Society for Conservation Biology
A global community of conservation professionals

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Division of Policy and Directives Management
Public Comments Processing
Attn: FWS–R9–ES–2011–0099,
Division of Policy and Directives Management,
U.S. Fish and Wildlife Service,
4401 N. Fairfax Drive, MS 2042,
Arlington, VA 22203

Re: Comments by the Society for Conservation Biology[1] Regarding the Advanced Notice of Proposed Rulemaking on Expanding Incentives for Voluntary Conservation Actions Under the Endangered Species Act.

On behalf of the Society for Conservation Biology (SCB), we offer the following comments and recommendations regarding the on the U.S. Fish and Wildlife Service's (FWS) advanced notice of proposed rulemaking regarding ways of expanding incentives for voluntary conservation actions under the Endangered Species Act (ESA).

According to the FWS, over half of the species protected by the Endangered Species Act rely to some extent on habitat found on private or State-owned lands.[2] Accordingly, the need to develop incentives to promote conservation activities on these lands in order to benefit threatened and endangered species is urgent. SCB supports efforts by the FWS to develop regulations based on the best available science to modernize and improve the effectiveness of the implementation of the ESA. Therefore, SCB supports the development of legally-binding regulations designed to provide regulatory certainty in the many programs that FWS has developed to encourage voluntary conservation efforts. In particular, SCB would like to offer the following recommendations and comments regarding any future rulemakings regarding voluntary conservation efforts. More detailed explanations are provided on the following pages.

1) Voluntary incentives for conservation function most effectively in those regulatory schemes where the failure to take early voluntary action results in more-burdensome, mandatory remediation and/or mitigation if a private entity is found to have violated an environmental statute or regulation. Thus, while it is important to create incentives for voluntary conservation actions, strengthening existing regulatory disincentives for non-compliance with the ESA is equally important.

[1] SCB is an international professional organization whose mission is to advance the science and practice of conserving the Earth's biological diversity, support dissemination of conservation science, and increase application of science to management and policy. The Society's 5,000 members include resource managers, educators, students, government and private conservation workers in over 140 countries.

[2] *See* FWS 2012, Grants Overview, http://www.fws.gov/endangered/grants/index.html. *See also*, Government Accountability Office. 1994. *Endangered Species Act: Information on Species Protection on Nonfederal Land*. Report to Congress available at: http://www.gpo.gov/fdsys/pkg/GAOREPORTS-RCED-95-16/pdf/

2) All voluntary conservation programs including Habitat Conservation Plans (HCPs), Safe Harbor Agreements (SHAs), Candidate Conservation Agreements with Assurances (CCAAs), and Conservation Banks should be standardized to the fullest extent possible such that they are implemented consistently throughout the landscape in a transparent manner.
3) All voluntary conservation programs must result in a net conservation benefit for a species, both for declining species that may become listed in the future and for currently listed species.
4) Voluntary conservation programs are normally undertaken to offset anticipated incidental take of threatened and endangered species elsewhere. For a net conservation benefit to be meaningful, it must be defined by a biologically-appropriate, scientifically based mitigation ratio of 2:1 in all cases (wherein two conservation "credits" must be generated to offset a single conservation "debit"). The scientific literature shows that mitigation efforts routinely fall short of their stated goals. A 2:1 ratio meets the policy objectives of addressing uncertainty and risk associated with mitigation effectiveness, and the larger policy goal of recovery.
5) To fully incentivize voluntary conservation, mitigation for mandatory ESA compliance, post-listing, should require a mitigation ratio that is substantially higher than the prescribed 2:1 ratio for voluntary efforts. FWS should ensure in its rulemaking that the benefits of scientifically appropriate voluntary conservation efforts be recognized as offsetting adverse effects post listing at the 2:1 ratio level, even if post-listing mitigation ratios are otherwise greater.
6) All voluntary conservation incentives programs must include mandatory monitoring, verification, and self-reporting to be effective. Current FWS permitting regulations are generally insufficient with respect to monitoring, verification and reporting. Therefore SCB recommends that the FWS consider modeling its regulations to mirror the reporting requirements found in the Environmental Protection Agency's regulations implementing the Clean Water Act.
7) We recommend the FWS, in cooperation with other Federal and State resource management and taxing agencies, to develop and publish a directory of programs and provisions that can provide affirmative financial and technical assistance to persons, including landowners and managers, who are considering undertaking voluntary conservation measures that are likely to benefit listed, candidate or declining biodiversity and ecosystems. The report should also include options for agencies and legislative bodies to consider as possible improvements to enhance the efficiency of those programs, and in general and, in particular, as they complement and support the implementation of the ESA.

Combined, these recommendations would provide the regulated community with the certainty required to invest in voluntary conservation actions, while also providing the public with the information needed to evaluate the effectiveness of these voluntary activities.

I. FWS Must Strengthen and Clarify its Regulatory Framework to Properly Incentivize Voluntary Conservation Activities and to Properly Dis-incentivize Conservation Inaction.

