

THREE**Science
and
Public
Policy****JOSEPH P. MARTINO**

Government is coercion. George Washington said: “Government is not reason. Government is not persuasion. It is force.” When science becomes involved in government, science will be involved in politics and coercion. When government carries out scientific studies, tests, and experiments and interprets the results without consideration of other studies, tests, and experiments and results, the “science” should be viewed with even more skepticism than industry or activist group science.

Politicized Science

Government agencies should, and often insist they do, base their decisions on sound science. In some, science is either warped to support a decision made on other grounds, or completely absent.

In this chapter, I describe cases in which government scientists fell short of any usual expectation for unbiased, open-minded, and fairly reported investigations and results.

Spotted Owls

How valid was the “science” used to justify an end to logging in spotted owl habitat? The answer to that question is to be found in knowledge of whether or not further logging would further endanger a species that was already endangered. Or was it?

The three populations of spotted owls in the United States—the Northern Spotted Owl, the California Spotted Owl, and the Mexican Spotted Owl—interbreed readily, and DNA analysis shows that they are genetically almost identical.¹ In 1986 the Audubon Society estimated that 1,500 pairs was the minimum breeding population needed to avoid extinction, and the U.S. Fish and Wildlife Service (USFWS) estimated that there were “somewhere between 3,000 and 4,000 spotted owl pairs” in the United States;² the number was uncertain because spotted owls in much of California and the Southwest had never been counted. At the same time, it was apparent that the number of Northern Spotted Owls was declining because of reduction in habitat as timber was clear-cut.

In 1989 the USFWS proposed to list the Spotted Owl as “Threatened,” under the Endangered Species Act (ESA). In July 1989, Congress appropriated \$13 million to study the spotted owl. One important “finding” of the studies was that there were more spotted owls in “old growth” forests than there were in very young

1. Greg Easterbrook, “The Spotted Owl Scam,” <http://www.olympen.com/solidarity/spotted.htm>.

2. Ibid.

forests (REF). However, “intermediate growth” forests were not studied.

Two years later, in 1991, federal judge William Dwyer, citing research that showed the number of spotted owls was approaching the minimum number required to maintain a breeding population, banned most logging in Oregon and Washington to assure that at least 3,000 pairs would survive. The key to the ban was the “finding” that the Northern Spotted Owl required “old growth” timber in order to nest and survive.

“Old growth” timber is the most valuable kind of timber for logging, and the ban shut down logging in the Northwest, put thousands of loggers out of work, and killed towns that depended on the logging industry. It added nearly \$5,000 to the price of an average new home.

Lost in the rhetoric was the fact that the spotted owl does not require old growth timber. The Mexican Spotted Owl lives in the scrub desert of the Southwest, a habitat much different from the humid old-growth forests of the Northwest. Gregg Easterbrook notes: “The California Department of Fish and Game has found spotted owls living and reproducing in several types of non-ancient woodlands, including oak savannas—low-tree habitats unlike any in the Cascade Range of Washington and Oregon.”⁵ Large numbers of the California Spotted Owl have been found on private lands, including “industrial” forests maintained by logging companies. Genetically nearly identical birds are found in widely differing habitats. This means the “old growth” finding is simply bad science.

Spotted owl survival turns out to depend not on specific type of habitat, but on availability of habitat, and availability of prey.

Spotted owls in Washington and Oregon prey mainly on fly-

3. Ibid.

ing squirrels, whose Cascades population is relatively low. In California, spotted prey mainly on the dusky-footed wood rat. California's managed woodlands [industrial forests] have sunlight on the forest floor, because foresters space and trim trees to maximize yield. The warm climate further encourages plant growth. The result is forests with lots of wood rats.⁴

In 1998 Federal Claims Court judge Lawrence S. Margolis ruled that the Forest Service did not have a "rational basis" for halting timber sales to the Wetsel-Oviatt Lumber Company, and that the Forest Service action was "arbitrary, capricious, and without rational basis." Moreover, he ruled that the Forest Service officials knew their findings were faulty when they canceled a sale to the timber company. He ruled: "The Forest Service therefore breached its contractual obligation to fairly and honestly consider Wetsel's bid on the sale."

