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Remarks

***1 ARE HUMANS PART OF ECOSYSTEMS?**

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The emerging field of ecosystem management stumbles over the question of whether human beings and their impacts are a part of, and define, an ecosystem itself. To deny that they are seems ridiculous; to accept that they are, on the other hand, strips the concept of any meaning. After examining several perspectives on the human role in the environment and legal regimes based on those perspectives, this Essay proposes a perspective and a legal regime that bifurcates the question. While ecosystems contain humans, human actions are not their measure--or there is no measure. The best available measures of ecosystems are representative species that indicate their natural conditions. This measure taken, the role of human beings is to manage ecosystems, and themselves, towards this goal.

It is an honor for me to be here at Northwestern School of Law of Lewis & Clark College, at an institution and in a region responsible for so much progress in environmental law. I knew that I was in a different environment this morning when my radio alarm went off with announcements of upcoming community meetings. The first meeting announced was that of the Progressive Singles of Portland, who would be having a vegetarian potluck next Tuesday. That is not the sort of announcement one would hear in Louisiana. If we were to have such a meeting in the Deep South--and I am not admitting that we do--we would never let anyone know ahead of time.

I have been here once before, in 1959. I was hitchhiking up the Pacific Coast, looking at signs at the side of the road that read "Fire Danger" *2 when a forest service ranger stopped the car and I was volunteered for a brush fire on Miller Creek. When that was over I went on to other fires, and I soon learned that forest fire management involves a great deal of standing around and waiting for nature to take its course. When the rains finally came, we were put on campground management, which involved cleaning the ladies' and men's restrooms. What was written on the inside of the walls of the ladies' rooms was another learning experience for a young boy from the East. These basic lessons in natural resources management under my belt, my life then went off in other directions--but a third lesson from Oregon became indelible over time. We were out on trail maintenance. It was noon and half dark in the woods, and the sunlight came down in shafts from the tops of the trees, turning green by the time it hit the ground. The ground was soft, with a murmur of water. The moss covered the logs so thickly that we could lie down on them and go to sleep which, being a forest service crew, we tended to do. But I was aware, before I dozed off, that I was close to the heartbeat of life and that it was good. What I did not know at the time is that I was also in the middle of--and this is the operative word--an ecosystem.

So it is no surprise to me that, almost forty years later, out of this same environment, out of these same wet, dark, and illuminated woods, a whole new species of thought--half science, half religion--has arisen in research, articles, books, management plans, and litigation, a new field of conservation biology spilling out of the Pacific Northwest like El Niño and changing the language of the game. Driven largely by the Pacific Northwest, America is now rushing toward something called ecosystem management, at the bottom of which is an enigma. Each of the books (nearly every book), the plans (nearly every plan), and the lawsuits (nearly every case) trips over a fundamental question that none can answer: If humans are going to manage ecosystems, then what is the assumption about human beings in these ecosystems? Is what humans have done and are doing to ecosystems included in the baseline? Are we in or are we out?

At first blush, the question seems ridiculous. My son might reply, "like, we don't exist?" Like, Kansas is not wall-to-wall wheat? The proposition is a little silly. As this Author has recently read, "[W]e are animals. Very pre-cocious to be sure, but just big monkeys nevertheless. We are therefore part of nature, not apart from it. Chicago is no

less a phenomenon of nature than is the Great Barrier Reef.” [FN1] From this point of view it is *3 only a small step, indeed an inexorable step, to this conclusion of the American Conservation Ethic Project: “A policy cannot be good for the environment if it is bad for people.” [FN2] On the other hand, however, if Chicago is an ecosystem, then where does the concept stop? At the L.A. freeway? Hiroshima, circa 1946? What I suggest is that once humans and their impacts are put into the definition of an ecosystem, the term loses all objective meaning. We simply manage for whatever we want. So what is new?

This is the question and the paradox that I want to explore. Neither answer, people-are-in ecosystems or people-are-out, seems to work. Taking the question as a little more legitimate than it first appears, then, let me surface three points of view on the human role in the environment that probably everyone at some point has embraced or embraces to some degree. Their history parallels the conservation history of the country at large.

