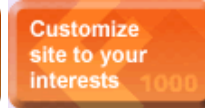


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Human predators outpace other agents of trait change in the wild.

Darimont CT, Carlson SM, Kinnison MT, Paquet PC, Reimchen TE, Wilmers CC
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Human "harvest selection" not only drives dramatic phenotypic changes in many wild plants and animals but these changes are significantly faster than changes resulting from other natural and anthropogenic selection pressures.

This concise meta-analysis builds on previous studies to demonstrate that human "harvest selection" has driven dramatic changes in many wild populations, and that these are much more rapid than changes reported from other populations subject to strong selective pressures. The synthesis specifically compared the rate of phenotypic change in plant and animal populations harvested by human predators to populations affected by 1) strong "natural" changes (e.g. Galapagos finches after drought), and 2) "other anthropogenic" agents (e.g. guppies introduced into novel habitats). Populations exploited by humans showed dramatic changes in morphology (decreases in body size) and life history (reproduction at earlier ages), and the average rate of change surpassed rates reported in natural systems by 300% and in other human-influenced systems by 50%. Harvest mode was the most important predictor of phenotypic change; commercially harvested populations exhibited stronger change than populations harvested recreationally or scientifically. These results confirm that human harvesting frequently affects wild populations not only through decreases in abundance but also by driving rapid changes in body size and life history traits of remaining individuals, which are likely to have profound effects on both population persistence and ecological dynamics. Human activities have become the most important agents of evolutionary selection on earth.

Competing interests: None declared

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