

RESEARCH PROGRAMS FOR THE MANAGEMENT OF CULTURAL RESOURCES IN MARINE PROTECTED AREAS

By

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INTRODUCTION:

Water, that basic ingredient of life, is intertwined with almost every aspect of human history, from earliest prehistoric times to the present. Our world has been, and is, tied together by water; economically, socially, commercially, and politically. And, just as on land, every passage of mankind across lakes, streams, rivers, oceans, and seas has left traces of past activities and events. Today, the remnants of those activities from ages past are scattered along the edges of, and on the bottom of, the world's waterways.

The cultural resource research program define herein is offered as a tool for use by managers of all Marine Protected Areas. This program has been extracted from the existing National Park Service Cultural Resource Program, United States Department of the Interior.

It is a program aimed at providing the range of scientific data necessary for the management and operation of a Marine Protected Area or a system of areas. The basic philosophy is a "Conservation Ethic" dedicated to preserving and conserving finite, fragile, and non-renewable resources in Marine Protected Areas. All of the research aspects are directed at having the least amount of impact and effect on the resources.

The Marine Protected Areas throughout the world exist because many nations are concerned about the marine environment. Creating Marine Protected Areas was a critical step towards insuring important segments of the marine environment are protected for the future of mankind. Marine Protected Areas play a very significant role, through their research programs, in furthering human understanding of the sea.

Most of the Marine Protected Areas of the world were established to protect specific aspects of the natural environment--the natural resources. To-date, very, very few Marine Protected Areas have been established specifically to protect cultural resources. Almost every "natural" area will contain cultural resources and all "cultural" areas exist in a natural environment.

"Cultural resources" may either be historic or prehistoric in terms of age and include sites, structures, districts, and objects significantly associated with or representing earlier people, cultures, and human activities and events. Alternative or substitute terms are archeological resources and historic or historical resources.

The most common type of cultural resource in the marine environment is the shipwreck. Shipwrecks, as a class of resource, are international in scope and nature--vessels from seafaring nations in the course of commerce and military actions, end up as shipwrecks in other countries' waters. Many shipwrecks, caused either by natural disaster or by acts of war, are considered to be "memorials" to and for those who lost their lives on those specific vessels by the country of origin. Unless within that country's own jurisdiction, these "memorials" usually are unprotected.

Marine Protected Areas also have the potential of containing the most important and significant prehistoric human remains--those left in periods of lower sea levels. Submerged prehistoric remains are difficult to locate because they lack quantities of metal and do not stand above the bottom. Today's technology is sufficiently advanced to even locate some prehistoric sites off-shore. These prehistoric sites are not directly threatened by deliberate artifact recovery (they contain no treasure), but are being destroyed by coastal development, dredgings, and off-shore oil and gas exploration.

All of these types of submerged cultural resources can be found in the various Marine Protected Areas around the world. Every Marine Protected Area will likely contain remains of past human activity. All cultural resources are finite in number and are non-renewable. There are only a small number of shipwrecks from any given time period, and when they are destroyed, they are gone forever. We cannot grow a new Manila Galleon!

Being that Marine Protected Areas were created to protect the resources contained therein, it becomes our responsibility to properly manage all of the resources, both natural and cultural, contained in Marine Protected Areas.

PREREQUISITES:

Before research programs can be considered as an aspect in the management of resources in Marine Protected Areas, there must first be a supportive management structure. Without such a system in place, any research effort may be misdirected or even useless to long term management objectives. Sound management for both natural and cultural resources requires the same basic prerequisites. Since most Marine Protected Areas were established for natural resources, these are usually well covered. However, cultural resources have been over-looked in most cases, and the necessary prerequisites for management must be developed.

A. Basic Authority

To adequately build a cultural resource research and management program first requires a basic authority. The law, regulation, proclamation, or other method utilized to establish a Marine Protected Area (or system of areas) needs to contain specific reference to the cultural resources and the requirement to manage them.

B. Integration with Other Mandates

Cultural resource management in Marine Protected Areas needs to be integrated with other existing mandates. Many nations and states have laws and procedures that generally apply to cultural resources, and these must be applied in developing specific programs for Marine Protected Areas. Care must be taken to consider other mandates that interact with cultural resource activities—such as endangered species protection.

C. Planning System

A formal planning system usually exists by which all activities for a marine protected area are defined. Cultural resource functions need to be included in this planning system to insure proper consideration in all aspects of operations and management.