The first point of view you could call “humans as God's engineers.” People are not only parts of ecosystems; we improve them daily. From the time we were kicked out of the Garden of Eden, the Earth has been a pretty terrible place, full of plagues, fires, and floods--until we began to set things right. When I would go to the auditorium in grade school we would see films with titles like “Nature on the Rampage” about the Mississippi River or the Wild Colorado. To the rescue came the Army Corps of Engineers. On other days, to the rescue would come the Standard Oil Company or the Federal Highway Program. If I had grown up in Arizona, I might have been rescued by cattlemen or the Bureau of Reclamation. It was a mindset with its own delusions such as “raindrops follow the plow”--a reassurance that ushered in the dust bowl. It was supported by Social Darwinism, a theory that justified our displacement of life-forms-in-the-way-of-progress because we humans were, after all, part of evolution so whatever we did to the Earth was natural; we were just helping nature along. [FN3] It even carried its own theology which is summarized in the teachings of the Four Great Johns: [FN4] 1) John Locke, to whom altering the Earth conveyed the legal right to own it, 2) John Wesley, for whom these improvements gave us a claim to the Kingdom of God as well, 3) John Winthrop, for whom these improvements justified taking real estate from the Native Americans, who, after all, did not even bother to fence it in, and, lastly, 4) our own John Wayne, who showed us, over and over again, that it was not only right to take their lands, you could kill ‘em too.

Only recently, the excesses of the God's engineers point of view have sent us in search of others. At the opposite pole is a different view of people and nature. Always latent in the background of America, as early as *4 the writings of Emerson and Thoreau, it has emerged in recent decades as a second major point of view: humans in the environment are, basically, Earth's virus. [FN5] This point of view features the sprawl of shopping malls, cul-de-sacs, and crumbling cities from Maine to Florida, California so done in by humans it is spinning them back out to Oregon and Montana, [FN6] and the Colorado front range now building at a rate of ten acres per hour. [FN7] It takes to heart a recent Canadian study concluding that, over the next fifty years, it will take four Earths and ten Earth atmospheres to perpetuate the American way of life, [FN8] and this was before the latest sales figures on Chevrolet Suburbans and the enlarged Ford Explorer. This is Bill McKibben's view in his recent classic, *The End of Nature*. [FN9] It is the only dark moment in Dr. Seuss, whose optimism and whimsy comforted us throughout childhood until we confronted our other selves, like some death-bed confession, in *The Lorax*. [FN10] It is the message of Robert Preston's chilling *The Hot Zone*, describing an outbreak of the Ebola virus. Preston writes:

In a sense, the Earth is mounting an immune response against the human species. It is beginning to react to the human parasite, the flooding infection of people, the death spots of concrete all over the planet, the cancerous rot-outs in Europe, Japan, and the United States thick with replicating primates, the colonies enlarging and spreading and threatening to shock the biosphere with mass extinctions The Earth's immune system, so to speak, has recognized the presence of the human species and is starting to kick in. The Earth is attempting to rid itself of an infection of the human parasite. Perhaps AIDS is the first step in a natural process of clearance. [FN11]

It is the very darkness of this second point of view that triggers its demise. It is simply a dead end. You cannot hold on to it, personally or professionally, and function. You cannot apply it to basic transactions in your life. This realization came to me some years ago when I was moving south to New Orleans. My wife and I had two small boys in the car and were towing a U-Haul. We could make forty miles-per-hour, tops. We had been driving all day and by nightfall we arrived, exhausted, in Knoxville, Tennessee. We found a cluster of motels and happened to choose the tallest building, a Howard Johnson. We went up the elevators and into our room. The boys were very excited that they were going to stay in a motel for the night. They pulled on the curtain and it parted to reveal the full wall window and the

landscape beyond. What was out there was shockingly,*5 stupidly, and stupendously ugly--probably five square miles of pavement. There was not a tree. There was not a blade of grass. There was not even dirt. Only parking lanes, car lanes, and fast-food establishments to the horizon. A large neon horse revolved in the air. Neon arrows pointed here and there. There was a tower of truck tires, painted white. In awe, Gabriel turned to his brother and said "Cyp, isn't it beautiful?" Now that comment was pure point of view one: God's engineers. Brother Cyp was older and a little more hesitant. He turned to me for an answer: "Dad?" Now, what should I have replied? "Son, that's a VIRUS out there! You are looking at The Death of the Earth." This is what I mean about point of view two. You simply cannot live it.

The despair of point of view two has led to a third point of view, very much in vogue these days. The human role in ecosystems is as ecosystem steward. If we just manage nature right, we will have a win-win situation. This is the predicate of something called the New Ecology, a movement that has apparently discovered that everything changes in nature, and, therefore, we do not really need to try and preserve anything because, after all, it is going to change. [FN12] Quoting from Daniel Botkin's *Discordant Harmonies*: "Nature in the 21st century will be a nature that we make . . . a more comfortable home, for each of us individually and for all of us collectively in our civilizations." [FN13] This win-win ethic is all around us. In Louisiana we have advertisements with happy egrets on tops of oil rigs, multiple-purpose structures serving birds and man. Here in the West, a recent Weyerhaeuser advertisement shows a wizard spreading trees from its arms, growing forests ahead of a happy couple who are walking hand in hand, escorted by Bambi-like deer and rabbits, into the win-win woods land. It is certainly an ethic fueling all of those trucks now carrying salmon around the dams on the Columbia River, a process the National Marine Fisheries Service refers to as "smolt facilitation." [FN14] They too, are win-winning. My favorite of this happy genre is a case a colleague of mine tried some years ago in Mississippi. [FN15] At issue was an interstate highway going through the last habitat of forty-four remaining Mississippi sandhill cranes, an endangered sub-species of the sandhill crane. [FN16] These are non-migratory cranes; it was this patch of land or nothing. Viewing the situation in win-win fashion, however, the trial judge saw no problem: there was plenty of room for "lanes and cranes." [FN17] Fortunately for the cranes, this *6 ruling was reversed on appeal and the area is now a national wildlife refuge. [FN18]

