Spotted Owls Revisited: Science vs. Politics

By Bob Zybach, Ph.D

This photograph by Mike McMurray was used seven years ago on both the title page and magazine cover to illustrate the following article. It was first used here in 1990 as part of a photo essay by McMurray titled "More Owls Than Hours," which chronicled the photographer's documentation of 42 adult Spotted owls and 16 owlettes in just 48 hours he spent in second-growth forestlands in northern California and southern Oregon after being taught how to call an owl: "It's tough to find spotted owls in old-growth, I only found them in second-growth."

The photograph is of a spotted owl and a Simpson Timber Company biologist who "called him in and put a mouse on his arm. Didn't take long at all, maybe 1/2 a minute and the owl came in and snatched the mouse." The owl was a male that had mated for several years with the same female in a stand of Simpson Timber's second-growth tree farm where the photo was taken.

Seven years ago I wrote an article/editorial for this magazine exposing the lack of actual scientific justification for the draconian government actions imposed to "save" the spotted owl. The article was titled "Spotted Owls and the Spotty Sciences that Spawned Them: 5 Questions," and is reprinted in the following pages.

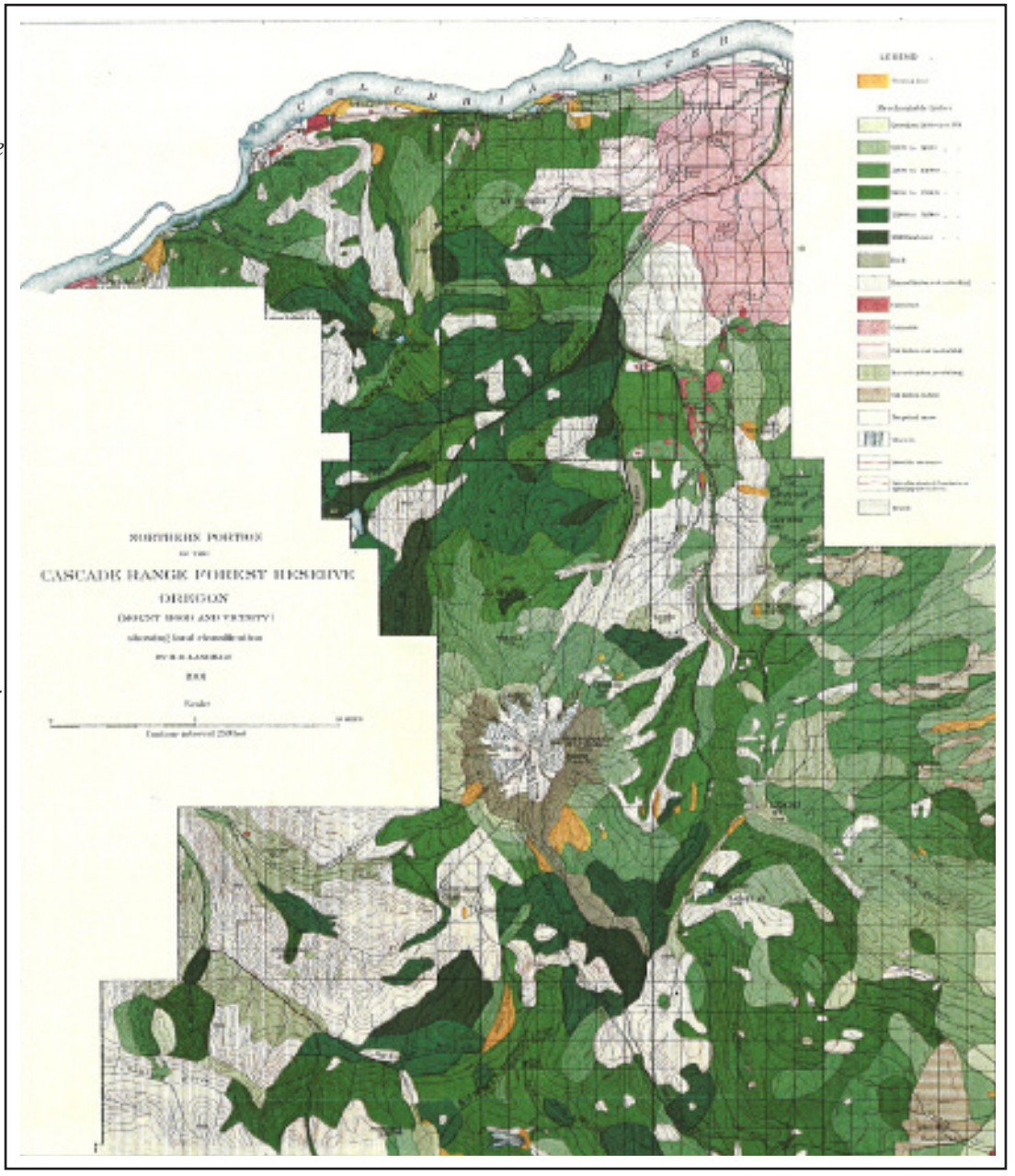
The modeled designation of "critical habitat" for spotted owls and marbled murrelets -- and the federally mandated "HCPs" (Habitat Conservation Plans) they produce -- has provided lucrative job security for a small number of anti-logging academics, environmental lawyers, agency employees, and government bureaucrats at an enormous cost to US taxpayers and to rural families, businesses, and communities. The scientifically predicted wildfires that have followed adoption of these arbitrary designations have also killed millions of wildlife and polluted our air and waters.

