

# **MUD, BIRDS and POPPYCOCK\***

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*\*Title inspired by MUD, BLOOD AND POPPYCOCK, the book by Gordon Corrigan on the many myths about WW1, and is used here with permission from The Orion Publishing Group.*

*\* This talk is based on an article to be published in the Bulletin of the British Ecological Society June 2016*

# SOME SHOREBIRDS





# COLLECTING PEELER CRABS ON THE EXE ESTUARY:

*Disturbance may be a threat to the birds!*



## HOW DISTURBANCE AFFECTS THE BIRDS:

- **Lost time and energy flying away**
- **Lost time as they recover**
- **Competition intensified for a while**

*i.e. increases energy demand but reduces their ability to collect it*





.... but **‘EFFECT** is not the same as **‘IMPACT’**

**‘effect’ = change in behaviour**

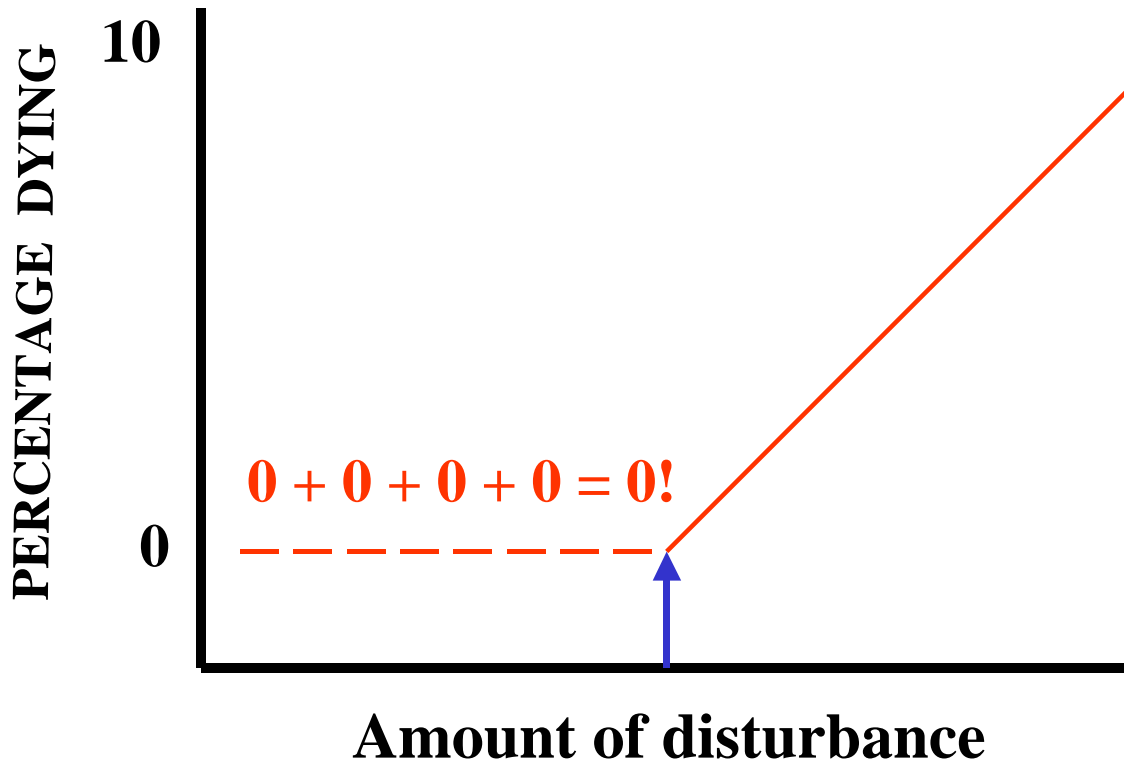
**‘impact’ = reducing their chances of surviving until spring  
in a good enough condition to migrate and breed**



It all depends on the frequency, intensity and duration of disturbances

**THE SCIENCE THAT SHOULD BE DONE: test the hypothesis that disturbance does have an impact**

↑ Threshold at which there begins to be an impact on the birds



*This can now be done using a model developed by Richard Stillman of Bournemouth University*

## WHAT (all too often) IS ACTUALLY DONE:

### ‘Assessments’ made from observations like these:

- Distance at which birds are disturbed by approaching person
- Comparing bird numbers in disturbed and undisturbed places
- Map area over which disturbers move and so ‘deny’ the birds
- Frequency at which >50 birds are disturbed

**The inference:** the birds’ natural activities are so badly affected that there simply *must* be an impact on survival and body condition...

