# Man: endangered species

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On a cloudless October day, I drove along Skyline Drive north of Tucson and looked out to the south, one of my favorite views. For the first time in my 30 years of residence in my favorite city, the Santa Rita Mountains were nowhere to be seen. Similar experiences in other parts of Arizona and the United States dramatically remind me that instead of winning the fight for clean air and clean water and a decent environment on this planet, we are in fact losing all of these fights. Conditions are far worse today than they were in 1962, and the way we're going, they'll be even worse a year from now.

Before I get into some of the specifics which concern me, let me give you some of the cold, tough realities as I see them.

Unless drastic action is pressed, I believe that there is a grave danger that mankind may make this planet uninhabitable.

This seemingly incredible possibility can be averted if we pursue strong preventive actions, but there are no cheap, easy, or painless answers. The villains are not just a few greedy industrialists, we are all at fault.

The problems we face go to the root of some of our most cherished assumptions. The necessary actions will require us to alter some of our basic and fundamental attitudes about "progress," growth, "prosperity," taxes, living standards, and customs. Tough choices will have to be made. In this new battle for the earth there is a role and a place for everyone: educators, students, retired persons, engineers and scientists, politicians, housewives, businessmen, and all the rest.

## Stewardship -- an Old Idea

We hear a lot of talk about our American heritage and what we'll leave our children and grandchildren. The ancient Athenians had an oath that read in part: "We will transmit this city not only not less, but greater and more beautiful than it was transmitted to us."

This is similar to the old Biblical philosophy of "stewardship." What a wise doctrine it is! My father and his father knew what it meant. As a boy in rural northern Arizona, I often went camping with my family. Before we could leave a campsite, we had to improve the fireplace, build a path to the stream, or bury someone else's garbage. The idea was the same as the concept of the Athenians: leave the place a little better than you found it.

I thought about this as I flew my airplane into Phoenix, descending through layers of foul-looking haze and smog. That's not the way I remember Phoenix as a boy. It's not even the way I remember it 10 years ago. And I thought about some of the places in Arizona which have changed for the worse just in my personal experience.

## A Generation of Decay

One of my favorite places in this state has always been the White Mountains area, with its crystal-clear fishing streams and its magnificent, uncluttered wilderness area. This beautiful, isolated region, however, has

increasingly experienced the blight of decay and pollution brought on by the era of the vacation home, resort development, and the easy trip from Phoenix or Tucson.

We're all the poorer for it, not only because we've lost some of the beauty of that country, but because we've also lost the knowledge that it was there to be seen and experienced. You might say it was part of our psychological environment.

In 1940, when I was a college student in Tucson, Sabino Canyon was another favorite spot of mine -- a great place to go for a cool swim on a hot day. Today, despite the best efforts of the Forest Service, I'm not too sure I'd feel safe walking among the broken bottles and beer cans or swimming in the possibly polluted water of the Canyon.

When I think about these things I get good and angry. And I can understand why young people might ask with some vehemence whether we're really proud of the garbage, foul air, dirty water, hopelessly contaminated food, unsafe beaches, and empty fishing streams which make up so much of their "heritage." I think members of my father's generation could honestly say that they left you and me an Arizona that was as good, or a little better, than they had received it. But members of my generation will have to act, and act fast, if we hope to make that kind of report.

Yet Arizona is more fortunate than most other states. Our air is still much cleaner than that of Indiana, Florida, or California, and we have almost no rivers to pollute.

Consider the dilemma of the states bordering Lake Erie. A vital part of their natural environment, this lake it not just another lake. It is one of the Great Lakes. And look at it today. Some say it's dead; others that it's merely dying. So much industrial and municipal waste has been dumped into it that the lake can barely support life or cleanse itself through the oxidation of organic matter. It's going through a process with the ugly name of eutrophication -- something no one ever heard of when I was a boy.

Or look at the Cuyahoga River near Cleveland. It may have been less than pure when I was young, but look at it now. It's a fire hazard! The river is so polluted with industrial wastes that it actually caught fire, causing $50,000 damage to two railroad bridges.

