



The Role of Interagency Cooperation in the Conservation of Threatened and Endangered Species

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PURPOSE: The Endangered Species Act (ESA) of 1973, as amended, was designed to protect and conserve critically imperiled species and the ecosystems on which they rely. While this legislation provides significant protection to imperiled species, some argue the greatest shortcoming of the ESA has been the lack of recovery of listed species. Threatened and endangered species (TES) have substantial impacts on the missions of the U.S. Army Corps of Engineers (USACE), particularly through add-on project costs and reductions in operational flexibility (e.g., navigation and dredging operations). USACE annually expends \$200-\$300 million to comply with ESA regulations (TES Costs Database; <https://wwwel.wes.army.mil/tescosts/index.cfm>).



The interior population of least tern (*Sternula antillarum*) is one of several federally listed species that impact USACE mission areas, and among several species being targeted for proactive conservation and recovery efforts.

Apart from resource constraints, perhaps the major contributor to a lack of recovered species has been missed opportunities by federal action agencies and resource agencies to utilize their responsibilities under the ESA to “conserve” TES. The purpose of this document is to provide basic guidance for USACE Divisions and Districts to develop and initiate conservation programs, as required under Section 7(a)(1) of the ESA, for federally listed and “at-risk” species affected by, or that might be benefited by their actions.

Purpose and Benefits of Section 7 Conservation. Humans and our activities, including those of federal action agencies, can rarely be separated from natural systems when considering ecosystem functions and services. In an increasingly crowded world, human infrastructure and actions have become a part of, not apart from, ecosystems, as encompassed in the evolving concepts of “Anthropocene” (e.g., Corlett 2014) and “novel ecosystems” (e.g., Hobbs et al. 2009). Recognition of this reality allows and demands consideration of how we can manage infrastructure and actions in such a way that can result in beneficially supportive and/or restorative outcomes for

ecosystems and the species they support. Without adequate concern or comprehensive consideration of the effects of modifications and maintenance, the same infrastructure and actions can have adverse effects on ecosystem diversity and function and species conservation¹. It is therefore the responsibility of all federal agencies to ensure our ecosystem continues to support (among other resources) threatened and endangered species and their habitats (ESA Section 2(c)). This was, and is the intent of Section 7(a)(1) of the ESA (TVA v. Hill 1978).

Section 2(c)(1) of the ESA declares that it is “...the policy of Congress that all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.” The primary mechanisms for implementing this policy are identified under **Section 7** and in **50 CFR 402.01**, both entitled “**Interagency Cooperation.**” Together, the law and regulation, *obligates* and *provides all Federal agencies the authority* to fulfill their missions in a manner that will assist in the conservation¹ of species listed as endangered or threatened under the ESA via means identified in both Sections 7(a)(1) and 7(a)(2).

Federal agencies are more familiar with ESA Section 7(a)(2), which requires all federal agencies to ensure that their *actions* do not jeopardize the continued existence of listed species or adversely modify their critical habitats. There is significantly less familiarity and utilization of the preceding Section 7(a)(1) which states:

All...Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species...

The 7(a)(1) duty to conserve *applies widely to programs*, that is, it is not limited just to individual actions. This *provides federal agencies a mechanism to distribute conservation obligations program wide*, as well as to *exploit conservation opportunities outside of defined action areas to achieve compliance with ESA in a way that promotes efficiency, cost effectiveness, ingenuity, and improved conservation outcomes*. This holistic systems approach to conservation can be used to encourage investment in activities that provide the highest conservation return to the population and habitat baselines, in lieu of potentially less effective minimization or mitigation strategies at an individual action area under 7(a)(2) standard operating practices. Thus, a more proactive use of Section 7(a)(1) conservation actions provides a way USACE can gain improved operational efficiency and flexibility in executing mission requirements.

When successfully incorporated into agency missions, 7(a)(1) conservation programs can benefit federal action agencies. While the ESA intended federal agencies to *affirmatively* develop programs to conserve listed species (e.g., TVA v. Hill 1978), *implementation* (i.e., timing and actions) *is discretionary* (e.g., Florida Key Deer v. Paulison 2008). The discretionary nature of implementation allows agencies to strategically commit resources, including type, timing, extent, and frequency of actions. In addition, the flexibility that can be gained through 7(a)(1)

¹ ESA Sec 2(a)(1). (The Congress finds and declares that) various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untampered by adequate concern and conservation.

