

Summaries of Literature for the Topic Knowledge, Attitudes & Perceptions of Management Strategies and Regulations

McCawley, Roger and Joseph D. Teaff. *Characteristics and Environmental Attitudes of Coral Reef Divers in the Florida Keys.* 7 pp. Appearing in: **McCool, Stephen F. and Alan E. Watson,** 1995. *Linking Tourism, the Environment, and Sustainability: topical volume of compiled papers from a special session of the annual meeting of the National Recreation and Park Association; 1994 October 12-14; Minneapolis, MN. Gen. Tech. Rep. INT-GTR-323. Ogden, UT: USDA, FS, Intermountain Research Station.*

Summary:

Increases in the number of divers and deterioration of many coral reefs have drawn attention to diver impacts on coral reefs. This 11-day study was designed to determine whether relationships exist among coral reef divers' demographic characteristics, diver specific characteristics, sports diving activity, sports diving trips, reasons for diving, knowledge of coral reef ecology, and attitudes toward the environment. The two study sites were in the Florida Keys National Marine Sanctuary (Key Largo and Key West). Coral reef divers who desire to learn about and be a part of the coral reef environment tend to be concerned with the negative impacts persons are having on the natural environment (McCawley and Teaff, 40).

The authors stress the importance of studying divers' environmental dispositions to gain a better understanding of how divers relate to the everyday physical environment. Dispositions that appear to be most applicable include concerns about the negative impacts persons are having on the natural environment, termed "pastoralism"; concerns that the preferred environment be modified to suit the needs and wants of humans, termed "environmental adaptation"; and dispositions toward competence and comfortableness in the natural environment, termed "environmental trust. McKechnie's (1971) Environmental Response Inventory is used because it measures environmental dispositions- that is, individual differences in the ways people think about and relate to their physical environment (McCawley and Teaff, 41).

The study results indicate that to heighten the emotional experience of diving it may be useful for dive operators and program managers to create programs that include learning about coral reef ecology. The study suggests that many divers in the Florida Keys are interested in such programs. The assumption is that divers who have a pastoralist disposition toward the environment will be more concerned with preservation of the natural environment and more supportive and understanding of rules and regulations (McCawley and Teaff, 46).

Monitoring education programs could be a key aspect to successful Sanctuary management. Education will foster better awareness among divers and dive operators to the anthropogenic impacts on the coral reefs.

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Milon, J.W., D.O. Suman, M. Shivilani, and K.A. Cochran, 1997. *Commercial Fishers' Perceptions of Marine Reserves for the Florida Keys National Marine Sanctuary*. Florida Sea Grant College Program, Technical Paper-89. Gainesville, FL: 50 pp.

Summary:

The report presents the results of a survey of commercial fishermen in the Florida Keys National Marine Sanctuary (FKNMS), with emphasis on their knowledge, attitudes and perceptions of the draft management plan for ecological reserves in the sanctuary. Face to face interviews were conducted with 337 fishers to collect information on fishing information and catch within the sanctuary, participation in the development of the plan, and attitudes and perceptions concerning the plan. Additionally, the survey was used to collect information about enforcement and attitudes about how fishermen would abide by ecological reserve regulations.

Generally, respondents indicated that a significant portion of their total catch was harvested within the boundaries of the sanctuary. The catch of some species (e.g. spiny lobster, reef fish, tropical fish and sponges) had a great majority or all of their catch harvested within the boundaries of the sanctuary. Respondents generally did not believe that the establishment of marine reserves would enhance the stock of fish outside of the reserve boundaries and that they would not be the primary beneficiaries of the establishment of reserves. Additionally respondents felt that the establishment of reserves would not have a long term positive effect on the Keys economy.

About half of the respondents participated in the process to establish ecological reserves, however a large majority of respondents felt that newspapers, local organizations, and other fishers were the most useful source of information about the plan. About 25 percent of respondents did express some support for reserves somewhere in the keys, when specific locations for reserves were cited, support decreased. Over 75 percent did not support the establishment of the FKNMS. Many commercial fishers felt that the Sanctuary Management Plan and the reserves were another in a long line of regulations intended to sharply curtail or eliminate commercial fishing in the Keys.

Suman, D. 19??. *Stakeholder Group Perceptions of Marine Reserves in the Florida Keys National Marine Sanctuary*. White Paper. Rosenstiel School of Marine and Atmospheric Science, University of Miami. Miami, FL: 13 pp.

Summary:

The Florida Sea Grant Program conducted three surveys with the purpose characterizing the knowledge, attitudes and perception of three stakeholder groups concerning the zoning process as part of the establishment of the Florida Keys National marine Sanctuary as well as to collect information on demographic,

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social and economic status of respondents. The three survey were similar with differences of a few questions. In total 337 commercial fishers (15 percent of the population), 62 dive operators (83 percent), and 401 members of environmental groups (11 percent) were surveyed as part of the effort.

