on average it has taken the Fish and Wildlife Service 12 years (*Puckett, Kesler & Greenwald, 2016*). Such lengthy wait times are certain to result in loss of further species and run counter to the purpose of the statute. This problem can be addressed by streamlining the Service's process for listing species, which has become increasingly cumbersome, and by increasing funding for the listing program. For every species listed, the Service's process includes review by upward of 20 people, including numerous individuals who have no specific knowledge of the species and in a

number of cases are political appointees. We instead recommend that the Service adopt a process similar to scientific peer review, involving review by two to three qualified individuals.

The loss of 26 species after they were protected is indicative of conservation failure. This failure, however, in most cases cannot be wholly attributed to the ESA because most of these species were reduced to very low numbers by the time they were protected, making recovery difficult to impossible. Of the 19 species we could find an abundance estimate for at the time of listing, 13 had an estimated population fewer than 100 with eight having fewer than 10 individuals. Of the six other species, two Hawaiian birds, Oahu creeper (*Paroreomyza maculate*) and 'O'u (*Psittirostra psittacea*) had estimated populations in the hundreds, but this was based on sightings of single individuals. Given the lack of further sightings and the presence of disease carrying mosquitoes throughout their habitat, these estimates were likely optimistic. The other four species, the dusky seaside sparrow (*Ammodramus maritimus nigrescens*), Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*), pamakani (*Tetramolopium capillare*) and Curtis' pearlymussel (*Epioblasma florentina curtisii*), had populations at the time of listing ranging from 100 to 3,000 individuals, but sufficient action was not taken to save them, making them true conservation failures.

At some level, all of the 97 ESA listed species that we identified as possibly extinct or extinct are conservation failures. For 42 of these species, the law itself was too late because they were last seen before the ESA was passed in 1973. But for others, there may have been time and we did not act quickly enough or dedicate sufficient resources to saving them. There are many examples of species both in the U.S. and internationally that have been successfully recovered even after dropping to very small numbers, but this can only occur with fast, effective action, resources and in many cases luck. The Mauritius kestrel (*Falco punctatus*), for example, was brought back from just two pairs (Cade & Jones, 1993) and the Hawaiian plant extinction prevention program, which focuses on saving plants with fewer than 50 individuals, has rediscovered many species believed extinct, brought 177 species into cultivation, constructed fences to protect species from non-native predators and reintroduced many species into the wild (Wood, 2012, <http://www.pepphi.org/>).

The failure to provide sufficient resources for conservation of listed species, however, continues to the present. As many as 27 species of Oahu tree snail (*achatinea spp.*) are extinct or possibly extinct, yet expenditures for the species that still survive are inadequate to support minimal survey and captive propagation efforts. Likewise, the Hawaiian plant extinction prevention program, which has been so effective in saving species on the brink of extinction, is facing a budget cut of roughly 70% in 2019 (<http://www.pepphi.org/>), which very likely could mean the extinction of dozens of plants that otherwise could be saved. Overall, Greenwald et al. (2016) estimate current recovery funding is roughly 3% of estimated recovery costs from federal recovery plans. We can save species from extinction, but it must be more of a priority for federal spending. Nevertheless, despite funding shortfalls and the tragedy of these species having gone extinct, the ESA has succeeded in preventing the extinction of the vast majority of listed species and in this regard is a success.

Management implications

Of the 97 species we identified as extinct or potentially extinct, only 11 have been delisted for extinction. Another 11 have been recommended for delisting due to extinction. The San Marcos gambusia (*Gambusia georgei*) could also be delisted since there is very little hope it survives. For the other 74 possibly extinct species, we recommend retaining protections in the hope that some will be rediscovered and because there is little cost in retaining listing.

ADDITIONAL INFORMATION AND DECLARATIONS

Funding

The authors received no funding for this work.

Competing Interests

All authors are employed by the Center for Biological Diversity which works to protect endangered species and their habitats.

Author Contributions

- Noah Greenwald conceived and designed the experiments, performed the experiments, analyzed the data, prepared figures and/or tables, authored or reviewed drafts of the paper, approved the final draft.
- Kieran F. Suckling conceived and designed the experiments, performed the experiments, analyzed the data, authored or reviewed drafts of the paper, approved the final draft.
- Brett Hartl conceived and designed the experiments, performed the experiments, analyzed the data, authored or reviewed drafts of the paper, approved the final draft.
- Loyal A. Mehrhoff conceived and designed the experiments, performed the experiments, analyzed the data, authored or reviewed drafts of the paper, approved the final draft.

