When We Talk About Animals

A Yale University podcast devoted to exploring the big questions animals raise about what it means to be human.

Ep. 34 – Dr. Daniel Pauly on why overfishing is a Ponzi scheme
“The science is very clear about fisheries,” Daniel Pauly, the world’s leading fisheries scientist and Principal Investigator of the University of British Columbia’s Sea Around Us initiative, says. “You have to get rid of subsidies, you have to manage them, you have to prevent the fisheries essentially from committing suicide. A fishery left on its own will build capacity, will build bigger engines on bigger boats, more people will get in, and it will destroy the resource. That’s what it does if there is no management. It’s like your kids – if you leave them alone with a pan of chocolate, they will eat until they get sick. You have to tell them don’t eat the chocolate, or give them one chocolate at a time. This is the paradox, that the NGO industry is seen by the fishing industry and fisher communities as the enemy. We are the people that prevent them from committing suicide.” Photo by Allison Barrat, courtesy of Sea Around Us.

Born in Paris to an African-American GI and a French woman at the end of World War II, Dr. Daniel Pauly rose from a difficult and extraordinarily unusual childhood in Europe to become one of the most daring, productive, and influential fisheries scientists in the history of the field — and the first to illuminate the global extent and significance of overfishing. He did this by, as he quoted from Matt Damon’s character in The Martian, “sciencing the shit out of it.”
Dr. Pauly as a boy. “I’ve read a bit about children that had difficult youths,” Dr. Pauly says. “It turns out that most of us end up badly, but there is a small percentage that is resilient. And I have been one of them.”
Photo courtesy of Daniel Pauly and Sea Around Us.

A professor and principal investigator of the Sea Around Us Project at the University of British Columbia, Dr. Pauly has devoted his career to studying and documenting the impact of fisheries on marine ecosystems and advocating for cutting-edge policies to address it. The software, scientific tools, and methods he and his research team developed have transformed understanding of how humans are impacting oceans. His research makes very clear that fish are in global peril — and so, in turn, are we.

If our species manages to reverse course and avoid the “watery horror show,” as he calls it, for which we're on track, it will be thanks in large part to his and his colleagues’ vision,
courage, and decades of tireless work. In this episode, we speak with Dr. Pauly about the "toxic triad" that characterizes modern fisheries (catches are underreported, science is ignored, and the environment is blamed when fish populations collapse as a result), how "shifting baseline syndrome" — a term he coined — results in slow and inadequate responses to overfishing and climate change, why fish are shrinking and struggling to breathe as oceans warm, and why we need to end high seas fishing and government subsidies of international fishing fleets.

In 1995, Dr. Pauly — photographed here on a boat in the Philippines — coined the term “shifting baseline syndrome” to describe how each new generation accepts the state of the natural world in which they were raised as “normal.” Lack of historical data and awareness warps perception about the severity of ecosystem transformation actually taking place. “It is happening so fast that young people now are not used to the winters that old folks like me recall,” Dr. Pauly says of climate change. “They don’t recall snow all over the place. They don’t recall cold in the winter, because often it’s not cold anymore. And if you add two generations, the stories they will read about how things were will not be credible anymore, and they will not be motivated to make any sacrifice to get back to the past. And so we can have a situation where we have every generation accommodating itself to a change that overall can be devastating.” Photo courtesy of Daniel Pauly and Sea Around Us.
“We must now, more and more, have the scientists speaking up,” Dr. Pauly says. “Because if they don’t, they leave the field to the politicians and to the pundits and to people who don’t know, and who make an agenda that is science-free. Science is actually not only what you can do, but also what you cannot do. It is okay to know what kind of things you shouldn’t be doing.” Photo courtesy of Daniel Pauly and Sea Around Us.
Dr. Pauly’s current scientific writing focuses on “Gill-Oxygen Limitation Theory,” a set of principles he pioneered that explains why fish are forced poleward and are expected to shrink in size as climate change causes ocean oxygen levels to fall. As fish grow larger into adulthood, their bodies need more oxygen. However, the surface area of the gills — which extract oxygen from the water — do not grow at the same pace as the rest of body. The gills are two-dimensional, while the body is three-dimensional. Photo by Valentina Ruiz Leotaud, courtesy of Sea Around Us.

Recommendations:

*The Martian* directed by Ridley Scott

*An Ocean Mystery: The Missing Catch* directed by Alison Barrat

*Alien Oceans* by Kevin Hand

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