This report is basically an overall summary of the three efforts and includes summary survey results including where the respondents received information on the process, the usefulness of NOAA information on marine reserves, the fairness of NOAA's process in developing zoning regulations, engagement in the public participation process, the purpose of the "no take" zones, beneficiaries of the zones, positive economic benefits of the zones, support for the siting of the zones and support for the establishment of the FKNMS. A summary table in the document gives comparative survey responses of the different groups. The survey instruments are not included in the white paper but are included in the reports of the individual groups included in this package.

Suman, D.O. and M.P. Shivlani. DRAFT 4/10/97. *Preliminary Results From Mail Surveys by Members of Three Florida Keys-Based Environmental Groups and their Perceptions on the Florida Keys National Marine Sanctuary Zoning and Designation.* Miami, FL: 21 pp.

Summary:

Environmental groups have played a pivotal role in the development and implementation of the Florida Keys National Marine Sanctuary. Since the creation of the Sanctuary Advisory Council (SAC) in 1991, several environmental group members have served as council representatives and assisted in the creation of the Sanctuary's zoning strategy. Environmental group members represent a diverse affiliation of persons with a common interest of resource protection. Their views on the Sanctuary and its resources and their efforts to implement Sanctuary management activities have placed them firmly as a vital user group in the Sanctuary process. In late 1995 and 1996, a mail survey contacted members of Reef Relief, Last Stand, and Sanctuary Friends of the Florida Keys (SFFK) and asked them various questions on the Sanctuary process and its zoning strategy. The survey was conducted to gauge environmental group member opinions on the implementation of the Sanctuary and to analyze the motivations for those opinions (Suman and Shivlani, 1).

The study requested that environmental group members respond to questions concerning their sources of information on the Sanctuary and its zoning strategy, their levels of participation in Sanctuary and Sanctuary-based activities, their views on the Sanctuary process, their perceptions on the purpose of the Sanctuary zones, their general support for the Sanctuary and the Sanctuary zones, the size of the Sanctuary zones they would want implemented, and their willingness to pay for the Sanctuary zone management strategy. It is vital that Sanctuary managers are in tune with the perceptions of "environmental community" to avoid alienating this important user group.

Overall the percentages for NOAA sources of information and percent usefulness were both high for environmental group members. When informational sources and

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participation activities are considered for environmental group members, it is clear that the members mostly received information via their own groups (81 percent) and also heavily participated via their own groups' activities (77 percent). These high percentages suggest reliance of environmental group members on their individual groups and a potential pathway by which designating agencies can improve their informational and public participation strategies (Suman and Shivilani, 11).

A vast majority, 75.5 percent, of environmental group members participated very infrequently or not at all in the Sanctuary process. These results may suggest that participation levels were not relevant to group members and therefore may not influence the members' perceptions on the Sanctuary, its process, or its zoning strategy (Suman and Shivilani, 13).

In terms of willingness-to-pay, the study found 356 of the 400 respondents (89 percent) list a preferable annual payment towards the management and maintenance of Sanctuary zones. The average annual payment as listed by the group members was \$28.60, the mode was \$0, and the range was from \$0-\$200. Over 34 percent of the respondents chose not to pay anything, and 85.4 percent list \$50 or less as a preferable annual payment (Suman and Shivilani, 20).

Suman, D.O. and M.P. Shivilani. DRAFT 4/10/97. *Data and Results from Dive Operator Surveys in the Keys: Use and Perceptions of the Florida Keys National Marine Sanctuary.* Miami, FL: 24 pp.

Summary:

This study examines social perceptions of the dive industry in the Florida Keys. The study analyzes social perceptions of the dive industry towards the Sanctuary process, the zoning strategy, and overall goals of sanctuary management (Suman and Shivilani, 2). Dive Operators were asked through surveys whether they received information about the Sanctuary and Sanctuary zones from a variety of sources, whether that information was useful, and whether it was complete and unbiased. Operators were also asked of their participation in Sanctuary activities (if they participated in Sanctuary meetings, hearings, read the Draft Management Plan (DMP), visited the Sanctuary offices, or wrote letters to NOAA or the Sanctuary). Perceptions of the NOAA process, Sanctuary outcomes, Sanctuary zones, beneficiaries of the zones, support for various zoning strategies, diving impacts, and support for operator or diver funded mooring buoy plans were also compiled (Suman and Shivilani, 4).

The survey consisted of 62 of the 75 dive operators in the Florida Keys with 13 operators refusing to conduct the surveys. Dive operators reported whether they received Sanctuary zone information from a variety of sources, including NOAA, other governmental agencies, the media, and interest groups, and whether they found the information useful. For any monitoring program to be successful it is essential that managers understand where dive operators are getting their information and how they perceive the information they obtain. Sanctuary Managers may then be able to assess the most effective means to provide information to dive operators.

