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ENVIRONMENTAL SCIENCES

Evidence for a fundamental and pervasive shift away from nature-based recreation

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Abstract

After 50 years of steady increase, *per capita* visits to U.S. National Parks have declined since 1987. To evaluate whether we are seeing a fundamental shift away from people's interest in nature, we tested for similar longitudinal declines in 16 time series representing four classes of nature participation variables: (i) visitation to various types of public lands in the U.S. and National Parks in Japan and Spain, (ii) number of various types of U.S. game licenses issued, (iii) indicators of time spent camping, and (iv) indicators of time spent backpacking or hiking. The four variables with the greatest *per capita* participation were visits to Japanese National Parks, U.S. State Parks, U.S. National Parks, and U.S. National Forests, with an average individual

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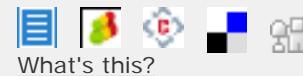
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participating 0.74–2.75 times per year. All four time series are in downtrends, with linear regressions showing ongoing losses of –1.0% to –3.1% per year. The longest and most complete time series tested suggest that typical declines in *per capita* nature recreation began between 1981 and 1991, are proceeding at rates of –1.0% to –1.3% per year, and total to date –18% to –25%. Spearman correlation analyses were performed on untransformed time series and on transformed percentage year-to-year changes. Results showed very highly significant correlations between many of the highest *per capita* participation variables in both untransformed and in difference models, further corroborating the general downtrend in nature recreation. In conclusion, all major lines of evidence point to an ongoing and fundamental shift away from nature-based recreation.

natural areas visitation | nature deficit disorder | recreational choices | biodiversity conservation | videophilia

Footnotes

Author contributions: O.R.W.P. and P.A.Z. designed research, performed research, analyzed data, and wrote the paper.

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