

MARINE PROTECTED AREA MANAGEMENT: IMPROVING PERFORMANCE BY PROFESSIONALIZING CAREER PATHS WITH INTEGRATED TRAINING, CERTIFICATION, AND TRADE ORGANIZATION DEVELOPMENT

Kenyon C. LINDEMAN^a, Eduard MÜLLER^b, and Glenn RICCI^c

^a*Florida Institute of Technology, Melbourne, Florida 32901 USA.*

^b*Universidad para la Cooperación Internacional, Altos de Escalante,
San Jose, Costa Rica.*

^c*University of Rhode Island, Coastal Resources Center,
Narragansett, Rhode Island 02882 USA.*

Marine protected areas (MPAs) that conserve over-exploited marine resources and ensure sustainable livelihoods for local communities are among the highest of ocean management priorities for the 21st century. Unlike other professions, however, these areas are often managed by staff without: a) advanced training in MPAs, b) incentives for long-term skill development, or c) professional organizations to certify competencies and represent MPA management as the skilled career for which it deserves recognition. Without the professional development infrastructure found in other important professions (e.g., teachers, attorneys, physicians), MPA management can be constrained by high staff turnover, and an absence of resources or political status relative to other interests. MPA staff should be professionally empowered through their full career cycle by specialized training and explicit performance standards; these can be achieved through well-designed certification programs that incentivize improved performance and professional trade organizations to improve long-term career prospects. Therefore, the IUCN through the newly formed Work Group for Education and Learning within the WCPA Protected Area Capacity Development Program will work with partners including the Global Protected Areas Programme, CBD Secretariat, and many others to build a Global Partnership for Professionalizing Protected Area Management (GPPAM). In terms of MPAs, the program will include: 1) open-access curricula specific to MPA rangers, managers, and system administrators; 2) accreditation of partner institutions and creation of a scholarship trust fund for MPA trainees; and 3) establishment of regional certification programs based on proven job performance following the MPA PRO model and the expansion of regional organizations to provide full professional career development services.

Keywords: MPAs, training, WCPA, GPPAM, MPA PRO, fisheries management

Introduction

Marine protected areas (MPAs) that conserve over-exploited marine resources have been widely identified as one of the highest sustainability priorities for marine systems (e.g., Lubchenko et al., 2003; Millennium Ecosystem Assessment, 2005). Many terms and concepts directly or indirectly involve MPAs including Coastal and Marine Spatial Planning, Ecologically or Biologically Significant Marine Areas, and Marine Managed Areas. It is important to emphasize that the policy objectives of protected marine areas often focus on social or economic issues as well as biological. Due in part to the diverse goals of many MPAs, the design and implementation of such areas is difficult and fraught with measurement and performance challenges (Sale et al, 2005; Mora, 2011).

The thousands of MPAs worldwide are complex institutions that require highly diverse skill sets to efficiently operate. Though potentially providing trillions of dollars' worth of ecosystem services, these areas are often managed by staff without formal professional training, certification or resource support. This is a suboptimal paradigm for managing billion-dollar institutions that also could serve to mitigate some impacts of climate change (MEA, 2005), though this will be difficult to assess in many marine systems (Jameson et al., 2002).

A series of meetings to professionalize protected area (PA) management worldwide has produced an evolving plan that received consensus endorsement at meetings of the World Commission on Protected Areas Training Task Force (WCPA) and Convention on Biological Diversity (CBD) in 2011 (Müller et al., 2012), and follow-up meetings at the Latin American School of Protected Areas in Costa Rica and the World Conservation Congress in South Korea in 2012. The new Global Partnership for Professionalizing Protected Area Management (GPPAM) has identified the following goals to advance marine and terrestrial PA professionalization:

1. Develop advanced, open-source curricula to professionalize training for three essential staff categories: rangers, managers, system administrators;
2. Implement advanced training through accreditation of exceptional training institutions and creation of a scholarship trust fund for trainees;
3. Establish certification programs that assess and certify on-the-job performance of PA professionals based on core competences and coordinate existing PA professional associations so that services for the entire career of PA professionals can be ensured.

Full-life-cycle development of PA professionals will be the focus of all components. In terms of MPAs, the program will innovate by moving beyond training programs alone to coordinate courses into a larger professional certification system that services the needs of both young and veteran MPA professionals throughout their career. It will incentivize staff to pursue new opportunities that will professionalize MPA management.