Master Plan: The single most important planning document for a Marine Protected Area is some form of master plan or General Management Plan that defines the purpose, objectives, scope and limits of that unit. Such a document is the "blueprint" for all management and operational functions of a Marine Protected Area.

Cultural Resources Management Plan: The second critical planning document for a Marine Protected Area. This defines the multi-year programming and action schedules for needed activities to preserve, perpetuate, manage, interpret, and appropriately use the area's cultural resources.

D. Programmatic Framework

To adequately manage the resources within a Marine Protected Area requires that a program structure be established. This is achieved through a set of written policies, regulations, standards, guidelines, and procedures. These clearly define the goals, objectives, and limitations that apply to all activities in a Marine Protected Area. Documents that would compose this programmatic framework include: Cultural Resource Management Policies, Management Standards, Guidelines, and Procedures.

DEVELOPING THE RESEARCH PROGRAM:

ONLY AFTER ALL OF THE PREREQUISITES ARE DEVELOPED AND IMPLEMENTED, SHOULD ANY EFFORT BE MADE TO DEVELOPE A RESEARCH PROGRAM.

General Considerations

Archeological studies are necessary components of a wide variety of Marine Protected Area activities including planning projects, development projects, protection, maintenance, operations, and interpretation. Archeological studies also often are undertaken independently, for resource management, preservation, and interpretation.

Archeological studies are divided into five general types. For specific projects or activities, archeological studies that combine two or more of these general study types or aspects of them, may be appropriate. The scope of work, justification, and research design for each specific archeological study will describe and justify the particular purpose, methods, and techniques that are to be undertaken.

Each archeological study must be planned carefully. In the planning, seven general aspects of the study should be considered especially carefully: research design, fieldwork analysis, reporting, curation of collections and other data, interpretation and other necessary permits.

EVERY ARCHEOLOGICAL STUDY SHOULD PROVIDE FOR ENHANCEMENT OF THE PUBLIC UNDERSTANDING AND APPRECIATION OF THE RESOURCES STUDIED. Various means of achieving this exist, including public lectures and slide presentations, newspaper articles, pamphlets, displays, and exhibits. The interpretation efforts should be coordinated with the park and regional office interpretation divisions. The best arrangement is likely to be an interpretive product done in association with the interpreters.

Archeological Overview and Assessment

The purpose of this kind of study is to describe and assess the known and potential archeological resources in an area. The overview reviews and summarizes existing archeological data, and the assessment evaluates these data. This is a comprehensive synthesis of data concerning the archeological resources of a Marine Protected Area. It is an evaluation of past work and the first step in designing future research. This study includes sections describing the natural environment, the cultural history, ethnographic occupation, description and evaluation of the past research, knowledge of archeological resources, location of collections, relevant future research topics and possible methods, field records and archives usable for future research, and bibliographic references. Overviews and assessments are framed in a regional context and may be a part of a multiagency regional planning endeavor. They should be sufficiently thorough to serve as a basis for evaluating the significance of resources within the Marine Protected Area and for formulating research designs for other studies.

"An overview and assessment is a study carried out for general management programs. For this study, present knowledge is gathered, evaluated, and analyzed to make general statements regarding the nature, distribution, and significance of the resources in a generalized sense. Recommendations for future research and predictions of potential impacts on the resource base are made."

Overview and assessments should contain an abstract, management summary, introduction and description of the study, effective environment, research goals and strategy, methods of data collection and analysis, summary of current knowledge, evaluation of current knowledge, assessment (of known or predicted resources), management options, research tools available and recommendations.

Identification Studies

The purpose of Identification Studies is to discover the locations, and some of the characteristics of all or of a sample of archeological resources in a particular Marine Protection Area. Identification Studies might be limited to the discovery of one or a few types of archeological resources (e.g., historic vs. prehistoric; sites with structural components vs. nonstructural sites) if the study goals justify such an approach. Identification Studies frequently are linked closely to evaluation studies because for many interpretive and management concerns resource evaluation is equally as important as resource identification. Special site discovery techniques such as aerial remote sensing may be needed in certain situations.

Identification of submerged (underwater) resources requires special expertise such as knowledge of geomorphology and special techniques such as use of magnetometers and side-scan sonar and subbottom profilers. Background research should include a documentary search of pertinent shipping records. Identification or predication of prehistoric submerged resources may require the assistance of geophysicists or geomorphologists to determine the nature of post-Pleistocene geological processes. Identification efforts in submerged areas should be conducted by personnel experienced in dealing with submerged archeological resources.