I expected to have to update the article, due to the passage of time. I didn't have to. Nothing has changed. Every word I wrote seven years ago remains accurate today. Worse, there has been no discussion or serious consideration of these concerns. Maybe the current coronavirus pandemic models can help change that:

For more than 30 years the American public, including its students, has been told that "computer modeling" can predict the future. Modelers presented themselves as "scientists" and predicted all kinds of horrible futures: Florida underwater, no snow on Kilimanjaro, and the extinction of all kinds of birds, bugs, fishes, plants, and mammals. None of this came true, but the academics, lawyers, and politicians still continue today to make a killing collecting and spending other people's money by promoting these stories.

At this time a good share of the world has been placed under house arrest, millions of people have lost their jobs, thousands of businesses have gone broke, and all because "science" told them to stay home, avoid people, and wear a mask and gloves at all times. Because the models said so and because autocratic government "scientists" and officials jumped at this chance to demonstrate their power. And yet, the publicly promoted models have continued to be wrong, and often by an enormous amount. And the press is noticing and reporting the facts.

Maybe people have learned and become wiser. If a weatherman can't accurately model the weather for more than a few days, and the widely quoted pandemic modelers are off by millions of deaths within weeks, how accurate can the models be for "climate change" and for species extinctions occurring decades and centuries into the future?



1901 USGS Map of Mt. Hood Vicinity of Oregon Cascade Reserves. Darkest green polygons below 4,000 feet elevation were most likely to contain spotted owl habitat 115 years ago (Zybach 1996: 6).

Spotted owls have now been in the news for more than 40 years; were listed as an endangered species via the Endangered Species Act in 1990; have been actively managed since 1992 by classification of millions of acres of federal forestlands in Washington, Oregon, and California as "critical habitat" -- and have still declined in population at an estimated rate of 2-3% a year ever since.

No one will argue that these results are based on political decisions that have had unexpected and wide-ranging cultural, biological, economical and aesthetic repercussions; particularly in the Pacific Northwest. Some have even referred to these circumstances as a "major social experiment." According to federal legislation and much of the

popular press, spotted owl legislative decisions have been based on the "Best Available Science," the "newest" scientific information, and "scientific consensus."

