



1. Introduction

1.1 Thank you for your recent email regarding the launch of your consultation on the impact of Covid-19 on the agriculture and fisheries sectors, food supply, animal welfare, climate change and the environment in Wales.

1.2 Just One Ocean is a UK based marine conservation charity. As an organisation our mission is to protect the ocean for future generations through science, education and communication. We focus on the marine environment but also have concern about coastal management issues. Scientific research into ocean issues plays a significant part of the work we do.

1.3 We recently produced a presentation that examined the impact of Covid-19 on the environment and in particular the blue economy. It covered some of the positive and negative effects of Covid-19 on the environment, as well as the implications and potential opportunities the pandemic presented. A summary of some of the key points from that presentation that may be relevant to your consultation are included in the following comments.

2. Behavioural Change has led to Environmental Change

2.1 We have seen some interesting newspaper stories about the canals of Venice having clean water, penguins walking down the streets in Capetown and Wild Boars roaming around parts of Europe, including places like Paris. Some have been calling it 'nature taking back the planet', which isn't exactly true, but it sounds good. This is a result of there being less of 'us'.

2.2 In a way, these examples sum up what has happened to the environment. Covid-19 has forced a number of changes in our behaviour. We are staying at home, working from home, isolating and not travelling. The result of this has been to produce less, buy less, use less, waste less and significantly, move around less. What you have to remember is that the reduction in our movement and just 'doing things' has been on a scale not seen since WW2. We haven't done this before and what we are seeing is new to us.

3. Air Pollution

3.1 The scale in the reduction in our movement has been one of the most striking effects of Covid-19. It has been suggested that we have seen a 90% reduction in movement around the world and this



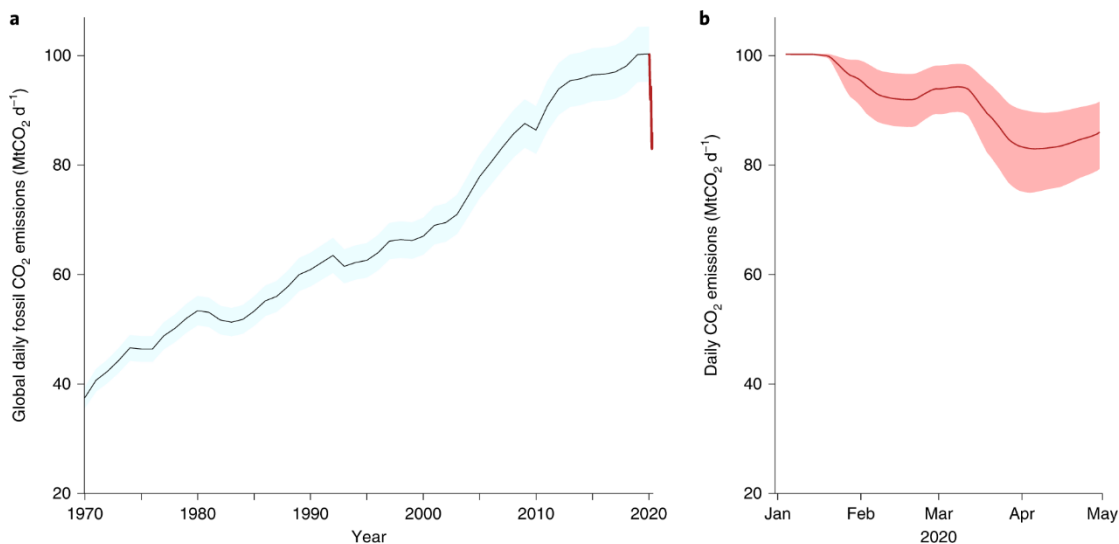
has seen a corresponding decline in emissions from internal combustion resulting in cleaner air and less pollution. Global production of Nitrogen Dioxide has reduced by around 30% globally with cities like Delhi and Seoul seeing reductions of 60% and 54% respectively due to the lockdown. There are some direct beneficial impacts from the reduction in pollution. Air pollution is a leading cause, or contributory factor of around 7 million deaths a year around the world. In London alone there are 9,400 deaths a year that are connected to air pollution. In South East Asia around 2 million people every year die as a direct or indirect result of air pollution.

3.2 Ironically moving around less as a result of Covid-19 is not only reducing pollution and helping the environment, but could also be saving lives. The number of deaths from coronavirus in London has been just under 6,000 compared to nearly 10,000 from air pollution per year. A Stanford university report suggested that up to 20 times more lives will be saved in China as a result of the reduction in air pollution during the lockdown than will actually be lost to the virus.

3.3 The problem of course is that these are short term impacts that only last as long as we stop moving around. The levels of nitrogen dioxide very quickly come back to their normal levels once lockdown measures are eased. By 3 June, pollution levels in China had already returned to what they were before the pandemic lockdown occurred¹.