Data Availability

The following information was supplied regarding data availability:

The raw data are available in a [Supplementary File](#) and include a complete list of the species we identified as extinct or possibly extinct along with all supporting information.

Supplemental Information

Supplemental information for this article can be found online at <http://dx.doi.org/10.7717/peerj.6803#supplemental-information>.

REFERENCES

- Benz GW, Collins DE. eds. 1997.** *Aquatic fauna in Peril: the Southeastern perspective*. Decatur: Southeast Aquatic Research Institute Special Publication 1, Lenz Design and Communications, 553.
- Bishop R. 2013.** The Endangered Species Act has failed. Available at <http://esawatch.org/the-endangered-species-act-has-failed/>.

- Butchart SHM, Stattersfield AJ, Brooks TM. 2006.** Going or gone: defining 'Possibly Extinct' species to give a truer picture of recent extinctions. *Bulletin of the British Ornithologists' Club* **126A**:7–24.
- Cade TJ, Jones CG. 1993.** Progress in restoration of the mauritius kestrel. *Conservation Biology* **7**(1):169–175 DOI [10.1046/j.1523-1739.1993.07010169.x](https://doi.org/10.1046/j.1523-1739.1993.07010169.x).
- Duffy DC, Kraus F. 2006.** Science and the art of the solvable in Hawai'i's extinction Crisis. *Environment Hawaii* **16**(11):3–6.
- Gibbs KE, Currie DJ. 2012.** Protecting endangered species: do the main legislative tools work? *PLOS ONE* **7**(5):e35730 DOI [10.1371/journal.pone.0035730](https://doi.org/10.1371/journal.pone.0035730).
- Greenwald N, Hartl B, Mehrhoff L, Pang J. 2016.** Shortchanged, funding needed to save America's endangered species. Available at <https://www.biologicaldiversity.org/programs/biodiversity/pdfs/Shortchanged.pdf>.
- Harris JBC, Leighton Reid J, Scheffers BR, Wanger TC, Sodhi NS. 2012.** Conserving imperiled species: a comparison of the IUCN Red List and U.S. Endangered species act. *Conservation Letters* **5**:64–72.
- Mace GM. 1995.** Classification of threatened species and its role in conservation planning. In: Lawton JH, May RM, eds. *Extinction Rates*. Oxford: Oxford Univ. Press, 197–213.
- Male TD, Bean MJ. 2005.** Measuring progress in US endangered species conservation. *Ecology Letters* **8**(9):986–992 DOI [10.1111/j.1461-0248.2005.00806.x](https://doi.org/10.1111/j.1461-0248.2005.00806.x).
- McMillan M, Wilcove DS. 1994.** Gone but not forgotten: why have species protected by the ESA become extinct? *Endangered Species Update* **11**(11):5–6.
- Puckett EE, Kesler DC, Greenwald N. 2016.** Taxa, petitioning agency, and lawsuits affect time spent awaiting listing under the US Endangered Species Act. *Biological Conservation* **201**:220–229 DOI [10.1016/j.biocon.2016.07.005](https://doi.org/10.1016/j.biocon.2016.07.005).
- Schwartz MW. 1999.** Choosing the appropriate scale of reserves for conservation. *Annual Review of Ecology and Systematics* **30**(1):83–108 DOI [10.1146/annurev.ecolsys.30.1.83](https://doi.org/10.1146/annurev.ecolsys.30.1.83).
- Schwartz MW. 2008.** The performance of the Endangered Species Act. *Annual Review of Ecology, Evolution, and Systematics* **39**:279–299 DOI [10.1146/annurev.ecolsys.39.110707.173558](https://doi.org/10.1146/annurev.ecolsys.39.110707.173558).
- Scott JM, Goble DD, Scvancara L, Pidgorna A. 2006.** By the numbers. In: Goble DD, Scott JM, Davis FW, eds. *The Endangered Species Act at Thirty: Renewing the Conservation Promise*. Washington, D.C.: Island Press, 16–35.
- Scott JM, Ramsey FL, Lammertink M, Rosenberg KV, Rohrbaugh R, Wiens JA, Reed JM. 2008.** When is an "extinct" species really extinct? Gauging the search efforts for Hawaiian forest birds and the Ivory-billed Woodpecker. *Avian Conservation and Ecology* **3**(2):3 DOI [10.5751/ACE-00254-030203](https://doi.org/10.5751/ACE-00254-030203).
- Suckling KF, Mehrhoff LA, Beam R, Hartl B. 2016.** A wild success, a systematic review of bird recovery under the Endangered Species Act. Available at <http://www.esasuccess.org/pdfs/WildSuccess.pdf>.
- Suckling KF, Slack R, Nowicki B. 2004.** Extinction and the endangered species act. Center for biological diversity. Available at <http://www.biologicaldiversity.org/publications/papers/ExtinctAndESA.pdf>.
- Taylor M, Suckling K, Rachlinski J. 2005.** The effectiveness of the endangered species act: a quantitative analysis. *BioScience* **55**(4):360–367 DOI [10.1641/0006-3568\(2005\)055\[0360:TEOTES\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2005)055[0360:TEOTES]2.0.CO;2).
- U.S. Fish and Wildlife Service. 1977.** Final threatened status and critical habitat for five species of Southeastern fishes. *Federal Register* **42**(175):45526–45530.

