Incidental Extinction: How the Endangered Species Act's Incidental Take Permits Fail to Account for Population Loss

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Editors' Summary

Section 9 of the ESA boldly declares that any harm perpetrated upon a listed species, even a single animal, is illegal. Yet, the Incidental Take Permit provision of the ESA expressly allows nonfederal landowners to harm thousands, possibly millions, of listed species every year. Despite this obvious statutory contradiction, the system makes sense—if executed correctly. Unfortunately, changes within the Incidental Take Permitting process have made it such that these permits, originally small in number and scope, may now be significantly contributing to the decline of our most precious species. A close examination of relevant regulations shows that crucial components of the approval process lack the scientific clarity and regulatory direction to deal with modern Incidental Take Permits. Specifically, current and future populations are grossly overestimated because of regulatory deficiencies.

In a feat of statutory clarity, §9 of the Endangered Species Act (ESA)[1] declares that any harm perpetrated upon a listed endangered species, even a single animal, is illegal.[2] Then, §10(a)(1)(B) of the ESA, the Incidental Take Permit (ITP) provision, allows nonfederal landowners to harm uncounted thousands, possibly millions, of endangered species every year.[3] The two provisions, strongly disallowing harm and patently allowing harm, are part of the same federal statute despite an obvious clash in consequences. Oddest of all, the dichotomy largely makes sense—if executed correctly.

The U.S. Supreme Court captured the spirit of the ESA most clearly in *Tennessee Valley Authority v. Hill*,[4] where the Court stated that the purpose of the ESA was to "halt and reverse the trend toward species extinction, whatever the cost." The Court left little doubt that the survival of an endangered species trumped private development interests. In the wake of the case, the immediate (and predictable) outcry from private economic interests and their lobbyists was that species with "no value" were squashing projects economically beneficial to humans.[5] Though the science-minded drafters knew of this conflict when they developed the §9 prohibition on harm, political and private-interest voices soon became the loudest.[6] The 1982 Amendments took a first stab at quieting the storm by instituting ITPs.[7] An ITP is a permit allowing nonfederal actors to harm or kill (called "take" by the ESA) endangered species, so long as that harm was caused incidentally to an otherwise lawful activity.[8] In certain circumstances, based on sound scientific consideration of species' population status, the availability of an ITP makes sense. ITPs would not frustrate the purpose of the ESA, and they would quiet powerful lobbies who decry the loss of economic promise. The question now is, are the necessary circumstances present,

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1. 16 U.S.C. §§1531-1544, ELR Stat. ESA §§2-18.
2. 16 U.S.C. §1538(a)(1)(B) (2008).
3. *Id.* §1539(a)(1)(B).
4. 437 U.S. 153, 184, 8 ELR 20513 (1978) (confirming an injunction that halted construction of the nearly completed Tellico Dam because completion would eradicate the endangered snail darter).
5. Zygmunt J.B. Plater, *Endangered Species Act Lessons Over 30 Years, and the Legacy of the Snail Darter, a Small Fish in a Pork Barrel*, 34 Envtl. L. 289, 301-03 (2004).
6. *Id.* at 292.
7. *See* H.R. Rep. No. 97-835, §6 (1982) (Conf. Rep.).
8. 16 U.S.C. §1539(a)(1)(B).

and is the consideration of species population status based on sound science?

As is the case with any major environmental regulation, the full picture does not unfold in congressional legislation. Instead, it takes shape in years of amendments, regulations, and administrative law. Since the 1982 Amendments, many aspects of the ITP process have changed. On the government's side of the table, the "no surprises" policy was implemented.[9] No surprises refers to the government's assurance to permittees that once the terms of an ITP have been set, the government will not impose additional restrictions on the ITP holder—even if the species is in dire straits due to unforeseen circumstances.[10] On the permittee's side, state and private landowners have recently discovered what a versatile tool an ITP is.[11] In the first decade after the 1982 Amendments, there were 14 ITPs issued, by August 1996, there were 179,[12] and by April 2010, there were 946 approved by the U.S. Fish and Wildlife Service (FWS) alone.[13]

The character of ITPs has changed as well. The early permits were small in both size and species covered. More recent permits often cover hundreds of thousands of acres or more, and have included as many as 165 species in a single permit.[14] The length of ITPs has been super-sized as well: permits for 100 years are common, and the average length of an FWS ITP is nearly 25 years.[15] Lastly, many permits are now geographically centered around "ITP hotspots," where, for any number of reasons, there are a multitude of permits in a confined geographic space. Multiple permits in the same area are likely to mean multiple permits for the same local species.

In many instances, the modern characteristics of the ITP program—increased size, increased numbers of species, and increased temporal length—lead to an accumulation of the incidental take of a species and a corresponding reduction in population. ITPs quantify this reduction in the number of species taken per year. The population reduction will presumably extend for the life of the permit. Yet, newly issued permits do not take this already-permitted take, which is quantified as species per year, into account.

As more and more new permits are approved for a species, it is vital that the future take *that has already been permitted* be taken into consideration. From here forward, this Article will use the term "preexisting take" for the take that has already been permitted but will actually occur in the future. If the preexisting take is not considered, then the predicted impacts of each new permit will be based on falsely inflated future population estimates, greatly skewing the anticipated impact of the permit under consideration. Thus, unless the preexisting incidental take of species is included in population estimates, the scientific underpinnings of new ITPs are missing an enormous and integral piece of data. This gap could easily undermine the ESA's principles; as opposed to halting and reversing a trend toward extinction, the ESA would quietly and incidentally allow species to slide toward extinction.

Consider the plight of the loggerhead sea turtle. Pursuant to ITPs, the United States allows the take of over 165,000 of these charismatic megafauna every year, almost 5,000 of which is explicitly lethal take.[16] Yet, this preexisting take, permitted and tracked by the United States, was not included as one of the factors in deciding whether to permit even more take of the loggerhead. Permits continue to be issued today.[17] The new permits that are issued do not account for the fact that the future population will be reduced by *both* the take in the new permit under consideration *and* the preexisting take that has been permitted into the future.[18] In the case of the loggerhead, that means population estimates will be off by, at the very least, the 5,000 turtles that are lethally taken every year, multiplied by the number of years in the permit. For a protected species, these errors are quite significant. For instance, the most recent data shows the loggerhead in immediate danger of extinction.[19]

