

Change and Adapt - Making a success of a career in Natural Science ... ?

Highlights from the 15th March 2025 talk

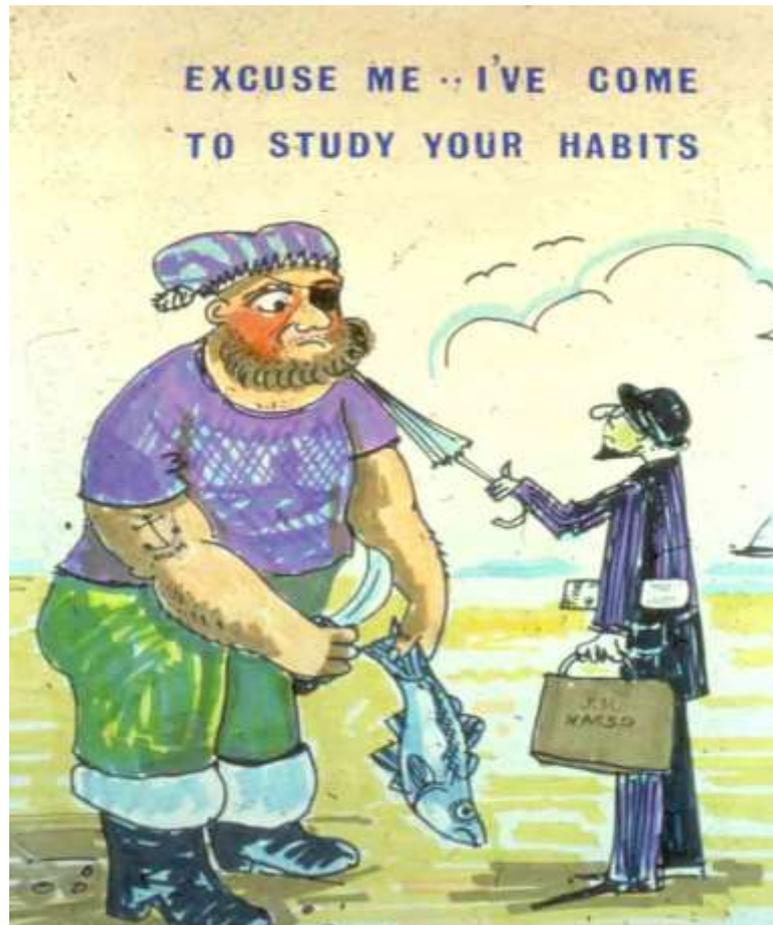
Paul Leonard FRSB, FMBA, FLS

BNSS weblink: [Change and Adapt - Making a success of a career in Natural Science - BNSS](#)

Outline of my talk

- Who is Paul Leonard?
- Tips & suggestions to enjoy making science fun
- Getting a career in natural science
- Demonstrations & prizes
- Questions

Who is Paul Leonard?



LEONARD, D.R.P., and HUNT, G.J. (1985). A study of fish and shellfish consumers near Sellafield: Assessment of the critical groups including consideration of children. *J. Soc. Radiol. Prot.* 5(3) 129-138.

CONTEXT

10TH March 2025, container ship SOLONG 140m collides with tanker Stena Immaculate 183m moored off the Humber Coast. Jet fuel set alight.

[BBC News 0822h. Tues. 11 March 2025](#)

KEY MESSAGES

In a career, there will be many challenges and opportunities. For example in 1996, the oil tanker Sea Empress ran around in Milford Haven harbour. Paul was appointed by the Welsh Office to advise on appropriate environmental monitoring. From 1995 to 2007, Paul headed the Defra Marine Environment Science Unit. In 2002, another oil tanker, the Prestige sank off the Portuguese / Spanish coast. Paul was appointed by the European Union to represent the UK in an Accidental Marine Pollution initiative (AMPERA).

CONCLUSION

Having the right experience & wanting to learn from others is essential.

AMPERA

EUROPEAN COORDINATION ACTION TO FOSTER PREVENTION AND BEST RESPONSE TO ACCIDENTAL MARINE POLLUTION

- » About AMPERA
- » Participants
- » Management and tasks
- » News & Events
- » Reports
- » Call for Proposals
- » Links
- » Contact Us

About AMPERA

» Background

Marine pollution, in general, and accidental marine pollution, in particular, are issues of major concern from the standpoint of their impacts on the health of the marine environment and their socio-economic uses.