## WHAT THIS APPROACH DOES:

- **Focuses research attention** on the occasions where and when people and birds **do** occur together – and not on where they **don't**.



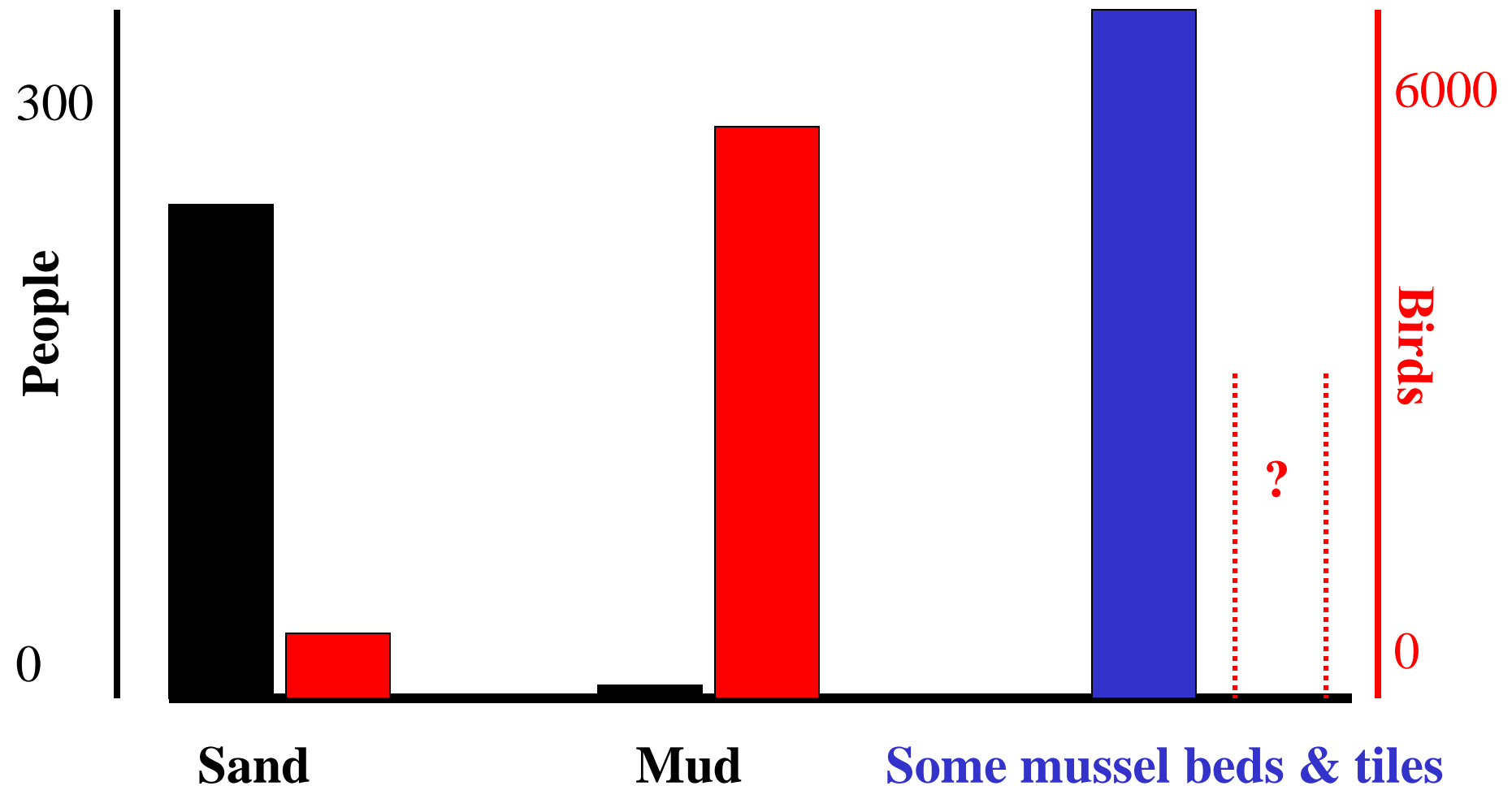
**Result:** greatly distorted impression of the disturbance experienced by shorebirds.

