

# Statement

## 3/8/2020

### Masahiro Takemoto

1. I live in Hayama, Kanagawa Prefecture. As a professional diver, I have observed the marine environment degrade and change dramatically over the past 30 years. Currently, I give lectures on the subject of “climate change and the problem of marine plastics,” hold seminars and teach environmental education classes, and provide technical advice to environmental NPOs. Additionally, in order to change the current situation where there are more ocean habitats predicted to disappear than those rich in biodiversity, I also own a shop called “Ecostore Paparagi” in front of Fujisawa Station, the first plastic-free shop in Japan. In 2015, I began a project to sail the Pacific Ocean, mainly Micronesia, on a sailboat (yacht) every year for the purpose of exploring the issues of climate change and marine pollution, and through this I experienced the critical changes to our climate.

2. Daily measurements taken by thermometers during voyages show abnormally high seawater temperatures, which increases the frequency of cumulonimbus clouds and marine tornadoes, causing torrential rains and intensifying typhoons throughout Japan. We visit Micronesian countries, Marshall Islands, Federated States of Micronesia, Palau, and others during our voyages. I am able to meet with the presidents of the Republic of Marshall Islands and Palau, and climate change is always a major topic of discussion. This is because the damage caused to South Pacific countries by the rising sea levels and high tides is growing extremely substantial.

In addition, local citizens on the islands we visit all ask us Japanese “What do you think about climate change?” They are often telling us that “the winds have changed.” They say that In the south of the latitude of 25°N in the Pacific Ocean, the “northeast trade winds” are blowing steadily but the wind direction is changing slightly. Additionally, a number of critical situations threaten the lives of the islanders, from coastal areas that have been completely swallowed by the rising sea levels, to buildings and graveyards that have been washed away by high surf.

3. One significant change in recent years is the increasing temperature of the water, and another is the strength and direction of the wind; the northeast trade winds south of 25°N have changed quite a bit.

The direction of the wind has also changed where my home is, on the southwest side of Kanagawa Prefecture’s Miura Peninsula. Most of the coast in this area faces southwest, but the most common wind direction is west-northwest, which is completely different than it always was before. Especially notable is that in December of last year, the northwest wind stopped blowing entirely. Fishing and leisure industries, especially perceptive to the condition of the wind when conducting their business, have all been feeling the same changes, which are also reflected in data in addition to these personal experiences - no west winds blew this winter either.

Around the Hayama area, when a strong west wind blows, it is called "onishi fuki" ("large western gust"). Even when walking on the shore, the wind was strong to carry the splash from the waves to your face. Nowadays, the frequency of this wind is becoming increasingly rare. For example, in Hayama, Morito Shrine built by Minamoto no Yoritomo 820 years ago faces a pine forest to the southwest. The west wind is so strong that it bends the pine trees, but wind strong enough to bend pine branches no longer blows.

4. The ocean is becoming like a desert as the rocky-shore denudation expands and seaweed disappears. In the absence of any seaweed, sea urchins on rocks stand out, but they are empty inside and are not edible. Rocky-shore denudation is expanding in Japan, and is especially worsening in the Sagami Bay area.

Hijiki, a type of seaweed, is no longer available to be harvested in Hayama. In Zushi City, we have begun selling akamoku, a species of seaweed that we had not eaten before, under the Zushi brand. Akamoku, unlike other seaweeds, has very high reproductive ability. We started selling it as a high-end food item, and for a while it was a huge hit. However, now it is no longer growing in the area, and the akamoku currently sold in Zushi is instead from Chiba Prefecture.

I think the reason for this is the change in wind direction. The wind direction changes due to changes in the temperature of the ocean, and the changing winds lead to a vicious cycle that leaves the sea unable to cool down again. Even if the north wind blows on the west side or around the Shonan area of Miura Peninsula, it is blocked by the mountains and prevents waves from being generated. Conversely, such north winds will cause Tokyo Bay to generate waves, reversing the relationship between Sagami Bay and Tokyo Bay. I think that the current situation of rocky-shore denudation is equivalent to a tipping point and will not stop anymore.



*Left: The ocean near Enoshima, where seaweed can be seen from the surface of the water (Photo taken on 2/2012; water temperature 13°)*

*Right: Now the surface of the area is covered by bare rocks without seaweed (Photo taken on 3/1/2020; water temperature 17°)*



*Left: The forest of seaweed is a symbol of the sea in Hayama, like the entrance to the mythical Ryugu Castle (Photo taken on 3/2014; water temperature 14°)*

*Right: The seaweed has disappeared, leaving a lifeless landscape full of an abnormally large number of gangaze sea urchins (Photo taken on 3/1/2020; water temperature 18°)*

5. At the same time, winds with strengths never before seen are being experienced in the form of ever-larger typhoons and other extreme weather. In Hayama, where I live, almost all homes that had aluminum fences on the windward side have had their fences blown away due to typhoons, yet the fences on the side of house behind the wind were unaffected. When my house's fence was blown out from the ground, it nearly smashed into my neighbor's 7 million yen Volvo car. Several cars in the neighborhood have been damaged by roofs that had blown off from the strong winds of typhoons.

Because of the increasing frequency of these extreme winds, we took specific care when installing solar panels so that they would not fly off in storms. We installed the panels so that they would be pushed in the direction of the wind without the wind entering the gap between the panels and the roof. In addition, all fences previously blown away by winds have been reinstalled from the foundation.

