



Limits of Acceptable Change - LAC

Description

The Limits of Acceptable Change (LAC) framework deals with recreational carrying capacity, i.e. how much use can or should an area be allowed to tolerate? The framework sets measurable standards for managing recreation in natural areas. It provides a process for deciding what environmental and social conditions are acceptable and identifies management actions to achieve these conditions. The key focus is “how much change is acceptable?”

Core elements of the framework are a set of [environmental standards and certification](#) that identify:

- minimally acceptable conditions
- a monitoring process to determine whether standards have been met
- management prescriptions based on whether standards have been met.

The process as originally nine steps that focused on identifying desired wilderness resources and social conditions and the management actions needed to preserve, restore, or enhance those conditions. The LAC approach is seen process-oriented in that the focus is on resolving conflict between objectives, rather than a product. Compromise is central to LAC, but one goal (usually maintenance of ecological values) constrains the others. LAC standards are commonly expressed through a [zoning](#) approach.

How and when the tool is used

LAC was developed by US Forest Services researchers to manage increasing levels of recreational use in wilderness areas and associated environmental consequences. It was developed because the prevalent approach at that time, [biophysical carrying capacity](#), had no ability to set limits. LAC derived standards have been implemented in a comparatively small number of US situations (mainly wilderness). Outside the United States, interest in application is growing, particularly in Australia and New Zealand (although not fully implemented). There are nine interrelated steps in the LAC process, leading to a set of standards and associated actions to achieve them. The process is flexible and allows users to adapt and modify the application. The process seeks to define the minimally acceptable conditions or limits for social and physical resources in an area through a consensus approach. Once a baseline of information has been gathered, monitoring and management techniques are suggested to maintain the area within the acceptable limits. The steps are as follows:



1. Identify area issues and concerns
2. Define and describe [recreational opportunity spectrum](#) classes
3. Select indicators of resource and social conditions
4. Make an inventory of existing resource and social conditions
5. Specify desired standards for resource and social conditions
6. Identify alternative opportunity class allocations
7. Identify management actions for each alternative
8. Evaluate and select preferred alternative
9. Implement actions and monitor conditions.

The most often used example of LAC is recreation planning for the Bob Marshall Wilderness Complex in Montana, initiated in the 1980s and continuing today. There have been a number of other applications of modified approaches in the United States and elsewhere, including some non-wilderness settings. It can be successfully applied using participatory processes. Within New Zealand, the LAC process provides some of the conceptual background for Department of Conservation approaches to visitor management. It is quite similar to Visitor Impact Management ([VIM](#)). Other New Zealand examples where LAC has been used in investigations of visitor use including Mason Bay in Stewart Island, and on the Tongariro Crossing in the Tongariro National Park (this study). Monitoring performs two major functions in the LAC process. First, it allows managers to maintain a formal record of resource and social conditions over time. Secondly it helps assess the effectiveness management actions. Clearly, monitoring applies essential feedback for modification of LAC parameters and standards, and verification that the selected standards are being maintained.



RECOGNISING AND SETTING LIMITS Limits of Acceptable Change

Application

The spatial framework for LAC is site specific but can apply to linked sites within a region. For example, some social indicators that have been used apply over large areas e.g. number of encounters in a day's walk. It is used rurally, mainly in the wilderness environment spatial context. Uses to date have all been on publicly owned land. The issue of acceptability is a social phenomenon and therefore stakeholder involvement in the LAC process is essential. The process has been developed using public participation, but host community and indigenous people's perspectives (i.e. consulting with Maori) have not been specifically considered in most known applications. It is unclear how community aspirations will be accommodated with ecological requirements when they do not coincide. There is growing interest in LAC by DoC and researchers. The application is largely effects (or "outputs") based; thus it is compatible with the [RMA framework](#) . However, it is a long and complex process, and its success multi-stakeholder and multi mandate contexts is unproven. Local authorities within New Zealand are not known to explicitly use the process. Under the [Conservation Act framework](#) , LAC could provide a suitable framework for the implementation of visitor management aspects within new Conservation Management Strategies as directed by Conservation General Policy, which emphasises defining values as a starting point.

Our evaluation

LAC provides a very sound approach for managing tourism in natural areas. The greatest strength of LAC is determining when enough acceptable change has occurred. One of the problems with the carrying capacity approach (in comparison to LAC) is its emphasis on controlling or limiting the number of visitors as a key to limiting impacts. As such, LAC is a useful tool in evaluating the amount of change that is acceptable. The two most difficult steps of LAC have been selecting standards and gaining stakeholder support. Agreement on indicators, standards and allocation of zones is crucial. Overseas applications of LAC so far have been lengthy and expensive. The challenge for natural resource and protected area managers is to clearly understand the principles and concepts underlying the idea of and then design the processes needed to implement an LAC-based planning system in different contexts. Useful improvements to the process would be a more explicit process for defining goals and desired conditions. This could be achieved through a participatory process. Further work on indicator development, especially non-ecological indicators, would also be useful.