The training elements of the program build on verified online and in-person MPA curricula developed by WCPA and partners and will provide onsite training facilities in selected UNESCO sites throughout the world. Working with both World Heritage and MAB sites will provide a range of training models from iconic, highly protected reserves to multi-use MPAs. The GPPAM initiative will be managed through the newly formed Work Group for Education and Learning within the IUCN WCPA Protected Area Capacity Development Program.

A strong existing example that the proposed certification elements will build from is the WIO-COMPAS (Western Indian Ocean - Certification of Marine Protected Area Professionals) program (<http://www.wio-compas.org/>) which is based on the MPA PRO model. In the case of WIO-COMPAS, 42 MPA staff are certified among three levels of achievement and are employed at over 27 MPAs across seven countries of southeast Africa. The MPA PRO certification is designed to be customized for MPAs in other regions and exemplifies a regional model to reinforce local ownership (Squillante et al., 2010). WIO-COMPAS is endorsed by IUCN-WCPA, WWF, International Ranger Federation, and others.

Marine Protected Areas are Critical yet Management is Erratic

At the international level, MPAs have been recognized as critical instruments in achieving the objectives of the CBD and the Millennium Development Goals. At national and local scales, many countries and regional or local governments have MPA initiatives underway. Complex government initiatives have established more than *200,000 PAs worldwide* covering nearly 13% of the Earth's terrestrial surface. Marine protected areas are also increasing, by 2010, 1.6% of the global ocean area, 4% of all marine area under national jurisdiction and 7.2% of all coastal waters were nominally protected (Bertzky et al., 2012). These efforts represent a continued emphasis on MPAs as increasingly critical management institutions. There has to be an increase in staff, *highly-trained staff*, to properly meet these increasing numbers.

MPAs face extraordinary challenges from climate change but also open windows of opportunity. MPAs are often fundamental to efforts to conserve ecosystem services, yet, diverse science and policy analyses have concluded that many PAs are not effectively managed (Appeldoorn and Lindeman, 2003; Mora, 2011). Despite their contribution to national and local economies, MPAs have

often not attained a prominent place in national policies, priorities, or funding. The CBD established goals to stop biodiversity loss, yet, the recently released Global Biodiversity Outlook 3 (<http://www.cbd.int/gbo3/>) concludes that targets have not been met. The Outlook states that the principal pressures leading to biodiversity and ecosystem services losses are, in many cases, intensifying.

MPA Staff Face Unique Ocean- and Coastal-based Operational Challenges

GPPPAM is focused on both terrestrial and marine protected areas but there are major differences in the design, implementation, and long-term management of each category of PA. These differences take multiple forms and place specialized demands on MPA personnel. In terms of physical structure, MPAs are largely underwater and there are typically no visible boundaries. In addition to the logistic challenges of governing areas that are very difficult to demark and establish signage on, there is also the major challenge of getting local stakeholders to value resources most of them may never even see. In most societies there is also a very limited history or cultural familiarity with zoning and protected areas in aquatic systems, in contrast to substantially more familiarity with PAs on land (National Research Council, 2000).

In terms of pure resource management considerations, many if not most MPAs are used as fishery management tools. The management of fishery resources is notoriously complex with very dynamic oceanographic processes affecting the population biology of the species under focus at multiple biotic and abiotic scales across dozens of spatial and temporal scales (Spencer and Collie, 1997). In addition, funding to implement basic fisher outreach, research monitoring of PA effectiveness, and compliance/enforcement is typically inadequate.

A prominent example of a PA management issues specific to marine system involves spawning aggregations near the drop-offs of continental and insular shelf platforms. Some of the most economically valuable reef fishes reproduce in dense aggregations that gather only once a year at such aggregation sites. Because these annual and brief concentrations hold high numbers of very valuable species (e.g. snappers and groupers), they are highly vulnerable to fishing. Overfishing of these special areas can have dramatic consequences on local and long distance populations of economically important resources. Regional and global trends demonstrate that declines in spawning aggregations have been and continue to be steep (Sadovy de Mitcheson et al., 2008).