**In fact, birds and people are often segregated in space and time**



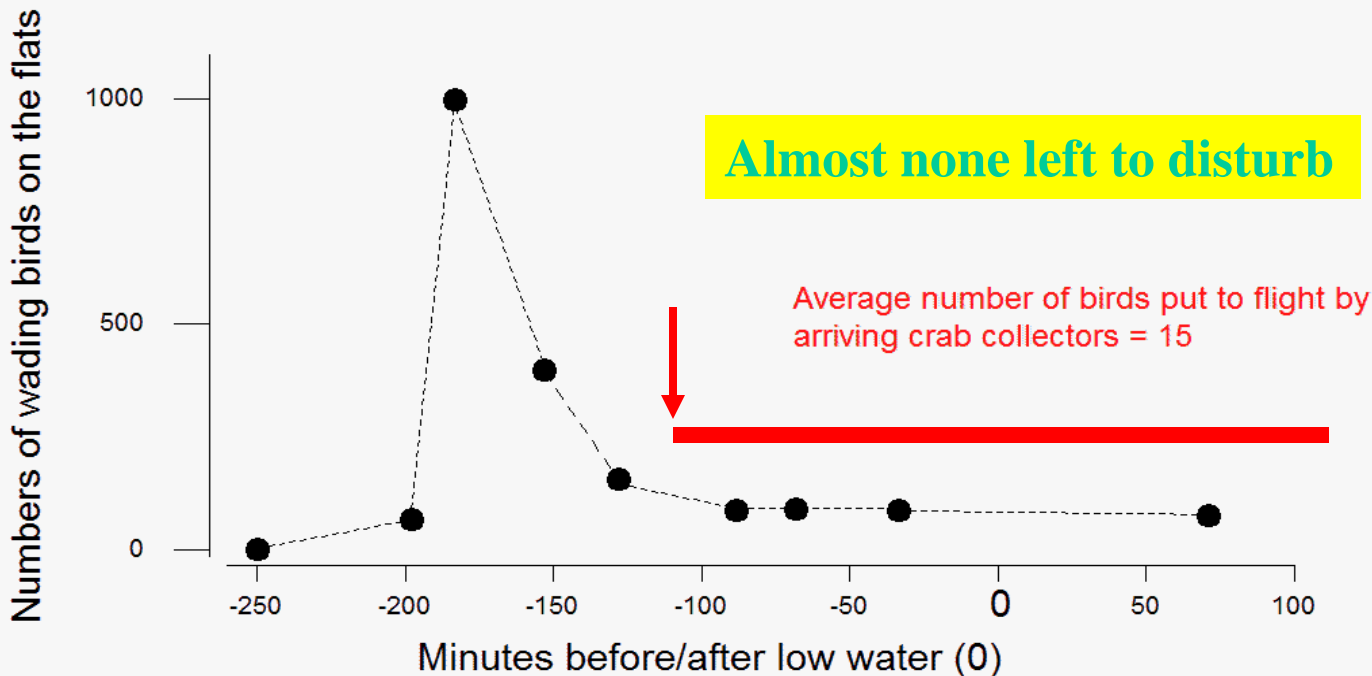
# OVERLAP IN SPACE : eg Exe estuary

*i.e.* most birds occur on mud; most people on sand. Overlap is mostly on accessible mussel beds & tiled areas.

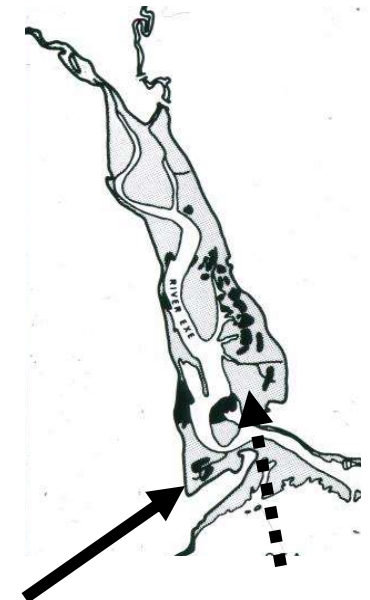


## OVERLAP IN TIME: often less than is realised

- **Daily cycle** – birds feed at night as well as day
- **Tidal cycle** - low water around dawn
- **In many upshore, accessible areas birds leave before people arrive: *eg Exe***