Driven by economic, ecological and security considerations, there is an increasing pressure upon the need for new or improved prevention mechanisms and emergency response systems to better protect the world's marine ecosystems.

In this context, decisions based on sound scientific principles are indispensable for the effective prevention of accidents and efficient formulation of contingency plans.



Prestige



Erika

AMPERA Intranet

user:

password:

Visit the Ampera interactive website:



AMP
Accidental Marine
Pollution

Ampera © design by MasterDissemy 2005

Working in Brussels



AMPERA: ERA-NET to foster prevention and best response to Accidental Marine Pollution

CONTEXT

MSC Napoli, a container ship lost cargo off the Scilly Isles & eventually came aground off the Dorset coast. January 2007.

KEY MESSAGES

Paul co-ordinated lunch – time briefings in London with environmental teams in Dorset, establishing collection of samples, fishing restrictions and briefings.

CONCLUSION

Having the right experience & wanting to learn from others is essential.

How does a career in Natural Science help?

The next slide shows marine colleagues from the Cefas Laboratories based at Weymouth & Lowestoft undertaking research on oil films and potential environmental damage e.g. to plankton, fish & seabirds.



YES ~ We Have Experience



CONTEXT

Over the years, building experience can result in career opportunities.

KEY MESSAGES

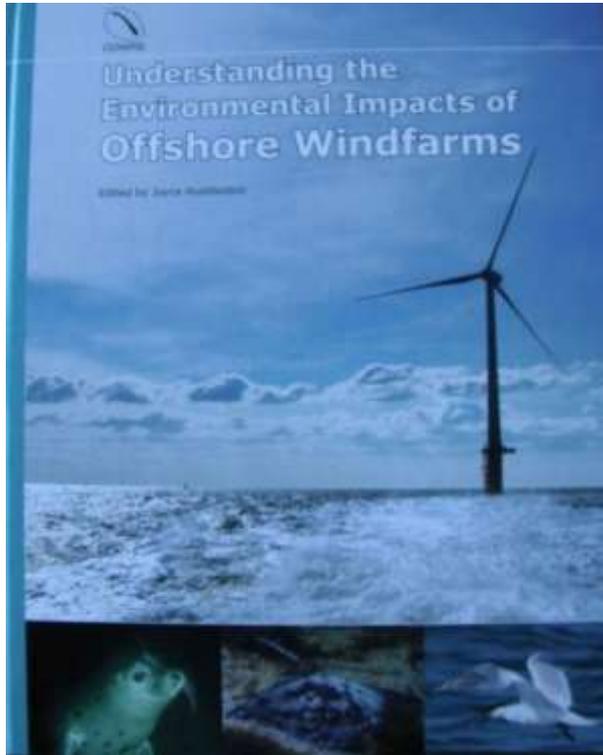
Paul was invited to Hong Kong to advise on environmental monitoring procedures. (Top left). Working with a Minister at a 'Living with Radiation' exhibition (Top middle), a colleague checking monitoring equipment (Top right), talking about habits (bottom left), assessing air monitoring equipment in the USA (bottom middle) . A television documentary team filming environmental sampling (bottom right).

CONCLUSION

A career in Natural Science makes a positive difference

The next slide shows these opportunities.



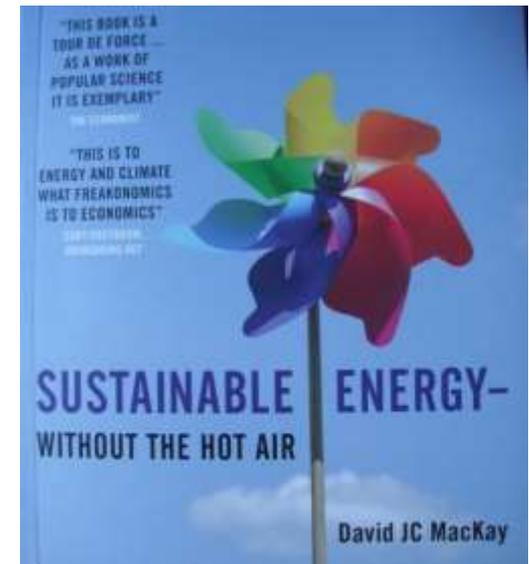


Marine Aggregate R&D used to help the London Olympics reduce environmental impacts.