4. CO₂

4.1 CO₂ is another by product of the combustion of fossil fuels and other industrial processes so not surprisingly, as a result of moving less and making less, we have seen a similar reduction in CO₂ around the world:



¹ <https://www.theguardian.com/environment/2020/jun/03/air-pollution-in-china-back-to-pre-covid-levels-and-europe-may-follow>

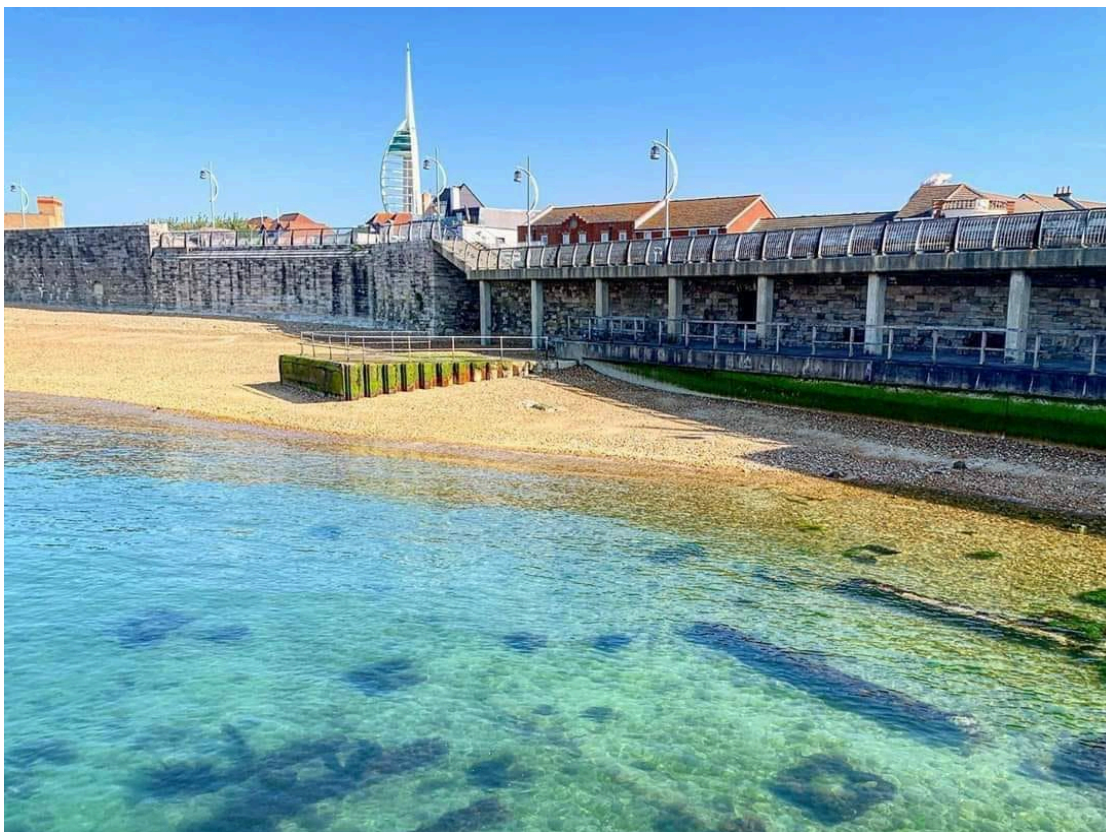


(Image source: Nature)

4.2 The main issue of course, is that we have got to where we are over a significant period of time and the impact of increased CO₂ levels on the environment is accumulative. A short term drop will not have a lasting impact on the overall levels and as we have already seen these behavioural changes are once again, only temporary. Unless there are significant structural changes in the economic system, our modes and habits of transportation and the manner in which we produce our energy, we will be unlikely to see the sort of reductions we will need to achieve net-zero emissions.

5. Clarity of Coastal Waters

5.1 One environmental change that we did see in April 2020 was a prolonged period of clearer water in many coastal regions around the UK, including Wales. This was the water at the entrance to Portsmouth Harbour²:



(Image source: J Sunderland)

² <https://www.dailymail.co.uk/news/article-8268831/Lockdown-turns-sea-tropical-pollution-activity.html>



5.2 Was this a result of the pandemic? There are some underlying factors to consider:

- April does trend to be clearer because the water is still too cold for the big algal blooms.
- We had just had the third driest March on record and as a result there was less rain and less run off.
- We had also seen a period of relatively calm weather and easterly winds rather than the predominant south westerlies.