9. 50 C.F.R. §17.22(B)(5) (2009) (no surprises assurances relating to ITPs for endangered species overseen by the U.S. Fish and Wildlife Service (FWS)); 50 C.F.R. §17.32(B)(5) (2009) (no surprises assurances relating to ITPs for threatened species overseen by the FWS); 50 C.F.R. §222.307(g) (no surprises assurances relating to species overseen by the National Marine Fisheries Service (NMFS)).
10. *E.g.,* 50 C.F.R. §17.22(B)(5). The government can revoke a permit, but only where the permitted activity itself is found to be causing the appreciable reduction in likelihood of survival *and* the government has not already been able to remedy the problem by other means. *Id*. §17.22(B)(8). Because one condition of the ITP in the first place is that the permitted activity will not reduce the likelihood of survival, it is doubtful that permits will be revoked.
11. The drastic change could also be partially attributed to the enactment of the no surprises clause, which was implemented between 1994 and 1998.
12. U.S. Dept. of the Interior & U.S. Dept. of Commerce, Habitat Conservation Planning and Incidental Take Permit Processing Handbook 1-7 (Nov. 4, 1996), *available at* http://www.fws.gov/Endangered/hcp/hcpbook.html (hereinafter ITP Processing Handbook).
13. U.S. FWS, Habitat Conservation Plans and Agreements Database, http://www.fws.gov/ecos/ajax/conserv_plans/public.jsp (last visited May 24, 2011) (hereinafter FWS Database of ITPs). To compile all ITP data, choose the "nationwide" option under the Habitat Conservation Plan column. Then choose "regional report," and the database will provide basic information on all HCPs and the corresponding ITPs.
14. *See* ITP Processing Handbook, *supra* note 12, at i. The ITP covering 165 listed and unlisted species was issued along with the Western Riverside Multi-Species Habitat Conservation Plan. More information is available at Riverside County's website, http://www.rcip.org/conservation.htm.
15. FWS Database of ITPs, *supra* note 13.
16. Note that take encompasses harming or killing a species. Not all take will result in death, though a permit should take both lethal and nonlethal take into account because nonlethal take can result in later death.
17. *See* discussion *infra* Part IV.a.
18. *Id*. This is expressed numerically in Part II.c., Figure 1.
19. *Id*.

Fortunately, there is a straightforward solution that can keep the U.S. government from hamstringing one of its greatest and most emulated environmental statutes. The solution involves only minor regulatory changes, and the necessary regulatory structure is already in place. Yet, the changes would foster a more complete use of scientifically available data in predicting future species populations, especially the data already available from preexisting ITPs. With a few tweaks and slight rewording, this problem could be avoided, and the U.S. government could save many of our most precious and besieged species.

To build to this conclusion, a cursory knowledge of the ESA itself and the ITP program is necessary. Section I will provide that background while examining how the regulatory process contributes to the current predicament. Section II will then delve into nonregulatory factors exacerbating the problem. Section III lays out the proposed solution and explores potential implications, both positive and negative, of the solution. To illustrate the practical ramifications and the varied need for the proposed solution, two case studies will be explored in Section IV: the loggerhead sea turtle and the Florida scrub-jay.

I. The ESA and ITP Regulations

A. *The ESA*

Some advocates applaud the ESA as America's most crucial environmental law, while at the same time, detractors condemn it as the most destructive.[20] This split in opinion is largely driven by how unequivocal the ESA's restrictions are. Section 9 provides that it is unlawful for any person to import, export, sell, possess, and most importantly, "take," any listed endangered species of fish or wildlife.[21] Threatened species enjoy the same prohibitions through later regulations.[22] Take is defined as "[to] harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."[23] A "person" includes not just individuals and businesses, but local, state, and federal agencies as well.[24] Thus, the ESA prohibits any person, in any sense of the word, from doing much more than viewing a protected species.[25] The U.S. Congress was very clear about why they were enacting such severe measures: economic and development pressures in the United States had already driven many species to extinction, and it was time to put the conservation of species in front of continued economic and development desires.[26]

Landowners were vocally upset by the strict ESA prohibitions.[27] Landowners claimed that there was very little economic use for their land once an endangered species or their habitat was found to be present. Their position was that any development meant risking a lawsuit for violating the ESA. Congress specifically noted this problem in a U.S. House of Representatives Conference Report relating to the 1982 Amendments.[28] The ITP was implemented thereafter in order to alleviate the problem and provide the Secretary[29] more discretion in allowing take due to economic development.[30]

B. *Incidental Take Permit Provisions*

The 1982 Amendments resulted in two distinct ITPs available to nonfederal agencies. The first, and less used, is for take that occurs incidentally to scientific activities or efforts intended to enhance the propagation of a species.[31] The overwhelming majority of ITPs are approved under the second option, which is available to any nonfederal actor conducting any lawful activity, as long as the taking is incidental to, and not the purpose of, the activity.[32] Before submitting an application, an applicant must develop a habitat conservation plan (HCP). The HCP is, or should be, the substantive majority of any ITP application. The HCP outlines the impact of proposed take levels, steps that will be taken to mitigate and minimize the impact, funding sources for mitigation and minimization, alternative measures considered, and any other measures the Secretary may require.[33] After public comment, if the Secretary finds that the taking will be incidental to the activity, the take will be mitigated and minimized, the HCP will be adequately funded, and that the taking will not appreciably reduce the likelihood of survival and recovery of the species, then the ITP is issued.[34]

The next major development in the ITP narrative began in 1994, when the government first proposed implementa-

20. J.B. Ruhl et al., The Practice and Policy of Environmental Law 35 (Foundation Press 2008).
21. 16 U.S.C. §1538(a)(1)(B).
22. 50 C.F.R. §223.205(a) (2009).
23. 16 U.S.C §1532(19).
24. *Id.* §1532(13).
25. The term "protected" will be used to refer to both endangered and protected species in situations when actors are subject to functionally identical restrictions.
26. 16 U.S.C §1531(a)(1)-(2). Case law further frustrated landholders by extending both the definition of take and who may be responsible for taking a species. In *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 25 ELR 10478 (1995), the Supreme Court ruled that significant modification of a protected species' habitat is the type of harm contemplated in the definition of take. Additionally, the ESA prohibits not just those who directly cause take, but also those who solicit others to and those who cause take to be committed, which added even more possible offenders to the ranks who were unhappy with the effects of the ESA on the economic capacities of their land. 16 U.S.C. §1538(g).
27. Plater, *supra* note 5, at 292.
28. H.R. Rep. No. 97-835, §6 (1982) (Conf. Rep.).
29. The protection of endangered species is allocated to both the Secretary of Commerce and the Secretary of the Interior, depending on the species. 16 U.S.C. §1532(15). In general, land-based species are delegated to the Secretary of the Interior, who further delegates to the FWS. Marine species are delegated to the Secretary of Commerce, who further delegates to the NMFS. 50 C.F.R. §402.01(b).
30. H.R. Rep. No. 97-835, §6 (1982) (Conf. Rep). There is also an Incidental Take Statement (ITS), which is similar to the ITP but only available for federal actors. 16 U.S.C. §1536(b)(4). The ITS, however, follows a different process and is not covered in this discussion.
31. 16 U.S.C. §1539(a)(1)(A).
32. *Id.* §1539(a)(1)(B).
33. *Id.* §1539(a)(2)(A). Most government literature will refer to the HCP instead of the ITP, which may be due to the connotation of a "conservation plan" versus "incidental taking." However, the HCP stems solely from the ITP process.
34. *Id.* §1539(a)(2)(B).

tion of the no surprises policy. This policy, proposed on August 11, 1994, and finalized on February 23, 1998, is essentially a guarantee to ITP applicants that if their application is approved, there will be no further requirements made of them.[35] The requirements set forth in the ITP, therefore, can be counted on by landowners to be consistent throughout the life of the permit. The Secretary cannot mandate any further investment of land, water, or capital, even if the species continues to decline.[36] There is a narrow carve-out for revocation of an ITP, but it would require a finding that the permitted activity, individually, is now causing an appreciable reduction in the likelihood of species survival and that the Secretary has not been able to resolve the issue by other means.[37] The ITP regulations have not undergone any major changes since the no surprises policy, which is part of the problem, as the character of ITPs have undergone significant change.

