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Title: Is conservation research money being spent wisely?
Changing trends in conservation research priorities

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18 10 As conservation biologists we have the responsibility to study both conservation related topics
19 11 and to ensure those topics can be used in either an applied, theoretical or foundational
20 12 perspective.

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23 13 Recent interest in temporal trends in ecological research (Carley *et al.* 2013) has opened the
24 14 door to addressing how well we are managing the allocation of public research funds. Temporal
25 15 patterns in research priorities often change through a combination of political, social, economic
26 16 and scientific drivers. Having multiple, and sometimes contrary, drivers may shift research
27 17 focus away from “true” research needs in applied sciences towards those determined more by
28 18 the availability of funding and/or popular trends. In certain research fields, such as conservation
29 19 biology, the need for accurate coupling of research needs and priorities is paramount.

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33 20 Conservation biology is often defined as a “mission driven crisis discipline”, and as such
34 21 research priorities should ideally parallel the relative importance of different conservation
35 22 threats. Conservation research priorities (here measured by the number of conservation-
36 23 related articles published annually in peer-reviewed scientific journals) has increased
37 24 exponentially over the last 22 years, rising from <150 articles in 1990 to >4000 articles in 2012.
38 25 However, as demonstrated by previous studies, this growth has not been consistent between
39 26 taxonomic groups or geographic areas (Wilson *et al.* 2005, Lawler *et al.* 2006, Griffith and Dos
40 27 Santos 2012) and may not necessarily reflect changes in research needs. Consequently, it
41 28 remains uncertain if growth and prioritization have been consistent between research themes,
42 29 or subdisciplines. In other words, it is unknown if conservation priorities change in relation to
43 30 research needs, or if instead to shifts in funding, which may or may not correspond to true
44 31 research needs.

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49 32 To address this question, we conducted a survey of the occurrences of phrases related to
50 33 different research themes in the titles, abstracts, and keywords in >40,000 conservation-related
51 34 articles published over the past 22 years (1990-2012; Table 1), as well as the amount of money
52 35 awarded by the US NSF for research on each of these themes (note: search terms were non-
53 36 exclusive and thus articles and awards could be tallied under multiple research topics). It must
54 37 be highlighted that these analyses are restricted to US funding patterns as comparable
55 38 metadata from other countries could not be retrieved. As such, there is a possibility that the
56 39 connections we draw between funding patterns and research priorities are not representative
57 40 of the global conservation community. However North America, and particularly the US, has

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