But were they really? And even if true, was all of this "newest science" used to make wise or thoughtful legislative decisions? Efforts to stabilize or increase spotted owls numbers have cost American taxpayers tens of billions of dollars, been partly responsible for unprecedented numbers of catastrophic wildfires, caused the loss of tens of thousands tax-producing jobs for western US families, created economic hardships for hundreds of rural counties, towns, and industries, and indirectly resulted in the deaths of millions of native plants and animals.

Dr. Ben Stout in spotted owl habitat near Mt. Jefferson Wilderness on the western shore of Round Lake, May 15, 2004 *(photograph by B. Zybach, www.ORWW.org).*

Was that part of the plan? Should we continue down the same path to "recovery" that has resulted from these decisions? My personal concern is not the politics involved in making such decisions – that's what politics are for. My concern is that the scientific process is being misused and degraded via such politics, thereby reducing public faith in the credibility and capability of science in general and scientists in particular. Also, I think the public should be direcly involved in such decision-making processes and not continue to leave it up to university and agency committees and the courts. Lawyers on both sides of the table get paid in these disputes, and so do politicians and government scientists – it is just the loggers, truck drivers, sawmill workers, foresters, engineers, tree planters, and construction workers that are left with the consequences.

The American public has been told that the scientific information used to drive spotted owl political decisions has been "peer reviewed," often with the declaration that it is the latest and best information available for making such decisions (and thus leaving "science" and scientists as scapegoats when things don't work out; i.e., "politics"). The quality of peer reviewed science, however, depends on the chosen method of review, the qualifications of reviewers, and the review criteria – which are typically expressed as a series of questions.

The US agencies in charge of managing public resources have not been forthcoming about the scientific information and quality of peer reviews used to drive their policies and decisions. There is no logical reason the American public has been excluded from this process, nor is there any logical reason to continue such exclusion. The following five questions are intended to begin a more transparent and scientifically credible review of the "science-based" management decisions involving spotted owls. These criteria are just as valid for public discussion as they are for scientific review, and I believe should become part of the public debate on these animals.

1. Are Spotted Owls Even a Species?

This is a trickier question than you might suspect. When I was a kid in public schools I was taught that animals that could biologically breed and produce viable offspring were considered the same species. A few anomalies such as lions, tigers, horses, and burros usually stretched the limits of these discussions; otherwise, viable offspring was the rule. The generation of Americans who taught this basic approach to biological taxonomy were members of the same generation that passed the Endangered Species Act in 1973, as spotted owls were first being introduced to the general public. What was the principal intent of this legislation? More importantly, how were they defining "species?"

The most common owl in North America is called the "hoot owl," or "barred owl." It looks and sounds almost exactly like a spotted owl, occupies the same range, and has successfully bred and produced viable young with spotted owls. Are spotted owls therefore, just the western-most cousins of the brown-eyed hoot owl family? Or did some committee of nameless scientists give them separate Latin names that somehow transformed them into separate species?

And if they really are the same species, shouldn't this whole "critical habitat" operation be shut down ASAP and the people who assembled it be held accountable?

The analogy I have been using for several years is probably not politically correct, but makes this key point in terms most audiences can relate to: 'there are far greater variations in physiology, vocalizations, coloration, preferred habitats, diet, and appearance between a Pygmy and a Swede than between a barred owl and a spotted owl.' Sometimes some people seem uncomfortable by this comparison, so potatoes, red and yellow roses or German shepherds and French poodles can be substituted as discussion points if the audience is more familiar with those species.

The point is, humans have mastered selective breeding and domestication of many species of plants and animals – and now we are trying to do the same thing with a particular group of wild owls. The public, at least, should know what it is spending such enormous sums of money on – and if it's only to breed a particular variety of common hoot owl, shouldn't that information be known and perhaps reconsidered?

2. What is so "Critical" About "Habitat"?

In 1992 the federal government designated several million acres of Pacific Northwest forests as "critical habitat" for spotted owls, thereby fundamentally changing the management methods and focus of our public forests. These lands were no longer managed by the US Forest Service and Bureau of Land Management foresters, but rather put into the hands of US Fish and Wildlife Service (USFWS) biologists – who declared them off-limits to logging and most other commercial activities. These same lands had been used for subsistence and recreation by generations of American families, and for hundreds of generations of local Indian families before them. Now it was being made into a massive and unprecedented reserve for a single species: spotted owls.