A. Background on Voluntary Conservation Tools

The Fish and Wildlife Service has established a broad range of voluntary conservation policy tools over the past 30 years. Beginning in 1982, Congress amended Section 10 of the Endangered Species Act (ESA) to allow private entities to take a threatened or endangered species, which would otherwise be prohibited under Section 9 of the Act, if the taking was "incidental to, and not [for] the purpose of, the carrying out of an otherwise lawful activity" and if the taking would not "appreciably reduce the likelihood of the survival and recovery of the species in the wild."[3] Currently, incidental take under Section 10 of the ESA is authorized through a variety of voluntary agreements to conserve and mitigate impacts to declining fish and wildlife species through Habitat Conservation Plans (HCPs), Safe Harbor Agreements (SHAs), Candidate Conservation Agreements with Assurances (CCAAs), and Conservation Banking programs. Each of these programs is designed to provide incentives for private landowners to take voluntary, proactive measures to protect threatened or endangered species, or to protect those species that are currently candidates for protection under the ESA.

Habitat Conservation Plans[4] are planning documents that describe the anticipated effects of private development activity on ESA-listed and non-listed species, and explain how impacts to listed species will be reduced and mitigated through other conservation activities. Applicants for a Section 10 permit describe the actions they will take to mitigate the impacts of listed species, how they will fund such activities into the future, and how the mitigation activities will contribute to the recovery of the listed species being impacted elsewhere. The FWS provides assurances to participants in HCPs that there will be "No Surprises" if unforeseen circumstances occur regarding the impacts to listed species. In other words, private entities will not be required to commit additional land, water or financial compensation beyond the terms of the original HCP.[5] Similarly, Safe Harbor Agreements provide private landowners with incentives to assist in the recovery of protected species by providing regulatory assurances to persons who agree to improve habitat conditions for species that are already listed under the ESA. Under an SHA, a landowner who provides a "net conservation benefit" through voluntary conservation activities receives assurance that they will not be required to undertake any additional or different management activities by the participants without their consent.[6] Parties with approved SHAs receive a permit that authorizes incidental take by actions consistent with the terms of the agreement.

Candidate Conservation Agreements with Assurances (CCAAs) provide private landowners with incentives for engaging in voluntary proactive conservation activities to protect

[3] 16 U.S.C. § 1539(a)(1)(B).
[4] For more information, see the USFWS website at: http://www.fws.gov/endangered/what-we-do/hcp-overview.html
[5] 63 Fed. Reg. 8,859 (Feb. 23, 1998).
[6] For more information, see the USFWS website at: http://www.fws.gov/endangered/landowners/safe-harbor-agreements.html

species that are candidates for listing under the ESA.[7] Specifically, private landowners are provided with the assurance that if they implement various conservation activities to benefit candidate species, they will not be subject to additional restrictions if the species becomes listed under the ESA in the future. Finally, the FWS has created guidance regarding the use of Conservation Banks as an additional means of creating voluntary incentives for private landowners by allowing the trading of habitat conservation "credits" to offset unavoidable impacts elsewhere.[8] The existence of these four programs demonstrates that there already exists a broad range of policy tools that have the potential to properly incentivize voluntary conservation activities. However, as described below, additional steps must be taken to ensure that these tools achieve their stated purpose.

B. Properly Incentivizing Voluntary Conservation Activities.

Voluntary conservation incentives are only effective when there exists the right balance between "carrots and sticks," incentives and regulatory constraints, to modify the conservation behavior of private parties. The scientific literature demonstrates that, in general, voluntary conservation efforts are most effective where there are meaningful mandatory restrictions on private behavior if voluntary efforts to conserve a resource fail.[9] If mandatory restrictions are not sufficiently "burdensome," then there will be few incentives for private individuals to take proactive, voluntary measures to avoid those mandatory restrictions. Recently, Langpap and Wu argued that the likelihood that a private entity will undertake voluntary conservation efforts under the Endangered Species Act depends upon the "availability of assurances regarding future regulation, as well as on the background threat of regulation and the cost advantage of voluntary agreements."[10] Without *both* the "threat" of mandatory conservation requirements through regulation, *and* regulatory assurances that there are advantages to taking voluntary conservation actions early, voluntary conservation efforts will likely be inefficient.[11] And, this research even demonstrates that, while providing regulatory assurances for voluntary conservation efforts may yield greater returns than would occur without such assurances, "assurances-based agreements may yield inefficient levels of conservation, perhaps *even lower than those attainable through regulation*."[12] Thus, SCB strongly recommends that as the Fish and Wildlife Service takes these initial steps towards providing greater regulatory assurances for voluntary conservation efforts, that it also takes steps to strengthen its regulatory framework regarding the mandatory provisions of the ESA designed to protect threatened and endangered species, especially with respect to Section 7 consultations regarding critical habitat.

