

Institution: University of Dundee		
Unit of Assessment: UoA14 Geography and Environmental Studies		
Title of case study: Establishing the Pitcairn Islands Marine Reserve		
Period when the underpinning research was undertaken: 2011-2016		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Professor Terence Dawson	Role(s) (e.g. job title): Chair in Environmental Change	Period(s) employed by submitting HEI: 17/01/11 – 30/09/16
Period when the claimed impact occurred: 2015-2016		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

In 2011, Dawson undertook an assessment of the ecological status of the marine environment surrounding the Pitcairn Islands, providing the first systematic assessment of the island's marine and coastal biodiversity. Commissioned by The Pew Charitable Trusts and funded by DEFRA, the research provided the evidence base that has informed policy briefings and ministerial meetings, and provided the scientific underpinning for the Marine Protected Areas in the UK's Overseas Territories' campaign, championed by leading scientists and environmental campaigners, raising both public and political awareness. On the 15th September 2016, in response to the scientific evidence and the advocacy campaign, the UK Government took the historical step of creating the World's largest Marine Protected Area (MPA) in the waters around the Pitcairn Islands.

2. Underpinning research

Before 2011, the scientific evidence for the state of the marine environment of the Pitcairn Islands exclusive economic zone (EEZ) was absent. To address this, Dawson (Principal Investigator) was awarded a DEFRA Darwin Initiative UKOT Challenge Fund grant to support research that led to the first systematic characterisation of the marine ecology of the waters surrounding the Pitcairn Islands. In addition, the project included a household survey and engagement with island residents and stakeholders to establish a future conservation and management plan for the fisheries, marine and coastal biodiversity. At the same time, The Pew Charitable Trusts, through their Global Ocean Legacy program, identified the islands as a candidate site within a system of large, fully protected marine reserves on a global scale. Having approached Dawson with a view to collaboration, the outcomes of Dawson's research provided the scientific underpinning of the subsequent campaign (led by The Pew Charitable Trust) to lobby the UK Government for the establishment of the Pitcairn Islands MPA.

The initial DEFRA UKOT Challenge Fund project undertook primary *in situ* underwater video coral reef surveys, as well as collation and analysis of local records, international surveys and relevant grey literature. The work produced a census of marine species that demonstrated there is high diversity in corals, reef fish and molluscs, and established a definitive list of 38 marine species found in waters around the Pitcairn Islands listed on the IUCN red-list as globally threatened [R1, R2], as well as several species new to Pitcairn (e.g. freshwater prawn). Furthermore, it was established that the islands are an important breeding ground for a sub-species of endangered humpback whale [R3]. This evidence base, describing the extraordinary biodiversity in the seas surrounding the Pitcairn Islands, demonstrated for the first time in a systematic and rigorous way both the uniqueness of the marine environment and the relatively

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low anthropogenic impacts, but that the potential susceptibility to degradation through fishing pressures was profound [R1, R2].

In conjunction with the assessments of biodiversity, the pilot project engaged with residents of the Pitcairn Islands to understand the requirements for a co-developed community-led marine management action plan (September 2010-2012) to explore ways of protecting this sensitive ecosystem from future over-exploitation (predominantly from fishing) [R4]. This was followed by further funding from DEFRA / DfID Darwin Initiative to develop a sustainable marine and fisheries management plan for the Pitcairn Islands (2013-2017). Dawson moved from the University of Dundee (UoD) to Kings College London in October 2016, however the fieldwork and data analysis for all supporting research was completed whilst at UoD.

