A Review of Monitoring and Evaluation Approaches and Lessons Learned in Conservation

Summary Results from the Measuring Conservation Impact Initiative

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1. Introduction

1.1. M&E and its importance to project management

Practitioners and scholars across a variety of disciplines recognize good project management goes beyond implementation – effective project management is integrally linked to well-designed monitoring and evaluation (M&E) systems. Approaches and motivations for M&E vary. For project management, monitoring and evaluation can help demonstrate accountability and project impact, an increasingly important function in the current climate of budgetary constraints. M&E answers questions related to how well a project or strategy is working independently of or in relation to other possible projects or strategies. Monitoring and evaluation is also critical for improving project management. It can help identify the conditions under which a project is likely to succeed or falter. Moreover, it can also serve as an early warning system for potential problems, and it can lead to ideas for potential remedial actions. As such, effectively delivered M&E results often provide the basis for improved decision making.

1.2. Purpose of the Measuring Conservation Impact review

Given the importance of M&E to good project management and the conservation community's struggle to develop effective M&E systems, Foundations of Success, in collaboration with the Wildlife Conservation Society and Conservation International, developed the Measuring Conservation Impact (MCI) project.

The purpose of this project was to learn from what practitioners in other fields have done to measure the success of their projects and interventions. Conservation is a relatively new field, in which there have been countless efforts to develop useful and practical monitoring and evaluation systems. Yet, often organizations build their M&E systems from scratch, overlooking many of the lessons that have been learned in conservation and other related fields.

Rather than "reinvent the wheel" in conservation, our aim was to capture and synthesize existing work, lessons, and principles across a variety of disciplines, including: conservation, development, public health and family planning, education and social services, and business. It has been our hope that the results from this project would catalyse discussions within the conservation community that lead to a more common understanding of how to most effectively carry out monitoring and evaluation activities.

The present document highlights some of the results from our review of approaches to M&E in conservation.

1.3. Methods

The MCI project involved an extensive review of over 300 publications (including organizational documents and reports, websites, journal articles, and books) from the fields of conservation, development, public health, education, and business. Approximately 100 of these publications were from the conservation field alone. Because conservation organizations and practitioners are our main audience, we focused more heavily on evaluation literature related to project and programme evaluation.

In addition, we interviewed key informants from four different conservation institutions to identify major approaches and innovations, as well as to receive recommendations of key publications to review.

We analysed the literature we compiled to identify key trends within each of the five disciplines, as well as across them. For each discipline, we presented this information in an evolutionary tree that charts the development and influence of key approaches to M&E. Again, our emphasis was primarily upon those approaches that have been most important for project and programme evaluation.

To ensure we had adequately represented the main trends within each discipline, we asked individuals working in M&E in those fields to comment on initial drafts of the discipline-specific syntheses. While our review was extensive, we found that the amount of written material on M&E is immense. It was not our intent, however, for this study to be fully exhaustive. Rather, we hope that some of the lessons learned will generate discussions and move the field of conservation closer to identifying the most appropriate and effective approaches, under varying conditions, to measure conservation success.

2. Evolution of Monitoring and Evaluation Approaches in Conservation

Although we may not realize it, we use evaluation daily to help us make decisions. These decisions might be as simple as choosing at which restaurant we want to eat or as complicated as finding a career that will satisfy our interests and talents. Anytime we collect and use information to help make an informed decision, we are using evaluation techniques. Just as we use evaluation in our daily lives to understand a situation or make sound decisions, so too do policymakers, programme officers, donors, and the general public use evaluation to understand their areas of interest and to take appropriate steps to improve them. In the field of conservation, evaluation has taken on increasing importance over the past two decades, as the conservation community struggles to determine and demonstrate progress made towards protecting the Earth's resources.

2.1. 4 main purposes of evaluation

Evaluation specialists agree that evaluation approaches generally vary by context and serve different or multiple purposes, depending upon the interests of those controlling or affected by the evaluation. Some common terms describing these purposes include: knowledge generation, programme improvement, accountability, transparency, resource allocation, advocacy, and impact assessment.[1] For this review, we modified a framework laid out by Mark et al. (2000) to identify four main purposes.[2] We define these purposes as follows:

[1] For a discussion of primary purposes of evaluation, see work by Patton (1997), Chelimsky (1997), and Mark et al. (2000).

[2] The categories proposed by Mark et al. (2000) are: knowledge building, merit judgement, programme improvement, and compliance. These also correspond closely to the purposes of evaluation identified by Patton (1997): render judgment, facilitate improvements, and/or generate knowledge.