The Forest Service denied logging in this case based on aerial photography of the area, which showed some old trees supposedly suitable for spotted owl nests. However, they made no attempt to verify their findings through a ground inspection. A private contractor and another government agency reviewed the Forest Service's analysis. Both found it unreliable.

There may be as many as 10,000 pairs of spotted owls in the U.S.⁵ The cry to stop logging to preserve the spotted owl is based purely on politicized science. The emphasis on preserving old-growth forests has nothing to do with science or spotted owls. There may be justification for maintaining "old growth" forests as valuable in themselves. However, the spotted owl is not a reason for "protecting" old-growth forests. The spotted owl story is an example of politicized science used to achieve a political objective.

4. Ibid.

5. Ibid.

Lynx Hair

In 1998, the U.S. Fish and Wildlife Service proposed listing the Canada lynx, which ranges across the “northern tier” of states from Washington State to Maine, as an endangered species. To determine the number of lynx, the Rocky Mountain Research Station of the U.S. Department of Agriculture Forest Service developed a sampling kit to be used to collect lynx hairs at more than 10,000 “scratching posts” in a dozen states.

Everything in the survey was standardized as much as possible. The kit for each scratching post included hair snares, visual attractants, bait, and glass vials, plastic bags, and other paraphernalia for returning the samples. The field protocol specified baiting the lure with a standard amount of bait. Two weeks later, any hair found on the bait was to be enclosed in the glass bottles, the bait was to be placed in the plastic bag, and everything returned to the Station.

Once returned to the Station, the hair was sent to the University of Montana, where a laboratory analyzed the DNA in the hair to identify the species. A “positive control,” a sample of Canada lynx hair, was run in each test to verify that the test could detect the species, and water was run in each test as a “negative control.” At the completion of each test, the extracted DNA samples were frozen, and hair samples were stored to permit checking any specific sample if questions arose.⁶

In 1999 and again in 2000, seven officials of the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the Washington Department of Fish and Wildlife sent Canada lynx hair samples to the laboratory with statements that the samples had been re-

6. The description of the survey is taken from the testimony of Kevin S. McKelvey, U.S.D.A. Rocky Mountain Research Station, to the House Committee on Resources, March 6, 2002.

trieved in the Gifford Pinchot and Wenatchee National Forests in Washington State. In reality, the hair had been taken from a pen holding captive lynx and from a stuffed animal, as became known the day after one of the officials who had sent in the samples retired.

On that day, the official reported the submission of the samples to his former superior. When questioned about why the hair from the captive and stuffed lynx had been submitted, the then-retired official and the others who had made the submissions said they wanted to test the laboratory to be certain it could detect lynx hair. They did so with no authorization, and because such “testing of the laboratory” was not included in the survey design, they had no way to inform the laboratory of the unauthorized submissions. The laboratory, not knowing the origin of the samples, counted the hair from the captive and stuffed animals as indicating that lynx were present at scratching posts in the forests in Washington State.

In a letter to *Nature*, Dr. L. Scott Mills, director of the laboratory that analyzed the samples, stated that the protocol used for the lynx survey had been validated with appropriate controls in two labs. His testing protocol had been peer reviewed and published. He said, “For a field worker to arbitrarily decide ‘to test the lab’ by labeling a hair from elsewhere as if it were a field-collected sample corrupts the integrity of the data and does not constitute a blind control.”⁷

There was no need to “test the lab,” and it was impossible for the persons submitting the bogus hair specimens to know the results of their “tests” anyway. In a report to the House Resources Committee, the General Accounting Office (GAO) stated:

7. L. S. Mills, “False Samples Are Not the Same as Blind Controls,” *Nature* 415 (2002): 471.

In 2000, one of the participants, a biologist with the Forest Service, notified the field coordinator for the National Survey that a control sample had been submitted in connection with the survey for the Gifford Pinchot National Forest. However, he did not identify which sample was the control. As a result, the laboratory and the Forest Service decided not to analyze the hair samples submitted as part of the 2000 survey for the region that included the Gifford Pinchot and the Wenatchee National Forests until the Forest Service completed an investigation and identified all of the unauthorized submissions.⁸

Land-use advocates characterized the incident as an attempt by “biologists with a green tilt” to close off National Forests. Environmental activists accepted the officials’ statements that they only intended to “test the lab.” Officials of the agencies involved have publicly recognized that the lynx hair incident reflects badly on their agencies and are attempting damage control.

