EGU24 Media Tip Sheet: Earth's Biosphere

What does the blood chemistry of wild, sick musk oxen look like? Can beautiful yet chokingly invasive water weeds be repurposed? How have trees and mosses changed over time? Do Mediterranean fin whales mate with Atlantic populations? Earth's biosphere—defined as where life exists—brims with mysteries, microbes, and migrations that scientists are trying to understand.

Water hyacinths: Use them or lose them? A holistic approach to a multi-faceted problem

Tropical lakes suffer from water hyacinth infestations as a result, in part, of fertilizer and manure-laden waters bringing in excess nutrients. The weeds affect aquatic life, fishing, irrigation, and tourism, and may facilitate the spread of water borne disease. Can they be repurposed for useful means, like wastewater treatment or biofuel?

Mon, 15 Apr, 10:45–12:30 CEST, Hall A, A.92

Session ITS3.15/HS12.3

Legacy of last millennium timber use on plant cover in Central Europe: insights from tree rings and pollen

How has timber usage changed over the long term? Scientists use 44,239 precisely dated tree-ring samples from historical buildings along with pollen-based plant cover estimates to reconstruct tree and land use in Central Europe. They find that land use since 1150 CE has impacted composition and diversity, leading to a homogenization of forests through time.

Mon, 15 Apr, 16:15–18:00 CEST, Hall X5, X5.164

Session CL1.2.2

Radionuclides and heavy metal concentrations in glacier mice on Austerdalsbreen, an outlet glacier from Jostedalsbreen ice cap, Norway

Scientists compare radionuclide and heavy metal concentrations of cryoconite (powdery accumulation of rock, soot and microbes on glaciers) with concentrations from glacier mice (not mammals, but rather accumulations of bryophytes—mosses—that host other species as they roll about the surface). What's the source of this pollution, and how does it impact these ecosystems?

Wed, 17 Apr, 14:15–14:25 CEST, Room L2

Session CR7.5

Enhanced secondary growth induced by warmer temperatures in early summer advances autumn leaf senescence in temperate saplings

In autumn, leaves senesce—they change colors before dying and falling from trees. A correlation between timing of senescence and temperature before summer solstice has been hypothesized to result from changes to the rate of plant development. Here, researchers find a link between spring growth and autumn senescence.

Wed, 17 Apr, 16:15–18:00 CEST, Hall X5, X5.193

Session CL2.7

Alternative migration strategies of fin whales in the Mediterranean sea : evidence of a lunar influence

Scientists track individual Mediterranean fin whales, finding that they meet with the North Atlantic population at strategic locations, which may minimize inbreeding for the otherwise isolated group. The team also finds that the whales' swimming behaviors may depend on lunar phases.

Wed, 17 Apr, 16:52–16:54 CEST, PICO spot 1, PICO1.12

Session ITS3.5/BG1.19

Isotopic composition in blood as a diagnostic tool of health in large Arctic wildlife

Captive animals exhibit changes in certain isotopes (like copper) when health deteriorates. But blood chemistry studies of wild animals are scarce. Here, scientists examine blood from captive (Sweden and Norway), wild (Denmark) or culled (Norway) muskoxen. They find that chemical signatures can be used to monitor health of large wildlife.

Thurs, 18 Apr, 15:35–15:45 CEST, Room 2.95

Session BG2.1

Enhancing Vegetation Cover in Fujairah through Sustainable Honey Tree Plantations and Water Harvesting Technique: A Multi-Criteria Suitability Mapping

Fujairah, part of the seven emirates of the United Arab Emirates, is mountainous and arid, but hosts national tree plantations that provide ecosystems services like honey bee production. This work identifies optimal areas for planting additional native honey trees while emphasizing sustainable practices and incorporating traditional water harvesting techniques.

Fri, 19 Apr, 16:15–18:00 CEST, Hall A, A.122

Session HS8.3.7