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All washed up

a low-cost, "flotsam" method for retrieving archival tags from marine animals

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I was trying to catch fish in the biggest pool beside the mound at the beach but the water was dark here so I moved up the burn to the second pool where I could see the fish but they were way to quick.

> I was looking for something shiny to try to attract them when I saw the orange casing of the chip lying in the shallow part of the burn at the side. At first I thought it was the top of a big felt pen until I looked closer. Then I knew it was "treasure".



"Treasure" from commercial species





Over the next few years Fisheries scientists will be releasing a small number of fish tagged with distinctive new

ELECTRONIC TAGS

which record important information about fish movements.

It is essential that as many as possible are recovered

> Please return both the tags and the fish by post to:

Ministry of Agriculture, Fisheries and Food; Directorate of Fishorios Research, Fisheries Laboratory Lowestoft, Suffolk MR33 OHT, ENGLAND

healt you for your co-operation.

DSTs, 1993-2011

Time-series data: behaviour and geolocation



Fishery independent data recovery



Advantages of satellite tags: High levels of data recovery, but not yet 100%! Independent of fisheries or other capture

Limitations of satellite tags: Too large for many species (but getting smaller) Expensive (~ factor of 10 x) Data capacity is limited (~ 1/100, but improving)

26 tags deployed, 8 (31%) tags physically recovered



Cefas "telephone" tag for basking sharks

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lease n

If found

4 (0)



After all, some hotels use the method for recovering room keys!

Dummy experiments

lrish Sea- green releases

Releases: (25) 20.11.2007 Recaps : (13) 3.12.2007 - 6.09.2008



Irish Sea 25 released (2007) 13 (52%) recovered (2007-08)



Celtic Sea- black releases

Releases:(25) 11.11.2007 Recaps :(8) 22.01.2008 - 24.10.2010



Celtic Sea (2007) 25 released 8 (32%) recovered (2008-10) Hurd Deep. Red and blue releases

Releases:(50)13-15.09.2007 Recaps:(13) 30.09.2007 - 14.11.2009



Western English Channel 50 released (2007) 13 (26%) recovered (2007-09)

56.5 56.5 56.4

Eastern English Channel

9 (36%) recovered (2008-09)

Release:(25) 24.07.2008 Recaps:(9) 28.08.2008 - 4.10.2009

25 released (2008)

North Sea - blue release (near Dieppe)

Overall recovery = 29%

But on the other hand.....



Northern North Sea

25 released (2008) but only 1 (4%) recovered (2009)



"Considering these points, I perceived that if the problem were to be solved in anything like a satisfactory manner it would be necessary to ascertain, not only where the youngest larvae were to be found, but also where they were not."

Johannes Schmidt, 1922.

Why the eeliad project is

important

You are in: Home

"eeliad is a scientific research project that aims to resolve some of the mysteries of eel biology, and to use this information to help conserve European eel stocks. The project will integrate and take advantage of significant recent improvements in techniques such as animal tracking, genetics and advanced mathematical modelling. The techniques will be combined in a large-scale field programme that will run between 2008 and 2011 and will be linked to studies and observations undertaken in other research and monitoring projects in freshwater and brackish environments to enable a comprehensive understanding of the life-cycle of eels to be developed."

News



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Background

The eeliad project

Facts and reports Eel blog

Partners and people







Eels on the move

The mysterious eel



A pictorial concept of the eeliad project

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"Treasure" on animals 1:

Eels







Buoyant, inserted under anaesthetic

Releases when eel dies

Drifts, hopefully making landfall (20 yr life)

Might be **recovered** from shore & returned

287 released across Sweden, Ireland, France and Spain (2008-2010)

18 (6.2 %) recovered so far



"Treasure" on animals 2:

Cod





198 released in the Irish, Celtic & North Seas in 2010

25 (12.6%%) from the commercial fishery

8 (4%) from beaches

Life and death of a cod in the Irish Sea in 2010



"Treasure" on animals 3: Loggerhead sea turtles in the bay of Naples





Turtles are rarely encountered at sea.

Tags attached using galvanic releases.



10 dummy tags deployed in 2005, 50% recovered
4 DSTs deployed in 2006, 75% recovered
5 DSTs deployed in 2008, 40% recovered

Overall recovery = 55.6%

"Treasure" on animals 4: Barrel Jellyfish in Carmarthen Bay, Wales





72 tags deployed in 2008/09 26 (36%) recovered 1-26 days on fish (mean=13 ± 9) Total: 315 days







ed for the Fisheries Society of the British Isles

Tags are small and cheaper, can go internally

Good recovery rates in many situations

Applicable to non-capture species

Supplements recovery rates from fisheries

Can yield novel data e.g. predation events

CONS

Not suitable for every application (e.g. rocky shorelines, sparse human populations)

Recovery depends on release location, prevailing wind & currents

Drifting tags may take some time to get home



So your kids may end up analysing your data.....



Thanks for listening

Comparison

	X-Tag	DST	
Data	1	83	
Cost	1	10	
Recovery		1	0.2
Ratio	1	166	