



Monitoring Natural Colonists through Biological Recording

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**Centre for
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NATURAL ENVIRONMENT RESEARCH COUNCIL

NBN

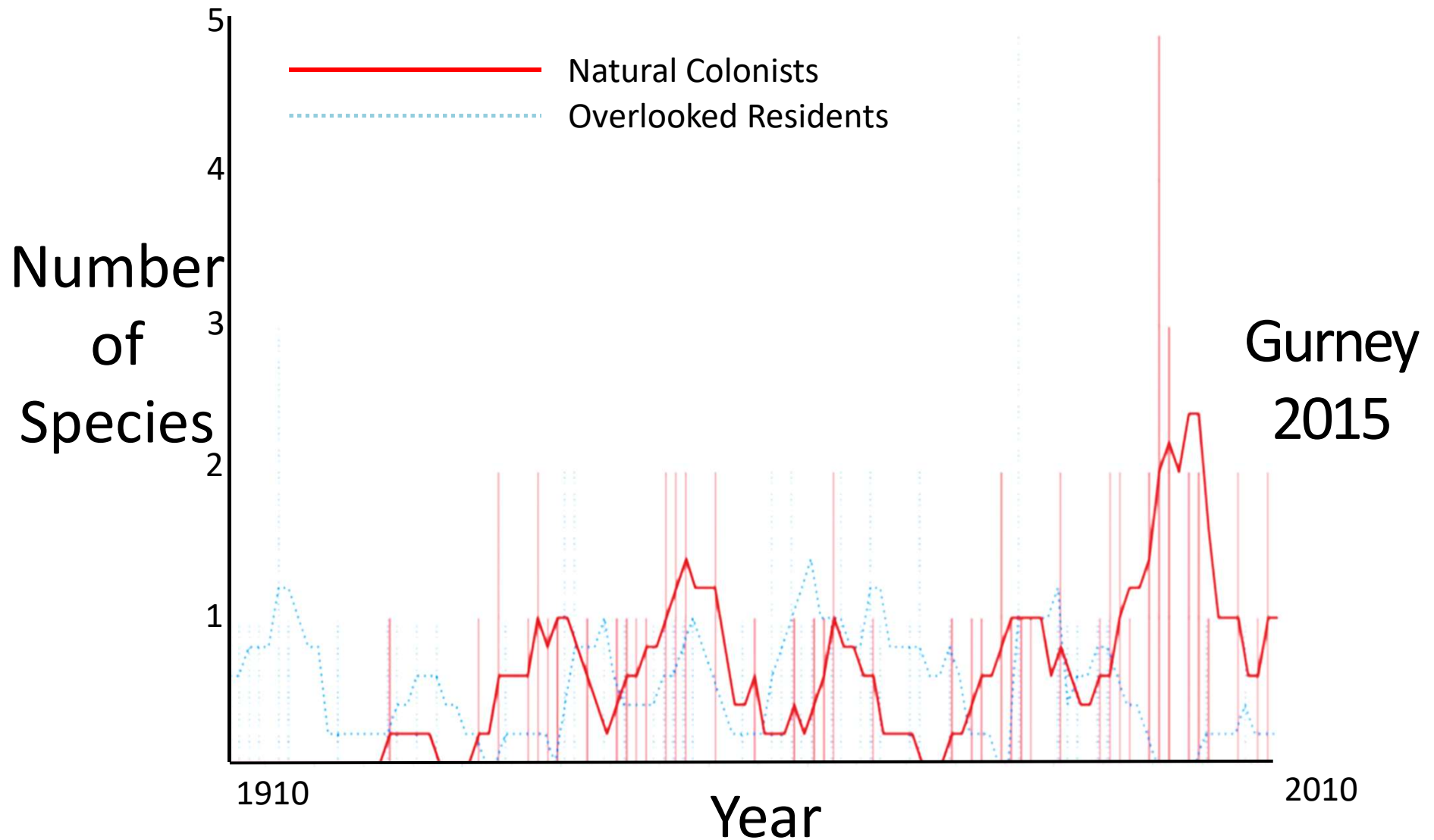
National Biodiversity Network



NERC
SCIENCE OF THE
ENVIRONMENT

UNIVERSITY OF
EXETER

New species are naturally dispersing into Britain



A Tale of Two Damselflies

1982



Ischnura elegans

2012



I. elegans



[Charlesjsharp](http://Charlesjsharp.com)