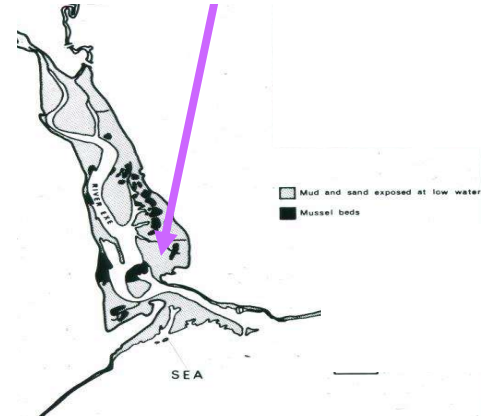
*eg Exe estuary*



An **OBVIOUS POINT** that is usually ignored: Once the birds have been disturbed from upshore, accessible areas, there are none left to disturb! And most leave of their own accord anyway: **dawn**.

*Drizzle – only 2 people arrived before low water* ↓

Exe – Cockle Sand



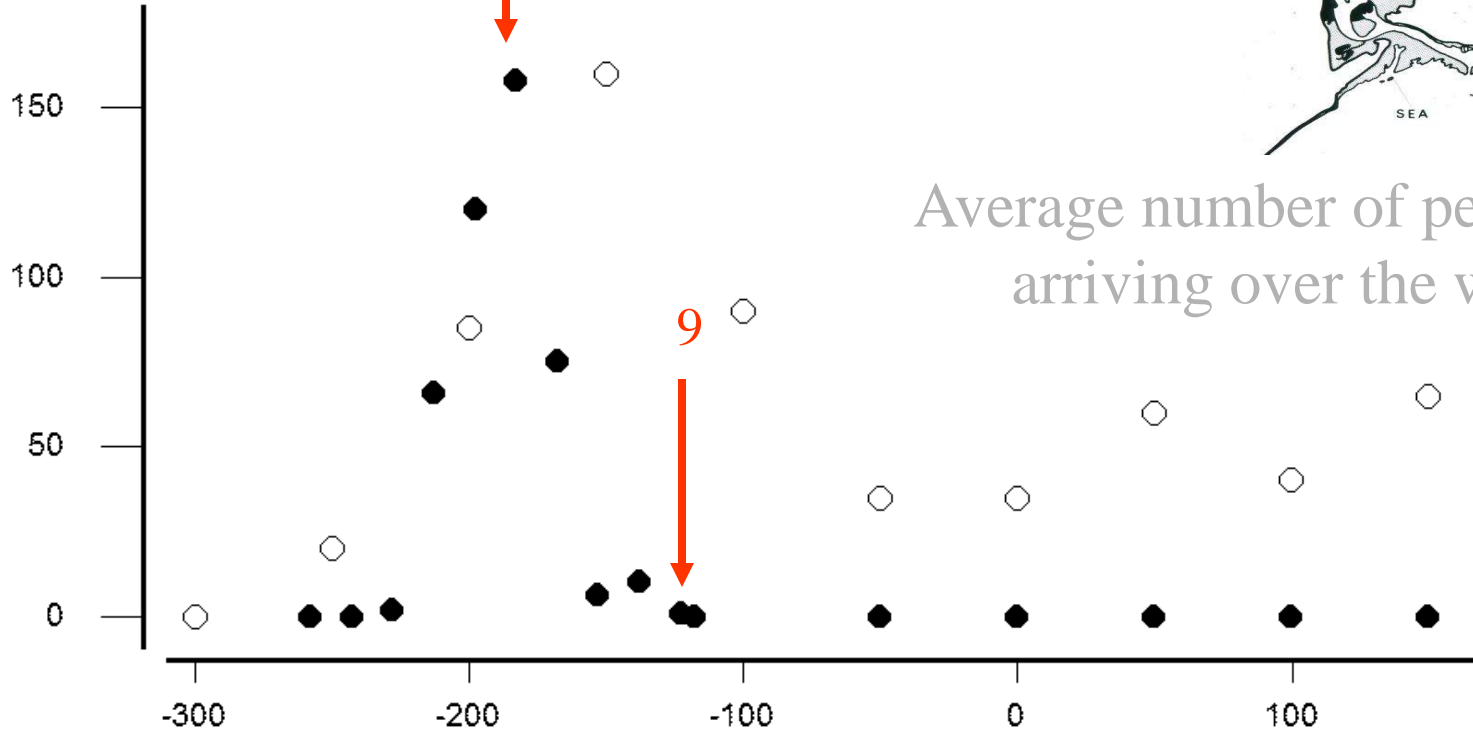
5 oystercatchers put to flight ↓

9 ↓

Average number of people (x5) arriving over the winter ○

Numbers of oystercatchers

on 20 Dec 2014 ●



Minutes before and after low water (0)

**The devil is in the detail – and the detail  
is usually ignored!**

*Birds are now a long way away!*





And it's all a question of quantities - the **amount** of disturbance: *eg Exe*

**BASED ON 6 YEARS (*self-funded!*) research:**

- Less than 1-2 % of bird foraging occurs at times and in places where the birds are **at risk** – *a low risk too* - of being disturbed.
- Bournemouth University's (very precautionary) model predicts it would require **15,000-30,000 people** to impact shorebird survival; *i.e.* 10-20% of the region's population!
- Nonetheless, the precautionary principle is applied and activities are *restrained* or *restricted* or *delayed*, and levies for *untested* 'mitigation' measures are raised.

## How has such indifferent research become to be accepted as adequate?

- 1 Culture of many conservationists and supporting ecologists:** *research appears too often to be done just to support preconceived 'concerns'*
- 2 Over-zealous application of the precautionary principle:** *presumption seems to be to say 'No!'*
- 3 Little or no attempt to distinguish between 'impact' and 'effect':** *just enough to raise doubt*

**This risks losing public support for shorebird conservation:**

*'Why are birds more important than people'*

# A more equitable and sustainable approach?

- Evaluate ‘risk against magnitude of potential loss’