The thesis that man is part of nature not as its conqueror but as its companion is now at the heart of ecosystem management. Let me demonstrate to you how ecosystem management is being defined in many journals and planning documents today. "Ecosystem management reflects a stage in the continuing evolution of social values and priorities. It is neither a beginning nor an end . . . [It] should maintain ecosystems in the appropriate condition to achieve desired social benefits." [FN19] According to proposed Forest Service regulations, ecosystem management is "a concept of natural resources management, wherein natural forest activities are considered in the context of economic, ecological and social interactions." [FN20] What I suggest we have here is large-case Human and lower-case everything else. Ecosystem management is whatever we want to do. Stripped of its gloss, we are back to point of view one.

What I suggest is that there is another point of view, a fourth view. In my thesis, in which I am not completely confident but in which I am sufficiently convinced to ask for a response, we must split the concept of ecosystem from the concept of management. I start with the proposition that human actions and impacts cannot define what a ecosystem is--not because humans are a virus and are intrinsically destructive, and not because as God's engineers we make colossal mistakes (although both cases could certainly be argued). Rather, once you put people in the equation, there is no equation. Humans come in and consume it. So we have to start by defining an ecosystem apart from people. Where humans come in is next on the management side. The exercise is two-step.

We have some experience in environmental law both in fusing these two steps and in treating them separately. Let me offer two examples. The bedrock principle of natural resources management for much of this century has been "multiple use," which is, of course, management for the use of human beings; [FN21] in the words of Gifford Pinchot, the greatest good for the greatest number of people. [FN22] The failure of this principle to provide even for the bare survival of natural resources--something far short of their perpetuation in a sustainable state--has become one of the better known lessons of environmental law. [FN23] A case in point among many is the Tongass National Forest, the largest public forest in the country and the *7 largest reservoir of old growth habitat. [FN24] In the early 1970s, the Tongass faced a proposal to log 99.5% of its harvestable timber, a proposition referred to by a reviewing court as a "liquidation." [FN25] This conclusion notwithstanding, the court could find in the Multiple Use-Sustained Yield Act no check or balance to the proposed logging: the Act was simply in the eye of the beholder. [FN26] This and an unbroken string of subsequent multiple-use cases [FN27] have demonstrated that, if you have a system predicated on whatever humans want to do as its bottom line, the bottom line disappears; there is no management principle or law.

Suppose now, for a contrasting example, we bifurcate the inquiry and separate humans from the initial stage, as we have with the protection of endangered species. Under the Endangered Species Act (ESA), [FN28] we take habitats most threatened by human activity and, in effect, create safety zones around them. The measures of these zones are not what people need or desire; they are the biological needs of the species themselves. Whatever else might be said about the ESA, from the standpoint of arriving at alternatives that better protect these habitats, it has worked. The Act did not dictate what had to be done to save the Texas blind salamander or the delta smelt, but it said what could not be done, and required humans to come up with step two, a better answer. [FN29] The first step was a scientific one: how much does the species need? The second step was human and political: how are we going to provide it? Across the country, agonizingly at times because the political steps here are difficult, the conclusion emerges that this approach works. It has begun to change management and development practices that, although long recognized as net-destructive and unsustainable, were beyond the reach of politics or law.

With these examples in mind, we may return to the issue of ecosystem management. Its rationale is unassailably logical. We cannot go around this world trying to save each individual creature. It is more cost effective, efficient, and just plain possible to save ecosystems and, thereby, all the life within them. Which begs our original question: what defines the ecosystem? Does any definition tell us what mix of timber and *8 owls to have in the Pacific Northwest old growth forests? Could it determine on any objective basis just how much run of the river we should have in the Columbia? Can it say how many oil and gas canals should be cut through the Louisiana coastal zone? Haven't we been having these and similar conversations for the last thirty years? With bottom lines based on human needs and desires and not on species, where have these conversations gone? Not very far. Sadly, these conversations continue today under the heading of ecosystem management. In a recent decision approving timber harvests in the George Washington National Forest in West Virginia, a court explained: “[T]he forest service does not manage ecosystems just for the sake of managing them or for some notion of intrinsic ecosystem values For the Forest Service, ecosystem management means to produce desired resource values, uses, products or services in ways that also sustain the diversity and productivity of ecosystems.” [FN30] So defined, the ecosystem is basically up for grabs.

