Reorganizing Research Teams into Integrated Project Areas (IPA) for CAP2

Central Arizona — Phoenix Long-Term Ecological Research

ABSTRACT

An innovative new approach to organizing research has been proposed for CAP2. Our experience in CAP1 taught us that for investigating the urban or "designed" ecosystem, old categories must be redefined and the boundaries of disciplines must be blurred to facilitate interdisciplinary research. Therefore, the new CAP2 organization features groupings of researchers called "Integrated Project Areas (IPA)", defined by the subject matter of our investigations, and "Working Groups", defined by the tools and approaches to the science. Each IPA interacts with one or more IPA core areas, but the new research organization aids in the rapid inclusion of socioeconomic drivers and feedback. The five PAs are: Land-Use and Land-Cover Change, Climate-Ecosystem Interactions, Water Policy, Use, and Supply, Flows of Materials and Socio-Ecosystem Response, Human Control of Biodiversity. The working groups are defined for each Integrated Project Area and may also be reviewed at the CAP-LTER website (http://cap-lter.assu.edu).

INTEGRATED PROJECT AREAS

There is a great deal of overlap and sharing of talent among the PAs and the parallel working groups (WG). Additional informal working groups are created to deal with immediate needs of specific projects.

PRACTICAL WORKING GROUPS

Informatics

Working Groups

Modeling

Long Term Experiments

Knowledge Transfer

Human Control of Biodiversity

Water Policy, Use, and Supply

Planes of Materials and Socio-Ecosystem Response

Material flow and biogeochemical cycles have been studied for decades in relatively undisturbed ecosystems, but not in urban ecosystems where human activities dominate the landscape. Biogeochemical processes in urban areas may be regulated by non-linear mechanisms that are difficult to assess through traditional ecological methods. In this project, we are assessing the characteristics of nitrogen, phosphorus, and other material flows in urban ecosystems. We are also investigating the effects of urbanization on soil and water quality, and the potential for ecosystem services in urban areas.

Human Control of Biodiversity

Ecological approaches to studying human control of biodiversity have been developed using molecular and population genetic models. These models have been widely used to assess the impact of human activities on biodiversity. However, these models do not account for the complex interactions between human activities and natural ecosystems. In this project, we are developing a new approach to studying human control of biodiversity that takes into account the complex interactions between human activities and natural ecosystems.