² ESA Sec. 3(3). “The term “conserve,” “conserving,” and “conservation” mean to use and 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 pursuant to this Act are no longer necessary.”

conservation programs enables greater synergy with stakeholder initiatives and promotes strategic collaboration and resource leveraging which can significantly increase objectives achievement and program sustainability. It also allows *opportunistic* mitigation of past, present, or future adverse effects of agency actions by raising the species population and/or habitat baselines, which may reduce the potential of future interagency conflicts under Section 7(a)(2) and increase operational flexibility and mission sustainability. Therefore, by utilizing Section 7(a)(1), consulting with regulatory agencies accordingly, and implementing conservation program actions, federal action agencies can use their existing authorities to conserve endangered or threatened species and their habitats. Further, by so doing, federal action agencies can cost effectively transform programs and actions from actual or perceived threats to listed species into resources and tools for their conservation, and by using leading practices and collaborative strategies, may do so with little to no effect on authorized missions (e.g., USACE 2013).

A number of legal scholars have recognized the potential, as well as the under-utilization, of the conservation provisions of Section 7 of the ESA for implementing effective species recovery (e.g., Eider-Orley 1978, Diner 1993, Ruhl 1995, Wood 2004, Gersen 2009). However, over the history of the ESA there has been little guidance to implement section 7(a)(1). Current Service (i.e., U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service) regulations (50 CFR 402) simply state, "... affirmative conservation programs (conducted under section 7(a)(1)) must comply with applicable permit requirements for listed species and should be coordinated with the appropriate Secretary."

Although formal Section 7(a)(1) conservation programs have been few in the history of the ESA, recent examples have shown their potential to reduce interagency conflicts, facilitate action agency missions, and achieve conservation of listed species. These Section 7(a)(1) programs illustrate the potential to refocus the conservation paradigm, as well as opportunities to cost effectively expand the listed species population and habitat baselines. For example, the U.S. Army Corps of Engineers (USACE) Mississippi Valley Division (MVD) *Conservation Plan for the Interior Least Tern, Pallid Sturgeon, and Fat Pocketbook Mussel in the Lower Mississippi River* (Channel Improvement Program Conservation Plan) (<http://www.fws.gov/mississippiES/pdf/LMR%20Conservation%20Plan%20Final%20USACE%20CIP%2023%20July%202013.pdf>) outlines a process to conserve three endangered species affected by the USACE Channel Improvement Program in the Lower Mississippi River. Under this multi-strategy program, the primary threat to the species (channel engineering) has been transformed into the primary conservation tool (USACE 2013). This section 7(a)(1) program has cost effectively improved the conservation status of all three species within the footprint of the Channel Improvement Program, leading to a recommendation to delist the Interior least tern (USFWS 2013), and the potential to down-list the pallid sturgeon and fat pocketbook mussel to threatened status. Another recent example, the United States Marine Corps (USMC) Red-cockaded Woodpecker Recovery and Sustainment Program (USMC 2012), has reduced training restrictions on military lands by effectively increasing the woodpecker population on non-military conservation lands. In both of these recent examples, the action agencies gained significant operational flexibility and reduced interagency conflict and procedural compliance and consultation inefficiencies.

Why 7(a)(1)? Simply stated, interagency cooperation was intended by Congress to efficiently achieve the intent of the ESA to conserve listed species and their ecosystems. Under the ESA,

federal action agencies are given the responsibility, burden, *and the authority* to develop necessary information, adjust actions, and monitor responses of listed species; the primary role of the Services is to coordinate and assist. When appropriately implemented, Section 7(a)(1) has the potential to facilitate USACE missions through minimizing and distributing costs and increasing conservation effectiveness; without section 7(a)(1), cost of compliance with section 7(a)(2) will likely continue to rise into the foreseeable future (TES Costs Database; <https://wwwel.wes.army.mil/tescosts/index.cfm>).

