

Limited patterns among ESA 4(b)(2) critical habitat exclusions

Andrew Carter, Jared Hocking, Michael Evans, and Jacob Malcom (2020-06-17)

Summary

Areas can be excluded from critical habitat (CH) designations for economic, national security, or other relevant reasons under §4(b)(2) of the U.S. Endangered Species Act (ESA). We are aware of no analyses that quantify the rates or patterns of use. To address this gap, we undertook a small descriptive study of CH 4(b)(2) exclusions. Less than half of designations in our sample had exclusions, most of which were classified under “other relevant factors”; all exclusions in our sample occurred in the past 20 years. While there was substantial variation, found no statistically significant taxonomic or regional differences in designation rates. These results can inform judgments if new 4(b)(2) exclusion regulations are proposed.

Methods and Results

We selected 84 designations (10%) from among all CH designations using a stratified random sampling scheme, balancing between CH exclusions in Hawaii and mainland species. We removed eight of the 84 designations from the dataset because the species listing predated the critical habitat provisions of the ESA or data availability issues. We quantified temporal and spatial patterns and trends with descriptive statistics and chi square analyses.

Of the 76 CH designations examined, 31 (40.7%) had exclusions. The distribution of exclusions among types was idiosyncratic (table at right), and in none of the designations did the Services withdraw a proposed habitat exclusion prior to the final rule. In 16 out of 76 instances (21.1%) an exclusion was included in the final rule that was not in the proposed rule. The rate of CH designation jumped starting with the G.W. Bush administration (table below), but we found no statistically significant patterns of exclusion among geographic regions or taxonomic groups, or between exclusions and conflicts with development activities under ESA §4(f)(1). Details include:

Exclusion type	# CH exclusions	Percent exclusions
Nat'l Security	5	6.6%
Economic	7	9.2
Both sec & econ	3	3.9
Other factor	19	25
Total (any)	31	40.8

- We found no statistically significant pattern of exclusion among geographic regions. Fish and Wildlife Service Region 1 had the highest number (17) while region 5 had the lowest (0). Exclusion rate was highest for NOAA (counted as one region), and Regions 3 and 7, though they each had only one CH designation in the sample (with each CH designation containing an exclusion).
- We found no statistically significant pattern of exclusion among taxa. Flowering plants had the most exclusions with 16 out of 43 CH designations, but the second lowest exclusion *rate* at 37.2%. Arachnids (1 sp.), birds (3 spp.), and reptiles (2 spp.) had an exclusion rate of 100% but we cannot draw a conclusion based on the small number in the sample.
- There was no statistically significant pattern of exclusions between species with a Recovery Planning Number conflict designation (e.g., RPN “4” vs. “4C”).
- CH exclusions increased dramatically in the 2000s. Because the CH provisions were added to the ESA in the 1978 amendments, we expect some lag in exclusions but cannot explain the full pattern.

Admin.	# spp. w/ CH	# spp. w/ excl.	Percent exclusions
Carter	1	0	0%
Reagan	5	0	0
GHW Bush	1	0	0
Clinton	0	0	0
GW Bush	26	11	42.3
Obama	43	20	46.5

The recent rates of exclusion strike us as relatively high, but absent stronger policy guidance on how costs and benefits should be weighed to derive an expected rate, we cannot conclude whether the rates are “too” high. A useful follow-up analysis could compare the status of species with or without exclusions to estimate the conservation effects of these decisions.