The same conclusion emerges from our recent experience with ecosystem management on the public range. When Secretary Babbitt took office at the Department of Interior, he initiated discussions about rangeland management. [FN31] We had been at war too long. We, range users and administrators, would look at the ecosystem as a whole and arrive at use levels necessary to sustain the range. A professor who participated in the Colorado sessions writes:

[T]he Colorado discussions reveal that common notions of ecosystem health and substantiality will not emerge because range policy lacks mechanisms for exploring and reconciling different perceptions. We are as divided as ever as to just what a ecosystem is and as yet have not even found words or useful metaphors to carry on the much needed discussion of the correct human role in the ecosystem. [FN32]

The rangeland discussions failed. What ensued was something called Resource Advisory Councils, in which citizens were put on advisory boards to help pressure the Bureau of Land Management (BLM) and ranchers into grazing reductions. [FN33] In the words of one Council member, “of course, agreeing on the need for healthy riparian systems is one thing. Talking about reducing the number of cows is a completely different ball game.” [FN34] Yes, it is. It is step two, the political step. Only there was no step one: a rangeland bottom line.

Now, to their credit, conservation biologists have seen this problem coming and have tried to develop principles for ecosystem management, an objective, scientifically supportable bottom line. In fact, two quite different*9 approaches have emerged. The first, spearheaded by several Pacific Northwest researchers and scientists, is quite direct. [FN35] There is no mystery to saving ecosystems; you just set them aside and leave them alone. The bigger the better. Do you want rules for ecosystem management? Here is one: the bigger the better. Here is another: the less intrusion the better. The difficulty with this approach is, how does one apply it? Is it saying that everything that is going to be ecosystem-managed is now treated as wilderness? Lots of luck. If it is not saying that, then how much intrusion will be allowed? May we put a few cows out? May we take a few trees? A few more? What I am suggesting is that even if you go with this model, it does not give you a baseline. It gives you an aspirational goal: large tracts of unfragmented habitat. Environmental litigants have attempted to make these principles more than a goal. A number of biodiversity and ecosystem management cases have been brought, trying to establish large pieces of unfragmented habitat as a management baseline. They have been brought by very intelligent and capable people. They have failed. In the words of one court faced with such proposals: “[T]he court can safely assume that the principles of conservation biology set

forth by [the] plaintiffs represent sound ecological theories [But] nowhere in [their] exhaustive briefs and supporting materials does there appear any suggestion of what methodology the Service should have used to incorporate principles of conservation biology into its planning process.” [FN36] Large pieces of habitat is a nice idea, but it is not a bottom line.

The second approach to ecosystem management is indirect and works in exactly the opposite direction, from the bottom up. The lead here came, again, out of the Pacific Northwest forests, in an effort made famous by Dr. Jack Ward Thomas, later to become Chief of the U.S. Forest Service. Faced with the question of how much Pacific old growth forest needed to remain unlogged, he began drawing those owl circles and determining minimum habitat requirements for the survival of the species over time, [FN37] which led to the Forest Ecosystem Management Assessment Team (FEMAT) plan, based on multiple indicator species and setting aside even larger tracts of the Pacific Northwest as biological reserves. [FN38] The species defined the ecosystem, and have gone a long way towards saving it. The next acid test was the Tongass, still at war with the largest clearcut production in the United States. [FN39] Changing management of the Tongass would be changing thirty years of history and planning based on heavy federal subsidies. Biologists began with the northern goshawk, the spotted owl, a species of trout, and several other genuine, indicator species, and *10 started mapping out their needs. [FN40] What was left could be timbered. After a long struggle, their approach has led to a reduction in the proposed harvest on the Tongass by about one-half, and the creation of large, unfragmented, biological reserves. [FN41] The same story is playing out in coastal California, where habitat conservation plans are being built from the ground up from the needs of the California gnatcatcher, coastal cactus wren, and orange-throated whiptail lizard for conservation of some of the most expensive real estate in America. [FN42] It is playing out in the Sacramento Delta, where massive irrigation systems are being modified upstream to protect the delta smelt. [FN43] All of these dramatic results and more arise not from defining an ecosystem as something left over after human use, but rather by, first, defining the needs of its individual parts.