*hypothesis-testing science*

*probability - not absolutism (what is acceptable amount?)*

*and*

- Search for ‘win-win’ outcomes

*and benefit from*

- skills and equipment of the shellfish industry

*A couple of examples.....*

# 1 'Discard' agreement on the Exe with Exmouth Mussel Fishery

*Effectiveness  
has been tested  
with  
Bournemouth  
University's  
model.*

**Discards put upshore to  
extend feeding time during  
difficult periods for  
oystercatchers.**





## 2 A 'win-win' at the Menai Straights mussel fishery

Low water mark

Lays for 'growing on' to harvestable size

*Derived from  
Bournemouth  
University's  
model*

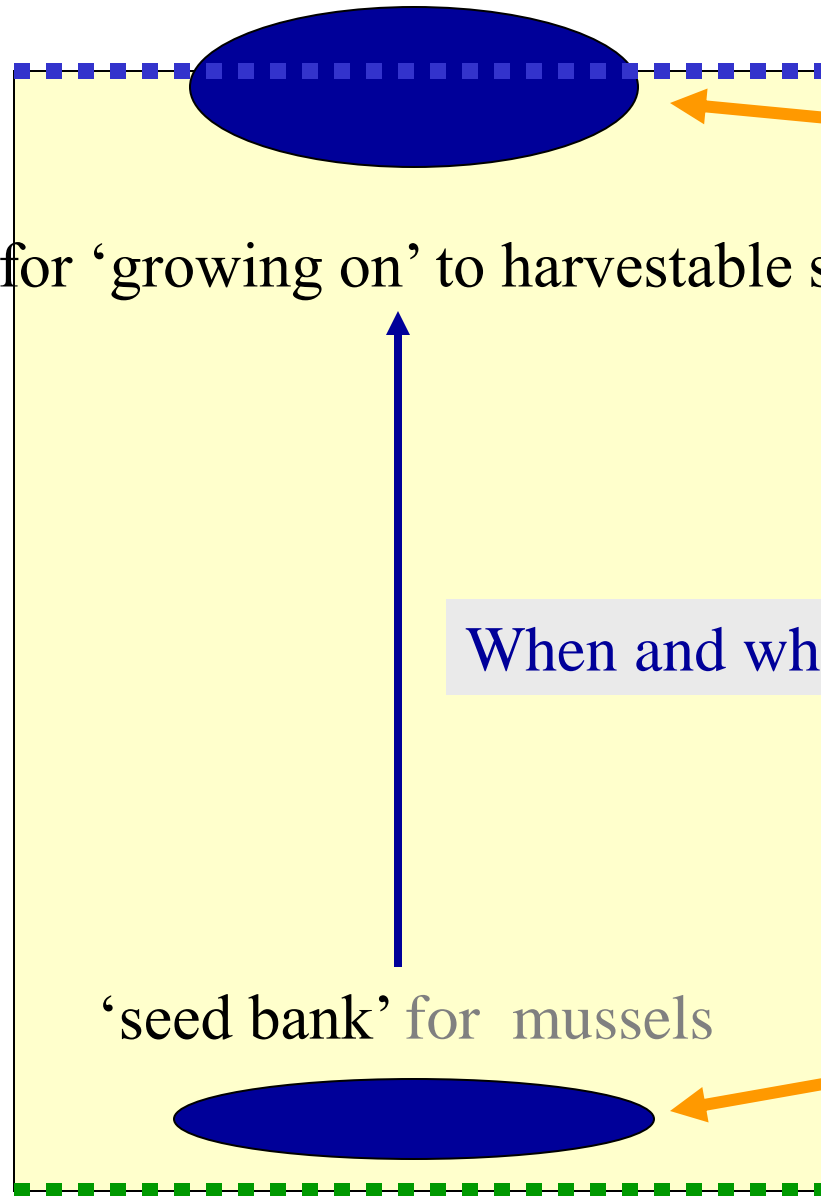
When and where to re-locate?