[7] For more information, see the USFWS website at: http://www.fws.gov/endangered/what-we-do/cca.html#ccaa
[8] Available at: http://www.fws.gov/endangered/esa-library/pdf/Conservation_Banking_Guidance.pdf
[9] *See generally*, K. Segerson, T.J. Miceli, *Voluntary environmental agreements: good or bad news for environmental protection?*, J. Environ. Econ. Manage. 36 (1998) 109–130.
[10] C. Langpap, J. Wu, *Voluntary Conservation of Endangered Species: When Does no Regulatory Assurance Mean no Conservation?* Journal of Environmental Economics and Management 47 (2004) 435–457.
[11] *Id.*
[12] *Id*. (emphasis added).

In 1978, Congress amended Section 4 of the ESA, requiring the Services[13] to designate critical habitat for threatened and endangered species.[14] The existence of designated critical habitat triggers the consultation process under Section 7 of the ESA, whereby each federal agency is required to consult with the Services on any discretionary action to ensure that their activities are not "likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat which is determined…to be critical."[15] Because consultations are required whenever a private action has a nexus with a federal activity, such as obtaining a Federal permit prior to filling a wetland under Section 404 of the CWA,[16] the jurisdictional reach of Section 7 of the ESA can be quite broad. And in theory, the prohibition on the destruction or adverse modification, should serve as a sufficient deterrent to those private activities with a federal nexus that jeopardize the survival or recovery of listed species. However, the Services' current regulations, and their past practices, have underestimated the importance of critical habitat for species survival and for species recovery. As a result, the regulatory "stick" that Section 7 could represent has been rendered less effective than it should be. Accordingly, the regulations implementing Section 7 should also be revised to strengthen the regulatory power of Section 7.

For example, in *Butte Environmental Council v. U.S. Army Corps*,[17] the FWS completed a formal biological opinion on a proposed project to build a 678-acre industrial park in Redding California. During the consultation process, the FWS determined that the project would destroy 234.5 acres of critical habitat for the vernal pool fairy shrimp and would destroy 242.2 acres of critical habitat for the slender Orcutt grass. The developer of the project proposed to offset these effects by creating or restoring 0.56 acres of aquatic habitat, and preserving another 18.64 acres, at other on- and off-site locations. Despite acknowledging that "the proposed project would contribute to a local and range-wide trend of habitat loss and degradation" for these two species, the FWS concluded that the proposed project "would not result in the adverse modification or destruction of critical habitat" for those species.[18] Although the Ninth Circuit upheld the FWS's decision in *the Butte Envtl Council case*, the ruling was based on deference to the existing regulatory framework. However, the Court stated "we express no opinion on whether the 'adverse modification' inquiry under section 7 of the ESA *properly focuses on the effects of an action on a particular unit of critical habitat or on total critical habitat nationwide*."[19]

If the "destruction or adverse modification" standard is so weak under the current FWS regulatory approach that a developer could destroy 235 acres of critical habitat based on the promise of 18 acres of mitigation, there is little reason to expect private landowners to undertake proactive, voluntary conservation measures to avoid a species from being listed under the ESA in

[13] The ESA, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service jointly implement the ESA. Where both agencies have statutory mandates or where they have acted jointly on regulations to implement the ESA, we use the term "Services" to describe them.
[14] Pub. L. 95-632 (Nov. 10, 1978). 16 U.S.C. § 1533(a)(3)(A)
[15] 16 U.S.C. § 1536(a)(2)
[16] 33 U.S.C. § 1344.
[17] 620 F.3d 936 (9th Cir. 2010)
[18] *Id*.
[19] 620 F.3d at 948 n.1 (9th Cir. 2010) (emphasis added).

the first place. SCB believes that this, in part, explains why most Habitat Conservation Plans and conservation banking schemes have to this date primarily involved other federal agencies, States, municipalities, or very large land-owners, rather than small-scale private property owners. Even with the presence of a suite of existing voluntary conservation measures already in place, perverse incentives still exist for small-scale private landowners and developers to destroy critical habitat before the listing of endangered species rather than proactively taking on conservation efforts pre-listing.[20]

A more stringent regulatory approach for analyzing "destruction or adverse modification" is needed to properly incentivize proactive, voluntary conservation efforts. The most straightforward policy approach for doing so is to require that whenever non-*de minimis* destruction or adverse modification of critical habitat is anticipated, the Services must recommend a Reasonable and Prudent Alternative (RPA), which would sufficiently mitigate possible impacts to avoid adverse modification from occurring.[21] On July 5, 2012, SCB submitted a formal petition to the FWS through the Department of Interior and to the NMFS through the Department of Commerce asking the two agencies to strengthen the regulatory definition of the term "destruction or adverse modification" to make mitigation mandatory for all non-de minimis impacts to critical habitat.[22] Adopting SCB's proposed changes to the regulatory definition of "destruction or adverse modification would provide the necessary mandatory mitigation requirements to make any voluntary conservation activities carried out in cooperation with the agencies more effective and reliable.

