

## **An Effective Marine Protected Area**

### **Pacific Island Marine Protected Area Community (PIMPAC)**

**Background:** The PIMPAC initiative is designed to enhance Marine Protected Area (MPA) management effectiveness throughout the U.S. Affiliated Pacific Islands. As part of this effort, PIMPAC believes it is important to identify those features that characterize an effective MPA. As practitioners strive to improve and maintain management of their MPAs, it is valuable to have a model concept of an effective MPA to help guide them. It is also valuable to have a description of what benefits may be expected

There are numerous published descriptions of effective MPAs. The following descriptions has been developed by referencing these documents as well as interviewing MPA experts. Any recommendations to strengthen this description of an effective MPA would be greatly appreciated.

This summary has divided characteristics of effective MPAs into several categories including: The Establishment or Design Process; Governance and Administration; Field Management; and Financing. Within these categories, we have tried to capture the majority of characteristics that make an MPA effective.

#### **Establishment Process/Design**

##### **1. Effective Outreach:**

For an MPA to be effective, it is important that there is a successful outreach component prior to initiating any design exercises. Particularly for MPAs that have a broad range of stakeholders, the development of trust between MPA practitioners and these stakeholders may take months or years to develop. One of the most effective ways to go about outreach is not to come in with preconceptions about what types of management actions will be taken in an area but to instead listen to the concerns and comments of stakeholder groups. Once these concerns have been expressed, it will become evident whether or not an MPA will help to address these concerns and what form the MPA might take. Several organizations provide detailed guidance on how to go about stakeholder consultations and how to incorporate the concerns and needs of stakeholders into MPA design.

##### **2. Stakeholder Involvement in the Design Process:**

Once it has been determined that an MPA is a useful management tool to address conditions in an area, it is absolutely critical that as broad a range as possible of stakeholders be involved in the design process. Research indicates that conservation projects that incorporate community and stakeholder interests from the beginning have a higher probability of long-term success. While the design process will no doubt take longer

If an MPA was designed without a good stakeholder process, it is important to assess the degree of stakeholder support and its impact on the effectiveness of the MPA. If the MPA is ineffective, it may need to be redesigned using a stakeholder involvement process.

## **2. Clear Purpose or Goal:**

For an MPA to be effective, stakeholders must first determine what the primary goal of the MPA will be. It is possible to have more than one goal; however, practitioners must be certain that these goals are not incompatible. For example, a goal of restoring a pristine ecosystem and a goal of maximizing commercial fishing may be incompatible. This is absolutely critical to identify the goal or goals for the MPA as the effectiveness of the MPA will be measured against this goal in the future. There are many MPAs around the Pacific that were formed with a specific goal in mind, but later that are judged from a different perspective. For example, Hanauma Bay in Hawaii was designated largely for its scenic and recreational value not for its fisheries value. If fisheries replenishment was the main goal, the area may have been designed differently. The overall goal or goals of the MPA will shape the design, management, and future effectiveness of the MPA. If the goal was determined many years ago, it should be regularly reviewed by stakeholders to be sure all involved understand it well.

## **3. Biologically Sound Design to Achieve the MPAs Goal and Objectives:**

Achieving an MPAs goal and objectives depends a great deal on the location, size, and orientation of the MPA. Unless certain habitats are included within the MPA it may never achieve its goals. For example, if the goal of an MPA is to improve fisheries benefits to a local community, it must be certain to include sufficient habitat of key species such that they can breed and increase in number. It is important to consult with individuals with sufficient experience to advise on the geographical design of the MPA.

## **4. Clear Boundaries:**

Many MPAs suffer from boundaries that are hard to locate. It is not uncommon for poachers to exploit the uncertainty of boundaries to avoid being cited for illegal fishing. In Australia, authorities have started to use straight edge boundaries to minimize confusion and uncertainty.