And then there's the Potomac River, which flows by the city where I work. They tell me there used to be a very popular swimming beach at the Tidal Basin, where the Jefferson Memorial sits today. When the beach was closed to the public to start construction in the 1930s, people staged a protest at the site. Today, if you merely fell in the water, you'd need tetanus shots and face the prospect of hepatitis.

## The Beat Goes On

As our society continues to grow and prosper, the beat of "progress" takes its toll. Here are some more examples.

* In New York City today, I am told, just breathing the air is equivalent in harm to smoking a pack of cigarettes a day.

* Americans annually spew out into the atmosphere every year more than 130 million tons of "aerial garbage" -- more than our annual production of steel.

* Our society produces about five pounds per day of solid wastes -- garbage, trash, junked autos, etc. -- for every man, woman, and child. Where to put this waste is becoming a horrendous problem. One sad result: San Francisco Bay, used as a dump, has been filled in to half of its size.

* The Florida Everglades, a unique area on the North American continent, is faced with the threat of destruction because of real estate developments which have dried up the swamplands and disrupted the ecology.

* Even the oceans are threatened by man's intrusions, including the dumping at sea of radioisotopes and other substances.

* Every major river system in the United States is polluted. All are getting worse.

* Thermal pollution -- the discharge of cooling water from power plants, for example -- poses a threat to many species of fish. If a nuclear plant proposed for the Gulf of California is built, it may mean the extinction of the fishing industry of Sonora.

* Sound pollution, a concomitant of the demand for faster transportation, is a threat not only to many species of animals but to the quality of life for man as well.

## Sequel to 'On the Beach'?

I don't want to overemphasize the minuses of our civilization. Technology and science have given us a life far better than anything previously known. And despite all the pollution, somehow there ***is*** much beauty in our world and pleasure in our lives. What I want to consider, however, is whether the forces we have unleashed might be gaining momentum to eventually endanger the very conditions which make life possible on earth.

While man with his magnificent brain is more than an animal, he is still part of the animal kingdom, and his very survival depends on fragile life chains and delicate relationships which are not thoroughly understood. It is my increasing fear that technology (the product of that super computer we call man's brain) may destroy the chain of life. Let me give you some reasons for that fear.

Some years ago, you may have seen the movie "On The Beach." In that frightening portrayal we saw the people of Australia and the crew of an American submarine awaiting the first signs of airborne nuclear fallout from a brief war which had destroyed all life in the northern hemisphere. At first there was some hope that Australia would be spared. But as the story unfolded, and the submarine made an undersea journey to inspect the west coast of the United States, it became evident that the forces set loose in that senseless war would ultimately destroy all life on the planet.

"On the Beach" was only a story. Some people even doubt that any nuclear war could totally eliminate life on earth. But the story had a powerful message which was close enough to reality to give us all pause. The thing that made it so frightening was our awareness that one thin, fragile atmosphere envelops the entire world. If it goes, we all go with it!

What if I told you that something like that nuclear fallout -- and potentially just as serious a threat -- is occurring throughout the world today? It's true. Strontium 90, iodine 131, and other radioactive isotopes are still floating around, even though most nuclear testing in the atmosphere was terminated several years ago. Carbon dioxide, which normally exists in the atmosphere, is building up to levels which may impede the release of heat into space, drastically altering our climate and upsetting our ecology. Hundreds of millions of tons of deadly gases and particles of all kinds are being released into the air and carried by the winds throughout much of the world, year after year. Some will remain intact and accumulate in the food chains of animal and man until they conceivably could provide a real-life sequel to "On the Beach."

## Penguins With DDT

Let me prove my point by taking a look at Antarctica, a continent as remote from man's intrusions and pollutions as any place in the world. It has no farms, no factory smokestacks, and no automobiles. Scientists have been doing a tremendous amount of research there in recent years. And what have they discovered? Penguins walking around with DDT in their bodies! Seals, fish, and birds which never venture beyond Antarctica are contaminated with DDT and dieldrin and other pesticides that have never been used within thousands of miles of that continent.

