Session 3C and 4C: Assessing Ecological Integrity
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The objectives of this session were to raise further awareness of the importance of ecological integrity (EI) measurement in protected area management and how EI measurements can inform us why and how well are we meeting our conservation goals and managing our biodiversity. The session also explored the sharing of tools and approaches to EI measurement through case studies conducted around the world. Further, it discussed challenges and solutions to the assessment of EI as a tool for the management effectiveness of protected areas.

These comments were compiled from approximately 150 participants in the morning plenary session on "Ecological Integrity and its Measurement in Protected Areas" and approximately 50 participants in the afternoon session on "Experiences Measuring and Managing for Ecological Integrity: Lessons from the Field". The participants and speakers represented diverse organizations (e.g. governments, NGOs, consultants, academia) from North, South and Central America, Africa, Australia, Asia, and Europe. The session concluded with a panel discussion.

Most speakers highlighted that while ecological integrity is THE underlying element of protected area management, it was surprising for them to find that EI assessment is often under-emphasized and not adequately addressed in many conservation strategies and management plans for protected areas.

KEYS MESSAGES:

- The session reaffirmed that sound science is essential to effective PA management. The various Ecological Integrity frameworks (Parks Canada; The Nature Conservancy, Conservation International) provide a means for integrating science with decision making.
- While definitions and some components of ecological integrity vary in the frameworks, their holistic approach, use of science, and focus on outputs are similar. The ecological integrity frameworks are flexible and complement the WCPA management framework. It also integrates ecological integrity assessments of the greater park ecosystem (e.g. landscape beyond the park boundaries).
- Ecological integrity is a necessary concept for establishing protected areas conservation objectives and targets, setting monitoring and reporting activities, and identifying critical research needs for protected area management. Most importantly, it is necessary for making adaptive management decisions by providing targeted information to engage protected area managers and stakeholders in the learning about the state of health the park ecosystem.
- Monitoring and regular reporting (including communicating to the public) of the status of the ecological integrity of protected areas is a vital element of the

framework. The development of indicators which are scientifically credible and can communicate essential information to managers and engage stakeholders is an central factor.

- Several approaches are available for Ecological Integrity implementation, including rapid assessments and long term evaluations. Methodologies and tools exist for implementing ecological integrity into current protected area management processes, and can be adapted at various scales.
- The case studies of Ecological Integrity assessments from Canada, USA, central America, south America, China, Australia and other countries have reported successes on the implementation of the ecological integrity framework. This has led to improved management of the protected areas, highlighted its flexibility to fit into various planning cycles and acknowledged some gaps.
- Indicators should be cost effective, biologically relevant, socially relevant (recognized by stakeholders) anticipatory. Challenges based on the number of ecosystems being assessed, the scale (spatial and temporal), scientific versus easily communicated.
- State of the Parks reporting is a necessary instrument -essential for accountability and for timely management actions. Regular and timely communications is a feedback mechanism useful to improve public support and increase public interest.

MAJOR ISSUES:

- The development of clear goals, objectives and associated targets and indicators may require greater guidance.
- Monitoring programs can be, but do not have to be, costly and can be targeted towards management issues as well as being more comprehensive (e.g. resource dependent) to evaluate long term changes in the ecosystem attributes.
- Ecological integrity programs and the associated measurements do not have to be costly, are flexible in scale and can be locally based.
- Limited data availability is an issue that can be addressed in the relevant park situation, and drives the need for further research.

EMERGING ISSUES:

- Sharing of ecological integrity frameworks is beneficial but in some countries, there is no capacity to follow up.
- Mechanisms should exist for adaptive management actions based on ecological integrity assessment outcomes.
- Regular and timely communications on the state of ecological integrity is a powerful tool to improve public support and increase public interest.

KEY WORKSHOP OUTCOMES:

- Clear message that there are benefits of employing ecological integrity frameworks and assessments as a science based approach to establish conservation goals and objectives, setting priority for information gathering for management actions and to engage stakeholders.
- Explore means to deal with the identified challenges that exist with respect to goals, objectives and indicator development; designing and evaluating ecological integrity monitoring programs that contributes to conservation targets, management planning processes, reporting and communications programs.

ACTIONS TO BE TAKEN:

- The Congress recommendations should re-emphasize that science is essential to protected area conservation and that ecological integrity assessments is important for effective protected area management.
- A process for raising greater awareness of ecological integrity for protected area management and developing common training needs should be undertaken to widen the implementation of ecological integrity assessments in protected areas.