



LETTERS

edited by Jennifer Sills

Bad Advice, Not Young Scientists, Should Hit the Road

TYPICALLY, WHEN GRADUATE STUDENTS APPLY FOR POSTDOCS, OR postdocs apply for faculty positions at their home institutions, they are greeted with a reflexive reaction: They should diversify their training by working elsewhere. This guidance is both antiquated and damaging. It is time for a change.

Most often, this affects young scientists struggling already to balance work and personal life, perhaps with young families and multiple careers. In many cases, they have real opportunities right where they are, and the pressure to “move on” is as costly as it is arbitrary. Large institutions often have multiple labs well-suited to the student’s career development, led by investigators in a position to



understand and appreciate the talent of these trainees. In some cases, the trainees already work in the best lab for their own development. Others are forced by the intellectual bad habits of grant reviewers to choose between family and career. This isn’t to say that the advice is always bad, but neither is it always right.

Science is a team sport: The strengths of a lab arise from the joint contributions of all of its members. These trainees may well be especially productive because of the environment they have helped to create, and the success of the lab as a whole follows suit. We should recognize and honor the importance of continuity when a group has formed an effective research unit, and should encourage young scientists to work where they are most productive. Can you imagine a private-sector environment that demands of its best workers that they find jobs at other companies, rather than nurture them toward the success of the business overall?

These are deeply institutionalized problems. As individuals, we should think carefully about the advice we give to students who want to grow right where they are. To see real change, we should look to the National Institutes of Health and the National Science Foundation to provide rational guidance on the expectations of continuing training fellowships.

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Rescuing Wolves: Threat of Misinformation

AFTER READING THE POLICY FORUM “RESCUING wolves from politics: Wildlife as a public trust resource” (J. T. Bruskotter *et al.*, 30 September 2011, p. 1828), I would like to set the record straight. First, state governments have not shown “hostility toward wolves.” Rather, each state wolf-management plan was vetted by the U.S. Fish and Wildlife Service (USFWS) and each seeks to maintain wolf numbers at or above 150% of official recovery levels. Second, although there always will be disagreement about what constitutes recovery of any imperiled species, teams of highly qualified scientists set wolf recovery criteria, and in the West, wolf numbers exceeded those goals by 500 to 600% before delisting. Third,

although public opinion toward wolves is variable (1), state wolf-management regulations are totally different now than when wolves were deliberately exterminated (2, 3). State wolf management will be monitored by the USFWS, and the wolf can be relisted anytime if necessary; strict post-delisting monitoring plans are in place for this.

Thus, the gist of the Policy Forum—that “courts must use the [Public Trust] doctrine to hold states accountable to their trust obligations” is redundant. The states, through their science-based wolf management plans, are already adhering to their public trust obligations as required by state laws for all wildlife species.

Because wolves and wolf management are contentious, no government entity can fully satisfy all viewpoints. Thus, agencies com-

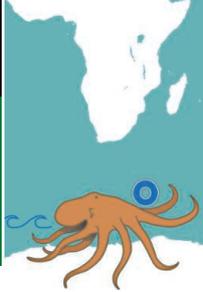
promise by setting regulations that ensure the conservation and survival of their populations while still attempting to assert some population control. Citizens assert their control over state actions through lobbying, elections, referendum, and other legal means (4), and that approach is well in place.

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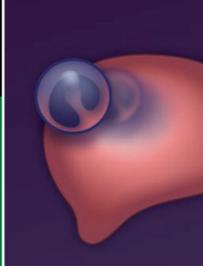
References

1. J. T. Bruskotter, E. Toman, S. A.ENZLER, R. H. SCHMIDT, *Bioscience* **60**, 941 (2010).
2. S. P. Young, *The Wolves of North America: Their History, Life Habits, Economic Status, and Control* (Dover Publications, New York, 1944).
3. M. J. Robinson, *Predatory Bureaucracy: The Extermination of Wolves and the Transformation of the West* (Univ. Press of Colorado, Boulder, CO, 2010).
4. C. A. Jacobson, J. F. Organ, D. J. Decker, G. R. Batcheller, L. Carpenter, *J. Wildl. Manage.* **74**, 203 (2010).