C. *The Incidental Take Process*

As is the case with all major U.S. environmental regulation, the real force of the ESA lies within regulations and various agency actions. The ITP process is a particularly complicated one—the Habitat Conservation Planning and Incidental Take Permit Processing Handbook (ITP processing handbook) designed to help guide the FWS and the National Marine Fisheries Service (NMFS) employees through the process is over 125 pages long without appendices.[38] Yet, the implications of the ITP process only become clear with an understanding of all the relevant regulations and guidelines.

The ITP process begins with the applicant, and the applicant retains much of the responsibility throughout. If a person finds that a protected species will be impacted in any way by a proposed activity, whether that activity is building a house, constructing a commercial development, or merely routine recreation, then that person should apply for an ITP from the appropriate agency or forego the activity.[39] In general, if the species are terrestrial or freshwater, then the application should be directed to the FWS, if marine or anadromous, then the application should be directed to the NMFS (the Service will be used to describe the permitting agency hereinafter).[40] Applications are typically processed between field and regional offices, though there are rare instances when the processing will be done by the Washington, D.C., office.[41]

Each ITP application must include a completed HCP.[42] The HCP is a planning document prepared by the applicant that outlines the impact of the take, mitigation and minimization efforts, funding sources for mitigation and minimization, alternative measures considered, and any other measures the Secretary may require.[43] HCP development is typically completed with technical assistance from the Service because the HCP must be developed *before* the landowner submits a formal ITP application to the Service.[44] The Service's assistance ensures that applicants are working toward an acceptable program and reduces redundant reworking of applications. Thus, the ITP application itself falls at the end of the ITP process, as it occurs after the applicant and the Service have worked extensively on an HCP.

ITPs and their corresponding HCPs have to comply with the National Environmental Policy Act (NEPA),[45] as well as the ESA. To expedite these parallel requirements, the Service has created a streamlined process.[46] Once the Service does receive a formal ITP application, the first step it must take is to determine whether the ITP applicant's HCP is "low effect" or not.[47] Oddly, the ITP processing handbook provides very little guidance on this. It merely states that relevant factors include, but are not limited to, the effect on the distribution or population level of the species.[48] If the HCP is in fact low-effect, then it is categorically excluded from NEPA analysis and is expedited.[49] If not, and there are no specific criteria named to determine the level of effect, then there must be a NEPA analysis. More often than not, the NEPA analysis requires an environmental assessment (EA) resulting in a finding of no significant impact (FONSI).[50] In rare cases, the HCP and ITP issuance would be considered a major federal action and would require a full environmental impact statement (EIS).[51] In either case, the applicant or the applicant's private consultant is responsible for completing the EA or the EIS.[52]

Section 7 of the ESA creates yet another parallel process for ITP applications. Section 7 states that any federal action affecting a protected species requires a formal consultation with the Service to determine whether the action will jeopardize the continued existence of a protected species.[53] Because the issuance of an ITP is a federal action, the Service must conduct an internal consultation to comply with §7.[54] The handbook recognizes that this can be a redundant and wasteful process if an internal consultation and analysis is completed *after* the HCP development and NEPA analysis, because the requirements of §9

35. 50 C.F.R. §§17.22, 17.32, 222.2.
36. *Id.*
37. *Id.*
38. ITP Processing Handbook, *supra* note 12.
39. *Id.* at 3-1 to 3-7.
40. *See supra* note 29 and accompanying text.
41. ITP Processing Handbook, *supra* note 12, at 2-1. The NMFS processes applications both from Silver Spring, Maryland, and its West Coast regional offices, though the FWS processes far more applications than the NMFS.
42. 16 U.S.C. §1539(a)(2)(A).
43. *Id.*
44. ITP Processing Handbook, *supra* note 12, at 2-2 to 2-4. The timing of HCP development is clarified at 3-16.
45. 42 U.S.C. §§4321-4370f, ELR Stat. NEPA §§2-209.
46. ITP Processing Handbook, *supra* note 12, at 1-8.
47. *Id.*
48. *Id.*
49. *Id.* at 1-9. The reason that ITPs trigger NEPA is discussed in the proceeding paragraphs.
50. *Id.* at 1-10.
51. *Id.*
52. *Id.* at 2-2.
53. 16 U.S.C. §1536(a)(2).
54. ITP Processing Handbook, *supra* note 12, at 3-15.

and §7 are very similar.[55] Service employees are therefore directed to begin the consultation process at the outset of the HCP development, so that it will be finished before the application is received, allowing the Service to guide the applicant to measures acceptable by §9 standards.[56] In essence, the Service has combined the two sections into a single streamlined process that will end with a finding of "no jeopardy" and "no appreciable reduction in the likelihood of survival or recovery." By guiding the process from the beginning, the Service largely assures that it will approve the application.

The largest aspect of the §7 consultation is the development of a biological opinion, which forms the basis for the determination of the "no jeopardy" and "no appreciable reduction in the likelihood of survival or recovery" findings.[57] Of course, if the effects of the activity indicate that the survival of the species would be jeopardized, then the HCP should not be approved and the ITP will not be issued, as it would violate both §7 and §9 requirements.[58] The biological opinion is the main source of scientific data, so it is leaned upon to determine the acceptable level of take as well.[59] The biological opinion is therefore the lynchpin in the entire system—a quality biological opinion that thoroughly analyzes the effects of this project should provide for an honest appraisal of whether the activity can be conducted without compromising the goals of the ESA. Because of the vital importance of the biological opinion, it is scrutinized thoroughly here.

In order to accurately decipher how a proposed activity will impact the species, however, any predictions must take into account the ongoing effects of preexisting activities that will also impact the species, such as projects that have already been allocated an ITP. No take of a species can be viewed in a static universe, and if the preexisting ongoing impacts to a species are not considered, then the predicted effects of an activity under consideration will rely on a future population that is unrealistically high. By assuming an artificially large future population, the impact of a permit under consideration will be artificially low. An example will illustrate this most clearly.

Assume that a 10-year ITP that allowed the take of 20 grizzly bears annually from 2005-2014 was issued to Company A. Then, in 2005, Company B applied for an ITP covering virtually the same activity in the same area that will also take 20 bears annually. To accurately depict the impact of the second permit on the species survival, a biological opinion must take into account not just the 20 bears taken in 2005 by Company A, but the 20 that will be taken by Company A each year until 2014 as well. A biological opinion prepared for Company B's permit application that only accounts for a current, static baseline (20 bears taken by company A in 2005) and the prospective take of 20 bears by Company B (the effect of Company B's activity) will fail to represent the true impacts of Company B on the species. In reality, each year, Company B will be taking bears from a smaller and smaller pool, as is shown in Figure 1, because Company A will have taken 20 bears as well. Company A's take is a preexisting ongoing threat, and for accurate depiction of the survival of a species, this must be considered in the biological opinion.

Figure 1

Effect of Lack of Consideration of Preexisting Ongoing Threats
Assume Population of Species = 10,000

Year	Permit 1 Annual Take	Permit 2 Annual Take	Take estimate utilized in Permit 2 Biological Opinion	Actual take (impact on species)
2005	20		20 (baseline)	20
2006	20	20	40	60
2007	20	20	60	100
2008	20	20	80	140
2009	20	20	100	180
2010	20	20	120	220
2011	20	20	140	260
2012	20	20	160	300
2013	20	20	180	340
2014	20	20	200	380
2015		20	**220**	**420**
	Future population estimate in Permit 2 biological opinion			**9,780**
	Actual population after Permit 2			**9,580**
	Difference between predicted and actual population			**200**

It is this artificially low projection of future population levels that the proposed solution aims to correct. The method of doing so is an alteration in the form and function of the biological opinion.