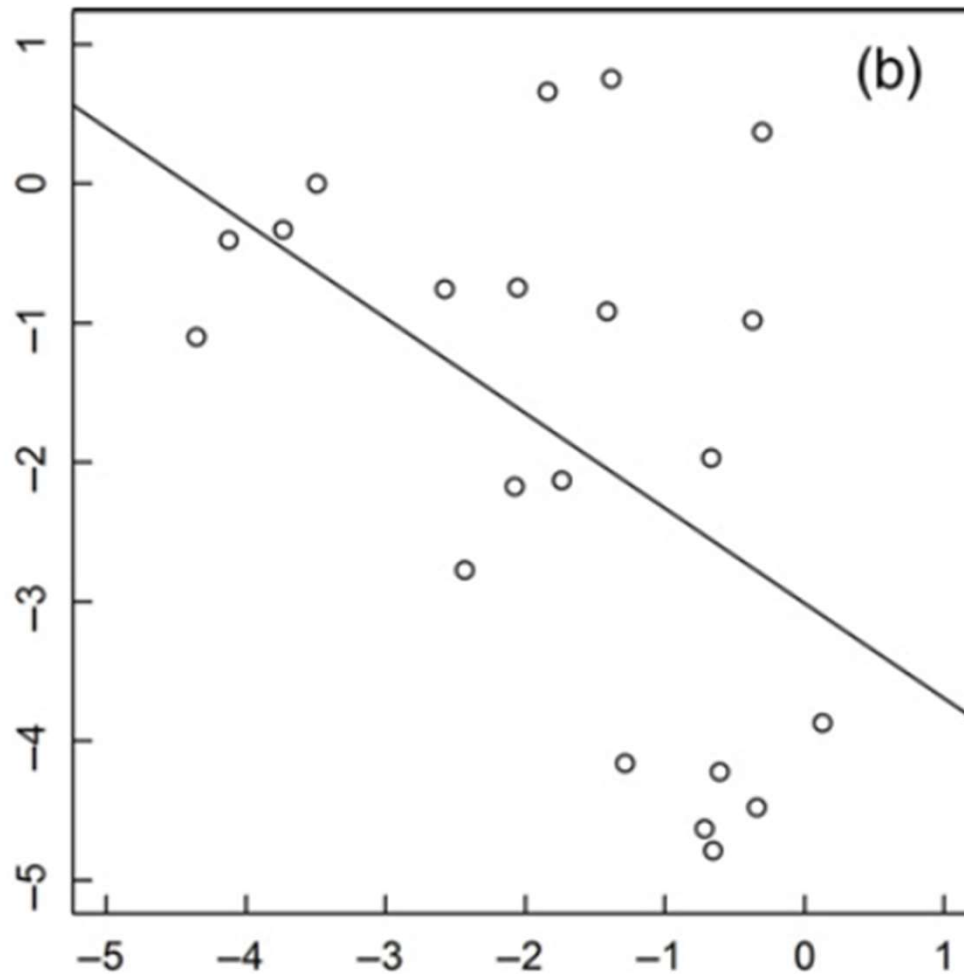
A Tale of Two Damselflies



A Tale of Two Damselflies



Log
(Native
Density)



Fitt & Lancaster
2017

Log (Colonist Density)



Ecological Refugees?

>90% UK decline
In past 30 years

Linked to Climate
Change

Moral Responsibility?

