***­­­environmental SCIENTIST* journal: learning resource notes**

The purpose of these educational resource is to provide a format for informal, seminar-style discussions of the topics explored in the latest edition of the journal of the Institution of Environmental Sciences.

Through discussion of the ideas and issues presented within the journal, they aim to supplement and enhance students’ knowledge and understanding of a broad range of environmental science issues and provide insights into the professional concerns of practising environmental scientists.

**Articles in focus**

The below articles have been selected as particularly relevant for in-depth discussion, allowing for wider debate of the key elements of the article topic. Some specific questions you may wish to consider when reading and discussing these articles are outlined.

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| Learning outcomes | * Understand the main ideas discussed in the publication
* Describe the main conclusions and their relevance to the environmental science sector
* Critically reflect on the main concepts discussed
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| Format | * Articles of particular interest are to be selected and shared with the group to read ahead of the discussion. Suggestions of focus articles are attached here
* Small group discussions of articles that closely relate to programme content to supplement learning
* Discussions can be led by participants or the tutor, using the ‘articles in focus’ resource to prompt debate and aid the conversation
* The suggested discussion points and questions provided in this pack for selected articles can be used as a starting point to guide the discussion
* Students can be encouraged to choose to discuss any of the other articles within the issue
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*******environmental SCIENTIST* **Environmental risk: At bursting point?**Vol 31, Issue 4

<https://www.the-ies.org/resources/environmental-risk>

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| **Topic overview**  | * By understanding risk, we can see potential futures and pathways for the society and economy we want to create for future generations. As the global community makes decisions about which approach to take to the interconnected issues of climate change, biodiversity loss and environmental pollution, we must grapple with many of these concepts lest we cross thresholds from which we cannot return. This edition of *environmental SCIENTIST* unites interdisciplinary voices to share understandings of risk, revealing how its consideration is also increasingly crucial beyond the science community.
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| **Articles in focus** |
| **Peeling apart the theory of risk****Joseph Lewis (p.10)** | **Article overview:** This article examines the theory of risk and what it means for environmental science. |
| * To what extent does understanding psychology help us communicate risk?
* How can the Source-Pathway-Receptor model (where does the risk come from, what pathways does a pollutant take, and what possible receptors will it reach) be applied to other real-world examples, similar to the pollution case study discussed in the article?
* Referring to Figure 1, consider climate change (or another environmental challenge) as a starting point and generate a simple systems model that illustrates the risks and consequences of decisions.
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| **Are we jumping out of the frying pan and into the fire?****Duncan McLaren (p.30)** | **Article overview:** This article explores the risks of incorporating solar geoengineering in the debate on climate change responses. |
| * Research one or more of the geoengineering methods discussed in the article and consider what wider risks they pose beyond the continued risk of climate change.
* What challenges are associated with both evaluating, and comparing, the risks of climate change and geoengineering?
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| **The risks and impacts of deep sea mining****Pippa Howard & Nicky Jenner (p.54)** | **Article overview:** This article examines why mining the ocean seabed should not be an option. |
| * Referring to both Figure 1 and Figure 2, consider how the risks associated with deep sea mining will impact ocean carbon cycling.
* Identify other case studies where the Precautionary Principle, outlined in Box 1, has been applied to emerging industries.
* It is the mandate of the International Seabed Authority (ISA) “…to ensure effective protection of the marine environment from the harmful effects of deep seabed-related activities”. To what extent is its work around deep sea mining a direct contradiction of this mandate, especially when the impacts are not yet fully known?
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