



THE WIT AND WISDOM OF DANIEL PAULY AND DIRK ZELLER, TRANSCRIPT OF A PRESS BRIEFING AT THE SCIENCE MEDIA CENTRE, LONDON, ON JAN 12 2017. BOTH AUTHORS WERE SPEAKING, MOSTLY DANIEL, BUT IT IS EASIER TO READ IF WE COMBINE WHAT THEY SAID.

January 18, 2017 by Daniel Pauly

On World Fisheries

Fisheries by tradition are in one place for one species serving the community like a bank. But in the meantime banks interact and when one goes down all the others go down. Like the weather, when we have low and high pressure the whole hemisphere is involved. We now know that because we have a global model to explain it. And fisheries are like that. We can see fisheries as a global system. If for example the price of tuna goes up the fleet will move, and so on. So basically catches were increasing because the rate of acquisition of new waters was bigger than the rate of destruction of stocks and then at some point these two grids crossed and now we have to do something about this.

We can be specific about Britain and the EU. The EU including Britain, the US and Japan import between 70 and 80 per cent of the sea food they consume. It is totally irresponsible for the government of Britain to say the British must eat twice as much fish. Where is it supposed to come from? Because it is imported. The EU has passed laws in the Parliament that will re-build the stocks to maximum sustainable yield by 2022 but the Council of Ministers still has the power to impose quota that is too high so that won't be achieved.

And in connection with this, the US is one of the few nations which has appropriate laws for this. The Minister of Commerce, in this case, cannot set the quota. The

minister is supposed to enforce the law that means re-building of the stocks. In the US they have re-built their stocks.

Britain and Brexit

Now that Britain is leaving the EU, this is an opportunity because you can now re-build your stocks without the French who oppose re-building and without the other countries that oppose re-building. Great Britain within the EU has been a positive force: “friends of fish” as opposed to “friends of fishers.” Britain was frequently in a minority at the Council of Ministers. Now with Brexit, you will be able to re-build your stocks. You could re-build them to the state of 1950 after World War II or after World War I or 1850.

You would have an immense bounty. Each of these things is an option because the stocks do recover – if you let them.

Every opportunity is also an opportunity to be stupid. The opportunity you have now is to do better than the EU has done or you can make it worse.

Fishermen

If you let your fishers have free reign...the fishers themselves will always want a short-term gain. The fisheries scientists and ministers have always had to prevent the fisheries from committing seppuku. They are always out to kill themselves...to fish everything. And we always have to prevent them doing that by reducing fishing effort and quotas and so on. So the mixed fishery only survives because they cannot do the madness they want.

A good example of that is the electrification of trawl nets. Trawling is very destructive gear, pulling everything in and destroying habitat and so on. So the habitat around Britain has been modified in the last hundred years – it has been flattened reducing the productivity of the system. Awful.

But you can make things worse. You can add insult to injury by electrifying this thing. So the animals that would slip under the net get a spasm of electricity. They

jump up and they are caught. So you can add to the things that you catch: the last worm, the last little shrimp in the sea. That is literally scraping the bottom of the sea.

Britain and Recovery

I would say to a British fisheries minister that you should plan a law like that in the US which mandates you to re-build your stocks within a fixed time period of ten years. And you have to have quota for each species which allows the stock to re-build. And if you had that law passed then the minister should ensure that that is done. At present you have ministers who interfere all the time in fisheries and set the quotas.

It's the equivalent of the justice minister interfering in trials. But the justice minister should not interfere in trials, he should make the law and once the law is made, make sure that it is applied. At present, ministers have no fisheries law that they must respect. There should be a law that they must respect, instead of messing up all the time in response to political constituents complaining and whining that they cannot pay for their boats that they have bought.

Small boats

They should be part of the system. They should not be excluded from any management or counting. If you go fishing you should be held accountable. You should have your rights but also your responsibilities. Because fish don't care who catches them.

And another thing is that we have to get free of this fixation that fisheries is necessarily an international thing. It is true that the European countries are small in comparison to those of Asia and Africa. But it is also true that there are lots of stocks within their own exclusive economic zones which can be managed by your national authorities.

You will probably find initially that fishermen will complain that the stocks are all gone. And in many cases they have been decimated – like the coastal stocks. And the best way to re-build a system like the North Sea might be a difficult concept because

they have been fished so intensively for such a long time. But fish stocks can be rebuilt if you give them the space.

Marine Reserves

There must be spaces, call them Marine Reserves, where some of the fish can recuperate – because large fish cannot withstand even low fishing mortality. If you pass only once with a trawl instead of ten times like in parts of the North Sea, it is enough to prevent fish from ever becoming big.

So around the British Isles there should be marine reserves . They don't have to necessarily be big but they should cover between 20 and 30 per cent of the ground.