The danger in ecosystem management, as it is currently emerging in government planning, is that it tends to put--indeed, it intends to put--humans back into step one, into the definition of the ecosystem itself. The ecosystem management goal is not predicated on a natural system; it is predicated on human needs and desires. One very recent illustration of the risk here emerges from the post-spotted owl planning for the Pacific Northwest. The Columbia Basin Ecosystem Management Project (CBEMP) is a planning exercise for the use of virtually all of the public lands of the Pacific Northwest, 194 million acres in seven states, twelve Native American reservations, thirty-five national forests, and seventeen grazing districts. [FN44] Faced with the need to preserve the status quo while the project took place, the solution was PACFISH, an interim plan based on the needs of indicator species, primarily spawning salmon. [FN45] The requisites of PACFISH were specific: buffer zones of up to 300 feet along inland streams, minimum pool frequency, and limited timber harvest in riparian *11 habitat conservation areas (RHCA). [FN46] PACFISH was pure step one, what the species needed to survive. It was crude, but it was objective and effective in redirecting development activity. Enter CBEMP, advertised as “refining PACFISH” with “flexible approaches” to “strengthen multiple use management,” while keeping ecological risks at “acceptable levels.” [FN47] In this process, humans were obviously back in the driver's seat. The latest results of CBEMP came out this month. [FN48] The new plan appears to reduce the streamside buffer zones from the PACFISH maximum of 300 feet to a new maximum of 125 feet. The new plan also increases timber harvest from one to two million acres over PACFISH levels for the next decade. [FN49] In short, when people came into the bottom line, protection for the natural system was, roughly, cut in half. If you start with the proposition that an ecosystem is whatever humans want it to be, you may arrive at any answer you want.

Which leads us to a somewhat paradoxical conclusion. As a matter of science and logic, there is no way we can save creatures without their ecosystems. But as a matter of law and policy, the way that works best so far is to work from the creatures on up. In my opinion, that is the real lesson of the spotted owl. That is the lesson of what is going on with development planning along the southern California coast, in the Sacramento Delta, in the Tongass Forest, and in red-cockaded woodpecker habitats across the American south. Why is it so? Why does this approach work? I suggest it works because what you obtain from species is a number that can be defended in science and in court and that does not have humans in it. It is an equation that we do not consume.

So, are humans part of ecosystems? Obviously so, but if we manage ecosystems that way we will lose them. We are part of ecosystems, but we are not their measure. In order to measure an ecosystem and its management goals we need to look at species other than the human species. What other species need is the bottom line, step one. Then, we manage it through people. Humans are step two.

Let me close with several criticisms about this thesis that have emerged in my conversations with others in the field. The first is that mine is an anti-human perspective. I demur; I have no beef with humans. Let me offer an example. I have a dog. Some students and I found her in the Atchafalaya Swamp this spring when we were coming home from a canoe trip; she was in the road, it was getting dark, and so I brought her home. I do not think this dog is a virus. I love this dog. But the other night we left the kitchen door open and she got into the Puppy Chow, which was in a paper bag. This dog can chew her way through yellow pine so the bag was no barrier and she about ate herself to death. We had a very anxious night at the puppy hospital. Now we have a management system for the dog food *12 and the system is not based on dog desires. The analogy is that humans are nice too, some of us are downright lovable, but we are into the Puppy Chow all the time. We are in over our eyeballs. This is true with every new subdivision we build in the floodplain and every new shoreline condominium. It is true with every tourist who drives to the Grand Canyon and cannot see the other side for the smog. It is not anti-dog or anti-human to say that we have to devise systems to keep ourselves out of the chow.

A second point I would like to make in the defense of my thesis is that it is flexible. Even the most Draconian-sounding environmental programs in America have an enormous, inherent flexibility. You need look no further than the Endangered Species Act. A rule that has evolved in my own head after twenty-five years of practice and study is that Nothing in Environmental Law is More Than Fifty Percent. I offer it as a somewhat conservative, quantitative proposition. Consider, for example, the zero discharge goal of the Clean Water Act. [FN50] Zero discharge? Consider the Act's National Pollution Discharge Elimination System. [FN51] Elimination? Consider RCRA's "land ban." [FN52] What's been banned? Consider Section 404 "no net loss" provisions. [FN53] None? What I am suggesting is that, however restrictively the standard is written in law, humans will creep into that equation. They are un-keep-outable. Politics, economics, and social values are all going to inform decisions purportedly based on the most objective, rigorous-appearing criteria. But this is no reason not to have an objective standard. Indeed, it is the reason to have the most objective standard possible. Humans will bend it; just not, with some supporting luck and a little environmental litigation, completely out of shape.

