

Vol.16 Dr Annette Fayet (University of Oxford)**Dr Annette Fayet**

Junior Research Fellow, The Queen's College
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Biography

2016 – present – Junior Research Fellow in Biological Sciences,
The Queen's College, University of Oxford, UK

2011 – 2015 DPhil in Zoology, University of Oxford, UK

2010 – 2011 Field assistant, New-Zealand & Wales

2009 – 2010 MSc in Biology, University of Oxford, UK

2004 – 2009 BSc & MSc Engineering, ESPCI Paris, France

I have been fascinated by birds since a very young age, but it's only after finishing graduate studies in engineering that I decided to switch to biology and become a full-time ornithologist. I am particularly interested in bird ecology, trying to understand how birds interact with their environment, how their behaviour gives them a competitive advantage, and how this affects their population as a whole. I mainly study seabirds, long-lived birds which spend most of their lives at sea, and only return to land to breed. Many of the seabirds I study are endangered, or declining, and my research also helps inform their conservation.

My first trip to Japan was a short holiday in 2011 to visit a friend on a study year abroad, and I loved the country at first sight. I also loved the food – as a typical French person food is very important to me, and I was delighted to discover a new and delicious cuisine! But it is only during my PhD that I discovered that Japan is a leader in ornithological research, and started being acquainted with Japanese ornithologists. This was mainly thanks to Akiko Shoji, now an established ornithologist and Associate Professor at Tsukuba University, who at the time was doing her PhD in the same research group as me in Oxford. We spent months doing fieldwork together on a tiny island in Wales, became friends, and in 2014 we attended a conference in Tokyo together, where she introduced me to seabird scientists in Japan.

Two years later I started a Junior Research Fellowship at Oxford, ready and excited to develop new research projects. Seabirds fly thousands of kilometres across oceans, navigating their way across apparently featureless seas – how they do that is currently poorly understood. One aspect of their navigation which is particularly unknown is their homing ability. Having spent years studying Manx shearwaters in Wales for my PhD, I was fascinated by their ability to dart to their nest in darkness at startling speed, and to find their burrow amongst thousands of others with remarkable precision. How these birds can navigate in the dark with such accuracy is a mystery, which I decided to try and solve. I got in touch with two world-leading seabird scientists in Japan, Prof Yutaka Watanuki at Hokkaido University, and Prof Ken Yoda

at Nagoya University. Profs Yoda and Watanuki study streaked shearwaters, close cousins of Manx shearwaters, breeding on jungle-covered islands along the Japanese coast, in stark contrast with the rugged, barren Welsh islands where I studied Manx shearwaters. I developed a collaborative project comparing the homing abilities of the two species in these very different habitats, aiming to identify whether birds memorise a return route or merely improvise each night, and whether they rely on visual, olfactory or magnetic cues (or a combination). I first obtained a small grant from my university to carry-out a pilot study. This was successful, and I therefore decided to apply for a JSPS short-term fellowship to carry out the study.



*A streaked shearwater in its burrow on Awashima
(photo: Aimee Van Tatenhove)*

The fellowship, hosted by Prof Watanuki, allowed me to spend one month in Japan in August 2018. I first spent a week in my host's lab in the Hakodate campus of Hokkaido University. It was a productive week, during which I met his students, discussed about our respective research, discussed research plans for our project, and gave a lecture on animal navigation to graduate students. I caught up with my friend Akiko, who was based in Hokkaido at the time, and visited Hakodate, a charming town with delicious seafood (squid in particular).

Voice! from Alumni member

I then headed out to Awashima Island (Niigata prefecture) to carry-out the fieldwork for our study, with one of my host's graduate students, Naya, who had kindly accepted to be my research assistant. Awashima is a lovely island with two small villages, mostly inhabited by fishermen. I lived in a traditional house shared with other researchers, and tried the local delicacy called Wappani (fish soup cooked with burned stones to simmer). In the first few days we had to find the birds' nests we would use in the study. This involved making our way through incredibly dense vegetation with machetes, dressed from head to toes in full waterproofs, hats, gloves and scarves to protect ourselves from insects. Unlike Hokkaido where temperatures are cooler, Awashima was blistering hot, and never in my life have I sweated so much!



Our beautiful field site on Awashima Island. (photo: Annette Fayet)

For the next three weeks, my days went as follow: I would get up, share breakfast with the other researchers in the house, and spend the morning working on my laptop. We'd make lunch (often ramen) together, and I'd spend the afternoon preparing for the night's fieldwork. This involved charging, programming and testing tracking loggers, making maps and plans of experiments, and preparing all the gear. Then my assistant and I would have an early dinner and head out to the shearwater colony for sunset, to set up camp before the birds returned. As soon as they started returning it was mayhem for 4-5h: we were walking up and down the colony, continuously checking underground burrows for returning birds, deploying GPS trackers, and downloading them sheltering under a tarpaulin trying to keep away from the rain. We'd stop around midnight, as the birds headed out at sea again, and returned home, exhausted and often caked in mud but buzzing and excited for the next day.

My stay on Awashima ended with a little bit of drama. After days of heavy rains and typhoons, the colony became too unsafe for us to work and the risk of landslide became so great we actually ended up being evacuated from our house, but luckily there was almost no damage. As the experiment was cut short, my colleagues finished the work in August 2019, and we are now investigating the results.

The JSPS fellowship was a fantastic opportunity and I enjoyed making new collaborations and learning about research in Japan. I will most definitely continue collaborating with colleagues in Japan and I cannot wait to return.

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*The detailed support is subject to change.

1

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2

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3

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