'seed bank' for mussels

High water mark

crabs

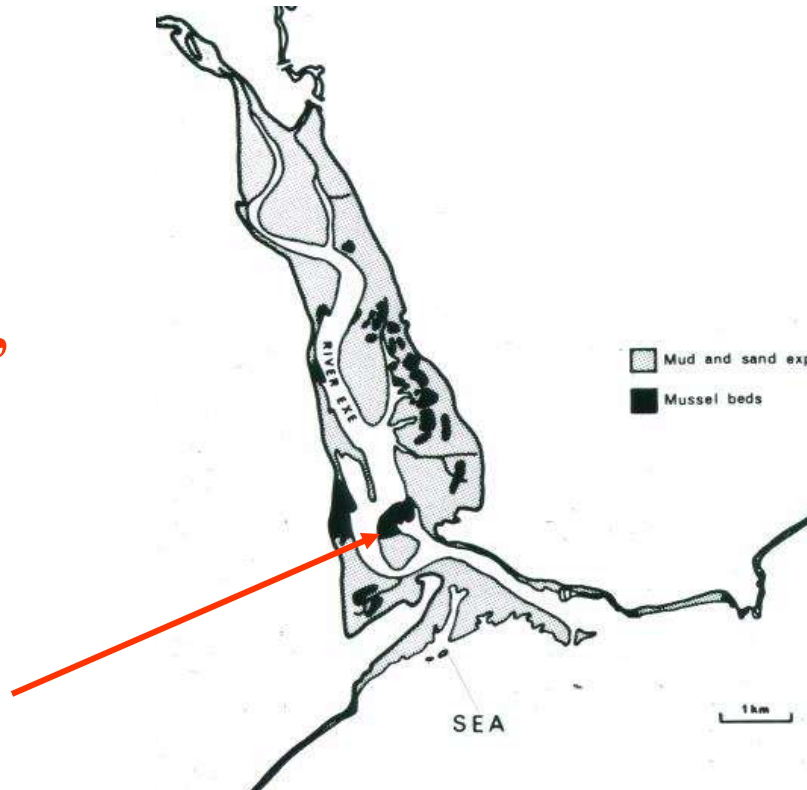
oystercatchers



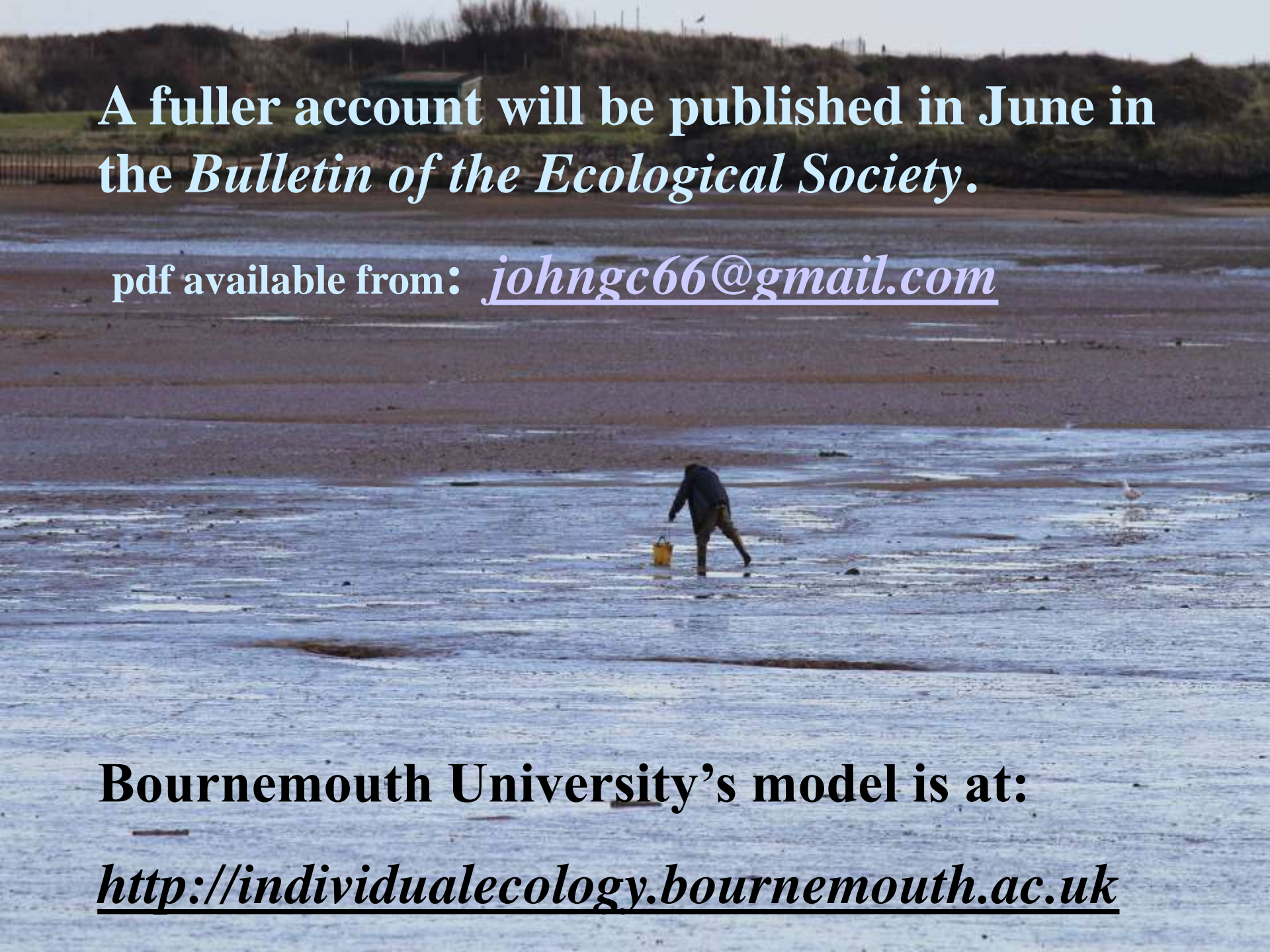
**Widespread difficulty?** Authorities have very broad roles: they are not specialists and may not know the detail - and there is no incentive to take a risk: *eg Exe*

**‘not natural!!!’**

**Source of seed**



*...and  
inspectors  
etc may  
know very  
little too*



**A fuller account will be published in June in  
the *Bulletin of the Ecological Society*.**

pdf available from: [johngc66@gmail.com](mailto:johngc66@gmail.com)

**Bournemouth University's model is at:**

<http://individualecology.bournemouth.ac.uk>