Most importantly, the mitigation required in any RPA must be greater than what would be required to generate "credits" in any voluntary conservation scheme. If the FWS desire to employ more market-based solutions to solving conservation problems, it must realize that it is important to create the proper supply-side incentives for undertaking voluntary conservation efforts, *and* it must create the proper demand for market-based credits. Demand for voluntary conservation "credits" will never be sufficient if avoiding compliance with the ESA altogether is cheaper, or if it is easier to exploit the current weaknesses in the Section 7 regulatory scheme rather than purchasing conservation "credits." And, as will be explained in detail below, without proper transparency and reporting requirements, the specter of an enforcement action being brought against a private entity for destroying critical habitat via Section 9 of the ESA is equally low. Therefore, standardized mitigation ratios must be defined in all relevant provisions of the ESA to create the proper balance of incentives and disincentives to undertake voluntary conservation activities. SCB recommends that voluntary conservation efforts be required to undertake mitigation at a 2:1 ratio, wherein for each unit of impact that occurs, voluntary conservation activities must generate two units of conservation benefits. To make this attractive to private landowners, mandatory mitigation under Section 7 must be undertaken at the 3:1 ratio or greater to offset adverse impacts. Finally, to provide regulatory assurance, FWS should

[20] Lueck, D., Michael, J., 2003. Preemptive habitat destruction under the Endangered Species Act. Journal of Law and Economics 46, 27– 60.
[21] 16 U.S.C. § 1536(b)(3)(A)
[22] The petition was delivered certified mail to both agencies on July 5, 2012. A copy of the petition can be found at SCB's website at: www.conbio.org/ /images/content_policy/2012-7-5_SCB_Adverse_Modfication_-_Critical_Habitat_Peition.pdf

guarantee that if verified mitigation at the 2:1 ratio occurs, private landowners would not be required to undertake additional conservation activities on their private property. Providing regulatory assurance that private entities will not need to undertake additional conservation after a species is listed as threatened or endangered is appropriate, but *only* when such assurances fit into a larger scheme of science-based implementation of the Endangered Species Act.

II. FWS Must Scientifically Define "Net Conservation Benefit" Using Mitigation Ratios Based on the Best Available Science and Based on the Policy Objective of Recovery. Mitigation "Credits" Must be Based on the Ecosystem Function Being Preserved, Not Simply on a Per-Acre Basis.

A. Defining Net Conservation Benefit.

Voluntary conservation actions must result in tangible benefits to candidate, threatened, and endangered species. To provide incentives for conservation efforts that merely maintain the status quo, would in effect, create its own perverse entitlement program where private parties are paid merely to comply with an existing law designed to protect the public interest in preserving biodiversity. Therefore, a "net conservation benefit" must result from any program that is designed to encourage voluntary conservation efforts. Unfortunately, the Fish and Wildlife Service has yet to develop a meaningful definition of what a "net conservation benefit" should mean for any of the existing policy tools designed to encourage voluntary conservation actions. For example, in the final rule regarding the Safe Harbor Policy and Candidate Conservation Agreements with Assurances, the FWS stated that a net conservation benefit "will vary depending upon the species and the proposed activities. However, it generally means that any potential negative impact to the species is outweighed by the benefits of the activities."[23] This is not a rigorous, science based definition. Instead, under this vague standard, even a slight and potentially *de minimis* overall benefit would appear to be sufficient to meet the FWS's "net conservation benefit" standard.

Similarly, in its final guidance on recovery credits, which are available to federal agencies to offset habitat impacts to listed species by conducting proactive habitat conservation elsewhere, the FWS defined "net benefit to recovery" as the "enhancement of a species' current status by addressing the threats identified at the time of listing or in a current status review….A net benefit to recovery will generally be found when an action directly or indirectly provides a material increase in a species' population and/or a material enhancement, restoration, or protection of that species' habitat."[24] This definition is equally vague, but the recovery credits guidance does state that when considering how to apply "recovery credits" the FWS should use "biologically appropriate mitigation ratios in habitat-based crediting (e.g., more than one credit for each debit necessary to fully offset adverse effects)" and to maintain "a credit balance that ensures an incremental increase in the species' recovery status."[25] Because the existing attempts

[23] Safe Harbor Agreements and Candidate Conservation Agreements With Assurances; Revisions to the Regulations, 69 Fed. Reg. 24,084 (May 3, 2004).
[24] Recovery Crediting Guidance, 73 Fed. Reg. 44,761 at 44,768 (July 31, 2008).
[25] *Id.*

to define "net conservation benefit" have fallen short, SCB recommends the following definition, as a more rigorous, science-based approach:

> *Net conservation benefit* means a biologically appropriate mitigation ratio in habitat-based crediting wherein at least two credits of permanent habitat improvements shall be generated in order to debit one credit of adverse effects in order to reasonably ensure an improvement in the species' conservation status.