The third point, and this is quite important to me, is that the species themselves are not the issue in ecosystem management. I am not contending that we ought to manage ecosystems from species up, rather than the top down (and certainly not from people down) because I love all creatures great and small. For purposes of this thesis, I do not care about the snail darter. I will agree with Justice Powell's question at the oral argument in *TVA v. Hill*, [FN54] when he turned to plaintiffs' attorney and asked "what purpose is served, if any, by these little darters? Are they used for food? . . . Are they suitable for bait?" [FN55] It is not because I love the miner's canary that I like the idea of miner's canaries. I like the idea of what it does when we put it down in the mine: it will die first, which tells me *13 something about that ecosystem. In ecosystem management, species are valuable because of their indicator-ness, not because of their species-ness. I think that there is a certain truth-in-advertising here. When you think of why you sided with the spotted owl, if you did, was it not because of the ecosystem it occupied? I think this is intuitively what we all do. I prefer law that matches our intuition. It is more honest.

The last thought that I have in support of this approach is that it is not unusual in environmental law to resort to nonhuman indicators when we are really serious about the law working. Consider our experience in pollution control. When we finally came to grips with air and water pollution, did we ask ourselves: "Are people part of air?" "Are people part of water?" As you know, we once did. Historically, this was the way we first approached water pollution in this country; [FN56] people were to decide how they wanted their water to be and we would take it from there. In the words of the National Water Commission: "Water is polluted if it is not of sufficiently high quality to be suitable for the highest uses people wish to make of it at present or in the future." [FN57] We had, in effect, multiple use water management: ecosystem management for water. Nothing failed more utterly. When we finally got around to being serious about water pollution, what did we do? We looked at technology standards based on engineering and water quality criteria based on fish. [FN58] We took humans out, and pollution loadings plummeted. [FN59]

The same history is prevalent across the landscape. Consider, as a final example, the greatest natural resources collapse in our recent history: commercial fisheries. We have had a lengthy and detailed federal fisheries management law for more than thirty years. [FN60] What went wrong? Well, for one, its basic management principle was not sustainable yield, a biological line beyond which fishing had to stop. Instead, the management goal was optimum yield, defined as sustained yield as modified by "any relevant economic, social, or ecological factor." [FN61] Eco-

system management for fish. Furthermore, the managers themselves were regional fisheries councils, composed basically of commercial fisherman whom today we would call stakeholders. [FN62] There was no way these puppies were going to stay out of the Puppy Chow. Particularly, if there was no bottom line requiring them to stay out of the chow. They ate themselves out of business.

Which brings me to this concluding story. At the turn of the century, the great naturalist and philosopher Henry James was said to be lecturing *14 on the origins of the universe when a woman in the audience stood up and said, "You are wrong, Mr. James, the entire world rests on the back of giant turtle!" James, not missing a beat, said "But madam, what does that turtle stand on?" The lady replied, "Why, another turtle!" To which James asked, "But madam, what does that turtle stand on?" There was a pause, and the lady replied, "You can't fool me, Mr. James. It is turtles all the way down!"

The point of the anecdote, of course, is supposed to be how wrong the lady was. The point of my discussion in this Essay is that, for ecosystem management and the present state of the art, the lady had it right. We are better off looking at turtles all the way down. It is the only way we can stop looking at ourselves.

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[FN1]. The Author will be greatly indebted to any reader who can identify the source of the quote in question. His notes continue to quote the passage verbatim and its ascription to a book entitled "Earth Rights." The quote is presented here not for its accuracy but, rather, for its graphic presentation of a commonly-held view of a man and nature. See Timothy H. Profeta, *Managing Without a Balance: Environmental Regulation in Light of Ecological Advances*, 7 *Duke Envtl. L. & Pol'y F.* 71 (1996) (characterizing this viewpoint as follows: "[H]umans are seen as a part of nature. Under this approach, New Jersey's industry is no less a part of nature than the alpine ecosystems of the Rocky Mountains."). For a thoughtful rebuttal, see Walter Kuhlman, *Making the Law More Ecocentric: Responding to Leopold and Conservation Policy*, 7 *Duke Envtl. L. & Pol'y F.* 133 (1996) (rejecting a homocentric view of nature).

[FN2]. Bob Clancy, *On Motorheads and Responsible Dirt-Biking*, *High Country News*, Jan. 20, 1997, at 8.

[FN3]. See, e.g., Robert C. Bannister, *Social Darwinism: Science and Myth in Anglo-American Social Thought* (1988) (explaining the theory of Social Darwinism).

[FN4]. For three of these Johns, I am indebted to Robert Wiygul of the Earth Justice Legal Foundation, to whom the idea apparently came when we were fishing one evening in Barataria Bay, Louisiana.

[FN5]. See, e.g., Bill McKibben, *The End of Nature* 78, 175-76 (1989) (taking the position that the Earth treats humanity as a plague).

[FN6]. Peter H. King, *This Land is My Land (Not Yours)*, *L.A. Times*, June 4, 1997, at A3 (describing the influx of Californians to Montana, Idaho, Washington, and other western states).