1) Basic research. Evaluation for basic research encompasses the gathering or generation of knowledge about our environment in order to understand it better.

2) Status assessment. Evaluation for status assessment involves assessing the condition or status of a particular variable (species, population, ecosystem), generally irrespective of a specific intervention designed to affect the variable. Status assessment provides a reading of where we are at a particular point in time.

3) Measuring effectiveness. In contrast to status assessments, evaluations for measuring effectiveness are necessarily linked to discrete interventions employed by specific actors. Evaluation for measurement effectiveness can be divided into two broad categories:

a) Impact assessment. These are generally one-time assessments, usually undertaken upon completion of a project, to determine how well the project performed. Impact assessments can also include predictive assessments that evaluate the appropriateness of a potential intervention.

b) Adaptive management. Adaptive management is an iterative process that involve the integration of project design, management, and monitoring to systematically examine interventions in order to adapt and learn. Adaptive management differs from impact assessment in that the ultimate goal is to adapt and learn in order to improve an ongoing project or intervention.

4) Accounting and certification. In evaluation for accounting and certification, the interest is whether an organization or programme is fulfilling its obligations to donors, the public, the government, or some other enforcement entity. In the case of accounting, standards for compliance are generally externally set and imposed, while certification involves self-imposed standards and regulations that are usually accompanied by an economic or social incentive.

2.2. Why an evolutionary approach?

This study involved an extensive review of the major trends and innovations in monitoring and evaluation (M&E) approaches in conservation. By documenting the evolution of different M&E approaches, we were able to trace the development of fundamental ideas and how they influenced later ideas. Thus, this strategy helped clarify the general direction in which monitoring and evaluation is heading. Figure 1 charts the key innovations in M&E in conservation. These are roughly categorized according to the four main purposes of evaluation, as described above. Each box contains a general approach or method and a key person or organization involved in its use or development. The placement of the boxes corresponds to the approximate period in which the approach was developed, although in many cases these approaches continue to be used today. Because this document focuses on the general trends and lessons from the MCI review, we do not discuss many of the M&E approaches in Figure 1. Nevertheless, we provide a summary of them in Table 1.[3]

[3] For a more extensive discussion of M&E approaches in conservation as well as in other fields, see FOS et al. (2003). Details available through the FOS website (www.fosonline.org).

