



# Public perception of ocean acidification

## Expert interviews and survey research during 2013

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# Background

- Part of 'added value' activities of UKOA
  - Public perceptions research through the School of Psychology Understanding Risk Group ([www.understanding-risk.org](http://www.understanding-risk.org)) at Cardiff University, with Paul Pearson in Earth Sciences
  - Study rationale and aims:
    - Information on public understanding of environmental topics can help inform communication, policy development
    - Study aims to measure basic awareness of OA and attitudes towards science, risks, responses
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## Previous studies: public perception of OA

- Little previous systematic work
    - Potts et al. (2011) found that 52% of an EU public sample rated ocean acidification as a 'threat' or 'severe threat' to the marine environment (vs. 80% for 'industry pollution', 75% for 'litter', 58% for climate change, and 44% for 'shipping')
    - Research commissioned by the Ocean Conservancy (USA) in 2012 found OA was not well known as an issue, though suggested the term itself was enough to generate some concern
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## Previous studies: public perception of climate change and other socio-technical issues

- Substantial literature examining public perceptions of various other environmental/ sociotechnical risks
    - for example: climate change, nanotechnology, GM organisms, nuclear power, air pollution, carbon capture and storage
  - Current research to draw on wider approaches from this previous work – e.g. image association, risk perception, value basis of opinion
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# Scoping research

- Interviews with lead scientists on UKOA projects to outline current state of knowledge around OA
  - Interviews used primarily to inform survey design (e.g. to pinpoint areas of consensus and uncertainty in OA research)
  - Possibility also for use of interviews for general purpose synthesis of OA
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# Public survey

- Online survey to be administered online in two phases
    - Phase 1 prior to IPCC 5AR ~ August/September 2013
    - Phase 2 following IPCC publication ~ building on first phase
    - Difference between phases (or not) depending on wider representation and reporting of IPCC findings
  - Nationally representative sample,  $n=1,000 + 1,000$  (by age, gender, social grade etc.)
  - Basic descriptive statistics available from September/October 2013; further analysis during late 2013, 2014
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## Survey items (questions)

- Basic awareness
    - Have you heard of OA?
    - How much do you know about OA?
  - Level of concern
  - Image association
    - “What is the first thought, image or phrase that comes to mind when you hear the term ‘ocean acidification’?”
    - Affective component to associations
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## Survey items

- Recognition/ perception of causes

One or more of the following could be considered **causes** of ocean acidification. Please indicate how likely or unlikely you consider each to be a *cause* of ocean acidification. [NB these are provisional]

- Over-fishing leading to disruption of ocean food chains
- Naturally-occurring carbon dioxide in the atmosphere being absorbed by the oceans
- Carbon dioxide in the atmosphere from human activities (e.g. use of fossil fuels) being absorbed by the oceans
- Pollution from ships, such as from oil spills and discharge of waste products
- Increased seawater temperatures from climate change
- Normal cycles of change in ocean chemistry

# Survey items

- Recognition/ perception of consequences

One or more of the following could be considered **consequences** of ocean acidification. Please indicate how likely or unlikely you consider each to be a *cause* of ocean acidification. [NB these are provisional]

- a) Damage to the metal hulls of ships
- b) Faster erosion of coastlines in certain parts of the world
- c) Damage to coral reefs
- d) Skin damage to those spending long periods of time at sea, such as fishermen
- e) Less [/More] favourable conditions for some types of marine micro-organisms
- f) Reduction in the volume of ice-shelves in the Arctic and Antarctic
- g) Less [/More] favourable conditions for some larger marine animals (including fish and squid)
- h) Problems for people who make a living from the sea, due to decreased fish stocks
- i) Reduced [/Increased] ability of the oceans to absorb carbon dioxide from the atmosphere

# Survey items

- Perceived consensus and uncertainty in understanding of OA

Sliding scale used to indicate perceived level of agreement among experts...

...that OA is caused by carbon dioxide (CO<sub>2</sub>) emissions from human activities that end up in the oceans

...that OA will have harmful consequences for certain types of marine life

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# Survey items

- Additional explanatory text used prior to further items
  - Range of additional measures:
    - Perceived policy priority of OA
    - ‘Psychological distance’ – i.e. perceived proximity of OA in space, time, societally, personally
    - Replicated measures of climate change perceptions (e.g. perception of reality, anthropogenic component, importance of CC; ‘scepticism’)
    - Measures of values and worldviews
    - Demographic variables
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# A request for comments, suggestions

- Selected items provided on handouts (relating to factual/expert material)
- Please let us know what you think...
  - Badly worded items?
  - Missing or misleading information?
  - Important omissions, additional areas of potential interest?
  - Answer the survey if you want, though we can't use responses officially
  - Please suggest any improvements so that we can gauge public awareness of OA in the proper scientific context
  - Email me at [capsticksb@cardiff.ac.uk](mailto:capsticksb@cardiff.ac.uk)

*Thanks*

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