

“JSPS Fellows Experience” Report

I was a JSPS fellow under the Short-term Postdoctoral Research scheme at the Center for Environmental Biology and Ecosystem Studies, National Institute for Environmental Studies (Tsukuba, Ibaraki), between October 2014 and March 2015. In collaboration with my host supervisor, Dr. Hiroya Yamano, my research focussed on the analysis of historical data compiled by Dr. Yamano’s research group on occurrence of Japanese coral and seaweed species to identify biogeographical shifts since 1950s in relation to ocean warming. The Japanese archipelago offers an ideal setting for this purpose because it has not only experienced significant warming across most of its territorial waters but it also covers a wide latitudinal range from subtropical to temperate areas, within which multiple corals and seaweeds encounter their southern or northern latitudinal limits. To check if species are keeping pace with the shifting climate, we used the velocity of climate change (VoCC), which is a metric showing the speed of temperature movement across space and basically indicates how fast and in what direction organisms will have to move to keep constant the temperatures they are experiencing today in the future. Preliminary results are showing that several species of seaweeds have shifted their ranges in Japan. However, observed rate of shifts are comparatively much slower than that expected under ocean warming (i.e., as indicated by VoCC), which suggest these species are building extinction debts. Though a similar analysis with corals is yet to be done (coral data was being updated during my stay), preliminary analyses by Dr. Yamano suggest corals are shifting much faster, possibly related to the South-North circulation of the main Japanese currents (the Kuroshio and Tsushima warm currents). These results, which we aim to have published in the near future, have important implications for management and conservation given the key ecological role of these habitat-forming species.



Biogeographical shifts in habitat-forming species, such as corals and seaweeds, are especially relevant from an ecological point of view because of the cascading effects that they can have on other dependant species.

On a personal note, this has been nothing but a great experience for me. My wife being Japanese, I had been many times in Japan before as tourist but this was my first experience properly living and working in Japan. I have found Japanese colleagues and people in general to be really helpful and welcoming to foreigners. Even when their English is often limited (still much better than my Japanese!), they try hard to communicate and help where possible. Their efficiency and organization also helps a great deal towards settling in. For example, I was given my residence card at the immigration control desk in Narita airport the very same day I arrived (while it normally takes my wife 3-6 months to get her residence permit every time we change country in Europe). In short, I had never had a moment of regret or even stress related to my stay in Japan and would very much recommend this experience to anybody wanted to expand both professionally and personally. My

advice is simple: be open to their culture and life style and go without any preconception of what is going to be like there. You will be pleasantly surprised of what you actually find.



The NIES soccer club. One of the many social clubs that NIES have for their employees. Great way of doing sport and meeting fellow colleagues.

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