Components of Section 7(a)(1) Conservation Programs. There is no formal template for Section 7(a)(1) conservation programs, and their design is currently flexible and adaptable. Important components would include relating the federal agencies role and contribution to the species baseline within their regulatory footprint, identification of research and monitoring needs relative to agency actions, and management strategies under its authorities to minimize adverse impacts *and* benefit (i.e., conserve) the species. The obvious intent of section 7(a)(1) is to raise the species status baseline within the scope of the federal agency mission program footprint. In general, a Section 7(a)(1) conservation program links the authorized purpose of the mandated mission program with the status of listed species potentially benefitted or adversely affected by the mission program, and presents a general and defined strategy for the conservation of the species and their habitats. Successful federal action agency conservation programs, including those identified above and below, have several components in common. It is expected that the order of the components and the degree of complexity and consideration of 7(a)(1) conservation programs will differ by the size and scope of the program, species status, informing science, environmental setting, and other circumstances.

These components include the following:

1. Target Species Status and Baseline. This summary of range-wide status and habitat and population baselines provides the background for interagency consultation between the action agency and USFWS. It provides the agencies with a common understanding of the species life history requirements, ecology, range-wide limiting factors and threats, data gaps and needs, and criteria for recovery. Federal Register listing documents, Service Recovery Plans, and five-year reviews are primary sources for this information.
2. Action Agency Mission(s) and Authorization(s) Relevant to Target Species Conservation. This information is presented in context of the broad purpose, scope, and general description of the program/project operations and actions, particularly as they may relate to the status of the species. For USACE, this component is largely comprised of the authorized project(s)/program description with a focus on primary mission purposes and activities.
3. Scope of the Conservation Program. The scope of the conservation program defines the conservation program action area, the species status baseline (habitat and population) within that action area, and the value of the action area relative to the range-wide baseline (i.e., component 1, above). The action area baseline is then considered in context with the agency's past and present operations and actions, and/or any data limitations. This analysis provides a common understanding between the action agency and USFWS relative to the local, regional, and range-wide importance of the conservation program to status and conservation of the species, and highlights important management data gaps.

4. Description of the Agency Conservation Strategy and Actions. The overall goal of a conservation program is to conserve or improve the species population and/or habitat baseline within the action area while sustaining action agency mission requirements. Proposed operations and management scenarios and strategies should identify actions to minimize adverse effects, maximize beneficial effects, and sustainably support net-positive conservation outcomes. Strategies may include capital, mitigative, and/or restorative works within the program action area. Conservation strategies may also be prioritized by feasibility, sustainability, the duration or magnitude of return on investment, or any other basis. The action agency identifies the actions for which the effects analyses will be based, and which may become part of the adaptive management strategy (see component six below). Although Section 7(a)(1) program implementation is discretionary, ideally the conservation strategy is deliberately and cost-effectively integrated into the action agency mission activities.
5. An Effects Analysis of the Proposed Conservation Program. The effects analysis identifies and recognizes both the adverse and beneficial effects, and links conservation challenges and opportunities directly to action agency authorities and established stakeholder partnerships and consortiums. The effects analysis also provides insight into key linkages between listed species and the operations and management actions that affect the species. This analysis should be realistic in prioritizing conservation and management options based upon anticipated changes in natural, political, and fiscal environments.
6. An Adaptive Management Strategy. Successful conservation programs will identify a pathway to fill information and research gaps, as well as for monitoring habitat and species responses. A customized adaptive management strategy identifies a process to address science and data gaps and monitoring needs that are critical to management success and action agency mission requirements. Since research and monitoring components are contingent upon opportunity and appropriations, and are largely discretionary, a *sensu stricto* adaptive management program may not be a realistic option. However, elements of adaptive management can be incorporated into Section 7(a)(1) conservation programs by identifying a pathway to disseminate, incorporate, and utilize new information as it becomes available to modify and/or improve strategies, standard operating procedures, best management practices, and/or engineering designs. Adaptive management also considers the potential and benefits of collaboration and cost sharing with other divisions, agencies, and stakeholder partners.

Section 7(a)(1) consultation is a collaborative process. The action agency is the authority on the agency mission, strategy, engineering requirements, and execution parameters, including how, where, when, and to what extent actions may be modified to provide conservation opportunities and benefits. The Service is the authority on biology, ecology, and habitats of the species, and can provide insight on response of the species to proposed methods and actions. In order to fully identify management opportunities, options, and limitations, it would be helpful for appropriate action agency personnel to assemble, review, and synthesize available information on the species status, life history, habitat, and limiting factors in the context of their agency's authorities (components 1-4, above) prior to requesting section 7(a)(1) consultation with the Services. Collaborating on the effects analysis and adaptive management strategy with the appropriate Service allows both agencies to utilize and share their information and expertise.