These so-called "critical" properties were designated by dozens of 2.7 mile diameter "crop circles," supposedly based on the "home range" of a nesting spotted owl. The final result was much like the cookies or biscuits shaped for your mom with drinking glasses or teacups when you were first learning to bake. The circles mostly correlated to owl sightings and were concentrated in public lands the USFWS did not want logged. Thus, about seven million acres of some of the world's finest timberlands were abruptly removed from management for human uses for the first time in history. These designations were transformative and unprecedented, yet quickly adopted without independent scientific review or substantive public discussion.

Environmental activists and some scientists have long claimed that spotted owl habitat used to exist in far greater amounts before 1940 than it does now -- therefore, spotted owl numbers must have been greater in the unknown past

than they are now. This is a baseless assumption that cannot be documented and therefore needs serious critical examination before acceptance – much less widespread adoption at an enormous cost to taxpayers or treatment as a "fact."

In 1996 I wrote a research report for a Portland, Oregon law firm dealing with this issue. My study area was the Columbia River Gorge, including thousands of acres of private and federal forestlands along both Oregon and Washington sides. My findings showed – and documented – that spotted owl "habitat" (by current definitions at that time) was unlikely ever more than 5% or 10% of the total study area during anytime since the 1790s. Subsequent research over two million other forested acres in western Oregon have yielded similar documented findings.

There is no demonstrated correlation between owl populations and artificial designations of "critical habitat" zoning. These areas appear far more critical for the survival of agency biologists and ecologists than for owls of any stripe or spot. Predator-prey relationships seem to have much more to do with owl populations than forest structure – an assertion borne out by efforts used to restore endangered condor populations, which are kept and bred in cages, and by the fact that at least one agency wildlife biologist caught and kept a spotted owl as a family pet for 30 years.

3. Are Barred Owls a Living Example of "Natural Selection?"

"Darwin's Finches" are 15 species of closely related birds – but with entirely different beaks and feeding habits, adapted to their local environments. These birds, and their individual variations, were first noted by Charles Darwin in his exploration of the Galapagos Islands in 1835, and were instrumental in the development of his theories of biological evolution and "natural selection."

Darwin's finches aren't really finches at all, but passerines: members of an order of songbirds and perching birds containing more than 110 families and more than 5,000 species – including Darwin's 15 finches. Passerines are the second most numerous vertebrate families on the planet, following bony fishes, and the basis for most subsequent findings and theories regarding evolution.

In the mid-1900s, Darwin's thoughts on natural selection were being refined into "ecological niche" theory, a systematic look at "how ecological objects fit together to form enduring wholes" (Patten and Auble 1981). It is basically an effort to systematize Darwin's theories so they can be diagrammed and programmed into mathematical computer models.

Spotted owls were first described in California in 1857, in Arizona in 1872, in Washington in 1892, and in Oregon in 1914. Barred owl were first described in 1799 in the eastern US, expanded their range westward to Montana in the 1920s, and were interbreeding with spotted owls in Western Oregon and Washington by 1975. From all historical perspectives, it appears as if two isolated populations of hoot owls – western and eastern – have coincidentally expanded their ranges during the past century or so, and have now joined together to form viable hybrids that are replacing former spotted owl populations. How is this any different than Europeans and Africans colonizing North America and replacing Native American populations as they "expanded their range?"

In 2007 the US Fish & Wildlife Service began a long-term program of systematically killing barred owls in order to maintain the genetic purity of local spotted owl populations. You can use dogs, or roses, or humans, as analogies here to see how artificial breeding precedence is being used. Is this a god-like attempt to control evolution, simply another human effort to artificially produce desired breeding characteristics, or some kind of ecological niche theory testing opportunity?

