95Z/00014 **Incorporating landscape pattern into conservation programs**
G. W. Arnold, in: *Mosaic landscapes and ecological processes*, ed L. Hansson & others, (Chapman & Hall; IALE Studies in Landscape Ecology, 2), 1995, pp 309-337.
At the species level, examples are given of management plans to meet specific grain size, type and spatial juxtapositions for individual species in managed forest landscapes. At the landscape, ecosystem and regional level the importance of retaining both the range of ecotypes and natural disturbance processes, or simulating them is stressed. Simulation models or expert systems coupled with geographic information system will be increasingly used to produce land management plans for sustainable conservation of wildlife coupled with sustainable forestry and agriculture. (from Author)

95Z/00015 **Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response**
D. N. Cole, *Journal of Applied Ecology*, 32(1), 1995, pp 203-214.
Experimental trampling was conducted in 18 vegetation types in five separate US mountain regions. Each type was trampled 0-500 times. Trampling intensity and vegetation type explained more of the variation in vegetation cover two weeks after trampling than they did one year after trampling. For most vegetation types, the relationships between vegetation cover after trampling and trampling intensity was best approximated by a second order polynomial of the form $Y = A\text{-}BX + CX^2$. The relationship was linear in a few vegetation types. The curvilinearity of the relationship between trampling intensity and surviving vegetation cover decreased with increases in resistance, tolerance and species diversity of the vegetation type. (from Author)

95Z/00016 **Experimental trampling of vegetation. II. Predictors of resistance and resilience**
D. N. Cole, *Journal of Applied Ecology*, 32(1), 1995, pp 215-224.
Experimental trampling was conducted in 28 vegetation types in five separate mountain regions in the USA. Each type was trampled 0-500 times. The response of vegetation to trampling is expressed in terms of resistance, tolerance and resilience. Resistance and tolerance are determined from the vegetation surviving two weeks and one year after trampling, respectively. Resilience compares the change over the remainder of the year with that during the first two weeks after trampling. Plant morphological characteristics explained more of the variation in response to trampling than the site characteristics that were assessed: altitude, overstorey canopy cover or total groundlayer vegetation cover. Resistance was primarily a function of vegetation stature, erectness and whether plants were graminoids, forbs or shrubs. The most resistant plants were caespitose or matted graminoids; the least resistant plants were erect forbs. Resilience was primarily a function of whether plants were chamaeophytes, with perennating buds located above the ground surface. Chamaephytes were much less resilient than other plants. Tolerance, which measures the ability of vegetation to withstand a cycle of disturbance and recovery, was correlated more with resilience than resistance. Consequently, the least tolerant plants were the chamaephytes. The most tolerant plants were caespitose, matted and rosette hemicryptophytes, and geophytes. The resistance and resilience of individual species were negatively correlated, particularly for chamaephytes and graminoids. For herbaceous species with perennating tissues located at or below ground level, tolerance was more highly correlated with resilience than with resistance. For chamaephytes, tolerance was more highly correlated with resistance. (Author)

95Z/00017 **The impacts of fishing on coral reefs**
J. A. Bohnsack, in: *Proceedings of the colloquium on global aspects of coral reefs, Miami, 1993*, ed R.N. Ginsburg & F.G.W. Smith, (University of Miami, RSMAS), 1994, pp 196-200.
Fishing has significantly reduced populations of some reef species, particularly larger species which are often top predators. Reef organisms tend to be vulnerable to overfishing because of life history characteristics that are not adapted to high adult mortality associated with fishing. Reduced fish populations can indirectly impact coral reefs particularly by changing patterns of predation and herbivory which are important structuring forces in coral reef ecosystems. Marine fishery reserves offer opportunities to better understand the impacts of fishing on coral reef health and function. (from Author)

95Z/00018 **Effects of coastal runoff on coral reproduction**
R. H. Richmond, in: *Proceedings of the colloquium on global aspects of coral reefs, Miami, 1993*, ed R.N. Ginsburg & F.G.W. Smith, (University of Miami, RSMAS), 1994, pp 360-364.
Erosion, sedimentation and runoff are problems many tropical islands are experiencing as they come under development pressure from the construction of hotels, resorts, condominiums, golf courses, roads and increased housing. Previous studies have shown the detrimental effects of sediment on living corals, which can destroy reefs through shading, burial and interference with the ability of corals to feed heterotophically. Experiments with coral gametes demonstrate that runoff also effects the reproductive success of corals, with an observed 86% drop in fertilization rate accompanying a 20% decrease in salinity from 35‰ to 28‰. Success of larval development following fertilization was also reduced by runoff, in some cases by as much as 50%. This is of particular concern as many corals on Indo-west Pacific reefs (eg Guam and Okinawa) reproduce during mass-spawning events which occur during the rainy season, when seawater temperatures reach their seasonal peak, and coastal water quality is most likely to be affected by runoff. As most tropical marine invertebrates and fishes also reproduce by spawning gametes into the water column, the evidence of reproductive failure in corals has far-reaching implications for the management and preservation of tropical marine communities. (Author)

95Z/00019 **Why conservation by legal fiat does not work**
H. Latin, in: *Proceedings of the colloquium on global aspects of coral reefs, Miami, 1993*, ed R.N. Ginsburg & F.G.W. Smith, (University of Miami, RSMAS), 1994, pp 113-119.
Current biodiversity protection measures are inherently inadequate and environmental law by itself is too frail a mechanism to achieve the many fundamental changes in human behaviour necessary to ensure worldwide protection of endangerd ecosystems and wildlife. In place of highly general, utopian conservation mandates now imposed by legal fiat, effective biodiversity conservation programs must be tailored to the particular social, economic, political, and ecological characteristics of varied resource exploration problems. These conservation programs must integrate paticularized laws, scientific research on specific ecological hazards, environmental education campaigns, economic incentive or assistance measures designed to make conservation 'profitable' for affected groups, and economic disincentives or realistic legal sanctions to curtail harmful activities. (from Author)

95Z/00020 ***The Marine Mammal Commission compendium of selected treaties, international agreements, and other relevant documents on marine resources, wildlife and the environment***
ed R. L. Wallace, (US Government Printing Office, Washington, DC, for Marine Mammal Commission), ISBN (paperback) 0 16 043132 8 (set of 3 volumes), 1994, 3547 pp.
These reference volumes, provided as a boxed set, contain the complete texts of more than 400 international agreements. These include over 1200 multilateral treaties, agreements, accords, and memoranda of understanding and bilateral agreements between the USA and 31 other nations. Also included are amendments and protocols to these documents, several nonbinding international documents, and a number of documents that are significant, but to which the USA is not party. The compendium is divided into two sections com-