## **5. SMART Objectives:**

Managers across the world have started to use the concept of SMART objectives to help guide their management activities toward achieving the MPAs goal. SMART means Specific, Measurable, Achievable, Realistic, and Time Bound. If an Objective meets these five criteria, there is a high probability that MPA practitioners will be able to achieve this objective and thus come closer to their goal. They will also be

able to measure their progress toward achieving this objective using efficient monitoring means. In addition, these objectives must be mutually compatible and compatible with the goal. For example, an MPA in Palau has the goal of “Maintaining the Biological Diversity and Ecosystem Balance of the Atoll while also Yielding Benefits for the Local Community”. Two compatible objectives that will help to achieve this goal are:

1. Reduce instances of poaching of marine species by 75% by 2009.
2. Determine and allow sustainable subsistence harvest levels harvest of parrotfish by 2010.

## **6. Rules and Activities that Support the Goal and Objectives:**

The rules and regulations of the MPA must also be designed to support the objectives and the goal. If a clear SMART set of objectives are articulated, a solid set of project activities will flow naturally. Explain this more – beef it up.....

## **Governance and Administration**

### **1. Effective Leadership:**

Leadership for an MPA can come in many forms from a village Chief to a Government Official to a local community volunteer that is very passionate about the area. It is also possible that more than one individual may act as a leader for the MPA. A leader or leaders should have respect from stakeholders that are interested in the MPA. The leader will act as an advocate for the MPA, will be willing to work hard to help make sure the MPA succeeds, and will provide their wisdom to help guide the MPA. The person need not be employed by the MPA but should have a recognized role of authority related to the MPA.

### **2. Effective Management Structure:**

As well as good leadership, an effective MPA must have an effective management structure. While there are effective MPAs that do not have a full time Manager or Coordinator, a good manager is usually very instrumental to making an MPA effective. Depending on the Objectives and set of activities that an MPA is pursuing, there is typically a need for some degree of specialization either by having part time employees or contractors in addition to the manager.

### **3. Well Designed/Simple Management Plan:**

An MPA can operate effectively and achieve success without a written management plan. There are several examples of effective MPAs that have no written management plan or have only prepared a management plan years after they began implementation. However, most of the effective MPAs that we know of, do have either spoken or written goals, objectives, activities, regulations etc. Translating

these and other elements of the MPA to a Management Plan is a simple (albeit time consuming) step that can significantly benefit the MPA. It provides a vehicle to communicate the goals, objectives, activities, regulations, zones, and other elements of the MPA. It also provides a point of reference from which to measure the effectiveness of the MPA both in terms of progress and process (see below). As a result, we recommend that all MPAs develop Management Plans in a mutually agreed to stakeholder process.

#### **4. Adaptive Management/Measures of Success:**

The most effective MPAs in the world have some sort of system by which progress is measured and program adjustments can be made to help ensure progress. While some MPA managers simply do this from instinct and experience, we believe that a systematic approach to measuring success and adaptively managing the program is very important. This starts with articulating SMART Objectives as discussed above. But it also means identifying both progress and process indicators. This can be included in the objectives or at the activity level. Progress indicators identify what you want to achieve in terms of outcomes by what date. Process indicators help you make sure you are on track to achieving those outcomes by giving you process milestones. For example, if your Objective is to Reduce Poaching by 50% by 2009, a progress indicator would be that by 2008, you have reduced poaching by 25%. This helps you make sure you are on track to achieving your designed outcome. A process indicator related to this might be that you train and deploy 8 new enforcement officers by 2007.

### **Field Management**

#### **1. Effective Awareness Raising and Outreach:**

As mentioned, making sure stakeholders participate in the development of an MPA from the beginning is extremely important. It is also very important to ensure that your MPA has a good awareness raising and outreach plan during the course of its implementation. There are many MPAs that have had good stakeholder participation during their design phase but fail to work with MPA users to ensure they understand the rules and are aware of the importance of the area. MPA outreach and Awareness raising is most often limited by financial constraints. In many cases, people may use an MPA for years and not even be aware that it is an MPA. A cost effective way to achieve solid outreach to MPA users is to help create and or support volunteer groups that can serve as docents to inform MPA users of the importance of the area.