Interior Department Inspector General Earl Devaney reported that he found no criminal intent in the employees’ actions, and the Justice Department declined to prosecute them. However, he said the USFWS’ failure to administer “meaningful punishment” showed the service’s “bias against hold[ing] employees accountable for their behavior.”⁹

The USFWS employees involved in the false submissions were taken off the lynx survey, “counseled,” and given bonuses. Considering the potential impact of a false finding of lynx presence in the Pinchot and Wenatchee Forests, this seems like a slight tap on the wrist. Indeed, the Inspector General said: “Awarding the involved employees with monies and specifically praising

8. R. Malfi, “Canada Lynx Survey: Unauthorized Hair Samples Submitted for Analysis (GAO-02-496T)” (Washington, D.C.: Government Accounting Office, March 6, 2002).

9. R. Gehrke, “No Criminal Intent Found in Lynx Study,” *Seattle-Times.com*, March 2, 2002.

their work on the lynx study so soon after the incident is not only an incredible display of bad judgment, but also highlights the FWS's excessively liberal award policy and practice."¹⁰

Only the perpetrators know whether the incident was intentional fraud. In any case, it reinforced the suspicions of those who charge the government with using politicized science to justify ideologically motivated decisions.

“Reintroducing” Wolves in Yellowstone

Historically, wolves ranged from Canada well down into the United States, and from the West Coast to the East Coast. There are numerous accounts of wolf attacks on humans and livestock. One of the earliest on record was reported by the naturalist John James Audubon, and occurred about the year 1830.¹¹ Attacks continued up through the 1990s, and one attack, in 1996, was the basis for an article in *Reader's Digest*.¹² Healthy as well as rabid wolves, which some blame for all the attacks, have been identified at autopsy when attacking wolves have been killed and examined.

It was with good reason that wolves were hunted to extinction in most of the United States. Wolves are incompatible with livestock, pets, and human beings. It is only because of “green ideology” that they are being reintroduced.

The government systematically misled the public about the numbers of wolves that would be involved in the reintroduction into Yellowstone Park. The organization Defenders of Wildlife cited thirty-five to forty-five wolves as being the target numbers.

10. Anon., “Here a Lynx: There a Lynx,” www.cfif.org/5_8_2001/Free_lines/current/lynx.htm.

11. J. J. Audubon and J. Bachman, *The Quadrupeds of North America*, 3 vols. (New York, 1851–54); reference in http://www.natureswolves.com/humans/aws_wolfattacks.htm.

12. Kathy Cook, “Night of the Wolf,” *Reader's Digest*, July 1997, pp. 114–19.

The National Park Service's initial estimates of between thirty and forty wolves grew to plans calling for ten packs of ten wolves each.

Later, the USFWS upped the ante. Breeding packs are assumed to average ten wolves each, but each pack is assumed to have only one breeding pair. The "recovery plan" calls for ten packs of ten wolves in each of three "recovery areas," for a total of 300 wolves.

Where did this number come from? In 1987, the USFWS stated: "The goal of 10 breeding pairs in each of three recovery areas was established after extensive literature review and consultation with a number of U.S. and Canadian biologists/wolf researchers."¹⁵ Contrary to that published estimate, USFWS responded to a Freedom of Information Act request for the data with a letter that stated the service

"[had] not contracted or undertaken any studies which deal with minimum viable populations of the Northern Rocky Mountain Wolf," and added "there are no records in the files of our Denver Regional Office or the Cheyenne Fish and Wildlife Enhancement Office referencing any specific materials [which were] used in determining recovery numbers for the Northern Rocky Mountain Wolf."¹⁴

In short, the current numbers have no scientific basis, and, apparently, the original numbers were set low to minimize public resistance.

