

-REPORT-

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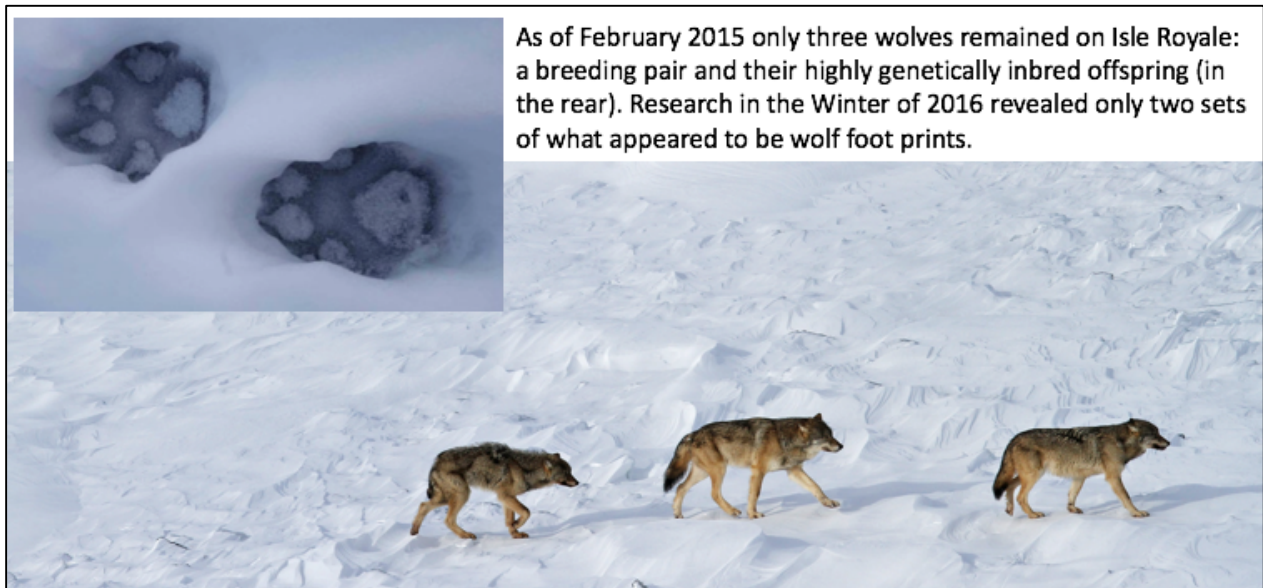
Should We Preserve the Wolves of Isle Royale? An Empirical Assessment of Public Input

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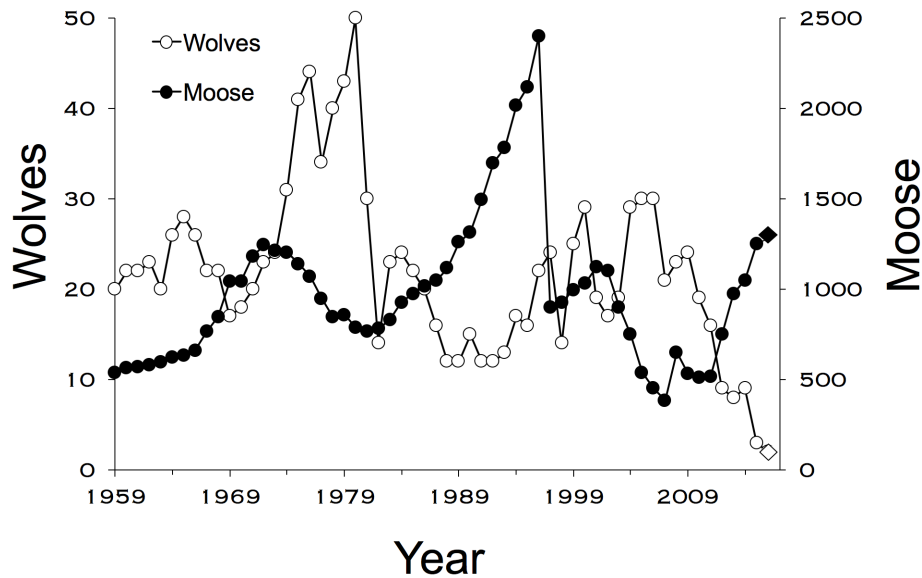
Executive Summary: We performed a formal content analysis on a sample of public comments collected via email by Isle Royale National Park between September of 2012 and April of 2014 regarding the precipitous decline in wolf abundance on the island; the resulting threat to the wolf/moose, predator/prey system; and the possibility of intervention. Public comments were obtained through the US Freedom of Information Act. 50% of the 930 open public comments were randomly sampled and analyzed to determine what the interested public thought should be done, and also what ethical reasoning they demonstrated in justifying their policy preference. Here we report on a few key findings:

1. Policy preferences of members of the interested public: 88% support or allow for some form of intervention and 12% oppose any form of intervention.
2. The interested public's concern for the health and naturalness of the biotic community: 71% of those who supported some form of intervention expressed concern for ecosystem or population health, and concern for naturalness was expressed both by those who supported, and by those who opposed, intervention.
3. There is a paucity of explicit appeals to (a) follow scientists' advice or (b) engage in the least expensive alternative: 6% of the entire sample thought the park should follow the advice of scientists and 3% thought the park should consider economic expediency.
4. The idea that the value of the science of the Isle Royale Wolf/Moose Project is affected by intervention: Of those whose policy preferences were motivated by a concern for the Isle Royale Wolf/Moose Project (~14% of sample), 84% asserted the need for intervention, and 16% asserted the need for non-intervention, to secure the continuation of the research on the island.

Introduction

Isle Royale is a ~210 square mile island in Lake Superior, North America. It was established as a US National Park in 1940 and a federally designated wilderness area in 1980. In the early part of the 20th century moose began to inhabit the island, and wolves established themselves on the island in 1948, just as the park was preparing to introduce them to the island upon the advice of leading wildlife ecologists of the day. Before wolves arrived moose populations went through a number of "boom and bust" cycles, with numbers reaching ~2-3,000 and then crashing to a few hundred, severely impacting the island's vegetation in the process. The Isle Royale Wolf/Moose Project began in 1958 and has become the longest continuous study of a predator/prey system in the world. The long-term (50+ year) average populations are ~1,000 moose and ~24 wolves. With a small founder population, the wolf population eventually became highly inbred, and started to decline precipitously in 2009 (see Figure 1). Wolf abundance and predation rates have become so low that predation, as an ecosystem process impacting moose abundance, has been functionally absent on the island for some years.

Figure 1. The long-term data set representing wolf and moose populations over time, from 1959 through 2016. [Note that the 2016 data points are presented as diamonds. The 2016 estimate of moose abundance appears as a diamond because there is reason to believe it is an underestimate, owing, in part, to having counted moose on only three-quarters of the plots that are usually surveyed. The 2016 estimate of wolf abundance appears as a diamond because the only evidence of wolves detected in January-February of 2016 were tracks of what appeared to have been two wolves].



As a result of the current decline in wolf abundance, the corresponding increase in moose abundance, and growing public concern, in the Fall of 2012 Isle Royale National Park began to solicit open public input about whether to intervene and preserve the wolves of Isle Royale. Herein we describe a few of the key results from a formal content analysis we conducted on a randomly selected set of 50% of the 930 public comments emailed to Isle Royale National Park (via email address isleroyale_wildlife@nps.gov) between September 2012 and April 2014. This time spanned three winter studies (the time of each year when scientists count both wolves and moose). During these winter study periods wolf numbers were lower than average but above the current all-time low number, and the moose population was just beginning to show signs of increase (2012 = 750 moose, 9 wolves; 2013 = 975 moose, 8 wolves; 2014 = 1050 moose, 9 wolves; see Figure 1). It is, therefore, reasonable to suppose that the further dramatic decline in wolf numbers (down to perhaps 2 wolves), and correspondingly dramatic increase in moose numbers (up to perhaps 1350 moose), would impact the views of the interested public were we to analyze more recent public comments.

Method in Brief

The National Park Service sought public input about how to address the rapidly declining wolf population via an email address that was available on the NPS's Isle Royale page beginning in the Fall of 2012. This email address and the invitation for public comments were also posted on social media by followers of Isle Royale National Park and the Isle Royale Wolf/Moose Project. Individuals submitting comments to Isle Royale National Park were asked to express their preferences with regard to wolves by considering three potential agency actions:

1. Do nothing, now or ever
2. Let them go extinct, then reintroduce
3. Genetic rescue now [*see below for a definition of genetic rescue*]

As we analyzed the comments we noted a fourth alternative expressed by some respondents:

4. Do nothing now, but don't rule out the possibility of genetic rescue later

Respondents were also encouraged to explain *why* they held their policy preferences. That is, the interested public was encouraged to explain both *what* they thought should be done, and also *why* they thought it should be done. Any thoughtful prescription for action is premised, at least in part, on normative beliefs about how things ought to be, and often there are ethical reasons for those beliefs. While solicitations for public commentary generally ask respondents to state their preferred prescription for action, seldom are respondents asked to explicitly explain their preferences. This set of comments is, therefore, importantly unique because, in many cases, comments reflect the ethical reasoning underpinning the interested public's policy preferences.