Surviving in the cold

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Loss of human genes

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Readers' Poll

Bad Advice?

In his Letter, M. S. Cohen questions the wisdom of pushing graduate students and postdocs to leave their home institutions when applying for new positions. Do you agree with Cohen that this tradition is "as costly as it is arbitrary"?

Does the standard practice of applying for postdoc and new faculty positions outside one's home institution make sense?

- Yes
- No

Vote online at <http://scim.ag/zWir00>

Polling results reflect the votes of those who chose to participate; they do not represent a random sample of the population.

Rescuing Wolves: States Not Immune to Politics

J. T. BRUSKOTTER *ET AL.* HAVE PERFORMED A valuable service in showing how the public trust doctrine might protect species delisted from the Endangered Species Act (ESA) or otherwise not protected ("Rescuing wolves from politics: Wildlife as a public trust resource," Policy Forum, 30 September 2011, p. 1828). However, they do not provide an adequate analysis of the federal legislative delisting decision and thus do not make a persuasive case that moving the issue from federal to state courts will remove politics from decisions about wolves.

Litigation in state courts under the public trust doctrine does offer the possibility of an alternative when the ESA is no longer applicable, but there are many obstacles. Although the Supreme Court and California deci-



sions seem to support the public trust's application to wildlife protection, Bruskotter *et al.* rightly note that state courts have generally resisted or been hostile to doing so (1). Case law is not static, but as with civil rights and First Amendment speech, it can take decades of careful legal work to gain more just interpretations of the law (2). Meanwhile, state court judges who are elected [such as those in Idaho and Montana (3)] are statistically more likely than judges appointed for life to be swayed by public expectations (4).

More important, Bruskotter *et al.* do not explain why wolf opponents would respond any differently to unfavorable state court decisions than to federal ones. State legislatures can overturn court decisions by enacting statutes that replace the common law just as they can change statutes. So we are back to politics.

Litigation is an important tool in convincing governments to pay attention to the law and facts, but without extensive grassroots organizing in support of the cause being litigated, court decisions can be undermined or nullified (5). Only grassroots organizing can build a conservation movement strong enough to prevail with legislatures and agencies, and in protecting good case law. Unfortunately, most conservation nongovernmental organizations (NGOs) have abandoned organizing [e.g., (6)]. NGOs consisting of check-writers and letter-writers are no substitute for the activism that won the 8-hour work day, women's suffrage, and the end of Jim Crow (7, 8).

Most polling data find that Americans favor wolf restoration by a two-to-one ratio (9), but if they are not organized on the issue, their voices do not count. Meanwhile, those opposed to healthy wolf populations—including some hunting and ranching groups, those with a rabid fear of wolves, and those looking to blame wolves for the consequences of sprawl, road building, and cattle consuming the forage of ungulate populations—have organized intensively (10).

It is the ability to reward and punish officials that determines influence (11). Wolves were legislatively delisted because even nominal defenders of the ESA believed they had more to fear from wolf opponents than wolf supporters. Wolf supporters were out-organized; Senator Jon Tester (D-MT) and the White House caved to the wolf opponents in hopes that such action would help Senator Tester keep his congressional seat for another term.

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References and Notes

1. P. Redmond, *Nat. Res. J.* **49**, 249 (2009).
2. H. A. Abraham, B. A. Perry, *Freedom and the Court* (Univ. of Kansas Press, Lawrence, KS, ed. 8, 2003).
3. L. Baum, *American Courts* (Houghton-Mifflin, Boston, ed. 6, 2008).
4. G. A. Huber, S. C. Gordon, *Am. J. Polit. Sci.* **48**, 247 (2004).
5. For example, the "wolf rider" included in PL 112-10 nullified Federal District Court Judge Malloy's rulings on the inadequacy of government wolf recovery efforts.
6. R. G. Shaiko, *Voices and Echoes for the Environment* (Columbia Univ. Press, New York, 1997).
7. S. Staggenborg, *Social Movements* (Oxford Univ. Press, New York, 2010).
8. F. F. Piven, *Challenging Authority* (Rowman & Littlefield, Lanham, MD, 2006).
9. R. Meadow, R. P. Reading, M. Phillips, M. Mehringer, B. J. Miller, *Wildl. Soc. Bull.* **33**, 154 (2005).
10. H. Herring, *High Country News* **43**, 8 (2011).
11. M. E. Kraft, S. Kamieniecki, *Business and Environmental Policy* (MIT Press, Cambridge MA, 2007).