[FN7]. Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 *Minn. L. Rev.* 869, 979 n.521 (1997).

[FN8]. Asta Bowen, *Too Much Stuff Creates Too Much Recycled Matter*, *Seattle Post-Intelligencer*, Apr. 12, 1997, at A11.

[FN9]. McKibben, *supra* note 5.

[FN10]. Dr. Seuss, *The Lorax*, in *Six by Seuss* (1991).

[FN11]. Richard Preston, *The Hot Zone* 287-88 (1994).

[FN12]. Daniel Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (1990).

[FN13]. *Id.* at 189, 193.

[FN14]. *Endangered Species, Permits*, 63 Fed. Reg. 8435 (1998) (to be codified at 50 C.F.R. pts. 217-227).

[FN15]. *National Wildlife Fed'n v. Coleman*, 400 F. Supp. 705 (S.D. Miss. 1975), rev'd, 529 F.2d 359 (5th Cir. 1976), cert. denied sub nom. *Boteler v. National Wildlife Fed'n*, 429 U.S. 979 (1976). My colleague, Robert Golten, now practices in Colorado.

[FN16]. *Id.* at 707.

[FN17]. *Id.* at 711-12.

[FN18]. *Id.*

[FN19]. Robert T. Lackey, *Ecosystem Management: Paradigms and Prattle, People and Prizes*, in *American Institute of Fishery Research Biologists, Proceedings of the Conference, "Forty Years of Controversy and Achievement in North American Fisheries,"* 8, 9 (1997) (emphasis added).

[FN20]. *National Forest System Land and Resource Management Planning*, 60 Fed. Reg. 18,886, 18,920 (1995) (to be codified at 36 C.F.R. pt. 215, 217, 219) (emphasis added).

[FN21]. See *Multiple Use-Sustained Yield Act of 1960*, 16 U.S.C. §§ 528-531 (1994) (outlining the purpose of multiple-use natural resources planning).

[FN22]. See Samuel T. Dana, *Forest And Range Policy* 72 (Sally K. Fairfax ed., 2d ed. 1980) (commenting on the basic premise of the Multiple Use-Sustained Yield Act of 1960).

[FN23]. See Michael C. Blumm, *Public Choice Theory and the Public Lands: Why Multiple Use Failed*, 18 *Harv. Envtl. L. Rev.* 405 (1994).

[FN24]. *A Poor Deal for the Tongass*, *N.Y. Times*, June 8, 1997, § 4, at 1.

[FN25]. *Sierra Club v. Hardin*, 325 F. Supp. 99, 122 (D. Alaska 1971).

[FN26]. *Hardin*, 325 F. Supp. at 122-24 (declining to create a cap on proposed logging without express language to this effect within the Multiple Use-Sustained Yield Act).

[FN27]. See *National Wildlife Fed'n v. United States Forest Serv.*, 592 F.Supp. 931, 938 (D. Or. 1984) (finding no violation of multiple use); *Dorothy Thomas Found. v. Hardin*, 317 F.Supp. 1072, 1076 (W.D.N.C. 1970) (no violation of multiple use). For general discussions of the failure of multiple use principles, see Michael C. Blumm, *Public Choice Theory and the Public Lands: Why Multiple Use Failed*, *Harv. Envtl. L. Rev.* 405 (1994) (criticizing multiple use as a management standard).

[FN28]. 16 U.S.C. §§ 1531-1544 (1994).

[FN29]. See *Westlands Water Dist. v. United States*, 850 F. Supp. 1388 (E.D. Cal. 1994) (declining to dismiss claim

by local water distributors against the federal government for reallocations of water in protecting delta smelt habitat); *Sierra Club v. Lujan*, 1993 WL 151353 (W.D. Tex. 1993) (finding Secretary of Interior and U.S. Fish and Wildlife Service have a duty to protect endangered species, such as the Texas blind salamander, and their ecosystems, pursuant to the Endangered Species Act).

[FN30]. *Krichbaum v. Kelley*, 844 F. Supp. 1107, 1115 (W.D. Va. 1994), *aff'd*, 61 F.3d 900 (4th Cir. 1995).

[FN31]. Adriel Bettelheim, *Republicans, Ranchers Push for Graze Plan: White House Assails Proposal*, *Denver Post*, Jan. 12, 1998, at E3.

[FN32]. William E. Riebsame, *People as Part of Ecosystems: The Case for Rangeland Reform*, *U. Colo. Resource L. Notes* 9, 11 (1996).

[FN33]. See 43 U.S.C. § 1784 (1994) (granting BLM authority to create such a council).

[FN34]. Rick Keister, *Multicultural Grazing Boards Off to a Good Start*, *High Country News*, Sept. 16, 1996, at 4.

[FN35]. See Reed F. Noss & Allen Y. Copperrider, *Saving Nature's Legacy* (1994).

