



Patuxent Science Meeting 2004 Poster Abstract

Pollution and Contaminants contributing to Species Decline: An Analysis of Threatened and Endangered Species Recovery Plan.

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Under the Endangered Species Act (ESA), the U.S. Fish and Wildlife Service listed 1,280 species as threatened or endangered (as of July 2002) and identified over 250 additional organisms as candidate species. The Fish and Wildlife Service and Environmental Protection Agency have identified environmental contaminants and pollutants as contributing factors to listing species as either threatened or endangered. Readily accessible information on the hazards that specific contaminants pose could provide important information to determine if a species should be listed as threatened or endangered and in evaluating recovery potential for that species. The purpose of this project was to develop a database that listed and ranked the effects of environmental contaminants and pollution on species decline. The specific objectives of this project were 1) identify trends in listing years, recovery plan approvals, and plan revisions for major taxonomic groups of threatened and endangered species; 2) classify which major taxonomic groups of endangered species were most affected by contaminants and pollution; 3) describe the major contaminant and pollution sources and stressors contributing to the cause of decline of threatened and endangered species; 4) compare the trends of contaminants affecting reclassified species (i.e. downlisted or delisted) to those that have not been reclassified; 5) define the relationship between contaminants affecting endangered and threatened species, current population status, and percentage of recovery objectives listed in the recovery plan that were met; and 6) offer recommendations for future threatened and endangered species recovery plans.

We used U.S. Fish and Wildlife Service recovery plans and listing packages to classify how contaminants and pollution contributed to threatened and endangered species decline. We reviewed 404 animal species recovery plans, including crustaceans (n=11), insects (n=23), arachnids (n=5), snails (n=27), clams (n=63), fish (n=96), reptiles (n=37), amphibians (n=10), birds (n=79) and mammals (n=53). Overall, 20.8% of endangered and threatened species were missing recovery plans; notably, the arachnids, crustaceans, and amphibians had the most number of species without recovery plans. We documented 1,421 contaminant and pollution threats cumulatively listed in animal recovery plans: aquatic species (i.e. amphibians, fish, crustaceans and clams) had 927 contaminant and pollution threats and terrestrial species (i.e. birds, mammals, reptiles, insects, arachnids, and snails) had 494 cumulative threats listed. Industrial sources were the primary source of contaminants and pollution affecting species decline (n=418), followed by waterway navigation (n=377), municipal sources (n=256), agricultural sources (n=211), and industrial/municipal sources (n=159). The stressors listed the most frequently as a threat to species health were hydrologic modifications (n=647), various discharges and effluents (n=374), pesticides and herbicides (n=132), accidental spills (n=105), heavy metals (n=81), and nutrient enrichment (n=55). This data will be used to facilitate reviews of Section 7 consultations and Environmental Impact Statements, review permit applications, conduct environmental risk assessments, prioritize research needs, and identify limiting factors affecting species health.