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Beyond Carrying Capacity in Recreation Management: In Search of Alternatives

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Carrying Capacity is a largely used concept in the field of recreation. While the notion originates in Pastoralist ecology, the concept has been adapted to various situations in recreation management, in both terrestrial, marine, and freshwater ecosystems and even in urban areas.

The original concept relied on a strong relationship between food resource and pastoral pressure; this link has disappeared in the field of recreation. The concept is largely used but in the meantime is subject to an important amount of criticism, shedding doubts on the concept's ability to be replicated in different situations. Many authors who use the concept are very critical when it comes to its field application. It is in fact very difficult to establish a mechanical relationship between the level of frequentation and the degree of impacts.

Despite these criticisms, the concept is still largely used and has been developed in different components, considering the ecological, economic, sociological and lastly perceptual aspects. (Briassioulis 2000, Papageorgiou et al. 1999, Buckley 1999). In a historical perspective the concept of carrying capacity has been regularly adapted and readapted to a more integrated ecosystem management approach encompassing social and biophysical dimensions. From pastoral ecology, where the concept estimates mostly biotic processes, its importation in recreation ecology meant transferring the specific notion of livestock pressure on pastures to evaluating impacts of a large diversity of tourism related activities on ecosystems defined as complex social and natural dynamics. This extension of the meaning jeopardizes the very relevance of the concept (Cole 2004). Indeed, these last developments have finally added more confusion to the debate, some authors accepting new components like "perceptual CC" or "sociological CC", which rely heavily on subjective appreciation regarding the state of a natural area, while others reject it massively. The development of alternatives to the model has never changed this attempt to establish a fixed relationship between degree of use and degree of impacts, not taking into account the limits outlined by Hughes (1999) regarding our limited understanding of ecological processes and through varying spatio-temporal scales.

It is indeed surprising to see that a concept that is so criticised remains largely used, and could more probably be explained by the absence of attractive alternatives. The present article intends to make a review of the current acceptation, use and criticisms of the concept and to seek for possible solutions of real alternatives in matter of management tools. The (legitimate) demand of managers of natural resources for estimations of measurable thresholds, beyond which ecosystem functions become irreversible, prevented some scientists from discarding the concept, even though it implies substantial uncertainty and complexity when applied to evaluating recreational pressures. The actors who most cling to the CC concept are managers and policy-makers who interpret it in normative terms. But even this normative use is a fallacy, because the effectiveness of the concept in convincing decision-makers to adjust recreation uses

- according to a presumed risk associated with recreation uses trespassing the CC limit - has barely been proven.

When it comes to management, decision making processes often define CC by considering site-specific objectives and related activities, which is indeed tautological and permits the legitimization of one sided interests, particularly if there is no real participatory strategy.

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