[FN36]. *Sierra Club v. Marita*, 843 F. Supp. 1526, 1541 (E.D. Wis. 1994), *aff'd*, 46 F.3d 606 (7th Cir. 1995) (ruling that the Forest Service did not err in failing to consider principles of conservation biology in fulfilling requirement of biological diversity).

[FN37]. See *Seattle Audubon Soc'y v. Lyons*, 871 F. Supp. 1291 (W.D. Wash. 1994), *aff'd*, 80 F.3d 1401 (9th Cir. 1996) (holding that final supplemental environmental impact statement adequately confronted criticisms regarding effect of timber harvesting on the spotted owl).

[FN38]. *Id.* at 1303.

[FN39]. Houck, *supra* note 7, at 900 n.150.

[FN40]. *Id.* at 905-06 n.193.

[FN41]. See U.S. Forest Service, *Summary, Revised Supplement to the Draft Environmental Impact Statement: Tongass Land Management Plan Revisions 6-7* (1996) (outlining reductions in proposed timber harvests in the Tongass as a result of protests following the initial publication of the draft environmental impact statement).

[FN42]. See Lynn E. Dwyer et al., *Avoiding the Trainwreck: Observations From the Frontlines of National Community Conservation Planning in Southern California*, *Endangered Species Update*, Dec. 12, 1995, at 5, 6 (detailing habitat protection developments in Southern California for indicator species).

[FN43]. See Elizabeth Ann-Reike, *The Bayou Delta Accord: A Stride Toward Sustainability*, 67 *U. Colo. L. Rev.* 341 (1996).

[FN44]. U.S. Forest Service & Bureau of Land Management, *An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins 5* (1997); see *Interior Columbia Basin Ecosystem Management Project, Preliminary Goals for the Development of Alternatives* (describing CBEMP plans for tracts of land in the Pacific Northwest) (on file with author); see generally Richard W. Haymes et al., *A Framework for Ecosystem Management in the Interior Columbia Basin*, Nov. 12, 1995 (summarizing CBEMP long-term goals for Pacific Northwest lands) (unpublished, on file with author).

[FN45]. PACFISH is the common name for the plan. U.S. Forest Service & Bureau of Land Management, *Environmental Assessment for the Implementation of Interim Strategies for Managing Andromous Fish-Producing Wa-*

tersheds in Eastern Oregon and Washington, Idaho, and Portions of California 2 (1994); Murray D. Feldman, National Forest Management Under the Endangered Species Act, 9 Nat. Resources & Env't 32, 34-35 (1995).

[FN46]. See Feldman, *supra* note 45, at 35.

[FN47]. See Upper Columbia River Basin-EIS Project Update, Comments to Issues and More 6 (1995) (on file with author).

[FN48]. Eastside Draft Environmental Impact Statement, 62 Fed. Reg. 43,937 (1997) (to be codified at 50 C.F.R. pt. 222, 227).

[FN49]. Houck, *supra* note 7, at 935.

[FN50]. Federal Water Pollution Control Act of 1972, 33 U.S.C. § 1251(a)(1) (1994).

[FN51]. *Id.* § 1342.

[FN52]. Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6924 (1994).

[FN53]. See, e.g., Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, 54 Fed. Reg. 51,319 (1989) (to be codified at 40 C.F.R. § 230.10) (articulating policy and procedures to be used in determining type and level of mitigation necessary to demonstrate compliance with Clean Water Act guidelines).

[FN54]. 437 U.S. 153 (1978) (prohibiting completion of dam that threatened eradication of endangered snail darter population, even though dam was almost completed).

[FN55]. Oliver A. Houck, *The Secret Opinions of the United States Supreme Court on Leading Cases in Environmental Law, Never Before Published!*, 65 U. Colo. L. Rev. 459, 492 (1994) (citing transcript of *TVA v. Hill* oral argument).

[FN56]. Robert V. Percival et al., *Environmental Regulation Law, Science, and Policy* 936 (2d ed. 1996).

[FN57]. National Water Commission, *Water Policies for the Future* 70 (1973).

[FN58]. *Id.* at 200, 359-63.

[FN59]. See U.S. Environmental Protection Agency, *Water Quality Improvement Study* (Sept. 1989) (ambient monitoring and discharge modeling show significant reductions in pollutants following the installation of technology standards).

[FN60]. Fishery Conservation and Management Act of 1976, 16 U.S.C. §§ 1801-1882 (1994).

[FN61]. *Id.* § 1802(21).

[FN62]. See Roger J. McManus, *America's Saltwater Fisheries: So Few Fish, So Many Fishermen*, 9 Nat. Resources & Env't 13, 13-14 (1995) (explaining the central role of eight Regional Fishery Management Councils).