A further bit of junk science involves an alleged "balance of nature," in which wolves prevent their prey (elk, deer, caribou, etc.) from overgrazing the land, and moreover strengthen the prey

13. "Northern Rocky Mountain Wolf Recovery Plan (Denver: U.S. Fish and Wildlife Service, 1987).

14. C. E. Kay, "Wolf Recovery, Political Ecology, and Endangered Species," www.natureswolves.com/usfws/recovery.htm.

herd by removing the old, the sick, and the unfit. In fact, wolves attack the calves and the yearlings, not the aged and the sick.

During the 1950s and 1960s, when wolf control was widespread and effective, game herds grew and the north country [Canada and Alaska] became known as a hunter's paradise. Government wolf control ended by 1970, and predator populations began to expand . . . In Wood Buffalo National Park, for instance, there were approximately 12,000 bison when wolf control was terminated; today there are fewer than 3,500, and the population is still dropping. Wolf predation of calves has been identified as the primary factor responsible for the decline.¹⁵

If only wolves and buffalo were involved, the number of wolves should decline along with the population of buffalo until an equilibrium is reached. In practice, as C. E. Kay also points out, wolves can drive a vulnerable prey population almost to extinction without effect on their own numbers, if they have an alternative though less vulnerable prey population available:

In Northern British Columbia, wolves caused a substantial decline in the most vulnerable ungulate species and then switched to the next most vulnerable ungulate until it also declined. The wolves cascaded down the list of available ungulate species from the most vulnerable to the least vulnerable until all ungulate populations had been substantially reduced.¹⁶

The USFWS attempted to develop computer models to prove that wolf recovery would not be detrimental to prey populations. Dr. Robert Taylor, a noted computer modeler and predation expert, testified to the Wolf Recovery Committee at Helena, Mon-

15. "Here a Lynx: There a Lynx."

16. Kay, www.natureswolves.com/usfws/recovery.htm.

tana, regarding two of these models.¹⁷ Of one, he said: “. . . this is a wholly unacceptable effort. It relies on datasets of questionable utility . . . it employs obsolete simulation approaches, and it reflects inadequate attention to uncertainty in assumptions and parameters.”¹⁸ Of the other model, Taylor testified:

The model is conceived in such simplistic terms that it cannot, at best, be expected to provide much more than a gross approximation to what will happen [if wolves are reintroduced because] it misrepresents the predatory impact of wolves and their internal population dynamics. . . . The sensitivity analysis is inadequate, considering that many of the parameter values are mere guesses. . . . The net effect of these problems is that none of the conclusions [on probable wolf-ungulate interactions] can be justified at this time.¹⁹

Taylor later obtained the computer codes for this model, made a single, yet reasonable, change to one of the model’s assumptions of wolf-ungulate prey interactions, and found that the model’s output was drastically different from what has been published by the agencies.²⁰

In addition, the computer models assumed only 100 to 200 wolves in each of three recovery areas. The reality is that ESA mandates will require 1,500 to 2,000 wolves. Moreover, the models do not take into account additive predation by bears or mountain lions, also undergoing expansion as protected species.

The word “reintroduction” assumes that wolves were once common in Yellowstone, but that assumption appears to be without a factual basis. Kay examined journals left by early explorers,

17. At the time Dr. Taylor was a faculty member of the Fish and Wildlife Department at Utah State University. He is now a wildlife consultant and professional computer programmer.

18. Kay, www.natureswolves.com/usfws/recovery.htm.

19. *Ibid.*

20. *Ibid.*

and found that, “Between 1855 and 1876, 20 different expeditions spent a total of 785 days traveling through the Yellowstone Ecosystem on foot or horseback,” without “seeing or killing even a single wolf.” No evidence “remotely suggest[s] that large numbers of wolves were common in Yellowstone during the 1855–1876 period.”²¹

From 1914 to 1926, Park Service employees, eradicating wolves from Yellowstone, killed 136 wolves in Yellowstone. This included only 56 adults over an eleven-year period.²² Kay concluded that even pre-Columbian ungulate populations were held to low levels by intense hunting, thereby keeping wolf populations low.