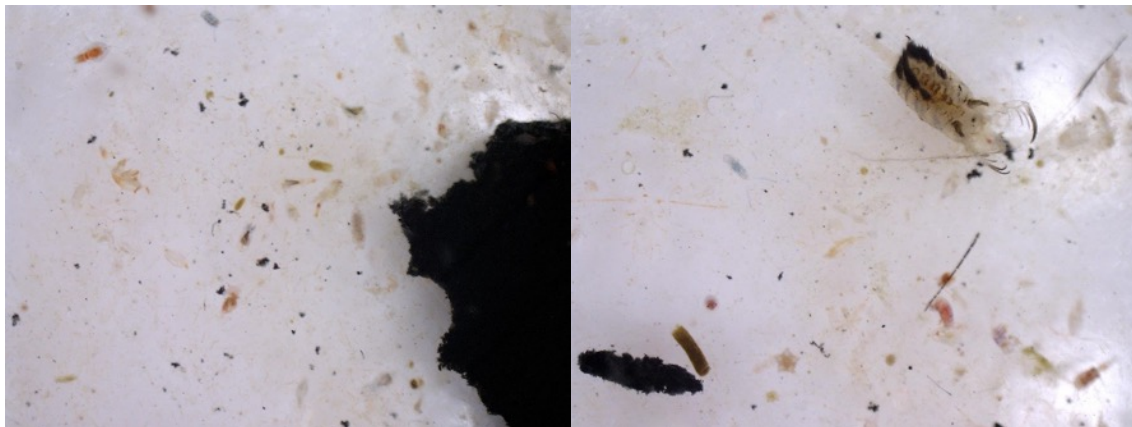
6. In Japan, November is the least statistically the month with the lowest frequency of marine accidents, followed by June. In November, the sea becomes calm with the end of the typhoon season, and low atmospheric pressures begin to occur more frequently from December. I used to schedule my research voyages for times when the number of marine accidents was low, but now even November is becoming unsafe to go on voyages. It is not the same as before.

Additionally, summer is starting earlier and earlier, with summer weather now starting in June, which may bring an acceleration and expansion of typhoons. Recently, water temperatures of 28°C have already been recorded around 26°N on our voyages in January. During our ship's departure in May, the recorded temperature of the water was over 30° C off the Izu Islands. Under such circumstances, the frequency of marine tornadoes becomes very high, particularly from May to June. However, there have been no marine tornados officially recorded. Very recently, I was surrounded by seven

tornadoes at once, higher than ever before.

Since the climate is changing in this way during the period of when the sea is relatively safe, we are telling those who yacht for leisure purposes that they must sail with a different awareness and knowledge than they have in the past.

7. Recently, plankton nets have been used to collect microplastics from nearby marine areas, but the increasing amount of carbon waste in Sagami Bay has become extremely concerning. I suspect it is coming from ships, but as no analysis has been performed, I don't know in detail. However, regardless of the cause, I believe that the amount of carbon waste will increase even more if the thermal power plant begins operation, despite it already increasing at an incredible density now. Both microplastics and carbon waste are eaten by marine animals. Carbon waste is also absorbed by plankton, which is eaten by fish, many of which are eaten by humans.



*Plankton and carbon waste collected from Sagami Bay (Photo taken on 7/2018 off the coast of Hayama by Masahiro Takemoto)*

8. As I said at the beginning, I believe that the stories and experiences of the everyday people living on the islands in the Pacific accurately reflect the reality of the situation, and I continue to listen to them. When they ask me, "What do you think about climate change?," I can't help but feel that what they really want to say is, "It's because of the gas (CO<sub>2</sub>) emitted from your country!" The reality is this exactly; those who live in the large majority of countries that are not responsible for the world's CO<sub>2</sub> emissions are being impacted by the "greenhouse gases" emitted by world's great powers. Nowadays "extreme weather" natural disasters occurring in Japan are becoming normal, and it is absolutely necessary that we recognize this situation as a "climate crisis."

At the same time, we need to keep in mind those in the countries to the south, who are suffering so much due to our excessive consumer lifestyles but are receiving so little help.



9. In September 2019, an event was held to watch a movie (titled "Chasing Coral") that followed a coral reef that was rapidly disappearing due to rising seawater temperatures, and to discuss what we could do about this issue. I joined as guest speaker to talk about how coral reefs are changing from year to year. (I participated at the Hibiya Library Culture Center in Hibiya Park on September 5 and at the Zushi Cultural Plaza in Zushi City on September 10).

At that time, I heard a summary of the previous lawsuit (2019 No. 275, Tokyo District Court Civil 2nd Cd.) from event participants who were plaintiffs in the case. I also learned that residents in the planned project area of the Yokosuka Coal-Fired Power Plant Project have filed a lawsuit to cancel the project's environmental impact assessment notice of finalization.

It pains me to think about how this beautiful ocean is going to be transformed due to climate change. I decided to file this lawsuit because I believe it necessary to cancel the construction of a coal-fired power plant near my home that will contribute to climate change by emitting a large amount of CO<sub>2</sub>.



*Photo of a marine tornado occurrence. 7 tornadoes are occurring simultaneously. (Photo taken on 5/2018 off the coast of Boso Peninsula by Masahiro Takemoto)*

*Even in the Izu Islands' coastal waters, high sea temperatures generate water vapor, creating giant cumulonimbus clouds (supercells) and these marine tornadoes.*