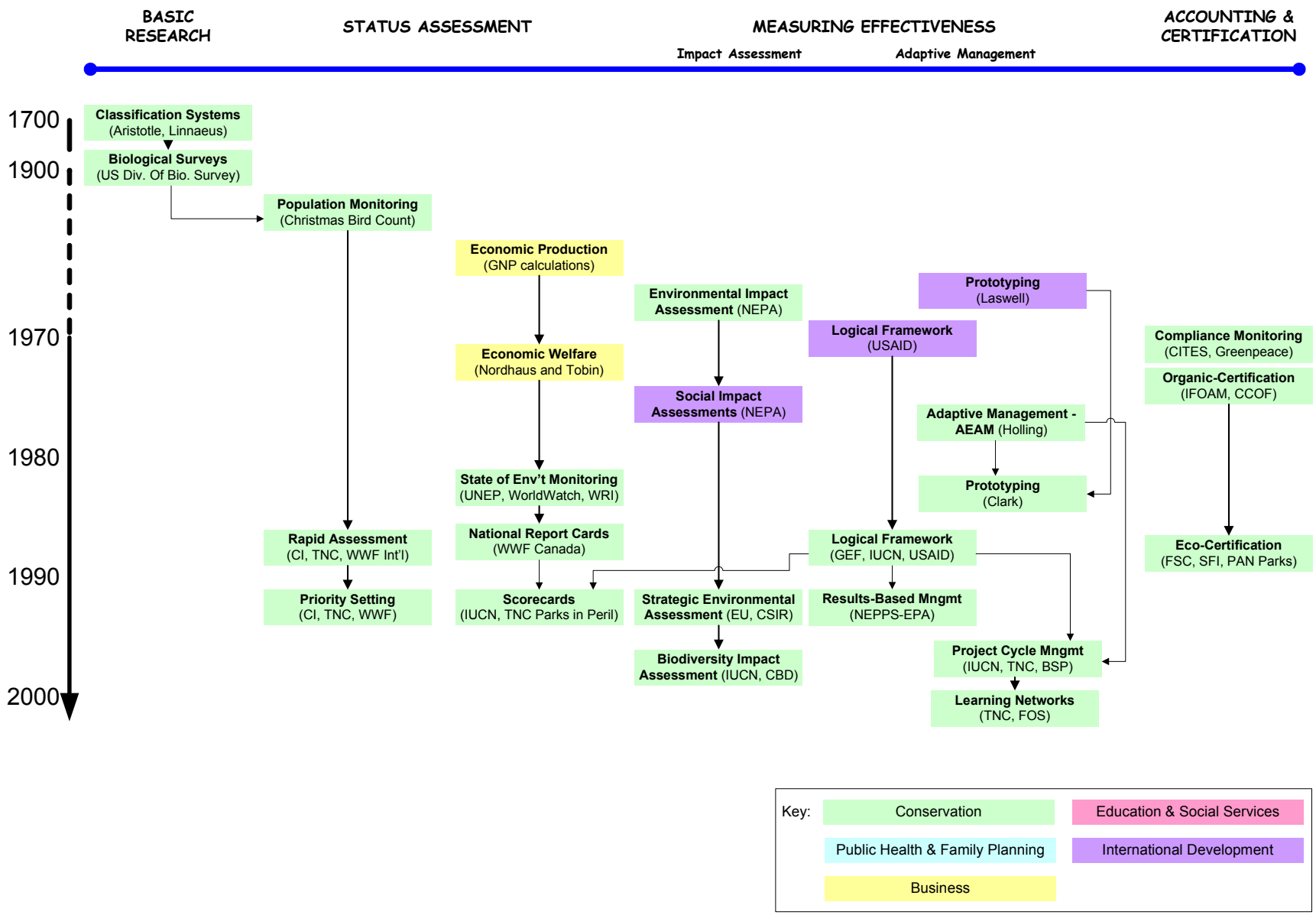

Figure 1. Conservation Evaluation Evolutionary Tree

Table 1. Highlights of Key Monitoring and Evaluation Approaches in Conservation

Approach	Typical Strengths/Opportunities	Typical Limitations/Challenges	Example
M&E for Basic Research			
Classification systems	Organize information in a simple, efficient, and biologically meaningful way	No analytical function beyond categorizing information	Linnaeus system
Biological surveys	Provides basic information about species (e.g., habitat, abundance) Often rigorous	Expensive Time consuming Generally no temporal tracking – thus, limited ability to show or explain trends	U.S. Biological Survey Unit's flora and fauna surveys
M&E for Status Assessment			
Population monitoring	Provides basic information about species (e.g., habitat, abundance) Shows change over time	Expensive Time consuming No causal data to explain trends Methodologically difficult (requires large sample size, consistent methodology across wide range and variety of observers, repeated monitoring at same sites) Difficult to analyse	North American Breeding Bird Survey
Rapid assessment	Relatively quick Relatively inexpensive Gathers targeted information	Just a snapshot of the status of a particular species or area – no trend or causal information	Conservation International's Rapid Assessment Programme
Priority setting	Relatively quick Relatively inexpensive Gather targeted information	Data often not available at fine scale required Inconsistent or incompatible data boundaries and scales	The Nature Conservancy's Rapid Ecological Assessment
State of the environment monitoring	Gives general sense of "health" of ecosystems Allows multi-country or regional comparisons When tracked over time, can show policy influence Politically effective	No causal data to explain trends, especially effects of specific interventions Indices hide and/or oversimplify information	UNEP Global Environmental Outlook Worldwatch reports
National report cards	Gives general sense of "health" of ecosystems Good communications tool Easy to understand Politically effective	Very simplistic Indices hide and/or oversimplify information No causal data to explain trends	WWF Canada's National Report Card on Protected Areas