Other Work

1997 : Responsible for the science supporting Flood & Coastal Defence at Defra & the Environment Agency

Research Council
Peer Reviewer



www.withouthotair.com

Last 10 years or so

Appointed by Marine Management Organisation to be an Independent Member of the Sussex Inshore Fisheries & Conservation Agency

[Welcome To Sussex IFCA](#)

Appointed by Thames Regional Flood & Coastal Committee to be an Independent Member. This has included since 2021, chairing the Natural Flood Management Steering Group.

[Natural Flood Management advice in Thames catchment | WWT](#)



Milan 17 – 18 September 2018

In 2016, Kazakhstan:
Key Note talk on UK
Energy, Oil & Gas
operations & emergency
response.

Also in 2016, in Cape Town
~ Public exposure to
radioactive discharges.

Beaver reintroduction and its effects on freshwater biodiversity in Britain



Natural Flood Management Group for the Thames Catchment a site meeting



Tips & suggestions to enjoy making science fun

- Network / Young Explorers
- Learn from others
- Collect things
- Join societies e.g. BNSS, Marine Biological Association, Royal Society for the Protection of Birds, Freshwater Biological Association ...
- Tell your friends / Have a Natural Science Club



Fish & invertebrates from a trawl.



CONTEXT

The next slide shows an envelope with some stamps. What is the story?

KEY MESSAGES

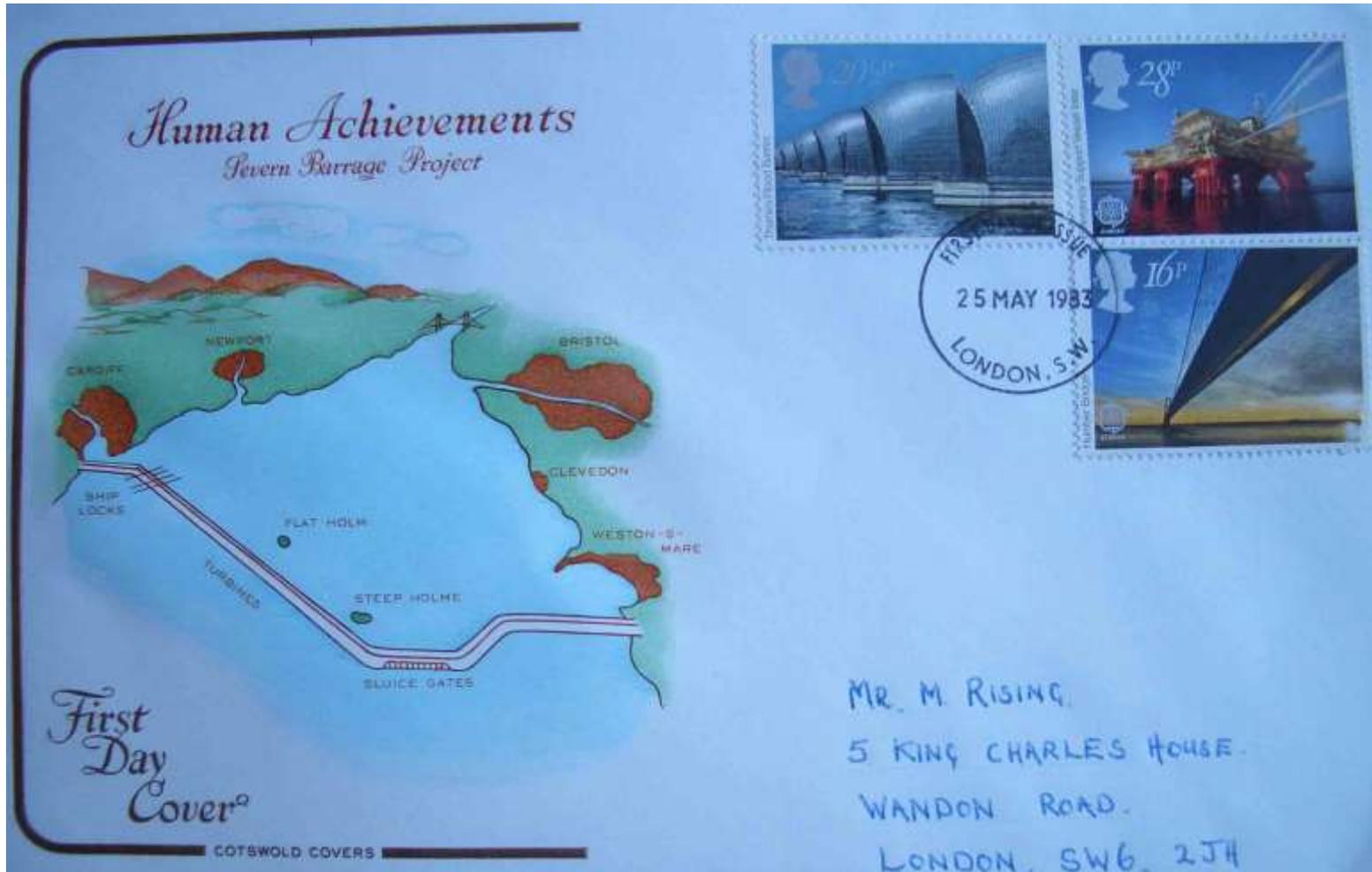
The envelope posted in 1983 is entitled 'Human Achievements' and the three stamps show successful completion of the Thames Barrier, an oil / gas rig and the Humber Bridge.

