Extinctions of Earth Life Are Accelerating Rapidly

Our blue planet seen from space, courtesy NASA.

Earthfiles, news category.

July 20, 2002 Corvallis, Oregon A study by the World Wildlife Fund (WWF) was released this month which says that at the current rate of extinctions in 350 mammals, birds, reptiles and fish studied by scientists, in the middle of the 21st century, the oceans will be empty of marine life, forests will be gone and 25% of the world's mammal species could be extinct. Human over-population will have polluted water everywhere.

Supporting this dire picture of the future are the following World Wildlife Fund statistics that contrast the state of the environment in 1970 with today:

More than a third of the natural world has been destroyed by expanding human civilization since 1970.
Over-fishing of the oceans has produced the collapse of the North Atlantic cod. In 1970, there were an estimated 264,000 tons of the fish. Today, that number has dropped by 80%, down to only 60,000 tons. That number is expected to keep going down.

The forest cover of our planet has shrunk by 12 percent.

Fresh water ecosystems have been reduced by 55 percent.

The world's tiger population is down 95%.

Indian Tiger and all photographs © WWF-Canon/MartinHarvey.

There are only about 3,000 black rhinos left.

In England, several species of songbirds have declined by 90% or more.

The WWF report places great blame on the United States of America where average U. S. residents consume and throw away more energy and materials than any other people on earth. The British are second on the list of consumers. A WWF spokesperson said, "If all the people of the world consumed natural resources at the same rate as the average U. S. and British citizen, we would require at least two extra planets like earth by the year 2050."

This week I talked about the very sobering World Wildlife Fund report with a prominent scientist and American citizen who has been warning about misuse of earth resources, destruction of natural habitats and rapidly increasing extinctions of earth life for many years. She is Dr. Jane Lubchenco, Distinguished Professor of Zoology and Marine Biology at Oregon State University in Corvallis. Dr. Lubchenco received her Ph.D. from Harvard University in 1975. She was President of the American Association for the Advancement of Science from 1996-1997. She is currently the incoming-president of the International Council for Science invited by the United Nations to coordinate the scientific information that will be discussed next month in Johannesburg, South Africa at the August 2002 World Summit on Sustainable Development.

I asked Dr. Lubchenco, in the context of her long efforts to raise political and civilian consciousness about the precariousness of earth life in the face of the industrial world's aggressive spread, what her greatest concern is now in 2002.

Interview:

Jane Lubchenco, Ph.D., Distinguished Professor of Zoology and Wayne

and Gladys Valley Professor of Marine Biology, Oregon State University, Department of Zoology, Corvallis, Oregon: "My biggest concerns are that we are in fact losing species and habitats at increasing rates, but that we don't really appreciate the magnitude of what is happening. I'm a marine ecologist and I work with ocean critters and much of what we are seeing in oceans are very dramatic declines and very few people are aware of the magnitude of the loss in oceans. Currently, less than a quarter of 1% of the surface area of oceans is set aside in any kind of protected status.

Since we live in a world where people fight over the right to fish in various waters, how are we going to get international agreements that are respected to slow down the over-fishing?

That is going to be a major, major battle. There is no doubt about it. As people have selectively removed a lot of the top predators in ocean ecosystems. Those would be the sharks, the blue fin tuna, the salmon, the very high carnivorous species that are at the top of the food web. In the process of removing those, we scientists think there have been some very significant changes to ocean food webs in a way that has collapsed and many of the collapsing fisheries we are seeing around the world are likely to be a result of some of those changes.

In fact, sharks and the beluga sturgeon are facing extinction in the next ten years, I believe.

They have been massively over-fished.

If they go and when we say extinction, we mean the end of that species.

Extinction is forever.

If the sharks are facing extinctions, if we see a lot of large marine creatures literally disappear off the face of the earth in the next ten years, what is the worst case that could happen in the oceans?

You don't have to lose very last individual of a species to see the system begin to collapse and we are already seeing it beginning to collapse. We are already seeing collapsed ocean ecosystems because we have removed so many of the top predators.

There is also recent information that a whole host of new diseases in corals and other marine critters are appearing where we had no record of them prior to very recent times. In many coral reef habitats and this is in tropics on hard bottom areas throughout the world, in many of those places there are very serious other threats such as significant over-fishing, pollution from the land both raw sewage as well as fertilizer runoff from adjacent areas destruction of mangroves which trap sediments and keep sediments from flowing onto coral reefs. The destruction of mangroves is a very serious contributor to loss of coral reefs. So, coral reefs are particularly threatened because there are so many different factors, all of which are hitting them at the same time. We are seeing some very serious loss of biological diversity and collapse of coral reef ecosystems around

the world and it is very, very serious.