Approach	Typical Strengths/Opportunities	Typical Limitations/Challenges	Example
Scorecards	Assist management decisions Good communications tool Easy to understand	Often no clear link between specific interventions and scores – data not causal Some scores not weighted to adjust for importance of variable Scoring is subjective Indices and composite scores hide and/or oversimplify information	World Bank/WWF Management Effectiveness Tracking Tool
M&E for Measuring Effectiveness			
Environmental impact assessment	Ensures environmental impacts considered in development projects	Narrow focus on site or project level – limited attention to broader ecosystems and functional biodiversity issues Does not consider cumulative impacts Often does not consider social, cultural, or economic effects Reactionary - advocates mitigation of impacts rather than promotion of proactive alternatives	EIAs as mandated through the U.S. National Environmental Policy Act of 1969
Strategic environmental assessments	Broader, policy/programme level – considers cumulative impacts	Experiences to date have involved little public participation Logistically difficult – implementation challenges of boundary setting, jurisdictional overlap, and coordination with assessment processes at other levels	European Union's Analytical Strategic Environmental Assessment project
Biodiversity impact assessment	Expands EIA to address biodiversity impacts in development projects	No recognized standards Incompatible boundaries between ecological and social data Inadequate attention to cumulative and indirect impacts	BIAs as mandated through Convention on Biological Diversity
Logical framework	Clear structure for project planning Links activities to indicators and assumptions	Assumes that change occurs in logical, linear fashion Rigid structure limits adaptation Some retrofit logframe to already planned activities	Various Global Environmental Facility projects
Results-based management	Links interventions to direct impact Allows efficiency and effectiveness comparisons	Often ignores process and intermediate steps behind impacts	Canadian International Development Agency's RBM Approach

Approach	Typical Strengths/Opportunities	Typical Limitations/Challenges	Example
Adaptive management	Uses causal relationships to test effectiveness of interventions Systematic and often rigorous process Learn from successes and failures Feedback lessons into management decisions	Institutional resistance to experimenting and learning by doing Long process	U.S. Environmental Protection Agency's Chesapeake Bay Programme
Prototyping	Systematic process Potentially inexpensive way to try new techniques Learn from successes and failures in small-scale trials Feedback lessons into management decisions	Has remained primarily in conceptual realm Potential institutional resistance to trial process when under pressure to produce results	T.W. Clark's conceptual work
Project cycle management	M&E fully integrated into management cycle Indicators clearly linked to project goals, objectives, and activities Consideration of context and processes	Time consuming	IUCN WCPA's work on protected area management effectiveness
Learning networks	Learn from collective experiences – learning often more effective and efficient	Time consuming Can be expensive Reluctance to focus on learning process	Biodiversity Conservation Network
M&E for Accounting and Certification			
Compliance monitoring	Ensures businesses and agencies comply with environmental standards and laws	Reactionary – can impede proactive approaches Requires sophisticated monitoring systems and extensive staffing Focus on legal adherence rather than environmental quality	CITES' Monitoring the Illegal Killing of Elephants Initiative
Organic certification	Proactive, incentives-based	Proliferation of certifying organizations and standards Standards vary by institutional interests	International Federation of Organic Agricultural Movements
Eco-certification	Proactive, incentives-based	Proliferation of certifying organizations and standards Standards vary by institutional interests	Forest Stewardship Council's Principles and Criteria for Forest Management

3. Lessons for conservation

By reviewing approaches, how they have evolved, and their key strengths and limitations, we were able to identify several broad trends and corresponding general lessons for conservation. In the following pages, we highlight those trends and lessons.

3.1. Trend: Shift from indicators-focused M&E to more comprehensive M&E approaches

Many conservation organizations have traditionally focused M&E efforts on identifying metrics or indicators of conservation impact. Often, these approaches have been purely indicator-driven, with little attention to designing M&E systems that measure outcomes associated with particular interventions. This may be appropriate at the policy level or for providing baseline information, but it does not allow the tracking of causality associated with site-level interventions.

Although the indicator/metrics perspective still prevails in many organizations, there has been a movement towards more comprehensive approaches to monitoring and evaluation. These include project cycle management, results-based management, and learning networks. In the context of protected area management, the concept of management effectiveness[4] is gaining significant ground. IUCN's World Commission on Protected Areas (WCPA) has been a leader in this area. In general, the trend towards more comprehensive M&E approaches has been characterized by an emphasis on learning, measuring effectiveness, adapting, and improving programmes.

Lesson: Indicators alone are not sufficient to reveal the effectiveness of conservation interventions. Project monitoring and evaluation is most effective when undertaken in the context of a complete process that links indicators to project goals, objectives, and activities. To accurately assess the impact of an intervention, it is important to understand the context in which the intervention takes place, the management processes behind the intervention, and the causal mechanisms supporting the intervention. This comprehensive process and perspective is key for helping managers improve their conservation programmes.

3.2. Trend: Application of conceptual frameworks and models

Conceptual frameworks are a key tool used in many of the more comprehensive M&E approaches. A conceptual framework depicts the generalized cause and effect relationships that affect the state of conservation.

