

Jesse Ausubel: Let there be (no) light

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By Mark Schrope

What is the Census of Marine Life?

It is a 10-year field programme designed to assess and explain the [diversity, distribution and abundance of marine life](#). There have been over 400 expeditions, and in October we will report on over [200,000 species](#), including more than 5000 recently discovered ones.

What has been the most memorable thing for you about the project?

The census has been the best and most exciting experience of my career. It has been very complex getting everything up and running. While I appreciated the importance of what we might learn, I certainly did not anticipate the satisfaction we got from the visual beauty of the discoveries.

You've recently proposed the Quiet Ocean Experiment. What's the idea behind that?

Ever since the invention of the marine motor in the 1870s humans have added clamour to the oceans. Now this noise is increasing by 3 decibels every decade. We want to quieten the clamour temporarily to get a better baseline of the natural symphony of the oceans.

How would you set up such an experiment?

We would ask maritime industries, navies, oil platforms and others who add a lot of noise to the oceans to take part in a worldwide period of quiet. For them to agree, they would need to feel that the benefits of the experiment exceed the inconvenience of turning their motors down or off for a few hours. With the right kind of experiment we might be able to quantify some of the environmental benefits that could follow from making marine motors quieter, and that should give industry an incentive to cooperate with us.

What could the experiment teach us?

One of the questions that scientists are discussing is whether [marine mammals have had to change the frequency of sound at which they communicate](#) because the frequencies they would normally use are saturated with human-generated noise. We would also like to put together a library of marine animal sounds that would be good enough for us to do biodiversity and abundance assessments based on listening. Crucially, we need quiet to finish recording the sounds and start the assessments.

You have also advocated the idea of a Dark Sky Experiment. What's the motivation for that?

I think a lot of ecological studies may be confounded by light. I would like to be able to analyse to what extent [behavioural change in ecosystems may be due to night-time illumination](#).

Why do you focus so much on sound and light?

We have been too narrow in our definition of global change. Changes in temperature and precipitation are important, but over the last century the increase in light and sound levels has been far greater. Global changes associated with light and sound levels are something we should be paying attention to, but are scarcely studied at all.

Profile

[Jesse Ausubel](#) is an ecologist at Rockefeller University in New York City and the programme director for the [Census of Marine Life](#) at the Alfred P. Sloan Foundation