#### **2. Effective Compliance and Enforcement System**

Around the world there are literally hundreds if not thousands of MPAs that are ineffective because they do not have an effective compliance and enforcement system. Again this may result primarily from a lack of financial and/or human resources. Encouraging compliance with regulations is often the priority of MPA

managers as it is unpleasant to undertake enforcement actions. The first step to compliance is adequate involvement of stakeholders at the design phase. However, this alone will not ensure compliance as time goes by. To help ensure compliance, MPA users must be aware of the rules of the area and must also feel that there are consequences if they do not comply. Most MPAs cannot achieve compliance without some level of enforcement activity. Depending on the nature of MPA, enforcement can be carried out by community members or may require trained enforcement officers who regularly patrol the area to discourage violations.

### **3. Balanced Distribution of Benefits:**

Helping to make sure that the benefits from an MPA are balanced among stakeholder groups will help to ensure compliance and success. If one or more stakeholder groups feel disenfranchised (particularly from their traditional area) at best they may simply not comply at worst they may purposely sabotage the MPA. Balancing benefits can be difficult with one MPA as in some cases the objectives of different stakeholder groups may be in conflict. One approach is to network MPAs in a way that balances the interest of different stakeholders. Another approach is to manage an entire coastline or ecosystem so that the interests of different groups can be addressed in different areas.

### **4. Effective Biological and Socioeconomic Monitoring:**

Understanding the impacts of your MPA is extremely important. As a result, careful biological and socioeconomic monitoring should be a part of every MPA effort. If possible a baseline should be established before the MPA is created. This should include biological factors, socioeconomic issues, and attitudes toward the area. Each of these can be tracked over time to help understand the effectiveness of the MPA. One factor that is increasingly important in MPAs around the world is spill over and or larval transport. As MPAs are increasingly justified based on their fisheries benefits, its important to measure spill over as well as changes in fish catch. As a result, the monitoring system should include survey sites both in the MPA and out of the MPA. Likewise, to the degree possible fish catch before and fish catch after data should be collected.

## **Financing**

### **1. Sufficient Funding to Operate Programs Annually**

A major complaint of some stakeholder groups during discussions about creating new MPAs is that the governing authorities are not even managing the existing MPAs well. For example, in Hawaii as some concerned groups tried to create new MPAs, opposing interest groups argued that the MPAs that we have are not even well managed so why should more be created. It is critical and every MPA have sufficient funding and staffing to achieve its goals. This is not only important to the individual MPA but is also extremely important to MPAs overall. If MPAs fail to achieve their goals due to lack of support it increasingly brings the entire MPA approach into

question. Opponents of MPAs often cite the failures of MPAs that have been documented around the world. These failures may result from many factors including poor design, inappropriate citing, lack of community buy in, lack of funds and staff to adequate manage and enforce the MPA, and several others. Any time that one MPA fails, it adds to the litany of reasons that some stakeholders oppose new MPAs. As a result, both for the sake of their own goals and for the sake of the MPA approach overall, PIMPAC believes each MPA should do its best to achieve certain standards of efficacy and success. PIMPACs goal is to make achieving these levels of success a reality.

## **2. Sustainable Financing**

An issue that impacts most MPAs around the world is how to sustain conservation activities in the long-term. While some MPAs receive government appropriations or have user fees to fund their management, the majority of MPAs have no sustainable financing system. For the moment that an MPA is created, practitioners involved in the area, need to think about how they will sustain its activities in the long-term. It is extremely discouraging when an MPA fails because it was not able to sustain the financing needed to keep it operating. A number of sustainable financing options exist including user fees, funding agreements with commercial operators who benefit from the area, earned income strategies, trust funds, cause related marketing, costs saving measures, volunteerism, and several others. The important point is that managers need to think as early as possible about how they will sustain their MPA activities. Private MPA projects need to be particularly aware of this fact as sustainable financing options can take years to develop.