However, the main picture shows the planned Bristol Channel barrage. That has never been built.

CONCLUSION

Natural Science studies have included the potential impact of the barrage on sea birds and the buildup of sediment that could adversely affect the turbines. Similar schemes continue to evolve with the offshore wind initiatives supplying significant amounts of electricity.

Natural Science = Fun?



Getting a career in natural science



Working with Sir David Attenborough.



On a Port of London Authority boat studying sea level rise and defence planning.

[Thames Estuary 2100 \(TE2100\) - GOV.UK](https://www.gov.uk/government/news/thames-estuary-2100-te2100)

What could you do?

- Sewage?
- Marine / Freshwater Fisheries
- Aquaculture
- Wildlife & Countryside inc. aliens
- Flood & Coastal Defence
- Water Quality
- Agricultural impacts
- Bathing Waters
- Pollution
- Drinking Water Inspectorate
- Climate change
- Emergency response



Demonstration & prizes

Attendees were encouraged to help themselves to a selection of Natural Science themed artifacts, primarily First Day Covers with stamps from Royal Mail celebrating achievements e.g. Darwin and Kew Gardens.



Amongst the exhibits kindly loaned by the BNSS there was a puffin and a bat. Paul explained how legislation to protect these species can be helpful to protect ecosystems.

Two tables showed a chart of the oceans, a range of healthy foodstuffs, environmental monitoring equipment and reference books.

Organisations that employ 'Natural Scientists' : A few web links

- [Defra Department for Environment, Food & Rural Affairs - GOV.UK](#)
- [Crown Estate Marine | The Crown Estate](#)
- [www.cefas.co.uk](#)
- [www.nerc.ac.uk](#)
- [www.environment-agency.gov.uk](#)
- [www.naturalengland.org.uk](#)
- [http://www.pla.co.uk/](#)
- Coastal Futures Jan. 2025
- [http://coastal-futures.net/](#)

These web links provide further information on science – based evidence and potential work opportunities



With thanks to colleagues at e.g. Defra, MMO, IFCA, EA, Cefas, NE, NERC, BMAPA, The Crown Estate, EU, MCA, UK universities, IMarEST, TEP & the London Gateway.

AND MORE : Organisations that employ 'Natural Scientists' : A few web links

Natural Capital Initiative [The Natural Capital Initiative | UK Centre for Ecology & Hydrology](#)

Marine Conservation Society [Marine Conservation Society | UK Ocean Protection Charity | Healthy Seas](#)

Marine Biological Association [Marine Biological Association | Marine Biology UK](#)

Freshwater Biological Association [Freshwater Biological Association | Environmental Research and Advocacy](#)

Reach B ~ The Stoop 2 August 2018

Location B5



Location B6





YES ~ We Have Experience



Questions...

..... ?