The Pressure-State-Response (PSR) framework is the most commonly used conceptual framework amongst conservation organizations. Under the PSR framework, a pressure (e.g., deforestation) might affect the state of biodiversity (e.g., habitat), and a societal response (e.g., logging restrictions) will be enacted to address and mitigate the pressure. Some of the main conservation organizations using a PSR framework or some derivation of it include the Organization for Economic Cooperation and Development (the organization credited with

[4] According to Hockings et al. (2000, p. 3), "management effectiveness" includes: "design issues relating to both individual sites and to protected area systems; appropriateness of management systems and processes; and delivery of protected area objectives."

developing the framework), The Nature Conservancy, WWF-U.S., the Biodiversity Support Programme, and Foundations of Success.

Modifications and adaptations of the PSR framework have arisen as some practitioners find the framework inadequate for capturing what is happening at their sites. For example, the United Nations Commission for Sustainable Development derives its indicators from the Driving Force-State-Response (DSR) framework (Rigby et al., 2000). The modification in terminology reflects a desire to include economic, social, and institutional aspects in the framework. "Driving force" allows for both positive and negative influences, whereas "Pressure" represents only negative impacts. The Driving Force-Pressure-State-Impact-Response (DSPIR) framework combines PSR and DSR but separates state and impact variables (Rigby et al., 2000).

Another conceptual framework that appears to be important in some conservation organizations' work is the capital framework. This framework recognizes the need to consider both natural and social dimensions related to resource use and conservation and how the various types of capital (e.g., natural, produced, and human) interact with one another. Organizations using some version of a capital framework include The World Bank (wealth of nations), Statistics Canada, UNEP/WCMC, and OECD.

Some confusion exists as to the purpose of a conceptual framework. A number of practitioners refer to frameworks such as PSR as their M&E approach. However, we see a framework as being a much more specific tool that depicts generalized cause and effect relationships that affect the state of conservation. In contrast, an approach, as we have defined it, outlines a series of steps and guidance for doing M&E. Thus, developing a conceptual framework is often a step or a component of an M&E approach.

Some organizations are also thinking more explicitly about site- or issue-specific relationships and developing conceptual models for their sites. We consider conceptual models to be similar to conceptual frameworks, with the main difference being that conceptual models are much more specific representations of an individual site or conservation issue. They portray the particular context in which the conservation action takes place and the causal links behind the intervention and its intended impact. In reality, however, the distinction between what we are calling a framework and a model is often not clear-cut. Rather, we can think of a spectrum with generic conceptual frameworks on one end and site- or issue-specific conceptual models on the other. The value of the specific nature of a conceptual model is that it helps practitioners and evaluators consider the context, and it provides a foundation for identifying interventions and determining where along the causal chain measurements should be made to show progress toward the achievement of the conservation target.

Lesson: To most effectively measure conservation impact, it is critical to understand the context in which conservation interventions take place and the cause and effect relationships that affect the state of conservation. Conceptual frameworks help practitioners and evaluators consider these generalized relationships, while conceptual models provide more site-specific information about these causal patterns. Conceptual models in particular are important for identifying interventions and key measurement points. By considering both the context and the causality relationships, evaluators or programme managers can more reliably interpret evaluation data and demonstrate progress toward achieving their conservation targets.

3.3. Trend: Greater focus on impacts and performance

The 1990s brought attention to issues of accountability and a greater focus on measuring the ultimate effects of conservation interventions: outcomes and impacts. This emphasis on performance is due largely to broader movements in accountability stemming from regulations, such as the 1993 U.S. Government Performance Results Act. In some cases, organizations have come to focus exclusively on impacts and performance, with little or no attention to management processes or other variables that may affect an intervention's ability to lead to the desired impact. The cost to such approaches is that it becomes difficult, if not impossible, to reliably attribute impact to programmatic interventions.

Lesson: Donors, decision-makers, and the general public want to know if their resources are being spent wisely, especially under the present conditions of scarce funding. The conservation community must make a convincing case that its interventions are effective. In order to attribute ultimate impacts to a programmatic intervention, however, it is not sufficient to focus exclusively on measuring changes in the conservation target. It is important to also examine management processes (e.g., inputs, outputs, outcomes) that influence the ability to affect the target. If the causal relationship is explicit, as discussed earlier, practitioners will be able to demonstrate progress towards ultimate impacts by identifying intermediate outcomes along a causal chain.