Response

MECH'S CLAIM THAT "STATE GOVERNMENTS have not shown 'hostility toward wolves'" ignores states' recent actions with respect to wolves: Idaho's government barred its state agency from participating in wolf recovery (1), passed legislation demanding the removal of wolves by "whatever means necessary," and ordered state law enforcement not to assist in the enforcement of federal law protecting wolves (2). Wyoming held up delisting efforts by steadfastly refusing to provide any protection for wolves in the vast majority of the state (3)—a position Wyoming continues to maintain. Utah recently passed legislation that attempts to prevent "the establishment of a viable pack of wolves within the areas... where the wolf is not listed" and requests "immediate removal" of other wolves (4). In so doing, Utah's elected officials ignored public opinion (5) and abandoned a plan developed by the state Division of Wildlife Resources through a multistakeholder collaborative process.

Mech's confidence in states' intentions to conserve wolves is predicated on the wolf management plans developed by state wildlife agencies. However, he fails to recognize that

state agencies perform ministerial, management duties under the direction of the legislative and executive branches of government (6). Agencies' power over wildlife is thus constrained by elected officials (6), many of whom have obstructed wolf conservation, as the above examples demonstrate.

Likewise, the idea that wolves can be "relisted anytime if necessary" is dubious given Congress's willingness to remove wolves from endangered species protections by legislative rider. Furthermore, the monitoring and relisting provision of the Endangered Species Act that Mech cites extends only 5 years; after that, relisting becomes considerably less likely, especially given the U.S. Fish and Wildlife Service's recent reliance on the "warranted but precluded" finding to avoid listing species (7).

Finally, we believe that Mech fundamentally misinterprets our argument, which empowers wildlife managers at state agencies to act on species' behalf by reminding state elected officials that, as trustees, they have a duty to conserve wildlife—including wolves—for current and future generations.

Johns notes that we did not undertake a detailed analysis of the federal delisting decision. Indeed, such an analysis was

made moot when Congress intervened and removed Endangered Species Act protection for wolves in the northern Rockies. The result: Wolf management decisions will now be made by the legislative and executive branches of states in the American West (8), where wolf management decisions have historically been driven by influential special interests (2) rather than concern for long-term conservation [e.g., (9)]. Because the public trust doctrine imposes an obligation on the state to "preserve the subject of the trust" for future generations (10), an obligation that can be enforced in a court proceeding, the doctrine provides a less political avenue to assure the long-term viability of healthy wolf populations than the state legislative or state executive branches, which are subject to the vagaries of local, short-term politics. Although we agree with Johns that elected judges can be influenced by political ideologies, judges (unlike legislators, governors, and appointed officials) are constrained by prior case law and are not free to ignore precedent for political expediency (11). Certainly, powerful vested interests will oppose attempts to apply the public trust doctrine to wolves; however, this does not mean that state legislatures are free to adopt legislation in defiance of their

public trust obligations, nor may a state legislature or state executive substantially impair or abdicate its public trust obligation by contract or legislative action (12).