When and How are Section 7(a)(1) Conservation Programs Developed? Although there have been few formal Section 7(a)(1) programs developed, some federal action agencies have developed and implemented conservation actions that proactively address listed species. For example, some 7(a)(1) programs have originated during agency planning processes (such as U.S. Forest Service Forest Management Plans, and military Integrated Natural Resources Management Plans). Currently, Section 7(a)(1) programs within USACE Civil Works are rare; therefore few detailed institutional constrictions exist on how a USACE District or Division might proceed with development and documentation of a conservation plan. Further, the USFWS consultation handbook does not provide any prescriptive details regarding the establishment or documentation of a conservation program and/or plan, nor does it detail how consultation under 7(a)(1) should be initiated and conducted. However, on 30 June 2015, Major General Peabody, Deputy Commanding General for Civil and Emergency Operations, provided guidance to USACE through a directive titled, “Improving the Efficiency of Project Operations and Effectiveness of Endangered Species Act Compliance for the U.S. Army Corps of Engineers Projects.” This directed USACE to more actively participate in ESA compliance through Section 7(a)(1), review and identify all projects with current or future opportunities for 7(a)(1) activities, develop 7(a)(1) conservation plans for more cost-effective conservation solutions, and integrate conservation planning into ongoing Section 7(a)(2) consultations, as appropriate. Although many USACE projects are far beyond the planning stages and are in an operations and maintenance phase, 7(a)(1) conservation planning and consultation can be initiated by the action agency at any project stages.

Consideration and employment of the principles and practices of Engineering With Nature (EWN) (www.engineeringwithnature.org) can yield a high return for both primary mission sustainability and conservation benefit. USACE has recognized that recent advances in the fields of engineering and ecology provide opportunities to combine these fields of practice into a single collaborative and cost effective approach for infrastructure development and environmental management. The “Engineering With Nature” approach seeks to intentionally align both natural and engineering processes to efficiently and sustainably deliver economic, environmental, and social benefits through collaborative processes (Fischer et al. 2014; Banks and Gerhardt Smith 2013; Banks et al. 2013; USACE 2012). There are four main elements included in the EWN approach to solution development (USACE 2012):

1. Using both science and engineering to produce operational efficiencies supporting sustainable delivery of project benefits
2. Using engineering techniques synergistically with natural processes to provide maximum benefits
3. Broadening and extending the base of benefits provided by projects to include substantiated economic, social, and environmental benefits
4. Using science-based collaboration to organize and focus interests, stakeholders, and partners to reduce social friction, resistance, and project delays while producing more broadly acceptable projects

Fischer et al. (2014) provided an overview of how USACE and its partners developed a comprehensive, range-wide conservation strategy, within the framework of EWN, to support recovery of the federally endangered Interior Least Tern.

Components of the Section 7 process (i.e., the Biological Assessment process, Section 7(c)(1)), have been used to develop and document Section 7(a)(1) programs. Occasionally, 7(a)(1) plans have originated from formal and informal consultations with the Services under Section 7(a)(2) of the ESA that have been precipitated by individual or programmatic actions. Biological opinions generally contain many of the components of a Section 7(a)(1) program identified above. They also include non-discretionary (reasonable and prudent measures, terms and conditions) and discretionary actions (conservation measures) to minimize incidental take, fill data gaps, and monitor effects. Therefore, existing biological opinion components, particularly those from programmatic biological opinions, can serve as a selection list or template for agency conservation programs and can be tailored to meet the agency's suite of opportunities, constraints, and authorities. Although the majority of biological opinions are oriented toward individual agency actions, these are likely to be useful in developing a programmatic approach for like species and activities.