3.4. Trend: Greater attention to both biological and social monitoring

While improved biological health is the ultimate goal behind conservation interventions, most organizations now recognize it is important to look beyond strictly biological indicators when assessing ecosystem health. Evaluation activities now frequently include the monitoring of social, economic, political, and cultural variables that affect conservation targets. For example, ecological integrity is only one element of Parks Canada's protected area assessment system. They also monitor historical and cultural resources, state of a place for people, state of a place for community, and transportation (e.g., see Banff National Park of Canada, 2003).

This move to include social monitoring has also been accompanied by a recognition of the importance of engaging stakeholders in project management, including M&E. Participation could include soliciting stakeholder input on the design, implementation, analysis, and communication of evaluation results. Participation could also include what seems to be a growing movement: volunteer or citizen monitoring. For example, the U.S. Environmental Protection Agency's Office of Water coordinates a large network of volunteer monitors who, amongst other functions, gather data for water bodies that might not otherwise be assessed and provide valuable water quality information to decision makers at all levels of government (US Environmental Protection Agency, 2003).

Furthermore, there has been a greater acceptance of and interest in qualitative methods and measures. Both social and biological monitoring have traditionally involved the quantification of variables, but social monitoring also often incorporates qualitative methods and measures which better capture or provide additional insight into some variables, such as perceptions, values, and experiences. While conservation still places a heavy emphasis on quantifying measures, qualitative methods and measures have also emerged as valid and important means of measuring variables.

Lesson: Nearly all conservation interventions take place in a context influenced by human populations. To truly assess the impact of our interventions, we cannot consider them in isolation of these human populations. Thus, it is important to monitor not only biological variables but also social, economic, political, and cultural variables. Moreover, it is critical to involve key stakeholders in M&E activities. This comprehensive approach will provide a more accurate picture of what is taking place at particular sites. It is also important to understand the strengths and limitations of quantitative and qualitative methods and measures and when it most appropriate to use one or the other. In many cases, it may be ideal to use both quantitative and qualitative methods and measures.

3.5. Trend: Wide use of rating/ranking models

Scorecards and ranking models have been important tools for demonstrating and effectively communicating impact, especially at the site level. Such ranking models have been particularly prevalent in assessing the effectiveness of protected area management. The Nature Conservancy's Site Consolidation Scorecard and IUCN's WCPA framework-based models appear to be the most widely utilized and adapted scorecards. Although they are commonly used for protected area assessments, scorecards and ranking models have also been used within organizations to assess progress towards achieving conservation targets. TNC, for example, uses ranking models in its 5-S Approach for site level assessment of conservation targets, stresses, and sources of stress; to develop strategies to address threats and improve target viability; and to assess measures of conservation success.

Lesson: Scorecards and ranking models can be relatively quick and easy to use. Their clear and simple presentation makes them a powerful communication tool. Caution, however, should be exercised in using or interpreting them. For scorecards and ranking models to be most effective, scoring should be as standardized as possible and weighting mechanisms should be grounded in solid science. Furthermore, scorecards should not be the sole tool used for an evaluation. Most provide status rankings that do not reflect clear linkages between the intervention used and the desired impact. Scorecards can provide important management insight, but most are not comprehensive enough to provide sufficient information for evaluation purposes.

3.6. Trend: Increasing collaboration amongst conservation organizations

Historically, M&E in conservation has been marked by disparate efforts undertaken by many different organizations with little or no exchange between organizations. In conservation, there does not appear to be an "industry standard" for doing evaluation. The Australian Land and Water Resources Research and Development Corporation (2000, p. 48), quoting Ernest House (1980), observes, "The current evaluation scene is marked by vitality and disorder. The scale, ubiquity, and diversity of evaluation activities make comprehension difficult."

The historical trend, however, appears to be reversing itself, with a number of major conservation groups starting to come together to agree upon key steps and common terminology for undertaking monitoring and evaluation of conservation projects. For example, larger-scale cooperation is apparent through indicator standardization efforts undertaken by groups such as the Montreal Process and the World Conservation Monitoring Centre. Likewise, the