And paradoxically, the fishers wouldn't lose anything. Because this would increase their catches. But the problem is that they don't believe this.

Britain has done well in other parts of the world – Pitcairn, Ascension – with Marine Reserves but there are none in your own area. Which is a pity because fish here would react well to being given a break. In these zones there would be no take at all – no exceptions. A little fishing is all you need to bugger it up.

Why not make it simple ? No fishing. Take your 20 to 30 per cent, identify different eco-systems, spread it round your coast evenly and say 'no fishing.' It makes everything easy. You don't need to check whether someone is fishing for mackerel. No boat steaming other than passage speed. No fishing. End of story.

It seems that the fishing industry will always insist that they should be allowed to fish everywhere. But fishing everywhere is a very modern concept. Because before you couldn't fish far away, in deep water; in winter; in rocky water; when it was foggy. But technical advances have eradicated this. So it's not natural to fish everywhere. It is a recent development.

On Angling and Catch and Release

I wouldn't like to be a fish that was caught and released. Because fish are very sensitive to being able to breathe. And they must be in horrible pain because they are played. In order to catch them you have to play them and it's actually to deplete

them of oxygen and then they cannot fight anymore. So basically when its depleted of oxygen part of the body goes into lysis. Cells burst, and in tuna if you play it too long, the flesh is burned and the fish cannot be eaten because they become acidic. The little cell vacuoles burst and release enzymes and the body starts liquefying.

Basically if the fish has been played a long time it will die. Even if it's not dead when you release it. So it depends what state the fish is in when you release it.

It may be able to swim. But it will be different from the others and being different marks it out for death. In other words it will die even though it's reported as being released.

I don't think catch and release is a bad as killing fish you don't need to eat. But let's have no illusions about fish liking it. They must be in terrible pain. If we played Bambi – if we caught a deer in the same way we would see the pain. But in fish we don't see it but they must experience it psychologically in the same way.

What fish should we eat

In Europe 70 per cent of the fish we eat doesn't come from our own waters they come from the developing world – from Africa and Asia. So the first thing you have to ask yourself is where do the fish I want to eat come from? And what does it mean if I eat a fish caught off Africa? Because in these developing countries there are people who depend on fish for their fundamental food security, for their basic source of protein. So are we actually stealing fish out of the mouths of these people? And there are many instances where in Africa and Asia there is conflict between the local fishers and the industrial fleets from Europe and Asia. All target the same eco-systems and the same stocks. And it's not really ethical to continue that.

But how much fish do we actually need to eat? There are lots of stories that we should eat more and more fish because it's healthy, but the link is not very strong in terms of evidence.

So we should re-think in terms of Brexit re-building and start considering the actual supply of fish and particularly if it's sustainable. There is much less than we currently perceive to be available to the European and British markets a) because we import part of it and b) because the local stocks are depleted. And even if we start re-

building them we are not going to get the same quantity as we currently do with all the imports. But at least it will be locally-sourced sustainable stocks.

So the developed world has to get free of the concept of eating fish several times a week because it's healthy for us and consider seafood as an occasional add-on to their diet.

I personally eat fish about once a month. Whether that is the right number or not I don't know. I just don't view fish as something I should eat. I live in Vancouver where there's a sushi shop on every street corner. Plenty of people I know eat sushi twice a week because it's healthy for them. I don't do it. The health connection is actually not really there, because in tuna and swordfish you're consuming quite a lot of pollutants and that's not necessarily a healthy thing.

So long-term, talking within the concept of re-building stocks, as a consumer you should make the next choice. First choice is how often should I eat it if I know it's coming from the developing world where I am maybe stealing it out of the mouths of other people.

There are a few marine sustainability labels out there. And while they have their own problems in terms of what is sustainable for their certification I would argue if the consumer gets information they are able to make a more important choice. For example: what fish caught in European waters should I eat. Cod: if I eat cod from Norway or Iceland I would be more willing to say that they are from well managed stocks. I would go and eat that rather than Baltic cod or North Sea cod because those stocks are in trouble. And certification labels can help with that and I think that's good. I don't know if the Marine Stewardship Council labels North Sea cod as bad and Norway cod as good – but it should. It helps me if I'm eating fish once a month to make sure it's Norway cod and I don't eat North Sea cod.

What Type of Fish

We should eat more small fish like anchovies and sardines. They are very much liked in many parts of the world. Only where Britain has had its feet do people concentrate on the larger fish. We think of salmon, cod, halibut tuna: the big carnivores at the top food chain. If we ate more anchovies for example...

Think of the Peruvian annual catch of four or five million tonnes of anchovies – 98 per cent of it is turned into fishmeal, only two per cent goes for human consumption. Of the 98 per cent half goes to feed animals like pigs and chicken and the other half goes to fish – aquaculture.

