New Phyt blog

Official blog of the New Phytologist Trust

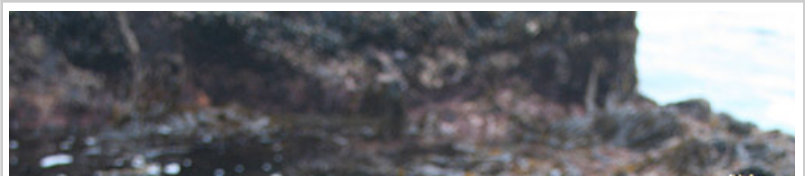
Behind the Cover: *New Phytologist* 212:3, November 2016

Posted on 13th October 2016 by Mike Whitfield

What can kelp tell us about trees?

Sea palm (*Postelsia palmaeformis*) is a species of kelp, pictured on the cover of *New Phytologist* 212:3, growing in the intertidal zone near Big Sur, California. In a study published in 212:3, Sam Starko and Patrick Martone investigate how kelps compare to land plants in the ways that they divide their biomass between different parts of the plant.

Like most other plants, kelps partition their biomass between three organ systems, which have analogies in land plants: blades (leaves), stipes (stems), and holdfasts (roots). However, in kelps, these organs function slightly differently.



Categories

Editors' Choice
Latest Posts
New Phytologist
NPCover
Symposia
Tansley insight
Undergrowth
Virtual Special Issue

Archives

October 2016
September 2016
August 2016
July 2016
June 2016

Postelsia palmaeformis, the sea palm, in the wave-swept intertidal zone (Big Sur, CA, USA). Courtesy of Patrick T. Martone.

In land plants, organs have mechanical and hydraulic functions – they transport water and nutrients from the roots to the leaves. In kelps, on the other hand, the main function is a mechanical one – the main purpose of a robust holdfast, for example, is to keep the kelp attached to the rock in stormy seas. Stipes, which are responsible for some internal transport of sugars (but not water) have a distinctive material composition that permits

May 2016
April 2016
March 2016
February 2016

Tags

3D printing ABA
Arabidopsis
Betula nana blog
carbon climate change
convergence
Cortinarius sp
cytoskeleton Darwin
Darwin Day
Dracula lafleurii
Dracula orchid
ectomycorrhizal fungi
Ecuador
Enhalus acoroides
evolution
evolutionary plant radiations
fungi heat stress
hormone hydrogen
immunolocalisation

flexibility under breaking waves.

Despite the differences in function, land plants (particularly trees) and kelps appear to partition biomass in strikingly similar ways. The tree-like shape of the sea palm pictured on the cover is a fitting example of how, despite being distantly related, these photosynthetic taxa can be surprisingly convergent in how they partition their biomass. In their paper, Sam Starko and Patrick Martone provide a comprehensive view of the similarities in interspecific scaling, between a 'plant' lineage that evolved independently from land plants, and their land dwelling equivalents.

Mike Whitfield
Development Coordinator
New Phytologist

This entry was posted in Latest Posts, New Phytologist, NPCover and tagged evolution, interspecific scaling, kelp, New Phytologist, NPCover, plant science, traits. Bookmark the permalink.

Keith Lindsey legume
microtubules
mycoheterotrophy
mycorrhiza
New Phytologist
New Phytologist Trust
NPCover orchid
photosynthesis
plant science
plant volatiles
pollinators primula
reproductive isolation
root growth
stable isotope
stable isotope probing
Thalassia hemprichii
University of Bayreuth
Virtual Special Issue