Adopting a rigorous definition for the term "net conservation benefit" that focuses on mitigation ratios would provide a much greater level of clarity, transparency, and regulatory certainty regarding the use of the existing policy tools focusing on voluntary conservation efforts. Furthermore, as will be shown below, mitigation ratios have been required in the context of wetland protection under the Clean Water Act (CWA) for many years. Harmonizing the FWS approach with the existing Environmental Protection Agency/Army Corp of Engineers approach to mitigation would potentially streamline the regulatory requirements under both the CWA and ESA. Because many endangered species live in federally protected wetlands and navigable waters, conservation gains would be immediate if the FWS adopted an approach that mirrored the CWA approach to wetland mitigation.

B. Setting Minimum Mitigation Ratios

Mitigation ratios have been a long-standing policy requirement in wetland mitigation activities under the Clean Water Act. A 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Army Corps) established basic mitigation principles to ensure that there would be "no net loss" of wetlands in the United States.[26] This policy contained three basic principles: (1) permittees would be required to avoid impacts and permits s would only be issues for the least environmentally damaging practicable alternative; (2) permittees would need to take appropriate and practicable steps to minimize adverse impacts; and (3) compensatory mitigation would be required for unavoidable adverse impacts. Regarding compensatory mitigation, the joint MOA states the following:

> Mitigation should provide, at a minimum, one for one functional replacement (i.e., no net loss of values), with an adequate margin of safety to reflect the expected degree of success associated with the mitigation plan…. In the absence of more definitive information on the functions and values of specific wetland sites, a minimum of 1 to 1 acreage replacement may be used as a reasonable surrogate for no net loss of functions and values. However, this ratio may be greater where the functional values of the area being impacted are demonstrably high and the replacement wetlands are of lower functional value or the likelihood of success of the mitigation project is low.[27]

[26] *The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines*, February 6th 1990. *Available at*: http://water.epa.gov/lawsregs/guidance/wetlands/mitigate.cfm
[27] *Id.*

Under the joint MOA, mitigation rations vary across permits depending on the quality/functions of the wetlands at issue. Higher mitigation ratios are often required for sites and wetland types that are difficult to restore.[28] Higher mitigation ratios are often also required where there is a long time-lag expected between the permitted activity and the achievement of the desired endpoint for the compensation site. Higher mitigation ratios are often also required where the impacts are going to occur in pristine wetland rather than in severely degraded ones. As an example, **the California Fish and Game requires 5:1 mitigation for impacts to riparian habitats for endangered species**, 3:1 mitigation for rare/unique habitats, 2:1 mitigation for medium value habitat, and 1:1 mitigation for disturbed wetland habitats.[29] Because the overarching policy goal for wetlands is no net loss, there are only a few exceptions where wetland mitigation is permitted at a level less than 1:1.[30]

The FWS has appeared to endorse the idea of mitigation ratios in some specific contexts, but not yet done so in a transparent and consistent manner as a matter of national policy. For example, in a programmatic consultation regarding Section 404 wetlands permits for threatened and endangered vernal pool crustaceans, the FWS required that for "every acre of habitat directly or indirectly affected, at least two vernal pool credits will be dedicated within a Service-approved ecosystem preservation bank, or, based on Service evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved on the project site or on another nonbank site as approved by the Service."[31] In other words, depending on the location of the conservation crediting activity for vernal pool habitat, a mitigation ratio of either 2:1 or 3:1 was required.[32] However, it is important to note that these mitigation requirements were complimentary of the underlying EPA/Army Corps requirement regarding no net loss of vernal pool wetlands under the Clean Water Act. In situations where the loss of endangered species habitat does not implicate the loss of wetlands, mitigation ratios do not appear to be required consistently.

Explaining why a minimum ratio of 2:1 should be required for all voluntary conservation policy schemes is also important. First, a safety margin must exist for all mitigation actions because scientific literature demonstrates that mitigation is rarely 100% successful. The National Academy of Sciences conducted an extensive review of nine wetland mitigation programs in 2001 and found that "the mitigation ratio requirements were never fully met, but the

[28] National Academy of Sciences. *Compensating for Wetland Losses Under the Clean Water Act*. Committee on Mitigating Wetland Losses, Board on Environmental Studies and Toxicology, Water Science and Technology Board, National Research Council (2001).
[29] California Department of Fish and Game-South Coast Region: Guidelines for Wetland Mitigation.
[30] *The Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines*, February 6th 1990. *Available at*: http://water.epa.gov/lawsregs/guidance/wetlands/mitigate.cfm
[31] US Fish and Wildlife Service. Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California (1996)
[32] Id.

ratio for the mitigation implemented was higher than 1:1 in three of the nine studies."[33] Thus, general difficulty in fully implementing a mitigation program, the NAS concluded, "a 1.5:1 ratio of mitigation:loss of acreage would be needed to equal the area lost (if all other permit conditions are met, including functional equivalency)." In other words, a 1.5:1 ration is needed just to ensure that in fact 1:1 mitigation actually occurs (assuming all permit conditions are met).