The same is true of the Shetland Islands, 100 miles north of Scotland -- a place where pesticides are never used. Tests have shown that the average concentration of pesticides in the rainfall there is equal to that found in the San Joaquin River in California, which drains fields sprayed with pesticides.

Now these are things to worry about. We don't know precisely what DDT will do to the human organism. We do know it settles in fatty tissues, and we're all carrying some of it. Beyond that, we know that in laboratory animals it attacks the central nervous system, upsets body chemistry, distorts cells, accelerates gene mutation, reduces drug effectiveness, affects calcium absorption by the bones, and causes cancer.

We also know that it is terribly durable and persistent. No matter how little DDT you may be carrying around today, you undoubtedly will be carrying more tomorrow, more the next day, and so on. Its dangers are compounded because of what the scientists call the "concentration phenomenon" in the delicate food chains of life. Minnows eat plankton or mosquitoes; bass eat minnows; birds eat bass; wolves eat birds, etc. If you're the species at the end of the chain you're in bad trouble.

In California, scientists found that a harmless scattering of DDT (0.02 parts per million) in a lake was concentrated 250 times by plankton and another 80 times by the fish which ate the plankton. When they studied the birds poisoned by eating the fish, they found tissues containing 1600 parts per million of DDT.

A number of species of birds are now threatened with extinction because of the effects of this concentration process. Arizona banned DDT because seemingly "harmless" levels sprayed on cotton fields reach alfalfa pastures, only to be eaten by cows who concentrate the poison in their milk. If used by expectant mothers, it is concentrated still further, and a stillborn or malformed baby may be the end result.

The problem isn't just with pesticides, as frightening as they may be. It isn't just with the air we breathe, as contaminated as it is. It's with the water we drink, the food we eat, and the complicated set of forces which make life possible for us and for the rest of nature.

Perhaps I am exaggerating all these dangers. I'm not saying that all life will end. I am saying that for the first time mankind has the capacity to alter these fragile interworkings of nature. I'm saying that some of our best scientists are worried because they don't know what precisely is going on.

But nature has always been surprisingly resilient and adjustable. Suppose we don't end it all. Are we doomed to a steadily declining quality of life? What are our prospects? As I read the script for the 70s, I frankly see a steady degeneration in the availability and quality of good air, water, recreational opportunities, access to nature, and all the rest. If we continue on our present course, we may all be alive in 1980, but if life is not more dangerous, it surely will be much more crowded, tasteless, and dreary.

## Needed: Tough Decisions

My hard counsel is that tough decisions need to be made soon if we are to save our environment. Toes will have to be stepped on; and old, cherished beliefs will have to be re-examined.

Ed Crafts, who used to be director of the Bureau of Outdoor Recreation in the Interior Department, put it this way.

*"The long-term issue is environmental management. But the price runs against our grain. It includes a social ethic for the environment, control of the world's population, willingness to forswear profits, sacrifice certain creature comforts, revise social priorities, and raise sufficient public opinion against principal industrial offenders to compel change."*

It's a big order. I hope we can fill it.

Most of the crucial battles I see ahead will be of the legislative and political kind. They will involve both dramatic debates on national priorities and some drab but important battles on sewage and parks. Let me record some of our setbacks and some other discouraging prospects.

There is no secret cause of water pollution. It's sewage, an ever-increasing flow of noxious liquid that descends downward by force of gravity to our rivers and lakes and oceans. It can't be eliminated as long as there are cities, factories, and people. The only ways to meet the problem are to pass laws prohibiting certain forms of pollution, such as the reckless discharge of industrial wastes, and to build sewage treatment plants to remove the accumulation of other impurities. Unfortunately, sewage plants cost money, and industrial polluters often wield enormous influence. Most taxpayers and most industrial polluters, however much they're against sin and pollution, are unwilling to make the sacrifices necessary, in terms of cold, hard cash, to do the job. So the problem remains unsolved.