If, as pointed out earlier, wolves and humans in the same territory are incompatible, it is to be expected that the alleged “reintroduction” of wolves into settled areas has caused problems. Indeed, it has. Wolves are killing livestock, including cattle and horses, and pets, including large “working dogs” used in cattle herding.²³

Poorly done science or, perhaps, politically motivated science, bolstered the push to “reintroduce” wolves to their former range, including areas like Yellowstone where they probably never existed in great numbers before. Unfortunately, that was not the end of the poor science.

Chairman Dan Fuchs of the Montana House of Representatives reports that USFWS has known since 1997 that elk-calf ratios were being drastically reduced in areas of high wolf concentration. However, when Montana Fish and Wildlife Protection per-

21. Ibid.

22. Ibid.

23. Some reports, including some grisly photos, can be found at <http://www.natureswolves.com>.

sonnel attempted to release this evidence to the public, the USFWS barred them from doing so.

A study begun in 1997 showed that calf ratios were dropping precipitously—zero to 10 elk calves per 100 cows—in areas of high wolf concentration inside Yellowstone while the ratio outside high wolf concentration areas remained at 46 calves per 100. However, USFWS officials hid wolf predation in the annual reports because they published averages for the entire northern herd, combining the 0 to 10 calf ratios in high wolf areas with the 46 calf ratios from elsewhere, bringing the average to near the 30-calf ratio needed to sustain herd viability.²⁴

In 1997 and 1998, the low calf ratio was confined to areas of high wolf concentration. In more recent years, as dense wolf populations have reached critical mass across the entire northern Yellowstone Range, the area of low calf ratio also expanded to encompass the entire herd.

The introduction of wolves in areas where they had been eliminated or never existed is a case of ideology overpowering not only science but common sense.

Klamath Basin Water Supply

In 2001 the Bureau of Reclamation shut off irrigation water from the Klamath Basin, which originates in the Cascade and Siskiyou Ranges of southwest Oregon, to save an allegedly endangered species, the suckerfish. While the shut-off was widely described as a case of “people versus fish,” there were people on both sides of the issue: people using water for irrigation and people dependent on fish.

Rogue Valley pear farms draw off some Klamath Basin water

24. Personal communication from Mr. Joe Balyeat, Montana House of Representatives.

before it reaches Klamath Lake, and an adequate flow of water below the lake must be maintained to allow migration of coho salmon, which is essential for two American Indian tribes' way of life. In 1864, a treaty created a reservation for Klamath Indian bands living in the Klamath area and recognized the Indians' legal rights to water. The water rights were reaffirmed in the 1954 Termination and Relocation Act, in the subsequent Restoration Act of 1973, and a federal case (*U.S. v. Adair*). In addition, the Yurok Indians, who depend on coho salmon for their way of life, have a reservation on both sides of Klamath River, downstream from Klamath Lake.

In 1905 the Bureau of Reclamation started the Klamath Basin project. Lake Klamath, largest of the lakes in the basin, is thirty-five miles long but averages only seven feet deep, which results in the water in the lake becoming warm in the summer. In the 1930s and 1940s, the Klamath Basin land was awarded to homesteaders, with the promise of ample water. Many of the homesteaders were veterans of World War I or World War II.²⁵

Several varieties of suckerfish apparently migrated into Upper Klamath Lake at some time during the Klamath Basin project. As of 1970, the official count of Lost River suckerfish was "unknown," and the shortnose suckerfish was "very rare." By 1976, estimates rose to 94,000 Lost River suckerfish and 252,000 shortnose suckerfish. Since then, suckerfish kills have taken place during years of high water levels—1995, 1996, and 1997—and by 1997, the suckerfish populations were estimated to have declined about 50 percent to 46,000 Lost River suckerfish and 146,000 shortnose suckerfish. There were no suckerfish kills in 1992 and 1994, when water levels in the lake were low. In only three years since 1991

25. A copy of a *Life* magazine article about the land lottery for veterans can be found at <http://www.klamathcrisis.org/Photos/life-cover.htm>.

was the water level in Upper Klamath Lake higher than it was in 2001.