Furthermore, recent research also demonstrates that wetland functionality in mitigation projects is often less than would occur in non-disturbed wetland locations. Meaning that functional equivalency rarely occurs in mitigation wetlands. In a meta-analysis of over 600 wetland mitigation projects around the world, biological structure and biogeochemical functioning was on average 26% and 23% lower, respectively, compared with undisturbed wetland locations.[34] On a whole, this analysis concluded that restoration performance is often limited meaning that even after several decades, mitigation fails often fails to recovery original levels of wetland ecosystem functions, even after many decades. For these two reasons, lack of full mitigation and loss of functionality, SCB recommends a 2:1 mitigation ratio as an appropriately precautionary approach for voluntary conservation efforts. Until the FWS can demonstrate that its voluntary conservation projects do actually restore/preserve equivalent acreage with equivalent ecosystem functionality, a greater than 1:1 ratio is needed in order to provide threatened and endangered species with the benefit of doubt that Congress intended.[35]

Finally, a 2:1 mitigation ratio is required to further the overarching policy goal of the ESA, namely the recovery of threatened and endangered species. As has been widely noted, Congress enacted the ESA "to provide a program for the conservation of such endangered species and threatened species."[36] The ESA defines "conservation" as "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided [by the ESA] are no longer necessary."[37] Thus, the objective of the ESA is to enable listed species "not merely to survive, but to recover from their endangered or threatened status."[38] Loss of habitat continues to be the primary threat to the vast majority of endangered species, a fact that the Congress expressly noted when it passed the Endangered Species Act in 1973.[39] Accordingly, the recovery of threatened and endangered species depends on sufficient habitat being protected and restored to ensure a species' long term viability. Therefore, recovery for many threatened and endangered species requires not just "no net loss" as is the case in context of wetlands, but likely requires additional protected habitat.

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[33] National Academy of Sciences. *Compensating for Wetland Losses Under the Clean Water Act*. Committee on Mitigating Wetland Losses, Board on Environmental Studies and Toxicology, Water Science and Technology Board, National Research Council (2001).
[34] Moreno-Mateos et al. *Structural and Functional Loss in Restored Wetland Ecosystems*, PLoSone 10:1, Jan. 2012
[35] House Conference Report 96-697, 1979 U.S.C.C.A.N. 2576 (emphasis added).
[36] 16 U.S.C. § 1531(b).
[37] 16 U.S.C. § 1532(3).
[38] *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F.3d 1059 (9th Cir., 2004); *N.M. Cattle Growers Ass'n v. U.S. Fish and Wildlife Service*, 248 F.3d 1277, 1283 (10th Cir.2001); *Sierra Club v. U.S. Fish and Wildlife Service.*, 245 F.3d 434, 441-42 (5th Cir.2001).
[39] Wilcove, D.S, et all. 1998. *Quantifying threats to imperiled species in the United States: Assessing the relative importance of habitat destruction, alien species, pollution, overexploitation, and disease*. BioScience 48(8):607-615.

Voluntary conservation efforts must take note of this reality, and a 2:1 mitigation ratio is the most straightforward policy tool to accomplish the larger goal of recovery.

C. Mitigation Must Be Based on Ecosystem Functionality, Not Simply Acres Mitigated.

SCB also has concerns that the FWS may define "credits" and "debits" in too simplistic a manner to ensure that there are scientific justifications for sanctioning voluntary conservation efforts. The Service currently defines a "credit" of voluntary conservation effort that "equal one acre of habitat or the area supporting one nest site or family group. Credit values are based upon a number of biological criteria and may vary by habitat types or management activities. When determining credit values, some of the biological criteria that may be considered include habitat quality, habitat quantity, species covered, conservation benefits, including contribution to regional conservation efforts, property location and configuration, and available or prospective resource values."[40] SCB believes that this definition provides too much flexibility in how "credits" should be defined. Although it is clear that there may be some need for flexibility with respect to which biological criterion is chosen for a particular voluntary conservation effort, all voluntary conservation programs should include some minimum baseline covering several ecosystem functions that are essential to the conservation of the candidate species. Therefore SCB recommends that the Services define conservation credits in the context of the physical and biological features that are essential to the conservation of the species if such species were to have critical habitat for it designated in the future.