D. The Biological Opinion

The biological opinion is typically a voluminous report that incorporates many biological aspects of the proposed action. The purpose is to coalesce all of the relevant data regarding the impacts of the activity in question, so that the Service can determine whether or not the activity will jeopardize survival of the species.[60] The major features of the opinion are the status and life history of a species, an analysis of the proposed area, the environmental baseline, the

55. *Id.* at 3-16.
56. *Id.*
57. *Id.*
58. 16 U.S.C. §1536(a)(2); 16 U.S.C. §1539(a)(2)(B)(4).
59. *See* ITP Processing Handbook, *supra* note 12, at 3-7.
60. 50 C.F.R. §402.14(g)(4).

effects of the action itself, the cumulative future impacts, and the conclusion on whether the action will jeopardize the species.[61] It would seem from the general topics of consideration that the opinion would surely take into account preexisting ongoing threats, yet a deeper reading shows that in fact it does not. This is not only damaging to the continued existence of endangered species, it also violates the §7 requirement that consultations must use the "best scientific and commercial data available."[62] While it may not be realistic to include every preexisting ongoing threat, it is both realistic and scientifically responsible to incorporate threats permitted by the Service itself, especially ITPs currently in place.[63] Within the biological opinion, the sections most suitable for incorporating preexisting ongoing threats would be the environmental baseline or cumulative impacts.

The environmental baseline's content is defined by regulation, and includes:

> [T]he past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.[64]

So, the environmental baseline incorporates the impacts of all actions up until the time of the application, as well as the impacts of prospective federal actions and private or state actions that are being permitted at the same time. The definition curiously does not include the future impacts of private or state actions that have already undergone §7 consultation, such as ITPs. Nor does it consider completely extrinsic actions, which are central to the survival of migratory species that move through foreign jurisdictions. Both of these omitted categories are very real threats to species, and as shown in Figure 1, their absence can have an appreciable impact on the predicted population of a species. The baseline is a snapshot of the current situation but does not extend any further into the future. The limited scope of the baseline would not be an issue if other areas of the biological opinion accounted for the ongoing effects of preexisting threats. Unfortunately for protected species, that is not the case.[65]

Despite the fact that it would be intuitive to include preexisting ongoing threats under the auspices of cumulative impacts, the definition of cumulative impacts is even farther afield with regards to preexisting threats. It exclusively includes nonfederal actions that are reasonably certain to occur in the future and within the specific geographic area under consultation.[66] There is no mention at all of past actions that have future effects, nor is there any mention of future actions that affect the species but occur outside the area being permitted. Though common sense would list preexisting ongoing threats under cumulative impacts, the extremely limited scope makes it a poor candidate for future regulatory shaping. Thus, the ideal area to incorporate these threats would be the environmental baseline.

The definitions of an environmental baseline and cumulative impacts are only the first half of the problem. Even if the Service rewrote the definition of baseline to include preexisting ongoing threats, there would still be a formidable barrier between the baseline and the decisionmaking process. Neither the determination of jeopardy nor the determination of acceptable take limits must incorporate the environmental baseline. The jeopardy finding need only be based on the effects of the action itself and the cumulative impacts.[67] The level of acceptable take is even worse; it is set by the applicant, and the Service merely provides support. There is no scientific requirement of methodology or what data to include in deciding whether to approve an applicant's proposed level of take.[68] The environmental baseline, which would at least include impacts from currently proposed federal projects already under consultation and contemporaneous state or private actions, does not need to be considered in either of these critical decisions. Thus, even if the baseline did include all of the relevant information, that information would not be translated into the jeopardy finding or the acceptable levels of take. The proposed regulations will eliminate this hurdle.

While the distinctions in the ITP regulations may seem subtle, the ramifications are significant. For example, due to the Service's failure to include ongoing threats from previously approved actions, the possibility of underestimating the impact of an action is greatly increased. The no surprises policy then solidifies any of those flaws by handcuffing the Services from requiring any more stringent protections. Combined with the nonregulatory factors discussed in the next section, it is entirely possible that this oversight could appreciably undermine the ESA.

II. Nonregulatory Factors Contributing to Excess Take

If the implementing regulations of the ITP program have opened a crack in the ESA's protections, the additional factors below are driving a wedge into the fissure. The average length of ITPs, their geographic location, as well as

61. FWS Southeast Region, Biological Opinion Format (2007), *available at* http://www.fws.gov/southeast/es/pdf/BO-Outline-SERegion.pdf.
62. 16 U.S.C. §1536(a)(2).
63. One reason that it is especially important to include ITPs is that they contain concrete estimates and ongoing data regarding the amount of take. It is rare for population-level analysis to have reliable data, and forfeiting such data is scientifically irresponsible.
64. 50 C.F.R. §402.02.
65. This does not mean that a biologist *cannot* take these threats into account as part of the baseline, but a biologist is not required or directed to do so. In order to ensure scientifically accurate decisionmaking, biologists should be required to consider these threats.
66. *Id.*
67. 50 C.F.R. §402.14(g)(4).
68. ITP Processing Handbook, *supra* note 12, at 3-7. The Service must then review these numbers as part of the review of the formal application, yet by that point, the "no jeopardy" finding has already been issued as part of the biological opinion, which is formulated before formal application as part of the §7 consultation.

the type of activity permitted will all exacerbate the impacts stemming from the faulty definitions discussed above and the cementing effect of the no surprises clause.

A. *Average Length of an ITP*

The length of an ITP would be irrelevant, if it were not for the no surprises regulation. If the Service could revoke or adjust each permit based on the most recent biological data, then the overall amount of take could be managed easily (assuming that the various regional and field offices had access to each permit for a species). Unfortunately, the Service can no longer adjust permits in any but the direst of circumstances, and so the level of take and mitigation measures are locked in.[69]

The importance of a permit's length is fairly straightforward. As was shown in Figure 1, the absence of preexisting threats can skew the effects of population-level estimates, so that each permit seems to be affecting a larger population.[70] If the time period is longer, the effect of any preexisting ITP is exacerbated. For instance, assuming the same scenario as described in Figure 1, if the permit length was 20 years instead of 10, then the difference between the predicted population and actual population is doubled, which is demonstrated in Figure 2. An analysis of the FWS database for HCPs and ITPs shows that the average length of a permit is 24.7 years, which could cause major discrepancies in population-level estimates.[71] Included in the FWS data, however, are many projects that have no time period at all.[72] These are approved for projects that involve a permanent displacement of habitat.[73] Disregarding the permits without a time period, the average length is over 27 years.[74] By locking in permits for such a long period of time and restricting the Service from adjusting the requirements of each permit for the entire period, the Service will be making permanent decisions based on future population estimates even farther from the scientific reality.