After a direct request for these public comments was denied by Isle Royale National Park, they were obtained through the US Freedom of Information Act.

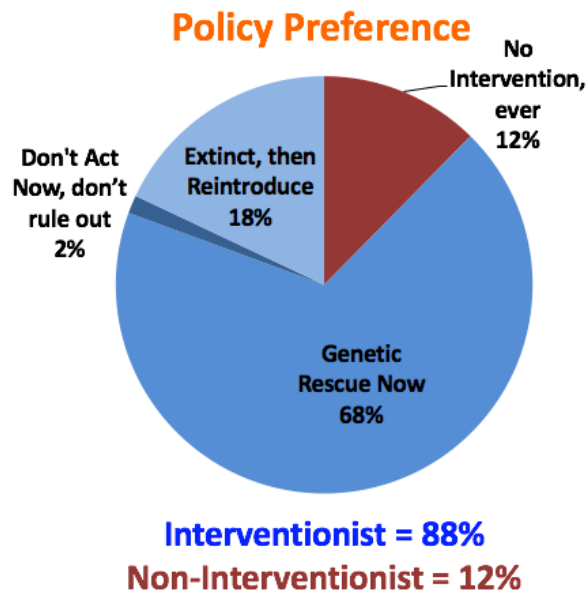
A more detailed account of the methods and results of our analysis is currently in preparation. We expect that manuscript to be completed by the Fall of 2016.

In this report we present four major findings: (1) the policy preference of the sample, (2) the expressed concern for the health and naturalness of the Isle Royale ecosystem as an explanation for policy preference, (3) the importance of scientist opinion and economic expediency for policy preference, and (4) the expressed concern for the science of the Isle Royale Wolf/Moose Project by policy preference.

Finding 1 – Policy Preference

A majority of the sample expressed approval for some form of intervention aimed at preserving a wolf population on Isle Royale. More than two-thirds of the interested public (68%) believed that we should intervene immediately to enact a human-facilitated “genetic rescue” of the population (genetic rescue is a process whereby an inbred population receives genes from another population – in this case by introducing new wolves to the system – such that its overall genetic diversity, and presumably its viability, is enhanced). 2% of the sample was opposed to a genetic rescue at the time, but suggested we should not rule out the possibility of a genetic rescue at some point in the future. Another 18% of the sample believed we should allow the current population to go extinct, but then reintroduce new wolves to Isle Royale. 12% of the sample was opposed to intervention now and in the future. In sum, 86% of the sample urged intervention by introducing new wolves to Isle Royale now or in the future, 2% was not opposed to intervention but felt the park should hold off for now, while only 12% opposed any form of intervention now or in the future (see Figure 2).

Figure 2. Policy Preference for Wolf Management on Isle Royale National Park, as Expressed by the Interested Public



Finding 2 – Expressed Concern for Healthy Populations and/or Ecosystems and Naturalness

As we move into a future wherein the protection of the health of populations and ecosystems will at times require human intervention (that is, where the protection of

healthy populations and ecosystems will not be simply synonymous with non-intervention), it is important to understand how the public thinks about population and ecosystem health in relation to intervention and non-intervention. Two findings seem especially relevant here.

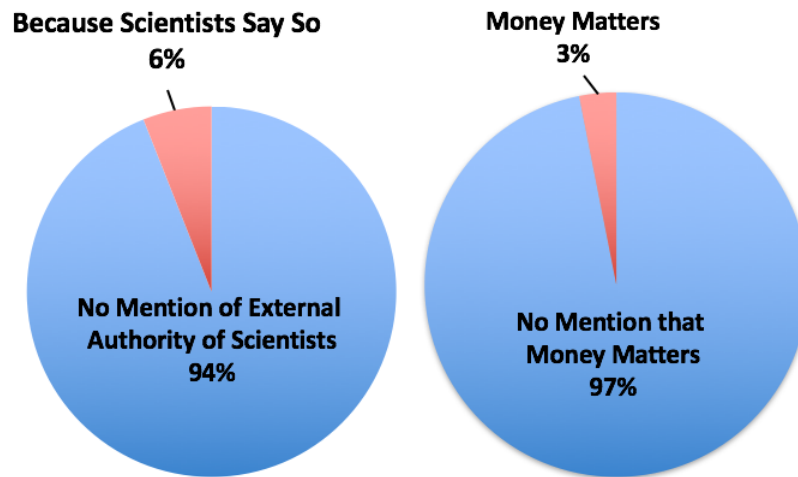
First, the protection of the health of the island's populations and/or ecosystem is not necessarily viewed as incompatible with intervention. At least 71% of our total sample, all interventionists, voluntarily expressed concern for Isle Royale's populations and/or ecosystem in explaining their preference for some form of intervention. (We have reason to believe this figure may actually underestimate concern because of the conservative coding scheme used in our analysis.)