5.3 However, the other big change was the reduction in the movement of vessels in the area, both leisure boats and commercial shipping which occurred as a result of Covid-19. Clearer water is good for the environment. Marine vegetation, seaweed and seagrass in particular play a vital role within the marine ecosystem and beyond. Less boat traffic reduces the disturbance to the seabed and subsequently lowers the turbidity. Clearer water allows more light to penetrate which in turn increases photosynthesis and stimulates growth. Seagrass³ and other marine vegetation absorb CO₂ and provide massive carbon sinks that can contain and withhold excess carbon for hundreds of years. In addition the vegetation provides food and habitat for the marine life in the shallow waters of coastlines and estuaries. Something like 70% of marine fish species spend part of their lives in these shallow waterways. It should also be remembered that boats damage the environment in other ways. Regulations regarding bilge waters only apply to boats of a certain size and around 10% of the oil found in the ocean is derived from bilge.

5.4 Less boat traffic is good for the environment but socio-economic impacts can be catastrophic for local communities. That said, clearer waters can improve tourism and associated coastal activities. What we are talking about here is an understanding of the economics of ecosystem services. Trying to figure out a monetary value to the things that nature gives to us for free, understanding what contribution they make to the economy and our society. When we can do that then there is usually likely to be a greater incentive for environmental stewardship.

6. Reduction in Noise Pollution

6.1 Marine mammals and fish rely on sound underwater for a range of things, including communication between and within groups, growth and reproduction and also as a method that they use in order to locate and capture prey. Alongside this virtually all anthropogenic activities in the marine environment from shipping to wind farms generate some sort of noise underwater. The wavelengths animals use does vary, however, whales⁴ for example rely exclusively on low frequency sounds. These frequencies just happen to be similar to this produced by anthropogenic activities such as shipping and drilling.

6.2 As a result of the reduction in shipping due to us using and moving less, noise levels underwater have gone down. I don't have data for Wales, but Vancouver saw a 20% reduction in

³ <https://daily.jstor.org/why-we-need-seagrass/>

⁴ <https://www.visitpembrokeshire.com/explore-pembrokeshire/wildlife-and-nature/whales-and-dolphins>



exports and shipping between January and April, and they also found that during that period there was a 5 decibel reduction in noise levels. For whales it could be significant, but at the moment we don't know how significant as experiments and data sampling are still ongoing.

7. Fishing

7.1 Fishing is an industry that is highly dependent in international trade. As a result of not moving as much it has been hit hard by Covid-19. Lockdown measures and restrictions between borders have led to the closures of global markets and subsequently a huge reduction in demand. As a result, the number of fishing vessels putting to sea is far lower and we are all eating less seafood. Localised fresh fish and shellfish supply chains have also been severely impacted due to the closure of the food service sectors, the hotels, restaurants and catering facilities. From a socio-economic perspective things are not good resulting in the Welsh Government announcing a fisheries grant in April to try and support the industry.

7.2 However, if you are a Blue Fin Tuna⁵ heading down the West coast of the UK towards the Mediterranean for your annual spawning cycle, or an Atlantic Cod making your way through the channel to the North Sea, things are definitely looking up.

7.3 We know from experience that we can improve fish stocks when we properly manage fisheries, but we have never seen what happens when we just stop fishing for a period of time. Timing couldn't be better for the fish either, with the majority of Mediterranean species breeding between March and May and the Atlantic species breeding between April and June.

7.4 It is important to remember that around 31% of fish species are currently running at levels that are not sustainable and even in the short term the reduction in fishing is going to help. Fish stocks can change dramatically in a limited amount of time. The centre for ocean research in Germany estimated that if we stopped fishing completely, fish stocks in European waters could double their biomass over a 12 month period. Pandemics are clearly good for fish stocks.

7.4 Another example of how there might have been a beneficial impact for the fishing industry from an environmental aspect is the common whelk⁶. It is an important part of the UK coastal marine ecosystem but exports have doubled recently. 95% of the catch is exported, predominantly to countries such as Korea, Japan and Singapore. Unfortunately their reproductive strategy has a limited larval dispersal and no broadcast spawning, leading to geographically isolated sub-populations. The pre-Covid demand levels are likely to lead to a situation that could result in localised overfishing and population collapses if left unchecked.

⁵ <https://marinedevelopments.blog.gov.uk/2017/09/04/bluefin-tuna-in-uk-waters/>

⁶ <https://theecologist.org/2019/may/29/save-whale-now-its-help-whelks>



7.5 There is historical evidence that these molluscs literally become extinct on a localised basis once that happens and never return. Giving this species and others like it, a bit of breathing space now might ensure they can recover in areas where numbers were becoming critical.