3. References to the research

[R1] Irving, R.A. and Dawson, T.P. (2012) 'Coral Reefs of the Pitcairn Islands', in Sheppard, C.R.C. (ed.) *Coral Reefs of the United Kingdom Overseas Territories*. Coral Reefs of the World, Vol. 4, Dordrecht: Springer, pp 299-318 https://doi.org/10.1007/978-94-007-5965-7_22 (Accessed 22 March 2021)

[R2] Irving, R.A. and Dawson, T.P. (2012) *The Marine Environment of the Pitcairn Islands*. Dundee: Dundee University Press. Available at: <http://www.octassociation.org/IMG/pdf/dupreport11lo.pdf> (Accessed 22 March 2021)

[R3] Irving, R.A., O'Keefe, S., Warren, P., Koldewey, H.J. and Dawson, T.P. (2018)*, 'Confirmation of a new breeding area for humpback whales (*Megaptera novaeangliae*) in the central South Pacific'. *Journal of Cetacean Research Management*, **18**, pp. 119-125. Available at: <https://archive.iwc.int/pages/view.php?ref=7069&k=&search=%21collection15> (Accessed 22 March 2021)

*All underpinning research was conducted at UoD between 2013-16. Funding: <https://www.darwininitiative.org.uk/project/DAR20006/> refers.

[R4] Dawson, T.P. (2012) *Developing a community-led marine management action plan for the Pitcairn Islands*, Darwin Challenge Fund final report to DEFRA No. EIDCF003, London: DEFRA. Available at: <https://www.darwininitiative.org.uk/documents/EIDCF003/23673/EIDCF003%20CFFR%20-%20edited.pdf> (Accessed 22 March 2021)

Funding awards:

- Developing a community-led marine management action plan for the Pitcairn Islands (Awarded £25,000 by the DEFRA Darwin Initiative UKOT Challenge Fund, Sept 2010-March 2012) (Professor Terence Dawson, Principal Investigator)
- A Sustainable Marine and Fisheries Management Plan for the Pitcairn Islands. Awarded £250,000 by the DEFRA/DFID Darwin Initiative (Ref: 20-006), Sept 2013 - March 2017 (Professor Terence Dawson, Principal Investigator).

4. Details of the impact

The census of marine species diversity, the threats posed by fishing and the requirements of Island residents, established from UK Darwin Initiative projects 'Developing a community-led marine management plan for the Pitcairn Islands' and 'A Sustainable Marine and Fisheries Management Plan for the Pitcairn Islands' **provided the critical scientific underpinning to a subsequent campaign to designate a Marine Protected Area (MPA) around the Pitcairn Islands [E1]**. At the time of designation (September 2015) this was the world's largest MPA and an important step forward in protecting a fragile environment and the communities of the Pitcairn Islands that depend upon it.

Informed directly by the assessment of biodiversity and stakeholder responses, a policy briefing aimed at the non-scientific reader was commissioned by the UK Foreign and Commonwealth Office [E10]. This was widely disseminated to government ministers and as a result Dawson was twice invited to the UK Parliament to meet with ministers and the Foreign Office Director [E2].

Dawson's research directly led to the launch of the 'Marine Protected Areas in the UK's Overseas Territories' campaign, led in the UK Parliament by a group of MPs including Zac Goldsmith MP. This campaign attracted support from other global marine scientists (including researchers from Zoological Society London) and high-profile celebrities (including Hugh Fearnley-Whittingstall, Helena Bonham-Carter and Gillian Anderson) to lobby for the creation of the MPA [E3], creating a sustained and high profile process of engaging the public and policy makers. The campaign was led by The Pew Charitable Trusts, Dawson and others such as the Blue Marine Foundation, and engaged National and International Media organisations to increase public awareness and draw political scrutiny. This culminated in an open letter (signed by over 100 scientists and celebrity supporters) being sent to the Prime Minister David Cameron, calling on the UK Government to designate the Pitcairn Islands Marine Reserve [E4].

On 17 July 2014, a written question (UIN 205917) was raised in the UK House of Commons regarding the steps the UK Government were taking to protect biodiversity on the Pitcairn Islands [E5]. The response from the (then) Parliamentary Under Secretary of State at the Foreign & Commonwealth Office **explicitly cited the Dawson-led Darwin-funded projects that were developing marine and fisheries management plans as an example of UK Government contribution to protecting the region's biodiversity**, and that the UK Government was working with stakeholders in drafting a revised Pitcairn Ordinance (Law) on environmental protection to entrench these protections further.