Subsurface archeological remains and sites, those buried in the sea bottom under coral, sand, or sediment, frequently require subsurface tests to be evaluated. A wide variety of subsurface testing techniques are available. The expected characteristic and distribution of subsurface remains must be considered carefully in order to select the most effective and efficient technique(s) to solve a particular discovery problem.

Identification Studies can be designed to discover all types of archeological resources throughout an area. For small areas this approach can be both the best for resource management and the most efficient. When large areas must be studied, however, a sampling approach is likely to be more effective for resource management and more efficient.

A. Sample Inventory

The purpose of a Sample Inventory is to discover the locations and some of the characteristics of a sample of the archeological resources in a Marine Protected Area. The sample might be all of the resources in a limited area, all of a few particular types of resources in a large area, or some combination. The descriptions and justifications of specific sample designs are included in the research design for specific studies.

Sample Inventory Studies include the following elements:

- clear delineation of the boundaries of the area or areas investigated and the sampling and site discovery techniques used;
- clear description and justification for the sampling and site discovery techniques used;
- clear description of the types of resources sought, and those discovered;
- estimate of the adequacy of survey coverage
- record of the precise location of all archeological resources identified.

If the Identification Study is combined with an Evaluation Study, sufficient information is needed on the type, size, nature, and integrity of each property to permit an evaluation of its significance and research potential and, if necessary, to recommend the most appropriate management strategy and treatment.

B. Complete Inventory

The purpose of a Complete Inventory is to discover the locations and some of the characteristics (e.g., approximate size and structure and a sample of the common artifact types) of all of the archeological resources in a Marine Protected Area. There may be questions about whether any study, no matter how intense, can identify all the possible resources. For the purpose of this definition all resources are considered to be the sea bottom and subsurface distributions of artifacts and features that are reasonably expected to occur in the study area.

Identification Studies designated to result in Complete Inventories must include intensive enough discovery techniques to locate even small sites with nondense artifact distributions. Intensive discovery techniques should be applied evenly across a study area so that sites in each portion can be discovered.

The only difference between a Sample Inventory and a Complete Inventory is that the former involves the collection of information from only a portion of the total unit area, or focuses on only a subset of all the archeological resources while the latter involves the total unit area or complete universe of resources.

Complete Inventory Studies include the following elements:

- clear delineation of the boundaries of the area or areas investigated;
- clear description of the types of resources sought, and those discovered;
- clear description and justification for the intensive, and detailed identification methods and techniques;
- record of the precise location of all archeological resources identified;
- the Identification Study is combined with an Evaluation Study, sufficient information on the type, size, nature and integrity of each site to permit an evaluation of its significance and research potential and, if necessary, to recommend the most appropriate management strategy and treatment.

C. Inventory Reports and Cultural Sites Inventory Forms

The reports that are generated by both types of inventory studies should be similar. An outline of these reports with some description of specific sections is presented below. The data needed include an abstract, management summary, introduction and description of the study, effective environment, research goals and strategy, methods of data collection and analysis, data description and analysis, and evaluation of past research.

Each inventory study is likely to result in the identification of archeological sites. For each site, an inventory form must be filled out and added to the total inventory of the Marine Protected Area. The locations of the newly identified sites also must be added to the archeological base map for the Marine Protected Area, and the Inventory Report added to the Marine Protected Area archeological bibliography. On the same base map, the areas that were tested and the intensity of the testing for the inventory study should be noted.

Evaluation Studies

The purpose of an Evaluation Study is to collect sufficient data and conduct sufficient analysis of the data to determine the significance and importance of the archeological remains under study. Evaluation Studies frequently are linked with Identification Studies. Any such dual purpose study would be described and justified in the project research design.

Evaluation Studies also should aim to determine the integrity of archeological resources. Evaluation of archeological resources is intended to define which resources and classes of resources are important and which attributes of those resources make them important.

Evaluation efforts should be based upon an explicit set of attributes or factors, derived from the research design of the evaluation study. Evaluation of resources also requires knowledge of the broader historic context of those resources, including their scientific, cultural and associative values at the local, regional, and national levels.

Archeological testing for evaluation purposes should be kept to a minimum and not proceed beyond the point of providing sufficient information for determination of significance and importance and to meet the requirements for management purposes.