Take a look at a recent example of performance versus promise. In the 1966 Clean Water Act, we determined that ***just to hold our own*** on water pollution, one billion Federal dollars would be needed in the 1969-70 fiscal year. Mind you, we weren't trying to make our rivers cleaner, just prevent them from getting worse. But the Nixon budget, like the Johnson budget, requested only 214 million dollars -- just over a fifth of the need. Like everyone else, the Budget Bureau hates dirty water, but there's a war on, and inflation, and the race to the moon. Dirty water can wait.

After we mounted a big bipartisan campaign for the full billion-dollar funding, Secretary of the Interior Walter Hickel sent us a letter saying the Administration wouldn't spend the money even if we appropriated it. The final result: a compromise figure of 650 million dollars. Everyone feels better, I guess, but more rivers will be unfit to swim or fish in.

Let me give you an even more frustrating example of non-performance. Many great new national parks exist mainly on paper. Congress has authorized them (i.e., promised to buy the land) but the parks don't exist until we put up the cash. In 1968 the House Interior Committee, on which I served, found itself with a backlog of 462 million dollars in parks that we'd authorized but hadn't paid for, and a Johnson budget of only 45 million dollars for acquisition. So my committee did a clever and responsible thing (seeing the squeeze in the regular budget). We looked around and found that hundreds of millions of dollars are flowing into the general fund from royalties on the outer continental shelf oil lands near Louisiana. We drafted a new law which earmarked some of this oil money to bring the Land and Water Conservation Fund up to $200 million a year for five years -- a billion dollars for local, state, and federal parks!

So what happened to this noble effort? A 1969 budget crisis and inflation demanded federal spending cuts. Vietnam, the military, and space got little or no cuts, but parks had to wait.

There's something elemental about the sands where land and water meet. The right of an ordinary citizen to get to a beach when he wants to would seem to be rather basic. But this is rapidly becoming a farce. Of the 8000 or so miles of shoreline on the frontiers of this nation, only 5 percent is available for public use. The other 95 percent is in private or industrial hands with fences and "Keep Out" signs blocking people from getting to the water.

## Where Are the Villains?

In all these fights it's nice if there are some handy villains on the other side. Conservationists often nominate for that honor the industrialists and business firms who contribute a large share of the pollutants. But it's just not that simple. I've met with heads of the large copper companies, who want to do the right thing in nearly every case. Many of them are willing to take personal risks, to lead their companies in the right direction. But they have stockholders and directors, and they work in a system where the ultimate control lies in the laws of the market place. Many enlightened businessmen would welcome laws which would require them, and their competitors, to meet strict pollution standards.

In the past, before passage of the Air Quality Act, tough state action would have been impossible. The usual industry response has been: "If you get tough with us, we'll go someplace where we're appreciated." With the prospect of an economy shattered, a tax base eroded, and jobs lost, it's easy to see why local anti-pollution forces have done so poorly through the years.

Ironically, the people concerned about pollution have often found themselves bucking the combined forces of city hall, the chamber of commerce, and some local labor unions. In circumstances like this, you suddenly find this great consensus for clean water isn't quite as strong as you thought.

Here we get to the essence of the problem. Our economic system prides itself on efficiency, productivity, and turning out the most for the least. Introduce new cost factors unrelated to efficiency or productivity and you run the risk of pricing your products above the competition, out of the market. In world trade the United States may lose out to cheaper producers, etc.

If the steel industry has the liberty to dump its ugly wastes into Lake Michigan or Lake Erie, American companies can produce finished steel for perhaps $145 a ton. But if they had to go to the expense of removing sulphur dioxide from their smoke and processing their liquid wastes before discharge, the price might be $160 a ton. These figures may not impress you, but they might mean something if they result in an additional $30 for your next car.

It's very clear to me that the conservation crusade has lost the battle of national priorities, despite all the great laws and all the congratulations the conservationists have given each other. The cause for parks and clean air and water is not coming up No. 1 or No. 2 or even No. 3. In nearly every recent case, conservation comes up more like No. 17 or No. 99.