The lake and river and the fish within them are essential for the 500 to 1,000 bald eagles that normally reside in the Lower Klamath Wildlife Refuge, downstream from the irrigation canals, during winter months. The same refuge is a stopping place for some two million ducks, geese, cranes, and other waterfowl that pass through on migrations and depend on water and fish for survival.

The government overpromised the water in the basin. It guaranteed homesteading farmers irrigation water “in perpetuity,” and the treaties with Indian tribes guaranteed water to maintain the coho salmon.

On April 7, 2001, the Bureau of Reclamation shut off water for irrigation in the Klamath Basin. The water was needed for salmon and suckerfish, and the Endangered Species Act took priority over Indian treaties and irrigation guarantees. Some 1,500 family-owned farms could not grow crops without the irrigation water. Farmers and agriculture-dependent businesses in the Klamath Basin lost about \$200 million.

Given the situation as of April 2001, did the government use sound science to allocate the limited available water as effectively as possible? It did not. Were the suckerfish endangered? Possibly those in the Klamath Basin were. However, they exist elsewhere. No evidence was given that the species was endangered anywhere else. Moreover, it appears that the suckerfish in the Klamath Basin were “exotic” invaders, no more native to the area than the Zebra Mussels in Lake Erie. Hence the very basis for declaring them “endangered” was questionable at best.

The matter of whether the coho salmon were endangered also represents “junk science.” In September 2001, a Federal district court in Eugene, Oregon (*Alsea Valley Alliance v. Donald L. Evans*), ruled that the government had improperly counted only

the number of wild coho salmon in determining whether they were “endangered,” ignoring thousands of genetically identical salmon raised in hatcheries. The court ruled that coho salmon must be taken off the Endangered Species list. (This ruling has been appealed.)

On February 4, 2002, a National Academy of Sciences report (NAS “Scientific Evaluation”) stated that the Council found no research showing that higher water levels in the lake benefited suckerfish or that reduced flows of Klamath water harmed coho salmon.²⁶ On the contrary, suckerfish kills were associated with high lake levels, and the lake was already higher than in all but three of the previous ten years. The report also stated that salmon would be hurt by releasing extra waters during drought years because the warmer water would “equal or exceed the lethal temperatures” for coho salmon in summer months. What little science was available to the USFWS should have led to a different decision from the one made by the service.

Now that everyone realizes there isn’t enough water to meet Indian treaty and irrigation guarantees, corrective action is being taken. In April 2002, the USFWS and the Bureau of Reclamation released a draft Ten-Year Plan, and with the attention focused on mistakes of the past, science may be better used than it was in the decision to shut off the irrigation water.

Tip of the Iceberg?

The problem is not these few cases where science was misused for political or ideological ends. The real problem is that there

26. National Academy of Sciences, *Scientific Evaluation of Biological Opinions on Endangered and Threatened Fishes in the Klamath River Basin: Interim Report* (Washington, D.C.: National Academy Press, February 2002). Available at: <http://www.nap.edu/books/0509083249/html>.

may be many more such cases that have not been discovered. There is no way of knowing.

As Representative James Hansen of Utah said of the lynx hair issue: “This lynx debacle calls into question everything the Fish and Wildlife Service has done for the past eight years. . . . It makes me wonder if past studies have been marred by sloppy or faulty research.”²⁷ He went on to add: “We came very close to impacting the economy of an entire region because of a handful of dishonest people. The use of sound science and peer review could have prevented this whole problem.”

Government agencies claim to make decisions on the basis of “the best science available.” These examples show that science may be carefully sifted and selected to support an extreme view, that estimates can be skewed to mislead, and that no science may be used. Even if the examples I mention are the only ones in which government agencies and their employees have played fast and loose with science, they are sufficient to remind citizens that they should not suspend skepticism when considering government’s claims based on science.

27. Comments of James Hansen at www.house.gov/pombo/wc/articles2002/january3_02.htm.