Second, not all members of the interested public believe that preserving naturalness, i.e., letting nature take its course, necessitates a "hands-off," or non-interventionist, approach. As we might expect, a large percentage (83%) of non-interventionists appealed to naturalness to explain why we should not intervene to maintain a wolf population on Isle Royale. However, it is also the case that more than a third (35%) of the interventionists appealed to naturalness to explain why we *should* actively intervene to maintain a wolf population on Isle Royale.

Finding 3 – The Influence of Scientists and Money on Policy Preference

From the Fall of 2012 until today (July 2016), the scientists leading the Isle Royale Wolf/Moose Project and many of their scientific colleagues have been outspoken about their preferences for intervention. They have expressed these views publicly and in high-profile venues. We might assume the interested public would, therefore, be strongly influenced by the opinion of scientific experts on this policy matter. Likewise, it is almost a truism to assume that the cost of management is an important factor influencing our policy preferences, even in the environmental/conservation arena. We found, to the contrary (at least in this case), little evidence suggesting that members of the interested public were being overtly influenced by the opinions of the scientists, and even less evidence to suggest that financial concerns were part of their policy preference calculus. Approximately 6% of comments mentioned that wolves should be rescued because scientists advocated rescue. Only about 3% mentioned financial concerns in their comments.

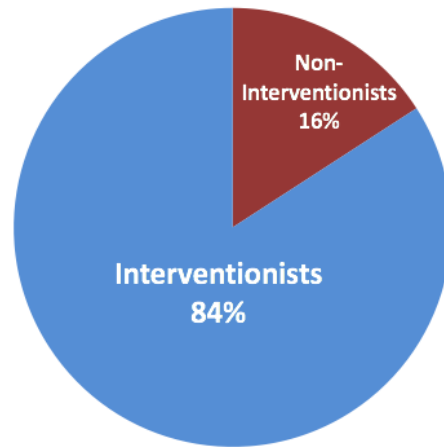
Figure 3. Percent of Respondents Appealing Directly to Scientific Authority or Financial Concerns to Explain Policy Preference



Finding 4 – Expressed Concern for the Continuation of the Science

For approximately 16% of respondents, the value of the science produced by the Isle Royale Wolf/Moose Project was of primary concern. In fact, those respondents' policy preferences were, at least in part, justified by the concern for scientific discoveries about the wolves and moose of Isle Royale. Interestingly, there was some disagreement about the appropriate agency response among those respondents concerned about the science of Isle Royale. Of those expressing a concern for the Isle Royale Wolf/Moose Project, 84% suggested we ought to intervene so the science could continue, while 16% believed non-intervention was a necessary condition for the continuation of the science. The latter group holds an interesting view given that, while the Isle Royale Wolf/Moose Project is an observational (and not experimental) predator/prey study, there is nothing inherently non-interventionist about it, and the scientists who run the project have never promoted it as non-interventionist. Anecdotally, this group expressed the most fervent commitment to their position of any identifiable group – if ferventness is measured by the use of capitalization and exclamation marks.

Figure 4. Percent of Respondents Expressing Concern for the Science of the Isle Royale Wolf/Moose Project, by Policy Preference.



Concluding Remark

A main purpose of this report is to give voice to the views of the interested public. Too often, open public comments never see the light of day, reported out only through the filtered interpretations of whichever authorities collected them (who often have their own policy preferences). The original comments are not generally made available to the public, which in turn precludes those who submitted comments from independently analyzing them, or even evaluating the accuracy of the official interpretation. We were also motivated in this effort by the profound concern for Isle Royale expressed by those who offered their time and thoughts in these public comments. By and large our sample comes from a group of caring people, who have deep concern for and long experience with Isle Royale. As such, and as recognized in this report, this is not a representative sample of the American public writ large, but comes from a group of motivated citizens. Neither we nor the Park are capable of characterizing the will of the larger public given this source of public input.

As has been made abundantly clear, the power to decide the fate of both Isle Royale wolves and Isle Royale itself rests with Park leaders, who admit no obligation to adhere to, or even acknowledge, the will of either the motivated or the general public. Nonetheless, as a matter of public lands management, both the motivated and the general publics have a stake, and to some extent a say, in the future of Isle Royale, and for this reason it is important that we recognize when Park decisions impacting Isle Royale either respond to or disregard the will of either of those publics.