Depending on the rationale used to justify these actions, the next questions become: "Is this method logical or practical?" And, "How much does it cost?"

4. How Reliable Are Computerized Predictive Models?

Modeling isn't rocket science, it isn't even a science. Computer sciences made rapid gains in quality in the 1970-80s, with one result being modeling predictions accepted as reasonable substitutions for actual field observations and analysis, especially by other modelers.

Wildlife models are almost exactly the same thing as "Sims" computer games, but with a lot more acronyms and algorithms in their attempts to mimic actual life. And then predict the future. Making predictions and comparing them with actual outcomes is a hallmark of scientific methodology, but when predictions are based on unstated assumptions, unproven theories, and "informed" speculation, all typical modeling characteristics, then the product can be little different than any other computer game. Models are a very useful tool for summarizing current knowledge and suggesting possible futures, but they have proven no more capable of predicting future conditions and catastrophes than ancient oracles or modern religious leaders and politicians. Or most scientists.

In his book "Best Available Science (BAS): Fundamental Metrics for Evaluation of Scientific Claims" (Moghissi et al. 2010), Dr. Alan Moghissi categorizes computerized predictive models into five basic types. Those typically used to model wildlife populations and habitat correlations he terms "primary" and "secondary" models. Despite their inherent weaknesses, he observes that society "has no other choice" but to use primary models in making certain decisions. Regarding secondary models, however, he states, "a society that bases its decisions on these models must accept the notion that it may waste its resources."

Often, the only people said to be "qualified" to assess models and modeling methods are "other modelers." The results have not been good. It is time to shine some daylight on this industry and have actual environmental scientists

and concerned members of the public take a better look at "the man behind the curtain."

5. What Do Government Scientists Say About Owl Recovery Plans?

Certainly, if the US government was going to spend billions of our dollars, ruin the economies of hundreds of our communities, and kill millions of wild plants and animals in the process, they would have at least used "peer reviewed" science – and been transparent in their methods -- wouldn't they?

In 2007 a number of prominent university and agency scientists that had help create the spotted owl "recovery plans" were asked, in essence, by USFWS to review their own work. Not surprisingly, they decided it was pretty good stuff and – despite declining spotted owl numbers – we should be doing more of it.

The "Scientific Review of the Draft Northern Spotted Owl Recovery Plan and Reviewer Comments" was written by Steven Courtney, Jerry Franklin, Andy Carey, Miles Hemstrom, and Paul Hessburg, several of who also appear prominently in their review bibliography – often for work done for, or used by, the USFWS. Despite the obvious potential for bias with this arrangement, the work was conducted openly and transparently and resulted in several useful observations and recommendations, including:

• Current models of owls and their habitats are largely heuristic. Hence decisions on important issues such as reserve size, spacing, etc., must be made with relatively weak predictive tools.

• The approach of the Draft Recovery Plan for designating habitat goals is deeply flawed. However the need to set locally appropriate and sustainable habitat goals remains a valid goal.

• The threat from wildfire is underestimated in the Draft Recovery Plan . . . This threat is likely to increase given both current forest conditions, and future climatic change.

Conclusions

1) Federal spotted owl regulations have been implemented during the past 25 years at an enormous cost to American taxpayers; particularly those living in rural timber-dependent areas of the western US.

2) Current plans are a proven failure. Targeted owl populations continue to decline despite an unprecedented public investment into their maintenance.

3) Barred owls and spotted owls may be the same species, in which there is no logical need to continue managing for the survival of either one. Or, they may be different species and we are simply witnessing natural selection in progress.

4) The scientific basis for these plans should be considered in full light of public and scientific review before they are continued much longer; the methods by which agency modelers and university theorists apparently dictate federal policies should also be reconsidered.

5) Scientific research and review teams dealing with spotted owl and critical habitat issues should also include scientists with an understanding of current and historical roles of people in the environment, such as landscape historians and cultural anthropologists.