UNESCO[5]/IUCN Enhancing our Heritage project involves collaboration from the World Commission on Protected Areas, the University of Queensland, the Wildlife Institute of India, The Nature Conservancy, and various governmental and non-governmental organizations associated with each of the project sites. The main purpose of this initiative is to demonstrate how using an assessment, monitoring, and reporting framework developed by WCPA can enhance the effective management of World Heritage sites. Another collaborative M&E effort emerged in 2002 when a group of conservation practitioners formed an alliance that has grown into the Conservation Measures Partnership (CMP). Presently, core and collaborating members include African Wildlife Foundation, Conservation International, The Nature Conservancy, Wildlife Conservation Society, WWF, Enterprise Works Worldwide, Cambridge Conservation Forum, World Commission on Protected Areas, and Foundations of Success. CMP's mission is "to transform the practice of biodiversity conservation by: a) developing common standards for the process of conservation and measuring conservation impact, and b) devising an audit process to measure conservation effectiveness and encourage the adoption of best practices." (Conservation Measures Partnership, 2003)

Lesson: The past has shown us that a vast array of individual efforts in monitoring and evaluation only leads to confusion regarding competing approaches, duplication of efforts, and a failure to learn from experience. To truly advance the field of conservation, the conservation community needs to work collectively and collaboratively. It will be important to help keep the present trend towards increasing collaboration on track. This will require organizational flexibility, a willingness to work across institutional boundaries, and a strong commitment to moving the general field forward.

3.7. Trend: Broad application of state of the environment monitoring

Local, national, international, and multi-lateral organizations alike have adopted state of the environment monitoring as a key publicity and advocacy tool. Some examples include Worldwatch's *State of the World* books, UNEP's *Global Environmental Outlook*, WWF's *Living Planet* reports, and Parks Canada's *State of the Parks* reports. Reports generated from state of the environment monitoring help educate the general public, donors, politicians, and decision makers about the status of the environment, key concerns, and where conservation efforts should be focused. Some organizations use these monitoring results for their own priority setting purposes, as well. For instance, Conservation International uses the IUCN's *Red List*, a series of reports which describe the state of the world's threatened and endangered species, to design conservation interventions to help prevent species extinction (Conservation International, 2002).

Lesson: State of the environment monitoring serves an important political function. The higher level indicators typical of this type of monitoring provide a general sense of where a country or region is in terms of key environmental variables. Moreover, information from state of the environment monitoring could also be helpful for priority setting and resource allocation decisions. Thus, state of the environment reports will continue to be a key product of future M&E efforts. To the extent that the methods and measures behind this monitoring approach can be standardized and the indicators tracked over time, their power to demonstrate reliable trends and to even provide indications of causality will be greatly enhanced.

[5] United Nations Educational, Scientific and Cultural Organization

3.8. Trend: General concurrence on principles and guidelines for doing effective monitoring and evaluation

Much of the conservation literature on monitoring and evaluation is accompanied by principles and guidelines for doing effective M&E. Although each publication offers its own unique contribution, there was a significant degree of concurrence on guidance offered. Through this review, we have synthesized those principles and guidelines, as well as distilled others based on trends we saw within the literature. We have highlighted some of these distilled principles in the lessons mentioned above. Here, we provide a sample of some of the other principles and guidelines that emerged from this study. These are organized according to the general 8 step process for project management, monitoring, and evaluation that emerged from this review:

1. **Conceptualise** what you will achieve in the context of where you are working.
2. **Plan** what you want to do and how you will monitor it.
3. **Do** the activities necessary to achieve your mission.
4. **Check** to ensure you are reaching your intended goals.
5. **Analyse** your data to evaluate the effectiveness of your activities.
6. **Communicate** your results to promote learning.
7. **Use** your results to **Adapt** your project to maximize impact.
8. **Iterate** – Go through the project cycle continuously to constantly improve.

Lesson: As mentioned above, we provide a sample of some of the guidance that emerged from this study. For a complete set of guidance, please refer to the FOS website (**www.fosonline.org**).

Conceptualisation guidance

1. Understand the context
    a. Conduct a stakeholder assessment or situation analysis.
    b. Clearly define your conservation target(s), the critical threats, and the sources or causes of those threats. This may be an iterative process as you learn more about your site and need to re-evaluate and revise your model.
2. Develop a conceptual model
    a. Specify relationships between threats and project activities designed to reduce them. Be clear on cause and effect assumptions. Emphasize the underlying logic and connection between your model and your measures.
    b. Explicitly identify all assumptions about the context and intervention.
    c. Keep your model simple (avoid very precise and unreliable predictions).

Planning guidance

1. Clearly Define Project Goals, Objectives, and Activities
    a. Make sure your goals and objectives are meaningful and realistic. Do not quantify arbitrarily.
    b. Ensure goals and objectives are politically, socially, and ecologically appropriate.
    c. Make explicit the link between project activities and project goals and objectives.
2. Plan, Reflect, and Update Your Action and M&E Plans
    a. Redefine criteria, goals, and measures of success as scientific standards and expectations change over time.
    b. Progressively verify and refine evaluation methodology, as needed.

c. Check on the validity of original assumptions.