Since marine spawning aggregations are highly site-dependent, they can lend themselves to spatial protection in the form of MPAs. However, there is considerable scientific and political complexity associated with optimized zoning-based protection of spawning aggregations that can also vary greatly

among differing regions and cultures. Whether a multi-use MPA or a no-take reserve focused on spawning aggregation protection 15 km offshore or many other different goals, the challenges associated with fisher outreach, monitoring of effectiveness, enforcement, and other needs can overwhelm even an excellent staff and administrative structure.

MPA Staff Need Professional Development in Diverse Skills

Many countries or regions are attempting to increase their MPA number and effectiveness, often through the creation of nominal MPA networks. Clearly, there are urgent needs for not only multidisciplinary training but for incentive-based professionalization including development of trade organizations dedicated to the career of MPA management, as other highly-skilled professions have developed. Long-term funding acquisition, administrative support, and incentives to view MPA management as a long term career have often been overlooked due to the understandable macro-focus on the potential values of well-managed MPAs (including biodiversity and ecosystem service conservation, protection of indigenous livelihoods, sustainable tourism, multi-use recreation, and climate change resilience).

The complexity of modern MPA management therefore requires professionals with knowledge of disparate fields who have been adequately trained to integrate diverse skills, including business management. Advanced professional development for diverse staff roles is crucial to ensuring PAs are capable of withstanding current threats and are prepared for new challenges. In economic sectors other than MPAs, formally trained professionals are required for managerial positions, with a degree or specialization related to what they are managing. Academic institutions that offer formal programs in MPA or terrestrial PA management are rare and MPAs in many developed and developing countries are managed by those trained in narrow technical fields like biology, anthropology, and forestry, who often modified their career paths after college.

An effective MPA manager should understand fundamental ecological dynamics with a broad knowledge of conservation science, including population dynamics and the marine sciences. Yet, this person should also understand complex human social dynamics including socio-economics, stakeholder outreach, traditional ecological knowledge, and conflict management (Russ and Alcala, 1999; Grant and Berkes, 2007), skills that are rarely delivered in a pure biology curriculum. In addition, knowledge of organizational administration, project management, budgeting, human resources, risk management, tourism, environmental education, infrastructure maintenance, and fundraising are also necessary.

In part, local limitations on staffing and career development have led to a dependency on international and national NGOs and government technical assistance projects that often operate for only a few years and can be over-focused on external actors. Relatively few long-term employees have specialized training or career support organizations to integrate the above skills and competencies for optimized MPA management. Challenges are increased for governments since professionals often migrate to the NGO or consulting sectors and the capacity for national systems to train new personnel is often limited. Training will not alone improve staff retention: there is a need for tools such as certification to reward consistently solid performance and larger professional organizations to incentivize additional career development.

Converging Training, Certification and Professional Development

To advance the professionalization of MPA and terrestrial PA management, the newly formed Work Group for Education and Learning within the IUCN WCPA Protected Area Capacity Development Program will work with a wide array of partners to establish a global partnership for training, accreditation and financing, and establish certification of professionals while building their career identities via professional organizations. Components specific to coastal and ocean protected area management within the GPPAM framework are summarized below.

Building Advanced Global Curricula for Three Levels of MPA Professionals

The GPPAM partnership will work to establish advanced, interdisciplinary training and competency standards for MPA professionals at a global level. Curricula will build from existing and new tools to best implement the Program of Work for Protected Areas.

Objective: To empower globally rigorous professional training at three levels: Rangers, MPA Managers, and MPA System Administrators to improve MPA management in all global regions.

Outputs:

- Development of regularly updated, training content on MPA management for three professional categories: Rangers, Park Managers and System Administrators;
- Three sets of differing curricula will cover all ecological, social, and management aspects of MPAs relevant to each of the three specific professional categories.

- All academic materials will be delivered using both e-learning and face to face modules.
- WCPA members will develop, review, and update course materials;
- WCPA will ensure quality control and the capacity building of trainees by developing an accreditation system for training institutions using the materials (Component 2 below);
- Management and updating of course material will be self-funded through fees from academic institutions for use of course material and for accreditation.
- Training curricula will promote curricula adaptations and their local cascades.

Partners: WCPA and Global Protected Areas Programme – IUCN, CBD, International Rangers Federation, The Latin American School for Protected Areas at the University for International Cooperation, the International Academy for Nature Conservation, AMPAM, and other organizations, academic and training institutions.

