Online Recovery Plans for Threatened and Endangered Species

Project # 17-832

Background:

The U.S. Endangered Species Act (ESA) requires that the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (FWS and NMFS respectively; collectively, the Services) develop written plans for recovering threatened species and endangered species unless such planning would not aid the species' conservation. The content and development of recovery plans has evolved significantly over the years, but plans are still fundamentally paper-based and static. Although this format describes the challenges and needs for the species at a point in time, it has significant drawbacks: plans are rarely updated more than once every few decades; they are impossible to integrate with other sources of information; and they are difficult to navigate.

Defenders of Wildlife worked to establish a pilot program for developing dynamic, online ESA recovery plans - using the eastern indigo snake (*Drymarchon couperi)* as an example species - that would benefit the Department of Defense (DoD) by making recovery plans easier to implement, linkages to DoD operations clearer, and by improving tools for collaboration for recovery.

Objective:

The goal of this project was to create a web-based, data-integrated recovery plan for the eastern indigo snake that would enable improved decision-making and more effective collaboration among the parties whose actions affect the conservation of the species, including the DoD.

Summary of Approach:

Collaborating with FWS, Defenders of Wildlife digitized the Species Status Assessment for the eastern indigo snake, tested various platforms for distribution, and developed draft software plugins to integrate real-time data. We demonstrated these resources to our partners at the FWS and DoD and discussed key challenges to be addressed.

Benefit:

We intended that this project would allow the DoD to enhance military readiness and species recovery by producing at least one fully-functional, dynamic online recovery plan that FWS and DoD staff would be trained and have access to update and reference. These characteristics would benefit the DoD by making recovery plans easier to implement, linkages to DoD operations clearer, and by improving tools for collaboration for recovery.

While a recovery plan platform was not able to be released to provide the full scope of described benefits, our hope is that the recommendations we developed through this project can be adopted and applied by FWS, the DoD, and non-governmental organization and other conservation partners in future related projects.

Accomplishments:

In meetings with FWS, we developed lists of data and draft software plugins needed to create real-time data integrations; and dove into the security and deployment requirements. All development was done by Defenders of Wildlife.

Although FWS was unable to provide data or data connections to dynamically linked elements, Defenders developed a partial online recovery plan for the eastern indigo snake, found at https://drcoco.esarecovery.org containing information from version 1 of the eastern indigo snake Species Status Assessment, in user-friendly format. We will continue to maintain this demo page to illustrate the ideas of this project

Based on our work during this project, Defenders of Wildlife developed recommendations for future projects to transition to web-based recovery plans and implementation tools based on lessons learned from this project. These include: Entering formal data- and information-sharing agreements; prioritization of technology and innovation; and proactively seeking collaborative processes that improve the efficiency of ESA implementation.

Moving forward, as part of Defenders' involvement in the Cooperative Wildlife Protection and Recovery Initiative, of which the Army Corps of Engineers and others are partners, we will continue to engage on Least Bell's Vireo (*Vireo bellii pusillus*) conservation and other species for which web-based recovery tools may be applied.

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