## The Great Contradiction

On television, I saw an automobile commercial, which gave a glimpse of some really beautiful scenery. It depicted for us a kind of romantic adventure available to car owners in the world of nature. As I watched this slick message from Madison Avenue I wondered if I wasn't looking at the great contradiction of our industrial society -- the drive for the good life which, as a byproduct, most certainly will make the good life impossible. The production and use of that very automobile will result in further pollution of just such dreamlike settings as we saw on the screen.

The time is surely coming when the American public can not have its cake and eat it too. There can't be more cars and less pollution, more available jet flights and fewer airport noises, regular garbage collection but no garbage dumps or incinerators, more children and less crowded beaches.

The great values and material advantages of our civilization produce byproducts which must be disposed of. Walter Heller, who advised Presidents Johnson and Kennedy, advocates that we discount any so-called "growth" by first deducting the damage it causes:

*"If as byproducts of our quest for growth, we destroy the purity of our air and water, generate ugliness and social disorder, displace workers and their skills, gobble up our natural resources, and chew up the amenities in and around our cities, the repair of that damage should have first call on the proceeds of growth."*

"Growth" and "progress" are among the key words in our national vocabulary. But modern man now carries strontium 90 in his bones, iodine 131 in his thyroid, DDT in his fat, asbestos in his lungs. A little more of this "progress" and "growth," and this man will be dead. Maybe we'd be better off if we slowed down a little and repaired the damages.

Suppose we were to decide to keep our living standard the same next year as it was this year. We wouldn't deprive ourselves of any of our present blessings, but we wouldn't spend any more next year than we did this year. Instead, we would pour all of the billions of dollars of new production into repairing and saving our environment. What wonders we could accomplish!

Unfortunately, however, the taxpayers of this country wouldn't stand for it. We have been so conditioned in this century to having living standards go ever upwards that we can't think of anything else. Every one of us has a long list of unsatisfied wants awaiting fulfillment. Most of us are unwilling to abandon those dreams for some nebulous, distant contribution to what is described as our environment. We're too "practical" for that.

## It's Our World -- Let's Save It

I admit I've painted a pretty grim and discouraging picture, But I want to leave a different message. Each of us has a vital stake in what happens to this spaceship we're riding on. ***We can*** save the environment of this earth. There is a role for every one of us, but time is short and we'd better get busy. What we need is a peaceful revolution. Let me make some specific suggestions how you -- each of you -- can help.

* Begin to learn the facts about pollution. Study your state and local laws. Support local and state authorities when they take positive action. Make your state a leader in conservation.

* Find out the stands of your representatives at city hall, in Springfield, and Washington, on pollution and environment questions. Be persistent and let them know how you feel. Let your Congressmen and Senators know that you'll support full appropriations for parks, and clean water and air. Be ready to pay increased taxes, if necessary, to keep a livable world.

* If you're a college student, see what you can do to get your profession or occupational group into the fight. I'm heartened by young doctors, architects, and lawyers (and some old ones too) who'll give their time and expertise in the conservation cause.

* You educators can see that this vital message gets to the young and the very young.

* Businessmen can be enlightened and imaginative. Companies can take the lead in research and management for a clean environment. Advertising and marketing people can build demand for products which last and do not harm. Farmers can demand and use safer insecticides and brag about it.

* Scientists can find some pollution answers in every area of technology. We have a desperate need for skilled technicians.

More important than any of this is a job that each of us can do: re-evaluate our own fundamental attitudes and tastes. The price of a decent environment may be cars with 60 horsepower instead of 360; fewer gadgets; higher taxes, but more fishing streams; fewer crosscountry SST's, but nicer beaches and forests. In our private lives, we can each pledge to stop being litter bugs, contributing as little garbage and junk as absolutely necessary.

Let's get on with this job! As Lewis Mumford wrote: "Any square mile of inhabited earth has more significance for man's future than all the planets in our solar system."

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