Plenary Abstracts OE3C 2016

Ecology – Zoe Lindo

**What happens above matters below: Linking plant and soil communities in peatlands**

Concerns over losses in biodiversity have accelerated research on biodiversity-ecosystem function relationships.  However much of this work has focused solely on aboveground (plant) communities, despite the fact that belowground (soil) systems are of parallel importance to ecosystem functioning, and that plant and soil systems are intricately linked.  Research in my lab demonstrates how changes in peatland plant communities under experimental climate change conditions have a cascading effect on soil properties, and soil communities.  Specifically I will show how elevated temperature and atmospheric CO2conditions shift the competitive balance from *Sphagnum* mosses to vascular plants, leading to changes in the quantity and quality of carbon entering the peat-soil system.  Belowground, these carbon inputs and temperature effects act as an enrichment scenario to alter soil faunal communities in a way that leads to community downsizing – the systematic increase in smaller bodied organisms under climate change.  Due to ecological feedbacks, peatlands are hypothesised to be robust to dramatic changes in ecosystem state, but it is clear from our data that such a regime shift is possible.

Evolution – David Queller

Ethology – Maydianne Andrade

Science Communication – Hannah Hoag