Tuna

Sushi is part of the tuna problem, especially in Japan where they are obsessed with catching all the tuna in the world and eating them.

All the tuna in the Mediterranean all go there and all tuna in Australia goes there – they want to eat sushi all the time. First of all its unhealthy. If you eat it you get an unhealthy dose of mercury, dioxins, PCBs. Why? Because it's bio-accumulated up the food chain. We have a plastics problem now. These little plastic dots we have in the ocean. They are consumed by small fish which are consumed by tuna. I am confident, though I don't have studies yet to show it – that the persistent pollutants in tuna are likely to have increased.

Micro beads are poison pills because they soak up all the stuff in the ocean and they are consumed by small fish in the open ocean which are eaten by tuna.

It's not recommended for pregnant women. So if pregnant women should not have it non-pregnant men shouldn't have it either.

Most of the tuna stocks are not doing well. There are some exceptions that are not in trouble yet. The fast growing skipjack tuna matures early so it is able to sustain a higher fishing pressure than the bluefin which grows very big.

Big eye tuna is in deep trouble as is the Bluefin – the Atlantic bluefin and the Southern bluefin and some of the yellowfin.

It comes back to what we were talking about with anchovies and sardines. These small fish grow very fast and the populations can re-build very fast.

And you might remember back when we were in trouble with the North Sea Cod, and in the Sixties and Seventies the herring stock collapsed. By shutting down the herring fishery within ten or 15 years, the stocks were able to recover, these small

fish grow very fast. North Sea cod is still in trouble because it's slow-growing and has a different biology.

And so it's the same with the tuna. The smaller species can sustain more fishing pressure and therefore they are not in trouble – yet.

What's going to happen is that the big ones are being fished out and so everyone is going to converge on the ones that are left over. So eventually skipjack will see so much fishing intensity that it's also going to crash. It's inevitable if we continue to fish as much as we do.

Bluefin tuna is in permanent crisis. Basically if you look at it in historic terms it was an extremely abundant fish in the Med and they were in every country [in the Med]. In the 19th century there were traps and weirs to catch them. There was gigantic production. Canning factories all over Italy and France. Tuna used to enter the North Sea. There was a Danish fishery, a German fishery, a Norwegian fishery which spill over because they were so dense.

What has become of that? We probably have two or three per cent of what we had 200 years ago.

The crazy thing is if you have two per cent of what you had and it jumps to four per cent, and that can happen with low quotas and let the stock rebuild, it will move from the two per cent you had before to four per cent – it doubles – then young fishers would say : “I have never seen so many – we have a bonanza!” “They have doubled – this is wonderful.”

This is a phenomena I call the shifting baseline because the baseline that people have now for what is abundant fish is completely screwed up.

The bluefin is relative to its abundance, previously the same situation as cod. It is very low.

If you read Callum Roberts's book, the Natural History of the Sea you would be flabbergasted by the wealth that was around the British Isles. It blows your mind and then we're scraping the bottom with electric trawlers.

Office workers eat mostly yellowfin in sushi. Most of basic tuna in sushi from the average store is yellowfin. People who catch bluefin are not interested in selling to

Europe because of the high value. Perhaps with the exception of Japanese restaurants...

In the Pacific, yellowfin is probably 30 per cent of its original abundance.

Only in the Pacific is the tuna fishery doing relatively well still. The catches are increasing. In the Indian Ocean the catches have been declining for ten or 15 years and in the Atlantic for the last 20 to 25 years.

So they have big catch in the Atlantic, big catch in the Indian Ocean and very soon big catch in the Pacific.

Most Pacific tuna goes to the Asian and American market. There is some Spanish and French vessels fishing the Pacific for tuna but I don't know what the destination for that is. So a little will come to Europe from the Pacific but most from the Indian Ocean.

Small-scale local fishers

Adjacency should be the first criteria to be given the privilege to fish. I believe very much that small-scale local fishers should have the right because of their proximity. If you look at the energy used to catch the stuff small-scale fishers do, they use far less fuel per tonne of fish caught because of their adjacency to the fishing grounds. They go out about 20 kilometres or 15 miles and come back.

If you, as part of stock re-building, re-emphasise this proximity you could go out ten or 15 miles to get his catch without burning vast amounts of fuel. You have rural employment. You have your rural community doing fine.

What's the alternative? You will impoverish the entire landscape because there is no more fish to catch. It's crazy. What are you going to do with the people who don't have anything to catch?

Link: <http://www.bluemarinefoundation.com/2017/01/18/the-wit-and-wisdom-of-daniel-pauly-and-dirk-zeller-transcript-of-a-press-briefing-at-the-science-media-centre-london-on-jan-12-2017-both-authors-were-speaking-mostly-daniel-but-it-is-easier-to/>