The survey has been further divided into the following sections: Levels of participation in Sanctuary activities; perceptions on the Sanctuary process; perceptions on the purpose

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and effects of Sanctuary zones; perceptions on the establishment of Sanctuary zones and the Sanctuary; and, perceptions on dive-related activities and programs. From a socioeconomic monitoring perspective the most important results to look at from this study would be the aforementioned perceptions of information sources, levels of participation, perceptions on the Sanctuary process, and perceptions on the establishment of Sanctuary zones.

These perceptions will most likely determine the Sanctuary's ability to implement rules and regulations. Managers must be confident that their information is taken seriously by dive operators; that operators are participating in Sanctuary activities; that operators feel their voices are heard in the Sanctuary process; and, that Sanctuary zones are not perceived to be established with bias towards any certain user groups.

This study indicates that in the Florida Keys managers must balance the perceived usefulness of their information; that although dive operators did participate in Sanctuary activities, extensive participation was only limited to a small percentage of operators; dive operators, as a majority, feel that they have been left out of the Sanctuary process; and, only 25.8% believe that the procedures that NOAA will establish to deal with Sanctuary regulations will be fair and just (although there is 30.7% non-response for this statement) (Suman and Shivlani, 20).

Suman, D.O. and M.P. Shivlani, 1998. *Characterization of the Commercial Dive Operator Industry in the Florida Keys National Marine Sanctuary.* Florida Sea Grant Technical Paper, Number 103. Miami, FL: 26 pp.

Summary:

This report presents the results of a survey of 62 Dive operators who operate in the Florida Keys National Marine Sanctuary (FKNMS). In addition to questions about the operators' financial situations, the survey questions include a broad array of operators' knowledge, attitudes and perceptions of the (at the time) proposed zoning of the FKNMS.

Among the data elements collected are reliance on proposed zones, participation in the process to establish the zones, perception of the planning process, perception of the fairness of the planning process, perception of how much the respondents opinion mattered, opinions of effectiveness of the zoning strategy.

Among the highlights of the report are the following (taken from the executive summary):

- Dive operators took nearly 70 percent of 25,000 trips and 77 percent of their 450,000 visitors to one of the 26 zones in 1995.
- Dive operators participated extensively in the FKNMS process, receiving information from NOAA, media, and interest group sources.
- Most operators read the draft management plan, other FKNMS literature, and attended NOAA meetings.

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- While most divers believed that the process had been conducted fairly, a majority still argued that individual citizen concerns were not heeded by NOAA.
- Dive operators were also concerned that the final regulations that the FKNMS adopts may not be fair, and that their opinions may not matter once these regulations are enacted.
- Most of the respondents believed that the purpose of the zoning strategy is to increase stocks and conserve biodiversity within the reserves, and fewer individuals agreed with the replenishment purpose.
- Most dive operators perceived that zones would lead to better diving conditions.
- Over 75 percent favored some type of zoning strategy in the Florida Keys, and 65 percent favored the establishment of the FKNMS.

Vrana, Kenneth J. and Edward M. Mahoney. 1995. *Impacts on Underwater Cultural Resources: Diagnosing Change and Prescribing Solutions*. Underwater Proceedings of the Society for Historical Archaeology Conference, 1995. 5 pp.

Summary:

The purpose of this paper is to identify and discuss relevant impact assessment concepts from different management and research fields, as applied to underwater cultural resources. The authors intended to synthesize these concepts and feedback from archaeologists into an article to be submitted in the discipline of park, recreation, and tourism resources. This approach was chosen to enhance communications among fields concerned with impact assessment and public resource management. The type of underwater cultural resource emphasized within this paper is historic shipwrecks, because of (1) increased interest in shipwrecks among different stakeholders, (2) growing recognition of economic benefits associated with shipwrecks, and (3) concerns about “appropriate” types and levels of use of these public resources (Vrana and Mahoney 176).

The authors conclude that (1) shipwrecks benefit a variety of current and future users, and other publics. These benefits are recognized in state and federal law. As an example the Abandoned Shipwreck Act requires guidelines that “maximize the enhancement of cultural resources, facilitate access and utilization by recreational interests, and recognize the interests of individuals and groups engaged in shipwreck discovery and salvage.” (2) Shipwreck publics have different needs and values. Consequently, different publics should be involved in management decision-making processes. (3) Finally, impact assessment processes must integrate concepts and methods from a range of disciplines and then evaluated to determine whether they result in more effective shipwreck management (Vrana and Mahoney 179-180).

Decisions made by Channel Island Sanctuary managers on shipwreck resource allocation will impact many sanctuary user groups. Between the years 1853 to

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1980, an inventory of over 140 shipwrecks has been documented in the Channel Islands National Marine Sanctuary and National Park. To date about twenty sites have been located. Channel Islands National Marine Sanctuary has a very active shipwreck reconnaissance program, and several of the submerged sites have been recorded through the development of underwater maps (<http://www.cinms.nos.noaa.gov/shipwreck/cinms.html>). Monitoring the CINMS shipwrecks' benefits to society should be evaluated in an attempt to optimally allocate and manage these resources.