Accreditation and Financing of Training Centers of Excellence

Training will be implemented through accreditation of exceptional academic institutions and training centers which will provide scholarships as feasible to deserving trainees.

Objectives:

1. Establish a network of accredited “Training Centers of Excellence” to ensure best instruction practices using MPA curricula developed and maintained by GPPPAM partners.
2. Identify scholarship sources for training at accredited institutions for managers and system administrators (ranger programs will occur in national systems, supported by local institutions).

Outputs:

Accreditation

- Development of a system of WCPA Partners to accredit specialized GPPPAM training and host institutions to enhance existing institutional leaders and create new ones.
- The accreditation system will ensure best standards, assist in improvement of programs, and lever funding for the administration and updating of curricula.

- Institutions and their MPA training will be assessed against standards including: capacity to hire necessary staff, understanding and delivery of course content, feedback from recipient MPAs, use of practical training sites including UNESCO World Heritage and MAB sites.

Scholarship-based Financing

- GPPAM courses will be supported by a scholarship trust fund at accredited institutions to provide capacity-building for MPA trainees with a focus on developing self-financing mechanisms.
- Funds will also provide for a small amount of seed-funding to facilitate practical projects on site to reinforce training and enhance management applications.

Partners: Training institutions include the ASEAN Regional Center for Biodiversity Conservation, the Latin American School for MPAs in Costa Rica, the International Ranger Federation, and marine conservation NGOs. Many universities and other organizations (e.g., Caribbean MPA Managers Forum) are associated with periodic MPA training and their expertise will be encouraged.

Certification of MPA Professionals and Building MPA Professional Associations

Following the successful MPA PRO model of the Western Indian Ocean Marine Science Association and the URI Coastal Resources Center, certification will be based on proven job performance and front end training programs using locally-guided core competences and standards for MPA professionals. MPA PRO provides clear milestones for MPA professionals who have applied skills from training courses to their work as well as for those veterans who have performed on the job without formal training. Certification addresses the demand of MPA professionals for recognition of their work, career guidance and networking.

To best sustain this initiative, there should be a foundation upon which these services can be layered. As with any other profession, such as doctors, engineers and lawyers, there is value in having professional associations that establish the standards, training process, ethics and professional services for an industry. Fortunately there already exist several MPA professional associations including the International Ranger Federation which could serve as the home for the expansion of services outlined in this initiative. Most MPA professionals are not scientists and need their own unique community to aid their development, advocate for their needs, establish performance standards, network people and

promote innovation. There could be a single global professional association or multiple regional associations that follow internally established competences and services for member professionals.

Objectives:

1. Establish certification programs that recognize MPA field and management staff based on assessments of proven on-the-job performance; and
2. Substantially enhance the identity of the profession by working with partners to respond to the needs of MPA professionals and expand the range of services to MPA staff at all scales.

Outputs:

- Core competences and standards for assessment of individuals at multiple levels of the profession (field operators, site supervisors, policy and planning)
- Regional certification bodies to lead the customization of general competences and standards with assessment instruments to conduct certification programs
- Formal processes to train and recognize regional assessors to deliver the program
- Standardization across regions to ensure the core of the certification program is rigorous and complimentary – regions can modify the program according to local needs
- Formal recognition of existing international MPA professional associations that can deliver services and provide the focus on the needs of MPA professionals in broader advocacy
- Development of the core competences and standards for MPA professionals from which other services can evolve (career guidance, performance appraisal, and hiring)
- Regional capacity development services to increase staff retention, career guidance, ethical standards and motivation
- Networking of regional MPA professional leaders to define the regional needs that can strengthen the performance of MPA professionals

Conclusion

The above document outlines an ambitious but necessary array of goals to assist the professionalization of MPA management. Professionalizing the career paths and status of MPA staff, whether field rangers or agency administrators will help

address many well-documented challenges to MPA effectiveness and enable badly needed increases in financial resources and the ability of MPAs to become more self-sufficient. The long-term stakes are high and the need for MPA employees to be incentivized to stay and flourish in the profession, as in other respected careers, is overdue. Resources should be mobilized to extend and expand upon extraordinary models like WIO-COMPAS in many other regions. The WCPA Training Task Force is actively seeking ideas to sharpen and better implement these ideas among all coastal and ocean regions.

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