On 18 March 2015, the UK Chancellor of the Exchequer, George Osborne, announced in his Budget to Parliament that 'The government intends to proceed with the designation of a Marine Protected Area around Pitcairn'. As the Senior Director Marine Habitat Protection, The Pew Charitable Trusts states "**The success of the campaign to establish the MPA was contingent on [Dawson's research] setting biological baselines, fully engaging with the Pitcairn Island community to ascertain their local needs and conservation objectives**, as well as partnering with The Pew Charitable Trusts to pitch the idea of the designation to the UK Government" [E1].

Dawson and colleagues were consulted by the Pitcairn Islands Attorney General's Office and contributed directly to the draft legislation that was introduced to establish an Ordinance to conserve and protect the Pitcairn Islands' marine environment [E6]. The announcement of the formal designation of the Pitcairn Islands Marine Reserve was made on 14 September 2016 by the UK Government and on 15 September 2016, the waters surrounding the Pitcairn Islands officially became what was at the time the largest MPA in the World [E9].

The Pitcairn Islands Marine Protected Area Ordinance (2017) established a zonation scheme for the whole of the Pitcairn Islands EEZ and the Coastal Conservation Areas (CCA) [E7]. 99.5% of the EEZ forms the non-extractive MPA, thus ending commercial fishing in the area with only small-scale, licensed subsistence and artisanal fishing allowed within the remaining 0.5%. In addition to impacting on the conservation of marine ecology, the protection of endangered species and species unique to the area, the residents of the Pitcairn Islands [E1] have also benefitted through public engagement with the research, inputting directly to legislation for both conservation and management of the Island fisheries and biodiversity.

In 2018, a Fisheries Management Plan was written by Dawson in partnership with the Government of the Pitcairn Islands [E8]. The management plan was based upon the three-year Darwin Initiative-funded project from 2014 to 2015, for the management of fisheries within the CCAs. Ongoing activities include scientific (and logistical) contributions to the UK Government's

'Blue Belt Programme', which is being delivered in partnership between the Centre for Environment, Fisheries and Aquaculture Science and the Marine Management Organisation.

5. Sources to corroborate the impact

[E1] Email from the Senior Director Marine Habitat Protection, The Pew Charitable Trusts detailing the contribution of Dawson's research to the establishment of the MPA

[E2] Email from the Head of Department at the Foreign and Commonwealth Office in London, responsible for the UK's Overseas Territories

[E3] Great British Oceans campaign flier for the Marine Protected Areas in the UK's Overseas Territories' campaign

[E4] Open letter to UK Prime Minister (David Cameron) from the Marine Reserves Coalition and RSPB in support of the UK's Overseas Territories' campaign [Online] Available at: <https://www.bluemarinefoundation.com/2015/02/20/5892-2/> (Accessed 22 March 2021)

[E5] UK Parliament (2014) *Pitcairn Islands. Question for Foreign and Commonwealth Office* (UIN 205917) Available at: <https://questions-statements.parliament.uk/written-questions/detail/2014-07-15/205917> (Accessed 22 March 2021)

[E6] Email letter acknowledging input and requesting further comments on draft Pitcairn Islands Marine Protected Area Ordinance (2017)

[E7] Pitcairn Islands Marine Protected Area Ordinance 2017

[E8] Fisheries Management Plan for the Pitcairn Islands 2018

[E9] Foreign and Commonwealth Office (2016) *UK set to protect 4 million square kilometres of ocean: Foreign Office Minister announces significant increase in UK Overseas Territory Marine Protected Areas* [Press release] Available at: <https://www.gov.uk/government/news/uk-set-to-protect-four-million-square-kilometres-of-ocean> (Accessed 22 March 2021)

[E10] Dawson, T.P. (2015), The UK Government agrees to create the world's largest marine reserve around the Pitcairn Islands, a UK Overseas Territory in the South Pacific, *Pacific Conservation Biology*, 21 (2), 108-112. <https://doi.org/10.1071/PC14916>