8. Cruise Line Industry

8.1 The Cruise line industry does have an impact on Wales and it has quite literally ground to a halt as a result of the quarantine. This is a £100bn industry that includes hundreds of thousands of employees. In the UK alone it provides around 14,000 jobs so the socio-economic implications are huge. It is not just the ships themselves that are affected but the whole supporting infrastructure behind them; the terminals, the hotels, transportation systems, logistic operations and the tour operators.

8.2 From an environmental perspective the lack of cruise liners has to be a good thing. While many cruise line companies have progressive 'sustainability' policies that seek to tick all the right boxes, they are and will probably remain, some of the least environmentally friendly products of man's ingenuity on the planet. The air pollution from one liner is staggering. In 2017 Carnival Corporation, the world's largest luxury cruise operator, emitted nearly 10 times more sulphur oxide around European coasts than all of the 260 million cars in Europe put together.

8.3 Whilst it is still legal (amazingly) to dump raw sewage anywhere as long as you are 12 miles offshore, most cruise liners have signed an agreement not to do that and have installed technology that can clean the sewage on board. However, just because you have the technology it doesn't mean you use it. In 2016, Princess Cruises was fined \$40 million (£31.66m) for polluting the ocean by dumping over 4,000 gallons of "oily waste" off the coast of Britain. In 2018 they admitted to dumping half a million gallons of raw sewage into the ocean. In 2019 Carnival Corporation were fined \$20 million (£15.83m) for environmental violations such as dumping plastic waste into the ocean in 2019.

9. Covid-19, PPE and the Environment

9.1 I do need to touch briefly on plastic pollution because it is one of the biggest environmental issues affecting the oceans at this time. The importance and our reliance on single use plastic in health care have been reinforced over recent months as the need for PPE has increased. However, whilst there is no denying the importance of these products in the fight to protect human lives, there is also a need to ensure that we put in place appropriate management processes to deal with them.

9.2 This increase in the use of PPE, not only within medical departments but also amongst the general population has resulted in a change in the type pollution being found on coastlines around the world all of which are having a negative impact on the environment. Gloves and masks are now commonplace. One of the problems of course, is that whereas we might have picked this up plastic litter and put it in the bin in the past, there is probably going to be more reluctance to do so with this sort of product in the future.



9.3 The concern over disease transmission has also forced many places to take a backward step in the fight to reduce single use plastic. California, for example, has lifted its ban on plastic bags while in other places reusable bags have been banned. In the UK, the Government has stopped the levy on plastic bags and put plans to introduce a ban on plastic straws, cotton bud sticks and stirrers on hold.

9.4 Businesses and companies that may well have been trying to reduce their plastic use prior to Covid-19 will be looking closely at costs involved in making those changes. The recycling industry is also under pressure as oil prices fall so to do the costs of raw materials for plastic production. As a result the gap between the cost of virgin plastic and recycled plastic materials continues to grow and the recycling industry is beginning to suffer. Plans need to be put in place to address these issues as soon as possible in order to prevent years of progress from being unravelled.

10. Opportunities

10.1 From an environmental perspective Covid-19 has provided us with many opportunities. It has provided us with the chance to conduct a 3 – 4 month scientific experiment looking into what happens when we leave things alone. It has provided us with the opportunity to see what the trade-off is between reducing the amount of shipping and movement and the benefits to the ecosystem. It has provided us with a number of demonstrations as to the importance of working with ecosystem services if we want to ensure the long term viability of the planets resources and the health of the environment.

10.2 It has provided us with a research opportunity to see what happens when we don't fish, or fish less and it has provided us with the incentive to develop a better, more sustainable way to manage the oceans in the post-COVID-19 era. It has provided us with an incentive to look at other ways of producing seafood, more sustainable methods that don't result in localised population decline or rely so heavily on international markets. In short, it has provided us with an opportunity to pause and re-think our fisheries management policies

10.3 It has proved to us that while we may find it burdensome and inconvenient, we can actually do without a lot of the things we think we need. It has proved that we probably don't need to buy as much as we do and that we probably could produce less than we do. At the same time it has perhaps provided us with an opportunity to realise how much waste we do create and possibly more understanding as to how we might waste less.

10.4 It has provided us with the opportunity to see what can happen to air pollution when we move around less. It has provided us with a rare glimpse of what a low-carbon future might be like. In a way it has shown us that net zero emissions is achievable; we just have to put the structures in place to achieve it.

10.5 It has provided us with the opportunity to try out new methods of communication and going about our business. Again these are opportunities that if taken could have long term beneficial impacts on the environment.



11. Finally

11.1 There has a very clear and positive direct human response to things like clear coastal waters and wildlife returning to places where it had not been seen before and that is encouraging. People have had the opportunity to see and appreciate a planet that is cleaner and an environment that is less polluted and healthier. We need to try and utilise that response in order to stimulate positive changes in behaviour and attitudes towards the environment in the future.

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