Finally, we agree with Johns that grassroots mobilization is an important element in species protection and may well be vital for lasting protection of wolf populations. Indeed, the record is clear that litigation can be used to influence public policy decisions (13), but research also suggests that the power of litigation to affect policy is enhanced when it is used as a political resource by social movement organizations in conjunction with "grassroots mobilization" (14). Thus, we believe that the public trust doctrine should be part of a broader movement to mobilize support for the protection of controversial wildlife populations. **JEREMY T. BRUSKOTTER,*** **SHERRY A. ENZLER,[†]** **ADRIAN TREVES[‡]**

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CORRECTIONS AND CLARIFICATIONS

News of the Week: "Joint German-Israeli research center planned" (13 January, p. 150). Both the print version and the earlier online-only *ScienceInsider* version of this article incorrectly identified the Minerva Foundation as the funding source for the new center. The new center will be jointly funded by the Max Planck Society and the Weizmann Institute. Also, Steve Weiner, director of the Kimmel Center for Archaeological Science, is a biologist, not an archaeologist.

GE Prize Essay: "Zoom" by E. L. Aiden (2 December 2011, p. 1222). An editorial error was introduced during production. On p. 1222, the zoom for the interior of a proton was given as "10 to 16 m." The correct number is 10⁻¹⁶ m. The number has been corrected in the HTML version online.

Reports: "A composite of multiple signals distinguishes causal variants in regions of positive selection" by S. R. Grossman *et al.* (12 February 2010, p. 883). The surname of the second author was spelled incorrectly; the correct spelling is Shlyakhter. The name has been corrected in the HTML version online.

TECHNICAL COMMENT ABSTRACTS

Comment on "A Diverse Assemblage of Late Cretaceous Dinosaur and Bird Feathers from Canadian Amber"

Carla J. Dove and Lorian C. Straker

McKellar *et al.* (Reports, 16 September 2011, p. 1619) analyzed Late Cretaceous amber specimens from Canada and identified some filaments as dinosaurian protofeathers. We argue that their analysis and data do not provide sufficient evidence to conclude that such filaments are feather-like structures. Further investigation, including destructive sampling, must be carried out for more convincing conclusions.

Full text at www.sciencemag.org/cgi/content/full/335/6070/796-b

Response to Comment on "A Diverse Assemblage of Late Cretaceous Dinosaur and Bird Feathers from Canadian Amber"

Ryan C. McKellar, Brian D. E. Chatterton, Alexander P. Wolfe, Philip J. Currie

Dove and Straker question our interpretations of plumage from Late Cretaceous Canadian amber. Although we are able to refute concerns regarding both specimen taphonomy and misidentification as botanical fossils, unequivocal assignment to either birds or dinosaurs remains impossible, as we stated originally. However, reported observations and their further refinement herein are insufficient to falsify the hypothesized dinosaurian origin for protofeathers.

Full text at www.sciencemag.org/cgi/content/full/335/6070/796-c

References

1. P. I. Wilson, *Nat. Res. J.* **39**, 543 (1999).
2. J. T. Bruskotter *et al.*, *BioScience* **60**, 941 (2010).
3. B. J. Bergstrom, S. Vignieri, S. R. Sheffield, W. Sechrest, A. A. Carlson, *BioScience* **59**, 991 (2009).
4. Utah Code Ann. §§ 23-29-101 et seq. (2010) (Wolf Management Act).
5. J. T. Bruskotter, R. H. Schmidt, T. L. Teel, *Biol. Conserv.* **139**, 211 (2007).
6. C. A. Smith, *J. Wildl. Manage.* **75**, 1539 (2011).
7. K. M. Smith, *Southeastern Environ. Law J.* **19**, 119 (2010).
8. 16 U.S. Code §§ 1533 and 1540(g) (2010).
9. Associated Press, "Idaho Governor pulls state management of wolves in dispute over wolf hunt," *OregonLive.com* (18 October 2010); www.oregonlive.com/pacific-northwest-news/index.ssf/2010/10/idaho_governor_pulls_state_management_of_wolves_in_dispute_over_wolf_hunt.html.
10. *Greer v. Connecticut*, 161 U.S. 519, 534 (1896).
11. T. J. Miceli, *J. Legal Stud.* **38**, 157 (2009).
12. *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387, 452-53 (1892).
13. C. F. Sabel, W. H. Simon, *Harv. Law Rev.* **117**, 1015 (2004).
14. S. Enzler, *William Mary Environ. Law Pol. Rev.* **35**, 413 (2011).

Letters to the Editor

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