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International collaborations to support a global Biodiversity Observation Network (GEO BON): research challenges ranging from microbes to a global 2010 biodiversity target

A new global Biodiversity Observation Network (GEO BON) will include observations on genetic and phylogenetic diversity. A working group co-chaired by Australia and Japan scientists is investigating alternative monitoring strategies, including use of large-scale models of genetic/phylogenetic turnover as a “lens” to interpret remotely sensed changes in land/water condition. Innovative approaches by microbial ecologists for modelling biodiversity may provide general strategies for such monitoring programs. These efforts to incorporate phylogenetic/ genetic diversity are supported by another collaborative effort with Australian and Japanese colleagues. This bioGENESIS project within DIVERSITAS will promote evolutionary aspects of biodiversity, and will work to integrate these with conservation instruments and policy. Our research linked to GEO BON and DIVERSITAS suggests that, in contrast to current pessimism, the 2010 biodiversity target (for a significant reduction in the rate of biodiversity loss) can be achieved through an integrated approach. Further, biodiversity models for 2010 may incorporate phylogenetic/genetic diversity.

Curriculum Vitae

Daniel P Faith was born in Chicago, Illinois, and was awarded a BA in mathematics in 1973 from The University of Chicago. He was awarded a PhD in Ecology and Evolution from Stony Brook University (New York) in 1979. He then moved to Australia to take up a post-doc at CSIRO in Canberra, in a Division then known as “Land Use Research”. Dr. Faith in November this year

will celebrate 30 years in Australia. He has been a research scientist at various Divisions of CSIRO, including Wildlife and Ecology. For the past ten years, Dr. Faith has been a research scientist at the Australian Museum in Sydney, specialising in biodiversity. This research has integrated elements of phylogenetics, economics, philosophy of science, bio-informatics, and conservation planning.