- U.S. Fish and Wildlife Service. 2011.** *Eragrostis fosbergii* (Fosberg's love grass) 5-Year review summary and evaluation. Available at https://ecos.fws.gov/docs/five_year_review/doc3814.pdf.
- U.S. Fish and Wildlife Service. 2012a.** Yellowfin madtom (*Noturus flavipinnis*), smoky madtom (*Noturus baileyi*) 5-Year review summary and evaluation. Available at https://ecos.fws.gov/docs/five_year_review/doc4146.pdf.
- U.S. Fish and Wildlife Service. 2012b.** Listing four subspecies of *Mazama* pocket gopher and designation of critical habitat, proposed rule. *Federal Register* 77:73769–73825.
- U.S. Fish and Wildlife Service. 2016.** Endangered and threatened wildlife and plants; 12-Month findings on petitions to list 10 species as endangered or threatened species. *Federal Register* 81:69422–69425.
- U.S. Fish and Wildlife Service. 2017.** Endangered and threatened wildlife and plants; 12-month findings on petitions to list a species and remove a species from the federal lists of endangered and threatened wildlife and plants. *Federal Register* 82:61725–61727.
- U.S. Fish and Wildlife Service. 2018a.** Endangered and threatened wildlife and plants; 12-month findings on petitions to list 13 species as endangered or threatened species. *Federal Register* 83:65127–65134.
- U.S. Fish and Wildlife Service. 2018b.** Listing and critical habitat workplan. Available at <https://www.fws.gov/endangered/what-we-do/listing-workplan.html>.
- Wilcove DS, Master LL. 2005.** How many endangered species are there in the United States? *Frontiers in Ecology and the Environment* 3(8):414–420
DOI 10.1890/1540-9295(2005)003[0414:HMESAT]2.0.CO;2.
- Wilcove DS, McMillan M, Winston KC. 1993.** What exactly is an endangered species? An analysis of the U.S. endangered species list: 1985–1991. *Conservation Biology* 7(1):87–93
DOI 10.1046/j.1523-1739.1993.07010087.x.
- Wood KR. 2012.** Possible extinctions, rediscoveries, and new plant records within the Hawaiian Islands, records of the Hawaii biological survey for 2011. In: Evenhuis NL, Eldredge LG, eds. *Bishop Museum Occasional Papers*. Vol. 113. Honolulu: Bernice Pauahi Bishop Museum, 91–102.



August 9, 2019

The Honorable Pete Aguilar
U.S. House of Representatives
109 Cannon House Office Building
Washington, DC 20515

The Honorable Mark Takano
U.S. House of Representatives
420 Cannon House Office Building
Washington, DC 20515

The Honorable Ken Calvert
U.S. House of Representatives
2205 Rayburn House Office Building
Washington, DC 20515

RE: H.R. 2956 – Western Riverside County Wildlife Refuge

Dear Representative Aguilar, Representative Takano, and Representative Calvert,

We are writing to express our concerns about your legislation, H.R. 2956, to establish the Western Riverside County Wildlife Refuge. While we support the creation of wildlife refuges to protect endangered species, as currently written, this legislation contains several deficiencies that could undermine both the Endangered Species Act as well as the national wildlife refuge system. Specifically, H.R. 2956 fails to ensure the ongoing conservation obligations of the parties to the underlying Western Riverside County Multiple Species Habitat Conservation Plan (“MSHCP”) under the law and fails to provide funding for the operation of this wildlife refuge.

First, H.R. 2956 must be clear that the signatories to the MSHCP must continue meeting all of their existing conservation and financial obligations to address the impacts of wildlife and habitat covered by the MSHCP.

Like any other habitat conservation plan, the MSHCP provides a legal shield and authorizes the “take” — killing, injuring, and harming — of 148 covered species under both the federal Endangered Species Act of 1973, as well as the State of California’s Natural Communities Conservation Plan. In exchange for authorizing take, the MSHCP includes mandatory requirements to minimize and mitigate the loss of threatened and endangered species, and the destruction of their habitats. In particular, the MSHCP obligates the participating entities to participate in a joint project review process with regional, state, and federal wildlife conservation agencies for development affecting wildlife in the plan area; creates funding obligations for plan

participants; and requires the plan signatories to ensure that the habitat reserves are protected and maintained.