Values and attributes of the resources which make them important to a Marine Protected Area should not be inadvertently damaged or destroyed during the period of evaluation.

Data Recovery Studies

DATA RECOVERY STUDIES SHOULD ONLY BE UNDERTAKEN IF SIGNIFICANT ARCHEOLOGICAL RESOURCES MUST BE DISTURBED OR CANNOT BE MAINTAINED IN SITU. Archeological resources should remain preserved in situ whenever possible. In some instances, however, significant resources may have to be destroyed in order to accomplish major mission objectives, such as essential operations, development or interpretation, that have greater importance overall. Then too, significant resources may be impacted or destroyed by natural or other human forces. Any such destruction or loss of significant resources must be fully recognized and reviewed. The adverse impact of this destruction may be mitigated by collecting and analyzing data from the resources that are to be destroyed, disseminating these data in a report, and preserving the archeological collections, field notes, and other records. Data Recovery Studies are designed to mitigate specific adverse impacts.

Data recovery programs are based on the premise that archeological resources are important wholly and partially because they can contribute to the study of important research problems. Adverse effects, therefore, can be mitigated by recovering data to address these research problems. Research problems provide the justification for selecting particular archeological sites for data recovery.

Archeological resources should be selected for data recovery based on their potential to provide data relevant to important research problems or management needs. The potential of properties to provide data suitable for addressing particular research problems or management needs should have been determined through overviews, surveys, and preparation of research designs during the identification and evaluation studies.

Data recovery should be conducted within an appropriate interdisciplinary framework. Relevant information from related disciplines, such as marine biology, history, geography, soil science, and others, should be consulted. Excavation should not proceed until other research which will provide information to guide and limit data recovery activities has been conducted.

Data recovery programs should provide specific and regular feedback to participants. The approach and progress toward addressing the important research problems should be reevaluated regularly and systematically based on currently available data. Data recovery priorities and approaches should be revised as necessary.

Data recovery field strategies should be selected to ensure collection of data needed to address the designated research problems and to gather baseline data needed to address future research problems. The selection of strategies should be supported by the success of similar strategies with similar resources in other projects.

Strategies should be designed to recover the necessary information at the appropriate level of investigation and be cost effective. Generally, appropriate strategies can be designed based upon information developed during identification and evaluation studies. Occasionally, some additional testing of resources may be necessary to aid in the design of data recovery strategies. In such cases, this testing should be restricted to the minimum necessary. A phased data recovery program may be cost-effective in these instances, allowing for termination of work if the resource cannot provide data pertinent to address the designated research problems. A phased program may also be appropriate when dealing with large, complex resources or groups of resources, allowing for changes in field strategy or emphasis, or termination of the program, based on an analysis of data recovered at the end of each phase.

Archeological Collections and Other Nonfield Studies

Another kind of archeological study involves the description or redescription, analysis or reanalysis, of collections or other data that we've collected at some point in the past. Increasingly, archeologists are turning to such collections and archival data as advances in methodology or interpretation have made studies of them seem worthwhile. As the desirability of conserving in situ archeological resources becomes more apparent, archeological collections and archival data are likely to be reanalyzed more frequently and intensively.

These studies may aim to provide information for interpretation and management. They may lead to revisions in Overview and Assessment Reports, Identification Reports, or Evaluation Reports.

CONCLUSIONS:

Since Marine Protected Areas only contain two types of resources, natural and cultural, management responsibilities and operational considerations must be applied equally to both types of resources.

The Marine Protected Areas of the world, individually and collectively, have the unparalleled opportunity today to lead the world in preserving and understanding submerged cultural resources—those rapidly vanishing remains of human use of the sea over hundreds and thousands of years. Today the opportunity; and tomorrow...?

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SUMMARY

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Generally, appropriate strategies can be designed based upon information developed during identification and evaluation studies. Occasionally, some additional testing of resources may be necessary to aid in the design of data recovery strategies. In such cases, this testing should be restricted to the minimum necessary. A phased data recovery program may be cost-effective in these instances, allowing for termination of work if the resource cannot provide data pertinent to address the designated research problems. A phased program may also be appropriate when dealing with large, complex resources or groups of resources, allowing for changes in field strategy or emphasis, or termination of the program, based on an analysis of data recovered at the end of each phase.