Figure 2

Effect of Lack of Consideration of Preexisting Ongoing Threats
Assume Population of Species = 10,000

Year	Permit 1 Annual Take	Permit 2 Annual Take	Take estimate utilized in Permit 2 Biological Opinion	Actual take (impact on species)
2005	20		20 (baseline)	20
2006	20	20	40	60
2007	20	20	60	100
2008	20	20	80	140
2009	20	20	100	180
2010	20	20	120	220
2011	20	20	140	260
2012	20	20	160	300
2013	20	20	180	340
2014	20	20	200	380
2015	20	20	220	420
2016	20	20	240	460
2017	20	20	260	500
2018	20	20	280	540
2019	20	20	300	580
2020	20	20	320	620
2021	20	20	340	660
2022	20	20	360	700
2023	20	20	380	740
2024	20	20	400	780
2025		20	**420**	**820**
	Future population estimate in Permit 2 biological opinion			**9,580**
	Actual population after Permit 2			**9,180**
	Difference between predicted and actual population			**400**

B. *Geographic Location*

If ITPs are concentrated in a specific region, then it is more likely that those ITPs will cover the same species repeatedly. The more often take of a species is allowed, the further from scientific reality estimates will be. This is because there will be a greater number of preexisting permits unaccounted for. Figure 3 illustrates this by adding an additional preexisting permit to the situation in Figure 2. With the addition of a single preexisting permit, the error doubles. Thus, a concentration of ITPs in a single region will cause a heightened chance of incorrect predictions of population levels. The population levels for animals such as the Florida scrub-jay, a localized species for which there have been over 85 applications in the last three years,[75] could be incredibly distorted, with each additional permit skewing the estimates farther from reality.

Error based on geographic location is more than a hypothetical fear. ITP permit data clearly shows that there *are*

69. 50 C.F.R. §§17.22, 17.32, 222.2.
70. *See supra* Part I.C.
71. FWS Database of ITPs, *supra* note 13. For permits that are allocated in perpetuity, 100 years was used as the time period.
72. *Id.*
73. It is not uncommon for permanent displacements to have time periods of 1-5 years allocated to their ITPs, either. *Id.*
74. *Id.*
75. FWS Database of ITPs, *supra* note 13.

Figure 3

Effect of Lack of Consideration of Preexisting Ongoing Threats
Assume Population of Species = 10,000

Year	Permit 1 Annual Take	Permit 2 Annual Take	Permit 3 Annual Take	Take estimate utilized in Permit 3 Biological Opinion	Actual take (impact on species)
2005	20	20		40 (baseline)	40
2006	20	20	20	60	100
2007	20	20	20	80	160
2008	20	20	20	100	220
2009	20	20	20	120	280
2010	20	20	20	140	340
2011	20	20	20	160	400
2012	20	20	20	180	460
2013	20	20	20	200	520
2014	20	20	20	220	580
2015	20	20	20	240	640
2016	20	20	20	260	700
2017	20	20	20	280	760
2018	20	20	20	300	820
2019	20	20	20	320	880
2020	20	20	20	340	940
2021	20	20	20	360	1,000
2022	20	20	20	380	1,060
2023	20	20	20	400	1,120
2024	20	20	20	420	1,180
2025			**20**	**440**	**1,240**
	Future population estimate in Permit 3 biological opinion			**9,560**	
	Actual population after Permit 3			**8,760**	
	Difference between predicted and actual population			**800**	

discrete concentrations of ITPs, creating "hot spots" in southern California, Florida, and central Texas.[76] FWS Region 8 and FWS Region 4, which encompass California, Nevada, and the southeastern United States, account for 74% of all FWS ITPs.[77] Add in Texas, and nearly 90% of all FWS ITPs are covered. Though the NMFS does not have a comprehensive database of ITP information, the ITPs will be concentrated on coastal states because the NMFS only has responsibility for marine species. The trend is continuing as well—the author's own analysis of the most recent three years of ITP applications shows that 72% of all applications are in Florida and California.[78] This incredible concentration of permits virtually assures that the same species will be permitted repeatedly, and a brief analysis of both outstanding ITPs and applications show species such as the Florida scrub-jay, the desert tortoise, and several anadromous salmonids permitted over and over again.[79] The dense concentration of ITPs is an intuitive outcome according to a 1997 study analyzing the geospatial concentrations of endangered species.[80] The study shows a large proportion of endangered species concentrated in Florida and southern California. Another disturbing finding of the study was that endangered species typically live in small regions within those states.[81] Twenty-six percent of endangered mammals are endemic to a single county only, and the average number of counties for an endangered mammal is only 32.9.[82] Thirty-one percent of endangered fish are endemic to a single county, and the average number of counties for an endangered fish is only eight.[83] Thus, it is not only more likely that a species will be repeatedly permitted in a small area, but it is more likely that in doing so, a dangerously high percentage of that species' range will be covered.

76. *Id.*
77. *Id.*
78. Patrick Duggan, Analysis of ITP Applications from 2007-2010 (unpublished research for Master's Thesis, Duke University) (hereinafter Analysis of ITP Applications 2007-2010) (on file with author). Forty-one applications in Alabama were considered a single application because they were all identical and related to the same housing project, yet each house was permitted individually.
79. FWS Database of ITPs, *supra* note 13; Analysis of ITP Applications 2007-2010, *supra* note78.
80. Andrew P. Dobson et al., *Geographic Distribution of Endangered Species in the United States*, 275 Sci. 550, 550-53 (1997). An additional disturbing factor brought out by this study is that the areas with the most endangered species are also areas of dense development. Southern California and coastal Florida are some of the most densely populated areas of the United States, both with large swaths of over 300 people per square mile. U.S. Census Bureau, Population Density for Counties and Puerto Rico Municipios (July 1, 2009), *available at* http://www.census.gov/popest/gallery/maps/PopDensity_09.pdf.
81. Dobson et al., *supra* note 80, at 551-52.
82. *Id.*
83. *Id.*

The Service's own recommendations are intensifying the problem by increasing the geographic breadth of ITPs. The ITP processing handbook explicitly states that the Service should encourage landowners to develop large ITPs and notes the benefits of such large ITPs, such as a greater number of species covered and a greater area with economic certainty.[84] The no surprises policy then guarantees that there will be no further action on these large ITPs covering as many as 125 species and nine million acres, so the landowner would be protected despite enormous take.[85]

A crucial distinction made in the handbook is that the ITP does not cover specific activities—it covers the amount of take of specific species.[86] The applicant can take those species by any lawful activity, so a preemptive, long-term, species-diverse, large landmass ITP would preserve the economic viability of the covered land, even if unanticipated activities occur. It would virtually immunize the holder from the most stringent ESA restrictions, so long as the take limit is not breached.

C. Type of Activity Permitted

The last decade has undoubtedly seen a boom in the use of ITPs,[87] but that will have less impact if the boom does not continue. To determine where the ITP program is going, the author analyzed every ITP applications for the past three years.[88] One aspect of ITP applications that is not available through the FWS database (another aspect being NMFS applications) is a description of the activity being permitted. The data show that the activities permitted are largely in growing industries, which indicates that ITP issuance is not likely to slow down any time soon.[89]

The most common reason for an ITP application was private housing construction, which represented over 32% of all new applications from 2007-2009.[90] According to the U.S. Census Bureau, there was an average of over 1.5 million new housing units built annually between 2000-2009.[91] Though only a miniscule proportion of these units apply for an ITP, the number of ITPs issued for housing is unlikely to decline based on this pattern of growth.