**RED
STATUS**



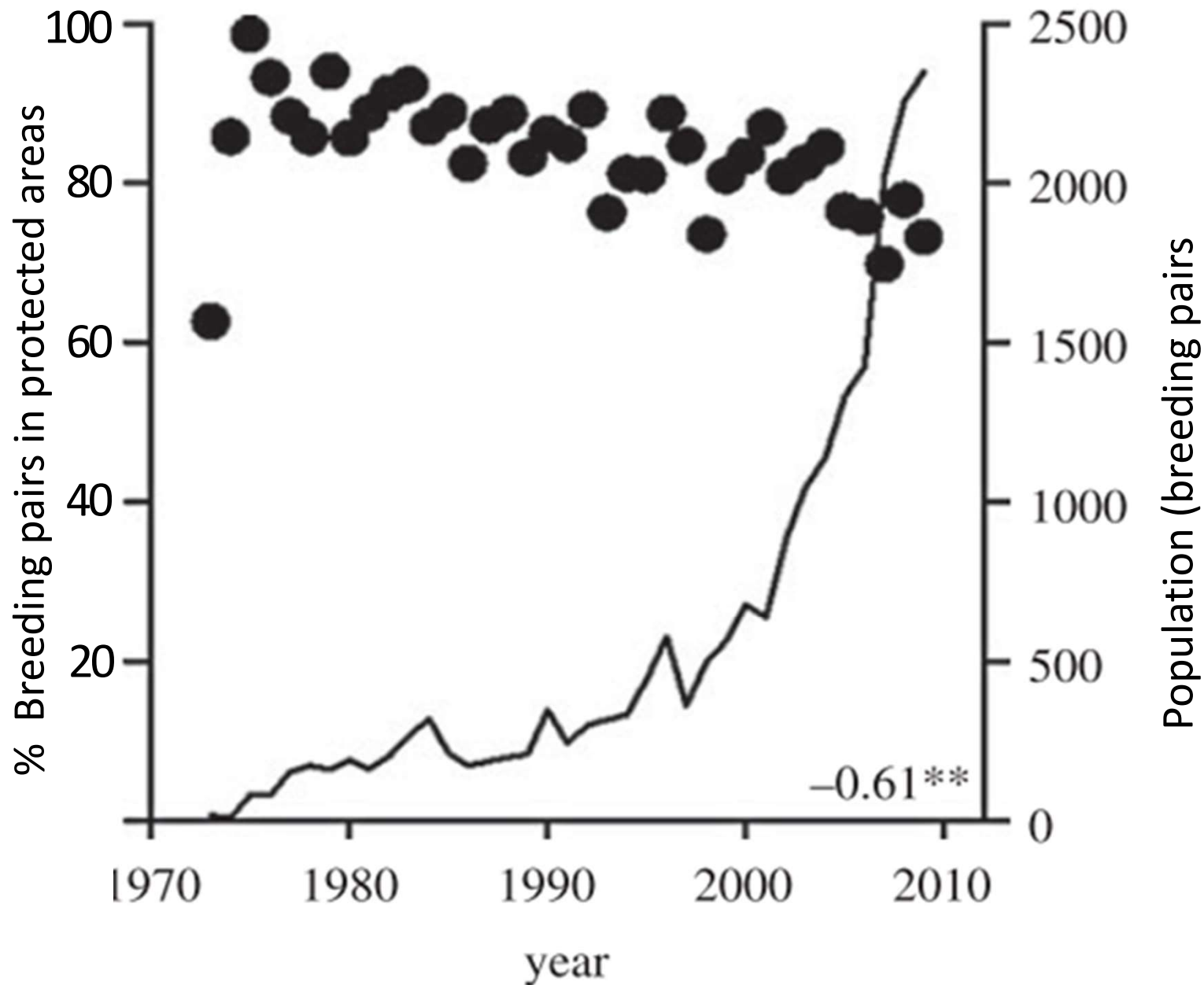
[Ian Preston](#)



