

APPENDIX:

Missing the Mark

How the Endangered Species Act Falls Short of Its Own Recovery Goals

Data Collection

Several estimates exist for the total number of listed species due to sorting or varying inclusion criteria. We include distinct population segments, species currently listed, and species delisted due to recovery. These criteria yield a list of 1,732 species listed and recovered.

Because some species were federally listed before the Endangered Species Act passed, we reset the clocks of species with list dates prior to the act's enactment to zero at 1973. If a species was endangered or threatened, time listed was calculated as the difference between 2023 and the list date. If the species was recovered, time listed was calculated as the difference between the delist date and the list date.

Our recovery plan data was obtained from the U.S. Fish and Wildlife Service's ECOS database in June 2023 (data is current as of June 30, 2023). We used the ECOS species code to generate a URL that retrieved the recovery plans for each listed species. After retrieving data on recovery actions listed in each species recovery plan, we cleaned the data to list each species, status, time listed, group, and delist date (if applicable). We obtained this information through a process of merges with existing species lists available on ECOS. All data scraping, processing, and aggregating was completed in R.

Recovery Plan and Progress Metric

Each recovery action item has a priority number, action status, description, species, and lead service. ECOS includes a column that lists the total number of recovery actions in a plan, but we found that the number of actions in the plan could exceed the total number of recovery actions listed by ECOS. To address this discrepancy, we totaled all steps in a plan (excluding discontinued or obsolete steps) and replaced the total number of recovery actions listed by ECOS with this number.

To identify the progress of a recovery plan, we grouped steps by action status (Complete, Partially Complete, Ongoing, Ongoing Not Current, Planned, Not Started, Unknown) and totaled the number of steps in a recovery plan by status and priority. To assess recovery progress, we combine the "complete" and "partially complete" actions into one category and sum. We report the percent implemented (complete + partially complete) as both a function of priority (1, 2, 3) and recovery plan (total implemented over total steps in plan).

Recovery Rate Calculation

One method of evaluating recovery progress is to look at the total number of recovered species under the Endangered Species Act. Critics, however, rightly point out that some species have not been listed long enough to recover; thus, just looking at the total number of recovered species could be misleading. To address this, we look at a subsample of species that the Fish and Wildlife Service identified as species they believed could be recovered by a specific date. For six years, the agency's

recovery reports to Congress identified 490 species as having a “projected recovery date.” These predicted dates ranged from 1987 to 2100. By 2023, the Fish and Wildlife Service believed that 300 species would be recovered, but only 57 species have been recovered (19 percent). However, while 57 species recovered, only 13 of those 57 were projected by the agency to recover by 2023. If we consider only the predicted recoveries to total predicted recoveries, the mean recovery rate is 4 percent. This rate is similar to the total recovery rate for all listed species of 3 percent.

Past Work on Endangered Species Recovery Progress

Prior work has used other samples of species to assess endangered species recovery progress. In 2012, the Center for Biological Diversity’s “On Time, On Target” report found that the Endangered Species Act had a 90 percent success rate based on a nonrandom sample of ten species projected to recover.¹

We replicate their method with the total number of projected species, instead of a nonrandom subsample of ten species. Using this full dataset, we take the number of projected recoveries that have actually recovered (13) and divide that by the total number of species projected to recover by 2023 (300), revealing a recovery rate of 4 percent.

Under this approach to assessing recovery progress, a species is counted as successfully recovered if it recovers by the year of interest and projected to recover by the year of interest, but there is no requirement that the recovery year be on or by the projected recovery year. In other words, a species could recover after its projected date, but as long as it recovers by the selected year (in this case, 2023), the species is included in the successful recovery rate.

¹ Kieran Suckling, et al., “[On Time, On Target: How the Endangered Species Act Is Saving America’s Wildlife](#),” Center for Biological Diversity (2012).