Energy projects and local government infrastructure[92] each accounted for 18% of applications, and it is unlikely that either of these industries will slow.[93] Many of the energy projects were renewable energy and exploration, both of which will continue to grow as traditional energy sources become scarcer and the United States attempts to gain energy independence.[94] Local government infrastructure will fluctuate based upon many factors, such as federal funding, but the Service's recommendation that local governments consider expansive regional ITPs will virtually guarantee an increase in applications.[95] Lastly, commercial development accounted for 11% of applications, water management projects and natural resource extraction each accounted for 8% of applications, and the final 5% was scattered amongst a wide variety of activities.[96]

None of the major activities currently applying for ITPs are likely to decline, and housing, commercial development, energy, and water management are very likely to increase in construction activity. This increase will have an even greater impact on endangered species because the permits are occurring in geographic hot spots, nearly guaranteeing an increase in species being subject to multiple ITPs.

D. Summary of Regulatory and Nonregulatory Factors

Taken individually, it is possible that none of the previous factors would significantly alter the impact of ITPs. Yet, the accumulation of detrimental factors is very likely to do so. The Service has stirred a dangerous brew that includes a lack of regulatory direction to consider preexisting ongoing threats, pooled with the inability to change permits that average nearly 25 years, which also cover the same areas and the same species repeatedly, and are being awarded to industries that will continue expanding in the future. The long-term impact of all these factors could wreak havoc on the survival of endangered species. Yet, the upside is that a solution would be neither difficult nor costly to institute.

III. The Proposed Solution

The solution is relatively simple: strengthen and clarify the wording of the environmental baseline, then require that it be incorporated into decisions regarding whether the species will be jeopardized, as well as the acceptable take limits. ITPs and biological opinions should also be stored in a central database, so that multiple regions can access and evaluate every government action regarding an individual species. Together, these changes would greatly reduce or eliminate the chance that ITPs will contribute to the extinction of protected species in the United States.

A. The Environmental Baseline

The core of the solution requires little work outside of the traditional regulatory process. The environmental baseline should be clarified, so that biologists must examine and include the future ramifications of preexisting threats. By

84. ITP Processing Handbook, *supra* note 12, at 1-14 to 1-15.
85. FWS Database of ITPs, *supra* note 13.
86. ITP Processing Handbook, *supra* note 12, at 3-14 to 3-15.
87. ITP Processing Handbook, *supra* note 12, at 1-7.
88. Analysis of ITP Applications 2007-2010, *supra* note 78.
89. *Id.*
90. *Id.*
91. U.S. Census Bureau, New Privately Owned Housing Units Completed (2009), *available at* http://www.census.gov/const/compann.pdf.
92. This includes local government ITPs that cover infrastructure for new commercial and new residential construction.
93. Analysis of ITP Applications 2007-2010, *supra* note78.
94. *See* U.S. Energy Information Administration, Renewable Energy Explained, http://tonto.eia.doe.gov/energyexplained/?page=renewable_home (last visited May 27, 2011).
95. ITP Processing Handbook, *supra* note 12, at 1-14 to 1-15.
96. Analysis of ITP Applications 2007-2010, *supra* note78.

doing so, the threats can be used to determine the future populations of species, and thus the effect of the activity being permitted will be analyzed against the backdrop of realistic future populations. Without such a requirement, it is difficult to state that a biological opinion reflects the best scientific data available. The environmental baseline should then be included as a mandatory consideration in the jeopardy finding, as well as the acceptable level of take.

The current regulatory definition of the environmental baseline is buried within the definition of "effects of the action," and is difficult to follow at best. A new definition, which should stand alone, should clearly state that all preexisting ongoing threats be included. Recommended wording would be:

> The environmental baseline shall include past and present impacts of all Federal, State, or private actions and other human activities in the action area, including but not limited to any activity permitted under §7 or §10 of the Act. The baseline shall then determine the reasonably foreseeable future impacts of all past and present actions identified. The baseline shall also include reasonably foreseeable future impacts of all currently proposed Federal projects in the action area that have already undergone formal or early §7 consultation, and the reasonably foreseeable future impacts of State or private actions which are contemporaneous with the consultation in process.

Though this Article focuses on inclusion of prior ITPs, that is merely because it is a federal program and the data is readily available. ITPs, however, are hardly the only preexisting ongoing threat. There are many other threats, especially to migratory species. For example, any available data relating to foreign fishing that is currently contributing to the decline of protected sea turtles should be included in an ITP for the take of those turtles. By requiring the inclusion of reliable data for *all* known preexisting ongoing threats, the Service can take into account any reliable data regarding foreign or unpermitted threats to a species as well.

The future population estimates used to evaluate the impact of permits under consideration will come far closer to the best available science with the inclusion of preexisting ongoing threats. Yet, including accurate data in the environmental baseline is not enough. It must also be included in the decision of whether the permitted take will jeopardize the future existence of a species. Presently, the Service only requires that the jeopardy finding include "whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species."[97] It amounts to regulatory tunnel vision surrounding only the immediate impacts of the permit under consideration. A proposed new regulation would broaden the scope to contain the reality of preexisting ongoing threats identified in the baseline. Recommended language is that the jeopardy finding be based on "whether the action is likely to jeopardize the continued existence of listed species, taking into account the current environmental baseline, the future implications of threats found to exist in the environmental baseline, as well as the effects of the action itself and the cumulative effects of the action." By changing the basis of the jeopardy finding, the data will not only be compiled, but will be used to determine whether or not the ITP should be approved.

A final step in the ITP process is setting the acceptable level of take. The requirement for determining the acceptable levels of take is given few parameters, and there is no explicit requirement of incorporating preexisting ongoing threats. The ITP processing handbook states only that the Service, as part of the §7 consultation, should assist applicants in determining what the biologically acceptable level of take should be.[98] The regulations for the ITP application itself merely state that the level of take shall be provided along with the biological opinion.[99] The proposed regulations specifically mandate that the data in the biological opinion shall be used to determine the acceptable level of take. A suggested phrasing would be: "The Service shall utilize all data contained within the biological opinion, including current and future population estimates, to determine the acceptable level of incidental take such that the take will not violate §7(a)(2) nor §10(a)(2)(B)(iv) of the Act."

These three changes comprise the proposed regulatory changes. All are fairly simple and would only require the Service to engage in a familiar rule change process. Yet, the results would go far in ensuring that the United States is abiding by its statutory duty to halt the decline of protected species.

The next suggestion is purely for efficiency, and requires no regulatory change at all, merely a tweak to the Service's standard operating procedures.

B. Central Database

ITPs and biological opinions are largely completed by field and regional offices that cover limited geographic areas,[100] and it is difficult for Service employees outside of the supervising field office to access either document.[101] Though many protected species are regional, there are also many migratory species, and the Service's regional boundaries mean nothing to an animal. To ensure that biologists have easy access to the necessary documents, all ITPs and biological opinions should be stored electronically in a centralized database by species. An additional benefit would be that the public would have easy access to the documents, which would increase the transparency of the process and reduce costs related to Freedom of Information Act requests.

97. 50 C.F.R. §4012.14(g)(4).

98. ITP Processing Handbook, *supra* note 12, at 3-7.
99. 50 C.F.R. §402.14(i)(1).
100. ITP Processing Handbook, *supra* note 12, at 2-1.
101. Interview with FWS Region 8 Biologist (Apr. 1, 2009).

