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Title	Ecological frameworks: The Cheshire example
Authors	James, P and North, M
Type	Conference or Workshop Item
URL	This version is available at: http://usir.salford.ac.uk/11325/
Published Date	2000

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RURAL COMMUNITIES AND RIVER SYSTEMS: A CASE STUDY OF BELIEFS, ATTITUDES AND REGULATION OF RESOURCE USE.

In South Africa, water is a scarce resource which requires to be managed with commitment. The new national water Act intends to conserve water resources by re-addressing past, top-down, command-and control regulatory systems by decentralizing authority to the local level. Although ecological requirements for the management of rivers to a large extent are known, the rural population requirements and dependencies are not known. Decisions (developments and water allocations) are made with little appreciation of the needs of rural populations. Therefore communities that depend directly on river systems become highly vulnerable to disruption of the river system that provides them with life support goods and services. Since the socio-economic and cultural knowledge of river systems is limited, a holistic and effective management of the river system is unlikely under present circumstances. A conceptual model is developed for the study. The model helps us to understand the context and the system in operation and how we can influence policy. The study applies the conceptual framework in a rural community context in the Umlazi river watershed/catchment. The study suggests that knowledge of 'belief systems and values' and 'institutional and power relationships' with respect to access to and control over river resources may be helpful in promoting wise use of river systems.

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ECOLOGICAL FRAMEWORKS: THE CHESHIRE EXAMPLE

Nature conservation in the UK has historically focussed on site based activities. However, deterioration of the natural environment has not been prevented. Initiatives based on principles from Landscape Ecology and which involve the wider countryside are now being proposed. English Nature (Lifescapes) and the RSPB (Futurescapes) have presented national schemes. However, much conservation work is carried out at the county scale by a combination of the County Wildlife Trusts, Local Authorities and other local conservation organisations. This raises the question of how wider countryside issues can be addressed at the county scale? A critical evaluation of the Life EConet Project - based in Cheshire - is used to examine this question. Based on an action research methodology the Cheshire case study reviews the aims of the Project, discusses the Project's work to date and sets out a critical evaluation of its impact. The role of an ecological framework is discussed in the context of conservation at the county scale. Analysis of outputs from the case study Project indicates that the Project has been influential in informing regional policies, has successfully engaged with local stakeholders and has established an ecological framework for the county. This draft framework is presented described and evaluated.

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THE MOLECULAR ECOLOGY OF WESTERN LOWLAND GORILLAS IN GABON; A FORENSIC APPROACH TO NON-INVASIVE STUDIES

Gabon's gorillas represent the largest remaining population of this threatened primate. The gorilla population at the Lopé reserve in central Gabon has been extensively studied for 19 years. However, due to the dense forest habitat sightings are infrequent and habituation has only been partially successful in the case of one group. Little is known of group ranging and overlap, dispersal and migration - crucial information for informed reserve design. For ten years hairs have been regularly collected from the night nests of approximately 50-60 gorillas in a 50 km² study area. This unique sample set provides us with a potential source of DNA to spatio-temporally track individual gorillas and explore changes in group dynamics through time. However, many problems are associated with PCR from naturally shed hair samples. I have developed a sensitive, forensically reliable system of genetic identification, maximising the potential for PCR success. Initial results suggest high levels of heterozygosity and allelic diversity. The characterisation of three key groups will provide the data to determine group and home range sizes, and to examine group structure paternity and relatedness within and between neighbouring groups.

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USING CONSERVATION PRIORITIES TO DESIGN A BIOLOGICAL CORRIDOR IN THE ATLANTIC FOREST OF BRAZIL

In the Atlantic forest, one of the world's top biodiversity hotspots priority-setting efforts by the scientific community indicate that virtually all intact habitat in this biome is of high or extremely high importance for conservation. These efforts have provided a basis for defining immense conservation corridors, such as one encompassing a 77,500 km² area of largely degraded landscapes in the Brazilian states of Bahia and Espirito Santo. Effecting protection of the Atlantic forest over the short term requires targeting smaller areas of maximum conservation value. Distribution data on passerine birds in the Americas reveals that the highest concentration of threatened species occurs in the Brazilian state of Rio de Janeiro, and specifically in lowland forest fragments that border an almost continuous strip of montane forests >600 m in altitude. Based on this information, we have delimited a 6,700 km² corridor that encompasses both lowland and montane areas, contains over 50% forest cover and, in addition to protecting threatened species, provides critical environmental services to urban centres that contain 90% of the state's population. With habitat restoration in highly targeted areas, the proposed corridor design should achieve maximum conservation benefits over a short period (<25 years).