CASE STUDY SUMMARIES

United States Marine Corps. The Red-cockaded Woodpecker (*Picoides borealis*), listed as federally endangered in 1970, was one of the first species protected by the ESA. In 2006, the USMC recognized that relying on limited on-base conservation opportunities and Section 7(a)(2) consultations could jeopardize future training missions by increasing the likelihood of reaching a jeopardy threshold. USMC initiated consultation with the USFWS on the potential to regionally increase the woodpecker population and habitat baselines as a means to mitigate for future impacts of military training. The resulting Red-cockaded Woodpecker conservation program was formalized and documented through the biological assessment process under Section 7(c)(1) of the ESA (USMC 2012).

U.S. Army Corps of Engineers. In the Lower Mississippi River, USACE Mississippi Valley Division (MVD) worked informally with USFWS and other partners to develop, test, and implement Best Management Practices, as well as a habitat mitigation process for the Channel Improvement Program (CIP). Following 13 years of data collection demonstrating improvement in the habitat and population baselines of three endangered species (Interior Least Tern, Pallid Sturgeon, Fat Pocketbook Mussel), MVD formalized the Channel Improvement Program Conservation Plan in consultation with the Service under Section 7(a)(1) (USACE 2013). This conservation plan was subsequently used as a biological assessment for a formal programmatic Section 7(a)(2) consultation for the CIP (USFWS 2013). The MVD conservation program was also instrumental in a subsequent recommendation by the Service to delist the Interior Least Tern. ERDC is currently working with other Divisions and Districts, including Southwest Division, Northwest Division, and the Louisville District, within the Interior Least Tern range to develop similar 7(a)(1) conservation plans as a partial requirement for a delisting proposal.

In summary, section 7(a)(1) planning provides benefits to listed species and to federal action agencies as follows:

Benefits of 7(a)(1) to the Species

- Provides a mechanism to systematically compensate (mitigate) for *past or future* impacts to the species or its habitat due to federal activities.

- ***Improves the baseline*** of the species (recovery), particularly as it relates to action agency activities and footprints.
- Ensures advanced consideration of the species in planning of routine activities and prior to design or funding of future projects within the conservation plan action area.

Benefits of 7(a)(1) to the Action Agency

- Consideration of the species needs and conservation opportunities early in the planning and budgetary process ***reduces regulatory surprises and conflicts***.
- The agency proactively commits to actions it is ***predisposed to undertake under Section 7(a)(2)***.
- Benefits and positive effects of the program that raise the baseline for the species will be considered under 7(a)(2), and ***facilitate 7(a)(2) consultations***.
- Agency actions under its program are discretionary, ***contingent upon the agency's ability to fund and implement them***.
- The administrative record resulting from development of section 7(a)(1) conservation programs demonstrates consideration, planning, and commitments by the action agency in compliance with the act. This administrative record ***prevents both the action agency and the Service from appearing arbitrary and capricious*** in their decisions and actions.
- Federal conservation programs ***provide for elements of adaptive management***, allowing planning, strategies, and actions to evolve as necessary as new information becomes available, and species status and action agency missions change over time.
- All of this ***reduces interagency conflict and encourages cooperation***.

Early Conservation and Management Opportunities: Although federal action agencies are not required to consult under the ESA on the effects of project and management actions for species considered “at risk” or “of concern,” these species may be addressed proactively, where appropriate (e.g., under the National Environmental Policy Act process and Fish and Wildlife Coordination Act). Ideally, early integration of at risk species conservation with authorized missions may prevent their listing under the ESA; however, if such species are subsequently listed, conservation actions and planning can be incorporated into the Services’ recovery planning process and formalized under a section 7(a)(1) conservation program. Such an approach would ensure early interagency communication and understanding, provide a process to immediately begin addressing data gaps and management information needs, achieve early conservation of the species (possibly eliminating the need to list the species), and provide an administrative record of the action agency’s conservation efforts.

For More Information About Section 7(a)(1) Opportunities

The U.S. Army Corps of Engineers recently developed the Threatened and Endangered Species Team (TEST) approach to identify opportunities to efficiently and effectively address ESA. TEST was developed to accelerate solutions to priority TES issues affecting USACE mission sustainability, and uses strategic collaborations between Headquarters, USACE division and district, ERDC project staff and scientists, and stakeholders to identify issues, and develop and implement cost-effective and efficient approaches, methodologies, and technologies. USACE personnel are actively working with USFWS to identify Section 7(a)(1) conservation opportunities.

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