C. Effects of the Proposed Regulations

The effects of the proposed regulatory changes would be significant. ITPs would not only reflect the reality of future population levels (and the best available science), but the nonregulatory factors mentioned above would be mitigated as well. The temporal length of permits would have less influence, because the future impacts of current permits would be accounted for by the jeopardy finding and acceptable level of take for any new permit. The same would be true of repeated permitting caused by hot spots.

The new regulations would also release the Service from the precedential effect of past permits. Under the current regulations, once a field office has issued a biological opinion stating that the annual take of 20 animals is acceptable, it is difficult to deny a new permit that would also take 20 animals. The impact of that new permit, viewed alone, would be the same as the previous. Under the proposed regulations, the Service would take into account the effect of every previous permit pertaining to the species at issue. The Service could then deny a permit, despite an identical level of take, if the predicted future population levels indicate a decline toward extinction. This ability would negate the effect of permits being issued to growing industries; even if a flood of permit applications is received, the Service will now have a clearer picture of the long-term population levels and can manage permit approvals so that the populations will remain viable.

D. Negative Aspects

The proposed regulations would close a gap that protected species could have slipped through. That is not to say that it would not have negative impacts as well. In the realm of foreseeable impacts, the only glaring negative would be the chilling effect it could have on property sales due to a reduction in landowner certainty of economic viability. Of course, the ESA will always restrict landowner rights; "Lockean" ideals of unfettered property rights are fundamentally at odds with restrictions to preserve species living on that property.[102] The ITP program mitigates this conflict by allowing economic certainty, as long as the landowner follows various rules.[103] The proposed regulations could eliminate some of the certainty that private landowners now enjoy, but they would not do so at a significant level. Most importantly, the negative aspects would not outweigh the benefits to protected species and the additional certainty that there will not be lawsuits challenging the scientific underpinnings of a permit.

The current economic assumption is that when a landowner buys a piece of property, the future ability to use the property for an economically productive use is part of the purchase price. After the passage of the ESA, a diligent purchaser will investigate the possibility of protected species or their habitat on the land. If there are protected species on the land, then that same diligent purchaser should look further to determine whether ITPs have been issued for the species. With the current regulations, a landowner could be fairly certain that if a permit has been issued for the same species and a legal purpose, then it will be available in this instance as well. Yet, as mentioned above, the proposed regulations would add a level of uncertainty. If the level of future taking is nearing a point where it would jeopardize the species' survival, then a permit may be denied despite virtually identical circumstances.

In theory, it would be a significant area of ambiguity in an industry that values predictability. In reality, it would affect very few people. The reason is that it would only occur once for each species. Once a single permit has been denied, then all future prospective purchasers will be able to account for the denial when they are assessing the value of the land in question. From that point on, both purchasers and sellers would be put on notice of the risk to species and the corresponding restraints. It is then only the prospective sellers that would feel any economic loss. Within that class of real-estate sellers, the impact would only be felt by those who own undeveloped land and are selling the land with an eye toward future development. Once there has been a denial, that small subset of sellers may be left with land that will be worth less than if the denial had not happened.

This situation, while unfortunate for the landowner, has not found sympathy in courts. There has been no shortage of cases claiming that the ESA unfairly restricts property rights, and there have been numerous unsuccessful legislative proposals to restrict the ESA's scope.[104] Courts have repeatedly sided with the ESA, stating in various situations that the restrictions are legitimate and that "one who buys with knowledge of a restraint assumes the risk of economic loss."[105] After all, the proposed regulations would merely be propagating the purpose of the ESA by prioritizing the survival of species "whatever the cost,"[106] and being sure that biological opinions incorporate the best science available.[107] There will be dissenters any time the government infringes upon a private right, but in this case, the arguments are unpersuasive considering the state of the law and the immense benefit to federally protected species.

IV. Case Studies

The proposed regulations will tip the scales in favor of protected species. But protected species are a diverse group, and the efficacy will vary depending on the species. It is unlikely that a burrowing rodent will see the same change

102. Marcilynn A. Burke, *Klamath Farmers and Cappuccino Cowboys: The Rhetoric of the Endangered Species Act and Why It (Still) Matters*, 14 Duke Envtl. L. & Pol'y F. 441, 444 (2004).
103. *Id.* at 453.
104. *See* J.B. Ruhl et al., *supra* note 20, at 111-19.
105. Good v. United States, 189 F.3d 1355, 1361, 30 ELR 20102 (Fed. Cir. 1999), *cert. denied*, 529 U.S. 1053 (2000) (citing Creppel v. United States, 41 F.3d 627, 632 (Fed. Cir. 1994).
106. Tennessee Valley Authority v. Hill, 437 U.S. 153, 184, 8 ELR 20513 (1978).
107. 16 U.S.C. §1536(a)(2).

as a migratory marine mammal. The most important factors to consider when evaluating how the proposed regulations will impact a species are the size of the species' range, the level of permitting or other known preexisting threats, and the ability to create conservation banks. A conservation bank is, in its most fundamental sense, purchasing suitable habitat in a different location to replace the suitable habitat being destroyed by an activity.[108] The area purchased acts like a "bank" where the species can flourish in its optimal habitat, sometimes providing even better habitat than that destroyed, because it is often larger and contiguous. If a species can successfully thrive in the conservation bank, then there should not be any true reduction in population.[109] By examining how the proposed regulations affect two disparate protected species, the varying impacts will become obvious.

A. Loggerhead Sea Turtles

The loggerhead sea turtle is currently a threatened species under the ESA,[110] but is likely to be uplisted to endangered in the very near future.[111] The species range includes the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans.[112] Because of this extensive range, loggerheads are subject to an incredible array of threats, most notably commercial fishing.[113] In the United States alone, the government has permitted the take of over 165,000 loggerheads annually, 4,770 of which is explicitly lethal take.[114] Such an enormous number should surely be taken into account when developing a biological opinion and acceptable take limits, but unfortunately that was not the case for loggerheads.[115] The biological opinion for a 2005 ITP covering multiple sea turtle species notes that there is take in other fisheries in the environmental baseline section and the status of the species section, but the mention is brief and does not reference ITPs. There is no consideration of the future effects of the current take, and there is no mention of extrinsic take in the jeopardy finding.[116] There is also no mention of any other preexisting threat in the take calculations. In fact, the calculations of acceptable take merely use the current take levels in the fishery and then use the upper 95th percentile of predicted take levels to use as the acceptable number.[117] Those estimates are then compared against the aggregate population status estimate without any mention of other threats that will simultaneously be removing individuals from the same population.[118] The biological opinion then determines that although the loggerhead population is continuing to decline, the permit does not jeopardize the population.[119] Throughout the entire opinion, future population estimates are never discussed or quantified.

The proposed regulations would force the Service to consider and quantify the effect of preexisting take on future populations. For loggerheads, that would mean including the at least 165,000 takes, 4,770 of which are lethal, and analyzing the impact on future populations. It is certainly possible that the additional accounting of 165,000 annual takes would alter a jeopardy finding.

The wide range and large number of preexisting threats means that if these threats go unaccounted for, the population-level predictions will be even further from reality. This has played out in the data—despite a prediction that loggerheads may be stabilizing, the most recent estimates show loggerhead populations declining at an alarming rate greater than predicted,[120] and one of the major factors cited is commercial fishing.[121] Commercial fishing is hardly an unforeseeable factor; it actually accounts for the overwhelming majority of permitted take and could be incorporated into any ITP.[122]

The other significant factor at play here is the inability to create conservation banks for loggerheads. It is far easier to create a conservation bank for a nonmigratory, land-based species. A highly migratory marine species whose individuals do not follow the same pattern every year are impossible to conservation bank. Even if a safe sanctuary of suitable habitat was developed, as long as the species is migrating elsewhere and take is not restricted elsewhere, the sanctuary would have little effect. Therefore, the population level will certainly change due to the take permitted by ITPs, and that data should be incorporated into any decision.