There are already many examples of how a more rigorous approach to considering different habitat characteristics and functions in voluntary conservation programs. For example, the Willamette Partnership has developed a General Crediting Protocol[41] to quantify how many "credits" a particular voluntary conservation project can/does generate. The key difference between the approach of the Willamette Partnership and the approach of the FWS is that the Partnership focuses on quantifying *functional* acres or *functional* linear feet of habitat restored, not simply acres or linear feet of habitat restored. For example, with respect to salmonids species, voluntary conservation project are evaluated based on the following functions: Cover/refugia, Foraging, Nesting/Spawning, Connectivity, Habitat Formation, Temperature Regulation, Spatial Separation, Variable Velocity, and Channel Diversity.[42] Thus, a project's potential is not scored merely on the basis of acres protected, but on the critical functions that habitat provides to the relevant species. This general approach is similar to that taken by the EPA/Army Corps with respect to mitigation of wetlands, the MOA for which clearly states, "the *functional values* lost by the resource to be impacted must be considered." Consideration of the functions that habitat provide is critical to reducing the uncertainty surrounding the successfulness of mitigation efforts. Voluntary conservation efforts to protect the habitat of

[40] U.S. Fish and Wildlife Service, *Guidance for the Establishment, Use, and Operation of Conservation Banks* (2003).
[41] Available at: http://willamettepartnership.org/General%20Crediting%20Protocol%201.1.pdf
[42] More information and salmon protocol available at: http://willamettepartnership.org/ecosystem-credit-accounting/salmon/copy_of_salmon-habitat

declining species will generally be more successful if those efforts consider the functions of the habitats being preserved.

III. FWS Must Establish Rigorous Regulatory Mechanism to Ensure that Voluntary Conservation Programs are Transparent and Accountable.

The long-term effectiveness of any voluntary conservation program is contingent upon is transparency and accountability to the public. For example, if some participants in a voluntary conservation program regularly fail to meet their obligations, and a species needs to be protected under the ESA, then those participants who met their obligations in good faith are more likely to bear more of the relative burden to conserve such species. Absent a means of tracking these voluntary efforts, there will simply be no way of knowing which parties are trying to game the system. This concern is not merely hypothetical. As discussed above, the National Academy of Sciences conducted a detailed study of wetland mitigation under the Clean Water Act.[43] The NAS report found that "much as 34% of the mitigation was never installed." For example, in one study of 40 wetland mitigation projects in southeast Florida, the research indicated that only about half of the required 430 hectares of wetlands had been constructed.[44] This result was not surprising given compliance inspections were rarely conducted by the Army Corps of Engineers based on the Corps' Standard Operating Procedures. Because the Corps' consistently had inadequate staffing, priority was given to issuing permits, not on follow-up inspections to determine if mitigation was successful.

The NAS also determined that mitigation permits failed to reflect the appropriate amount of time needed to gauge mitigation effectiveness. The NAS determined that monitoring periods commonly last between 3 and 5 following mitigation site construction. However, for many created and restored systems, particularly those such as woody riparian systems that require long periods of time for plant establishment, a short-duration monitoring (3-5 years) might not be long enough to determine whether mitigation goals will be achieved. The NAS recommended longer mitigation monitoring periods to determine whether efforts were or were not successful. The same deficiencies noted by the NAS regarding monitoring duration and overall mitigation compliance will likely occur, or are already occurring, regarding voluntary conservation actions relating to candidate, threatened, and endangered species. Therefore, **SCB recommends that the post-mitigation monitoring requirement extend 10 years or the time-span of one generation[45] of the species for which such conservation is targeted, whichever is longer.**

Gauging the effectiveness of mitigation activities must occur in relation to the species for which the voluntary conservation activities are designed. For long-lived species, the effectiveness of mitigation activities might take years or decades to fully assess. This would not mean that a developer could not "debit" any conservation credits until the mitigation project

[43] National Academy of Sciences. 2001. *Compensating for Wetland Losses Under the Clean Water Act.* Committee on Mitigating Wetland Losses, Board on Environmental Studies and Toxicology, Water Science and Technology Board, National Research Council. Report *available at*: http://www.nap.edu/catalog/10134.html
[44] *Id.*
[45] SCB recommends following the IUCN's Red List, which defines generation as "the average age of the parents of the current cohort."

reaches its intended conservation goal. Requiring monitoring simply ensures that such monitoring will occur in that species' context, should there be a need for supplemental conservation credits, and ensures that FWS will have the necessary data to determine where additional conservation efforts are needed to fully offset any conservation "debits." This approach is also precautionary since there substantial evidence that slow-reproducing species, that is, those with long generational lengths, can be more at risk than those species with short generational lengths. For example, a recent study concluded that "age at maturity can serve as a universal predictor of extinction risk in fishes and mammals when "rmax" is unknown. These findings are thus supportive of the application of extinction-risk and population-status criteria that are based on generation time and that are independent of taxonomic affinity."[46] In recognition of this, monitoring of voluntary conservation efforts is especially important for threatened and endangered species that reproduce slowly to ensure that these voluntary efforts achieve real and lasting gains for the species in question.