While the management of submerged cultural resources in most Marine Protected Areas is still in the developmental stage, the potential for furthering human understanding and scientific knowledge is as great as already realized in managing natural resources. The same management principles and scientific approaches apply to cultural resources as do to natural resources. Without knowledge and understanding of those resources, as derived through research programs, it is impossible to make appropriate management decisions.

PROGRAMMES DE RECHERCHE POUR LA GESTION
DES RESSOURCES CULTURELLES DANS LES RÉGIONS MARITIMES PROTÉGÉES

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Les Régions Maritimes Protégées existent dans le monde entier car plusieurs nations s'inquiètent du milieu maritime. La création des Régions Maritimes Protégées a été une étape critique pour s'assurer que des segments importants de ces régions soient protégées pour l'avenir de l'espèce humaine. Ces Régions Maritimes Protégées jouent un rôle très important, grâce à leurs programmes de recherche, dans le développement de la compréhension humaine maritime.

La plupart des Régions Maritimes Protégées ont été établies pour protéger des aspects déterminés du milieu naturel - les ressources culturelles. Presque chaque région "naturelle" contient des ressources culturelles et toute les régions "culturelles" existent dans un milieu naturel.

"Les ressources culturelles" peuvent être soit historiques, soit préhistoriques par rapport à l'âge. Elles comprennent des sites, des structures, des régions et des objets qui représentent ou qu'on associe d'une façon significative aux événements et aux activités humaines des peuples anciens. D'autres termes équivalents sont: les ressources archéologiques ou historiques.

Avant de pouvoir considérer les programmes de recherches comme un aspect de l'exploitation des ressources des Régions Maritimes Protégées, il faut avoir tout d'abord, une gestion de structure bien appuyée. Sans un tel système établi, tout effort de recherche peut être mal dirigé ou même inutile pour les objectifs de gestion à long terme. Une gestion solide pour les ressources naturelles et culturelles exige les mêmes conditions préalables et fondamentales. Puisque la plupart des Régions Maritimes Protégées ont été établies pour les ressources naturelles, celles-ci sont généralement bien couvertes. Cependant, les ressources culturelles ont été, pour la plupart, négligées et les conditions préalables nécessaires pour leur gestion doivent être développées.

Les études archéologiques sont des composants nécessaires pour assurer une grande variété d'activités dans les Régions Maritimes Protégées. Ces activités comprennent des programmes de planification, de développement, de protection, d'entretien, d'opérations et d'interprétation. D'autre part, les études archéologiques sont souvent prises en charge indépendamment pour les ressources de gestion, de conservation et d'interprétation.

On divise les études archéologiques en cinq catégories générales. Les études archéologiques qui contiennent deux de ces catégories ou plus, pourraient être convenables pour les activités ou les programmes particuliers: l'envergure du travail, sa justification et le plan de recherche pour chaque étude archéologique déterminé, donnera une justification et une description de l'usage particulier, des méthodes et des techniques utilisés que l'on doit entreprendre.

En général, des stratégies appropriées peuvent être formées à partir des renseignements développés pendant l'identification et l'évolution des études. De temps à autre, quelques vérifications supplémentaires des ressources pourraient être nécessaires au profit de la planification des données des stratégies de rétablissement. En pareil cas, cette vérification doit être limitée au minimum nécessaire. Dans telles circonstances, un programme de données de rétablissement introduit par étapes, peut être rentable et peut permettre l'accomplissement du travail si les ressources ne peuvent pas procurer des données pertinentes qui puissent s'adresser aux problèmes de la recherche désignée. Un programme introduit par étapes peut aussi être valable quand on a affaire à des ressources, ou à des groupes de ressources, qui sont larges et complexes; cela permet des changements dans les stratégies sur le terrain, l'accentuation ou la résolution du programme à partir d'une vérification des données récupérées à la fin de chaque étape.

Tandis que la gestion des ressources culturelles submergées de plusieurs Régions Maritimes Protégées est encore à l'étape de développement, les potentialités pour l'avancement de la compréhension humaine et de la connaissance scientifique sont aussi grandes que celles déjà réalisées dans la gestion des ressources naturelles. Les mêmes principes de gestion et les mêmes approches scientifiques s'appliquent tout autant aux ressources culturelles qu'aux ressources naturelles. Sans avoir une connaissance et une compréhension de ces ressources telles qu'elles ont été dérivées des programmes de recherche, il est impossible de prendre des décisions de gestion appropriées.