Lastly, loggerheads are found in the waters of most coastal states at some point throughout the year, and there are ITPs for loggerheads in the Northeast, Southeast, and Pacific.[123] Without a centralized database for ITPs, then the Service on the West Coast may not even have knowledge of the ITPs issued on the East Coast.

Loggerheads are an example of a species that would benefit the most from the proposed regulations. Wide-rang-

108. FWS, Conservation Banks, http://www.fws.gov/sacramento/es/cons_bank.htm (last visited May 27, 2011).
109. While conservation banks are ideal in theory, there are many who claim that the market must be more rigorously regulated for these banks to actually work in preserving species. For a detailed discussion of the benefits of, and challenges facing, conservation banks, see Christopher S. Mills, *Incentives and the ESA: Can Conservation Banking Live Up to Potential?*, 14 Duke Envtl L. & Pol'y F. 523 (2004).
110. 43 Fed. Reg. 32801 (July 28, 1978).
111. Ninety-day Finding for a Petition to Reclassify the Loggerhead Turtle in the Western North Atlantic Ocean, 73 Fed. Reg. 11849.
112. NMFS Office of Protected Resources, Loggerhead Turtle (*Caretta caretta*), http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm (last visited May 27, 2011).
113. *Id.*
114. Elizabeth Griffin et al., Net Casualties (Oct. 2006). The distinction is made between lethal and nonlethal take. It is important to note, however, that harming a species will often result in a mortality soon after the interaction, yet this is not considered a lethal take.
115. NMFS Office of Protected Resources, Endangered Species Act—Section 7 Consultation Biological Opinion for Permit 1528 (Aug. 19, 2005) (on file with author).
116. *Id.* at 63.
117. *Id.* app. A.
118. *Id.* at 56.
119. *Id.* at 63.
120. NMFS, Final Recovery Plan for the Northwest Atlantic Population of Loggerhead Sea Turtles (2008).
121. Blair Withergton et al., *Decreasing Annual Nest Counts in a Globally Important Loggerhead Sea Turtle Population*, 19 Ecological Applications 30, 48 (2009).
122. Elizabeth Griffin et al., *supra* note 114, at 28.
123. *Id.* at 27-29.

ing species, subject to many ongoing threats, that are not capable of being conservation banked, and are subject to ITPs from a variety of Service offices, will stand to gain the most. The next case study eliminates a few of these factors and exemplifies a species that will see less impact from the proposed regulations.

B. Florida Scrub-Jay

The Florida scrub-jay is a medium sized bird that is relatively similar to the common blue jay.[124] Unlike the blue jay, the Florida scrub-jay is highly endangered, with a total population of less than 4,000 pairs.[125] The scrub-jay is also subject to more ITPs than any other species. There have already been more than 130 permits issued for the take of scrub-jays,[126] and a study of ITP applications does not show that trend changing anytime soon.[127]

Yet, the scrub-jay will be affected far less than the loggerhead by the proposed rules. First, the scrub-jay is endemic to a small area: it only occurs in xeric upland habitat of the interior and Atlantic Coast of Florida.[128] Thus, it is easier to identify and quantify the preexisting and ongoing threats, whereas with loggerheads, the threats to be calculated were not only from many Service offices but foreign actors as well. Of course, the sheer number of scrub-jay permits to take into account will be significant, but as each new permit builds on the shoulders of the last, the additional information needed will be minimal.

The most important factor, however, is that it is possible to create conservation banks for scrub-jays. Not only is it possible, it is the preferred option for scrub-jay ITPs and is used often.[129] As part of mitigation efforts in the HCP, private applicants pay for the preservation or restoration of scrub-jay habitat in protected reserves.[130] While there are questions of how well this actually works (scrub-jay populations are still declining, though it is feasible that natural factors are contributing to the decline),[131] it is certainly better than no mitigation at all. Each permit will likely have a lesser effect on the overall population numbers than if there were no conservation banking. Thus, the biological opinion will collect the same data, but it is unlikely to have as drastic an effect as it would in the case of accounting for an additional 165,000 loggerhead takes annually.

These case studies are fairly drastic contrasts, but they show the outer bounds of how the proposed regulations would change the ITP process. Most species would fall somewhere in between the minimal impact on scrub-jay permits and the massive impact on loggerhead permits. But in both cases, there would be an impact, and the consequences of such an impact would certainly be a step toward preservation of protected species, as well as better science in the calculation of ITP ramifications.

V. Conclusion

The intention of the ITP program was to balance the interests of nonfederal landholders and the continued existence of protected species. The general outline of the program looks as if it has the capability of doing just that. The implementing regulations, however, have failed to live up to one side of the bargain—the continued survival of vulnerable species. In order to adequately protect our biodiversity and ensure its survival, we must utilize accurate scientific estimates and realistic data. It is no coincidence that the "best scientific data available" is mandated in the ESA. The oversight of preexisting ongoing threats is even more egregious, considering that it is the government's own permits, containing readily available data, that are going unused and contributing to faulty science. It seems counterintuitive that the government would not utilize the data regarding its own permitting of reductions in populations. The proposed regulatory changes would not only ensure use of that readily available data in the future, but ensure that population level predictions would be as close to reality as possible. Implementing the proposed regulations would not be a dramatic shift in the current system, but it could very possibly have dramatic effects on the survival of protected species. Equally important, the proposed regulations will strengthen the ESA without having serious negative impacts on landholder rights. By tackling this commonsense problem, the ITP program could change its resume from a thorn in the side of the ESA's ideals to a solid foundation on which to rebuild species' populations.

124. FWS North Florida Ecological Services Office, Florida Scrub-Jay, http://www.fws.gov/northflorida//Species-Accounts/Fla-Scrub-Jay-2005.htm (last visited May 27, 2011).
125. FWS, Florida Scrub-Jay 5-Year Review: Summary and Evaluation 6 (2006), *available at* http://ecos.fws.gov/docs/five_year_review/doc1117.pdf.
126. FWS, Species Profile: Florida scrub-jay, http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B082 (last visited May 27, 2011). To see all ITPs for the scrub-jay, click "see all" under the HCP section.
127. ITP Application Analysis, *supra* note 78. The scrub-jay accounts for 17% of ITP applications between 2007-2009.
128. FWS, Florida Scrub-Jay 5-Year Review: Summary and Evaluation 14 (2006), *available at* http://ecos.fws.gov/docs/five_year_review/doc1117.pdf.
129. Memorandum From the FWS Regarding Florida Scrub-Jay Mitigation Guidance (Mar. 16, 2009), *available at* http://www.fws.gov/northflorida/Scrub-Jays/Docs/20090316_gd_FSJ_mitigation.pdf.
130. *E.g.,* 72 Fed. Reg. 26418-01 (May 9, 2007).
131. The Nature Conservancy, Jay Watch Annual Report 2007 (2007), *available at* http://www.nature.org/wherewework/northamerica/states/florida/files/jay_watch_annual_report_07.pdf.