Finally, as part of any future rulemaking, FWS should include stringent monitoring and reporting requirements. General regulations regarding the issuance of permits can be the FWS can be found at 50 C.F.R. Part 13, and a few additional ESA-specific permit regulations are located at 50 C.F.R. §§ 17.22 & 17.32 regarding take of listed species. However, these permit requirements contain only the most rudimentary requirements regarding monitoring and reporting. Unless monitoring and reporting requirements are mandatory, with meaningful penalties for failures to report, or for falsifying reports, there will never be sufficient transparency for any voluntary conservation program to be successful in the long-term. While the EPA and Army Corp approach to mitigation is not perfect, their existing monitoring and regulations are more comprehensive than the FWS's regulations, which results in opportunities for possible enforcement actions through the use of citizen suit provisions as well as State-led enforcement activities.

One of the reasons that the Clean Water Act and Clean Air Act have much more robust citizen suit participation in the enforcement of those statutes is that reporting and monitoring requirements in the regulations have resulted in a high degree of transparency regarding industry compliance with those two statutes. Citizen suits can provide a meaningful deterrent to non-compliance, but public access to information is a pre-requisite for any such enforcement actions designed to deter non-compliance with one's mitigation requirements. Accordingly, as part of any regulations regarding voluntary conservation programs, new regulations must simultaneously be developed regarding reporting and monitoring of take and other associated voluntary conservation activities. FWS should look to the Clean Water Act's regulations regarding permitting, found at 40 C.F.R. § 122.41 as a model for its reporting and monitoring requirements. Accordingly, SCB recommends the following with respect to reporting requirements:

1) The FWS should adopt regulations that mandate annual self-reporting on compliance/non-compliance with permit conditions and self-reporting on

[46] Hutchings et al. 2012. *Life-history correlates of extinction risk and recovery potential*. Ecological Applications, 22(4):1061–1067.

known/suspected take of threatened and endangered species. Annual reports (similar to the EPA Discharge Monitoring Reports) should be available online to the public and available to the public at the relevant FWS regional office. Proposed language should read: *Monitoring results must be reported on a Species and Habitat Monitoring Report (SHMR) or forms provided or specified by the Director for reporting results of monitoring of voluntary conservation activities and their associated impacts.*

2) FWS should adopt regulations making clear that a permittee has a duty to comply with the terms of the permit, similar to 40 C.F.R. § 122.41(a). Proposed language should read: *The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Endangered Species Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.*
3) FWS should adopt regulations making clear that the permittee has a duty to provide information to the FWS, similar to 40 C.F.R. § 122.41(h). Proposed language should read: *The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.*
4) FWS should adopt regulations that specify what data must be measured during monitoring and specifically that monitoring is representative of the monitored activity, similar to 40 C.F.R. § 122.41(j). Proposed language should read: *(1) Samples and measurements taken for the purpose of monitoring shall be representative of the mitigation activity; (2) the permittee shall retain records of all monitoring information for a period of at least 5 years, from the date of the completion of the post-mitigation monitoring. This period may be extended by request of the Director at any time. (3) Records of monitoring information shall include: (i) The date, exact place, and time of monitoring; (ii) The individual(s) who performed the monitoring; (iii) The date(s) analyses of such monitoring were performed; (iv) The individual(s) who performed the analyses; (v) The analytical techniques or methods used; and (vi) The results of such analyses.*
5) FWS should adopt regulations that require that all monitoring reports be signed by a responsible party and that the falsifying of a monitoring report is a punishable act under the ESA, similar to 40 C.F.R. § 122.41(k). Proposed language should read: *(1) All applications, reports, or information submitted to the Director pursuant to a permit shall be signed and certified. (2) The ESA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $25,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.*
6) FWS should adopt regulations that require the permittee to report any other noncompliance or relevant information regarding activities covered by such permit in a timely manner to FWS, similar to 40 C.F.R. § 122.41(l). Proposed language should

read: *(1) The permittee shall report all instances of noncompliance not reported at the time monitoring reports are submitted; (2) Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.*

In addition to the recommendations outlined above, we urge the FWS, in cooperation with other Federal and State resource management and taxing agencies, to develop and publish a directory of programs and provisions that can provide affirmative financial and technical assistance to persons, including landowners and managers, who are considering undertaking voluntary conservation measures that are likely to benefit listed, candidate or declining biodiversity and ecosystems. The report should also include options for agencies and legislative bodies to consider as possible improvements to enhance the efficiency of those programs, and in general and, in particular, as they complement and support the implementation of the ESA.

CONCLUSION

We support the FWS for its continued efforts to improve its regulations implementing the Endangered Species Act. Improving the regulatory structure for conservation banking and other voluntary conservation activities has the potential to make the ESA more effective at recovering species, as long as parallel efforts to strengthen Section 7 of the ESA are implemented with equal vigor. Private landowner participation is crucial to the success of candidate conservation programs and we look forward to working with the FWS to make these efforts more effective. Thank you for the opportunity to comment on this issue.

Respectfully submitted,

John Fitzgerald, J.D.
Policy Director, Society for Conservation Biology

Brett Hartl, J.D.
Policy Fellow, Society for Conservation Biology