Implementation (Do) guidance

This step involves the actual implementation of interventions and projects. Because our focus was specifically on monitoring and evaluation, we did not come across a lot of guidance for this step. Although we are certain this guidance exists, we feel, for M&E purposes, it is most useful to focus on the other steps in project management.

Monitoring (Check) guidance

1. Keep the M&E System Simple, Affordable, and Feasible
    a. Be clear about the purpose and scope of the M&E system.
    b. Design your system to meet, not exceed, the level of sophistication necessary.
    c. Use indicators that are simple to measure and interpret.
2. Make M&E Systems Relevant
    a. Work with project staff, management, and stakeholders to develop evaluation questions that are relevant and practical.
    b. Use a broad set of indicators understandable to those who will be making policy or management decisions.
    c. Choose indicators that encourage the right action, are functional, and are clear, compelling, and understandable.

Analysis guidance

1. Keep Your Information System Manageable
    a. Process and analyse information at the field level – do not merely record data.
    b. Synthesize large amounts of information into simple principles that encapsulate the lessons learned.
    c. Make sure your data supports your conclusions.
2. Be Comprehensive
    a. Collect monitoring information on inputs, outputs, outcomes, and impacts.
    b. Analyse both success and failures to determine reasons behind them. Document and communicate key lessons.
    c. Assess not just if you have been effective but whether alternative approaches could be more effective.

Communication guidance

1. Consider the Audience
    a. Consult and involve stakeholders throughout the evaluation process, including when communicating findings.
    b. Communicate findings in a form appropriate to the needs of the interested parties. Information should be clear and understandable and should stimulate, inform, and support learning processes.
    c. Present recommendations and criticisms in a culturally-appropriate manner.

Use/Adaptation guidance

1. Link Assessments to Decision Making
    a. Specify early on in your work plan how you will use evaluation results.

b. Provide clear recommendations for improving management performance.
c. Clearly identify who is responsible for following up on recommendations.

2. Create a Learning Environment
   a. Embrace error as a way to learn and change. Design incentive structures to tolerate risk and reward experimentation and innovation.
   b. Systematically document the process your team has gone through and the results you have achieved.
   c. Develop active listening skills – probe below the surface for the logic of change.

4. Concluding remarks

This summary paper describes some results from Phase 1 of the Measuring Conservation Impact study, which involved a review of M&E approaches across five disciplines, including conservation. The purpose of the MCI project is to help advance monitoring and evaluation in conservation by learning about work in conservation and other fields to measure project and intervention successes.

Phase 1 results reveal a considerable breadth and variety of M&E approaches across fields. These approaches may be categorized into four broad purposes: 1) basic research, 2) status assessment, 3) effectiveness measurement, and 4) accounting and certification. Our interest and focus has been primarily upon status assessment and effectiveness measurement. Keeping in mind this focus, we observed some general convergence in the way M&E approaches have evolved. In the field of conservation, we observed the following general trends:

- Shift from a focus on indicators to a more comprehensive approach to monitoring and evaluation;
- Increasing application of conceptual frameworks and models;
- Widespread focus on impacts and performance;
- Greater attention to both biological and social monitoring;
- Widespread adoption and adaptation of ranking models;
- Increasing collaboration on M&E matters;
- Broad use of state of the environment monitoring; and
- General concurrence on principles and guidance for doing effective M&E.

We encourage readers to review the general study findings and the syntheses from other disciplines. Details on these will be available through the FOS website (www.fosonline.org).

Phase 2 of the MCI study is currently underway and involves the design of a prototype indicators database to guide conservation practitioners in the selection of potential indicators for their projects. The database will involve a series of queries related to conservation goals, targets, threats, and activities. By guiding practitioners through a user-friendly query system, the proposed programme would help them narrow down the most appropriate indicators for their situation.

We hope that the results from the Measuring Conservation Impact project will catalyse discussions within the conservation community that lead to common agreement on the key steps and guiding principles for effective monitoring and evaluation in conservation. Please keep

checking our website (www.fosonline.org) for further updates and publications related to the MCI study.

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[6] For this study, we reviewed over 350 publications and websites, approximately 100 of which were from the conservation field. To access a database with information on many of these publications, see the FOS website (www.fosonline.org).