Because municipalities and agencies covered by the MSHCP will continue to take threatened and endangered species into the future, they must continue to meet their obligations under the Plan and take positive steps to mitigate and minimize that harm. The creation of a wildlife refuge out of existing MSHCP lands potentially removes some of the responsibilities of the signatories to the MSHCP from the Western Riverside County Regional Conservation Authority, which was established under the MSHCP to assure full implementation of the plan.

The MSHCP includes broad benefits and obligations for the parties to the plan. The MSHCP promotes maintaining and recovering species and their habitats reducing the need to list additional species in the future, covers compliance with all applicable federal and State laws, facilitates economic growth and provides incidental take permits for all covered species.¹ The Western Riverside County MSHCP encompasses approximately 1.26 million acres (1,966 square miles). It includes all unincorporated Riverside County land in the western part of the County and includes 14 cities which are signatories to the MSHCP. H.R. 2956 must not supplant the obligations of local jurisdictions in adhering to the MSHCP.

Second, H.R. 2956 fails to include funding for the proposed new Western Riverside County Wildlife Refuge. As the recent Grand Jury report on the MSHCP identifies, the HCP is already short over \$1 billion for habitat acquisition and management in order to meet its obligations under the plan and collected funds have been mismanaged.² Funding deficiencies for completing the habitat acquisition and management goals of the MSHCP have been identified as a significant problem for over a decade.³ In other words, the MSHCP signatories and Western Riverside County Regional Conservation Authority are failing to meet the funding and habitat acquisition obligations of the MSHCP. H.R. 2956 should include funding to help alleviate that significant funding shortfall by fully funding the new National Wildlife Refuge while maintaining the strong conservation obligations on the participants in the Western Riverside County MSHCP.

The National Wildlife Refuge System too, is already chronically underfunded and consequently understaffed, thereby leading to ecological degradation of the very resources that the refuges were established to protect. To include the establishment of a new National Wildlife Refuge without including funding, undermines the long-term viability of the proposed refuge and creates a substantial drain on the National Wildlife Refuge System's ability to manage its current lands.

1 Western Riverside County Multiple Species Habitat Conservation Plan, Section 1.2, <https://rctlma.org/Portals/0/mshcp/volume1/sec1.html#1.2>.

2 *Western Riverside County Regional Conservation Authority (WR-RCA)*, 2018 – 2019 Civil Grand Jury, Riverside County, https://countyofriverside.us/Portals/0/GrandJury/GrandJury2018-2019/RCA_Report.pdf?ver=2019-06-27-130435-503.

3 *Balancing Environment and Development Costs, Revenues, and Benefits of the Western Riverside County Multiple Species Habitat Conservation Plan*, RAND Corporation 2008, <https://www.rand.org/pubs/monographs/MG816.html> (“the value of the land comprising a reserve of 153,000 acres was substantially higher than projected when the MSHCP was adopted”).

Congress clearly has the authority to authorize and appropriate funds for this Refuge and should do so as part of the legislation.

Third, the boundary restrictions in H.R. 2956 are unnecessary. The Fish and Wildlife Service should retain the flexibility to manage and shape the refuge in whichever way best ensures the conservation and recovery of all of the endangered species protected by the Western Riverside MSHCP. Section 2(b)'s restriction on the expansion of the refuge beyond the boundaries of the MSHCP is unnecessary and may be harmful. If a boundary revision provides a net benefit to the wildlife and plants protected by the Endangered Species Act, then the boundaries of the refuge should contemplate that possibility.

In order to create a viable Western Riverside County Wildlife Refuge the language in H.R. 2956 must clarify that the Western Riverside County Wildlife Refuge does not supplant the conservation or financial obligations of the signatories of the Western Riverside County MSHCP; must provide permanent federal funding for the Western Riverside County Wildlife Refuge; and must assure that any boundary revision provides a net benefit to wildlife.

Please feel free to reach out to us with any additional questions.

Sincerely,



Aruna Prabhala
Urban Wildlands Director, Senior Attorney
Center *for* Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
(510) 844-7100, ext. 322
aprabhala@biologicaldiversity.org



Ilene Anderson
Senior Scientist
Center *for* Biological Diversity
660 S. Figueroa St., Suite 1000
Los Angeles, CA 90017
(323) 490-0223
ianderson@biologicaldiversity.org