What happens to the species in the oceans that are dependent upon coral reefs? If the coral goes, does that mean we are going to accelerate the already-pressured extinction rates on marine animals?

Absolutely. Many of the species that live in and around coral reefs, live only there. So if the reef is destroyed, if the corals are eliminated, then in fact that wipes out the homes and habitats of a whole host of other species. This is another example of the interconnectedness of species and how you can have a loss of a few key ones that trigger serious losses throughout the whole system.

Is it true that the polar bear might be facing extinction in this decade because it is losing so much of the ice territory it has depended upon as ice melts so rapidly in global warming?

Yes. It is my understanding that polar bears are very seriously threatened right now because of the losses of the ice that they depend on to forage for their foods. The reports I have seen is that they are very seriously emaciated and in very serious trouble.

It is hard to imagine this planet without the polar bear.

Yes.

It becomes a metaphor for everything we are talking about.

I think it does, indeed. That's absolutely right.

When you gather with your scientist colleagues, each of you has a different facet of what is happening on the planet. I would assume the mood now is one that is quite depressed?

Many, many scientific meetings especially involving scientists who are dealing with environmental issues are very depressing because most of the news is not very good news. People who have studied systems for a long period of time are seeing very dramatic changes. They report those and share those and so there is very serious concern about the future and a tremendous amount of frustration and an increased willingness to step outside the ivory tower of academia and to share more widely with citizens and policy makers what is happening because it is so serious and the changes are so dramatic and are happening so rapidly. There is a strong desire on the part of many scientists to help others understand what they are seeing and to be as concerned as they are.

Is it fair to say that most scientists question whether the earth has a sustainable future?

I'm not sure that all scientists would say that. Scientists that are field scientists who have seen very dramatic changes, scientists who work on various aspects of environmental issues are by and large very seriously concerned about the unsustainable trajectory that we are currently on. The National Academy of Sciences in the United States has been championing a whole new focus for science called Sustainability Science. The report the Academy issued, which is entitled "Our Common Journey" says in no uncertain terms that the earth is on an unsustainable trajectory because of the broad sweep of human activities that are massively modifying the whole life support system of the planet. That includes loss of species as well as global warming, not to mention a whole host of other things, and it points to the fact that not only are we on an unsustainable trajectory now, but given the fact that there are an increased number of people on the planet.

We started this century with 6 billion and by the end of this century, it's likely to be on the order of 9 to 10 billion people. We currently are not providing adequate food and clean drinking water, even basic necessities, for a good fraction of the human population. The ways in which we are doing, providing food and drinking water, are resulting in species extinction, in resulting in

increased global warming the way we are creating our energy so the challenges of not only providing the basic necessities to all people down the road, but at the same time protecting and restoring the ecosystems of the planet that provide our life support systems, is an immense challenge. The reality is that we don't really know how to do it. We know that what we are doing is not working. We know that we need to use more, to switch away from fossil fuels, for example. We know that we need to significantly reduce the waste we are generating. We need to use resources much more efficiently, but there are some huge scientific challenges to figure out how to make that transition to sustainability.

Because time is very short! We don't have the luxury of being able to study this thing to death. We really need to begin to implement some major changes in the way we go about our daily business in a way that is going to allow us to have a future that has any kind of quality of life.

If even the National Academy of Sciences is saying that the future is not sustainable in the current path that we are on, why wouldn't addressing the environmental problems jump up to number one in this administration?

I can't answer that. It's a very good question.

Is it perhaps already too late to change this boat and turn it around?

I don't think we have a choice but to try. It's not clear when it will be too late. It's clear that we have already lost a lot of options. And one of the biggest arguments for moving quickly instead of delaying things is that we are likely to have more options the faster we are moving.

In oceans, we have seen that when you create a marine reserve, even in an area that was seriously degraded, it can come back. So in many situations, there is probably a good reason to believe that we can do a fair amount of recovery and that it is worth doing. And sooner is undoubtedly better.

If people are worried about jobs and health care and retirement now, those could only become worse if the world in the next twenty to thirty years begins to fight over water, land and food.

That's exactly right."

Websites:

http://www.panda.org (World Wildlife Fund)

http://www.environmentaldefense.org/home.cfm (Environmental Defense Fund)

http://www.cmc-ocean.org/ (The Ocean Conservancy)

http://nature.org/ The Nature Conservancy

http://www.pewoceans.org/ (Pew Ocean Commission)

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