Steve Childs

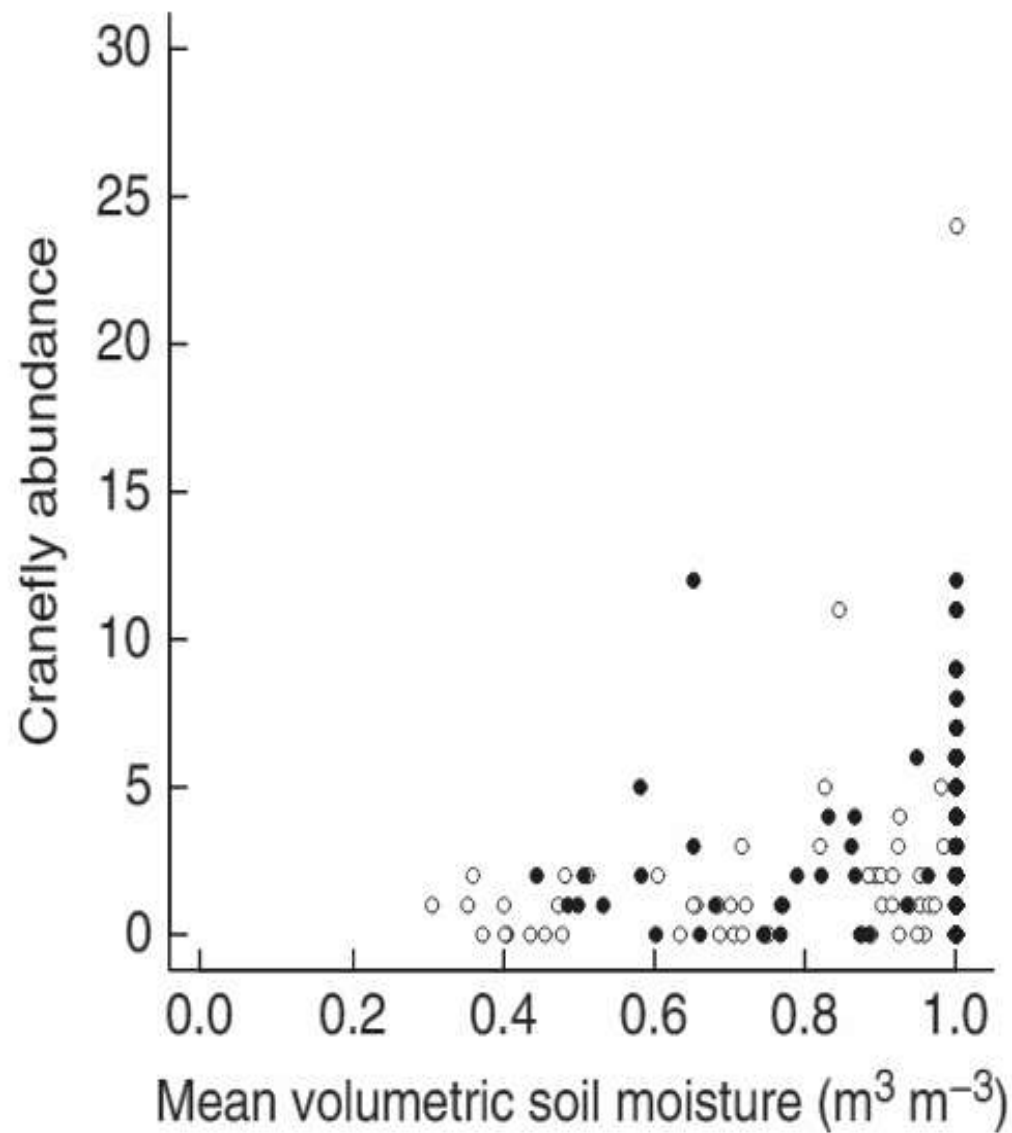
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Protected Areas as Landing Pads



Hiley
et al 2013





Carroll et
al 2011

Relationship between mean volumetric soil moisture and crane fly abundance, for sampling locations at blocked drains (●) and unblocked drains (○)





Problem



Planning



My Project

1. Predict Future Ranges

Method: Invasive Species Distribution Modelling (iSDMS)

2. Model Impacts

Method: Dynamic Bayesian Occupancy Models

3. Explore Stakeholder Attitudes

a) Questionnaires

b) Focus Groups



Thanks for listening!

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Linked in

<https://www.linkedin.com/in/jamescranston/>



Links: https://en.wikipedia.org/wiki/Blue-tailed_damselfly,
[https://en.wikipedia.org/wiki/Lestes_sponsa#/media/File:Lestes_sponsa_2\(loz\).JPG](https://en.wikipedia.org/wiki/Lestes_sponsa#/media/File:Lestes_sponsa_2(loz).JPG),
goo.gl/knHoYo, goo.gl/ZAFFFW, goo.gl/ofVuEi