

**NATURAL RESOURCES SYSTEMS PROGRAMME**  
***PROJECT REPORT***<sup>1</sup>

**DFID Project Number**

**R8134**

**Report Title**

Co-management literature review and project research framework.  
Annex B(I) of the Final Technical Report of project R8134.

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**Organisation**

Caribbean Conservation Association

**Date**

2002

**NRSP Production System**

Land Water Interface

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<sup>1</sup> This document is an output from projects funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID.

# CARIBBEAN COASTAL CO-MANAGEMENT GUIDELINES PROJECT (R8134)

## CO-MANAGEMENT LITERATURE REVIEW AND PROJECT RESEARCH FRAMEWORK 30 JUNE 2002

### 1 Introduction

The logical framework narrative summary for Output 1 states that this project is to achieve “Understanding of the requirements for establishing successful co-management institutions for coastal resources developed in the form of a research framework”. Objective means of verification are to have “Literature reviewed and research framework developed” and “Research framework guides and justifies final selection of case study sites” as documented in this report.

In reporting on the literature review and research framework the intention is primarily to provide context for this study. The literature on coastal resources and co-management is large. This report is not a comprehensive review, but the section on “Literature” includes both work cited in the text and a larger body of reading that is fairly accessible. Articles on co-management in the Caribbean are still relatively scarce and often not available as published work, especially not in mainstream journals. The Caribbean literature will be expanded as the study proceeds. Finally, the focus was on the overall conceptual research framework rather than details of methodology. Emphasis is on adapting the selected framework to suit Caribbean cases and the practical logistics of this study. Sections below highlight some findings from the literature, followed by development of the research framework. The informal format should facilitate wider readership.

### 2 Literature review

Building upon the review undertaken to prepare the RD1 proposal, the follow-up continued to focus on the key concepts of the research project. With some exceptions, a limitation was the researchers’ emphasis on literature written in English, which meant that Spanish, French and Dutch examples of co-management were under represented, but not completely excluded. More attention will be paid to other languages as the project proceeds and as resources permit, but communication with researchers in Spanish-speaking situations suggests that there will be more similarities than differences in these countries. Access to some mainstream literature was a minor challenge due to the limited relevant library holdings in Barbados. The inception mission to Belize provided opportunity to visit the University of Miami library where copies of recent journal articles were obtained, such as in *Marine Policy* and others not available locally. Several of the references were acquired through our MRAG partner and other non-project colleagues. The constraints on access to literature and language differences are factors to be borne in mind during the development of the guidelines and to be addressed in the communications strategy.

#### 2.1 Coastal areas, resources and management

The “Wider Caribbean” region includes the northeast coast of South America, the Caribbean Sea, the Gulf of Mexico, and the south-eastern Atlantic coast of North America. The region is geographically complex with the highest density of separate states per unit area in the world (Chakalall et al. 1998). The Exclusive Economic Zones (EEZs) of Caribbean countries form a mosaic that includes all of the marine space in the region with the exception of two small areas of high seas in the Gulf of Mexico. Oceanographically, the region is highly variable both spatially and temporally. Where deep water is not far offshore, fisheries for shared stocks of migratory

coastal and oceanic pelagic fish are important to coastal communities (Mahon and Oxenford 1999). Demersal fisheries for finfish and shellfish are significant where continental or island shelves are shallow and extensive (Neilson et al. 1999; Smith et al. 2000). Areas of continental mud bottom, significant coral reef development, white sandy beaches, seagrass beds and mangroves are common coastal habitats in different locations. The fisheries of greatest importance are for offshore pelagics, reef fishes, lobster, conch, shrimps, shelf demersal fishes, deep slope and bank fishes and coastal pelagics (Chakalall et al. 1998). There is a variety of less important fisheries such as for marine mammals, sea turtles, sea urchins and seaweeds.

Caribbean fisheries vary widely in state of exploitation, vessel and gear used, and approach to their development and management. Across all of these, the recognition that resource users can play several valuable roles in coastal resource management has prompted increased efforts at their inclusion in the Caribbean and worldwide (James and Fourniller 1993; Smith 1993; Dyer and McGoodwin 1994; Brown 1995; Finlay 1996; Brown 1997; McConney and Mahon 1998; Baird and Flaherty 1999; Baird 2000; Samuel and Smith 2000). In many of these initiatives building the capacity of stakeholders to participate is an issue that becomes a critical concern in the context of co-management (Bay of Bengal Programme 1990; Krishnarayan et al. 2000; CANARI 2000a; World Bank. 2000).

Marine protected areas (MPAs) also show considerable variation along several dimensions in the Caribbean according to a recent study (Geohagen et al. 2001) and worldwide (Kelleher and Kenchington 1992; Salm et al. 2000). Increased revenue from tourism is an objective in many areas, more often for national rather than purely local or community benefit (Dixon et al. 1993). MPAs are established for several other reasons such as fisheries management, biodiversity conservation and recreation, but many are "paper parks" with little active or effective management (Geohagen et al. 2001; Roberts et al. 2001). Because of the latter situation much attention has turned to measuring management effectiveness (McField 2000). Several of the governance and socio-economic indicators under consideration concern stakeholder participation and aspects of co-management.

The Code of Conduct for Responsible Fisheries seeks to ensure that fisheries are integrated into coastal management. Integrated coastal management and fisheries management have transformed in recent times to give emphasis to the need for government and stakeholder partnerships in governance (Gibson et al. 1997; Chan A Shing 2000; CZMAI 2001a; CZMAI 2002). Co-management is one consequence of this trend. MPAs are tools for such integration, and the practice of coastal management in some locations has incorporated co-management at several levels from research and monitoring to decision-making and community-based management (Berkes et al 2001; Manson and Die 2001).

Coastal resources are important for supporting Caribbean tourism, especially in small islands with few other significant natural resources (CANARI 1999a; Clauzel 2001). The actual and perceived potential economic contribution of tourism makes it a major factor in coastal management and development with both positive and negative impacts. The latter commonly include pollution and irresponsible physical structures. Several coastal area conflicts for use of space are caused by interactions between fisheries and tourism. On the other hand, the workers in each labour force frequently find part-time employment in the other industry. Tourism has many impacts on reefs, mangroves, seagrass and beaches. The adjacent coastal settlements that see community-based tourism and eco-tourism as options may seek to manage these critical habitats that are threatened in many parts of the Caribbean (Renard 1991b). Even without tourism, positive and negative community impacts on these environments and their role in coastal management and economic development that address poverty require attention

(Renard et al. 2000). Understanding matters of gender is useful in such analyses (Brown 1999; CANARI 1999c).

NRSP LWI Caribbean research projects on institutional arrangements and consensus-building (R7976 and R7408), coastal livelihoods (R7559 and R7797), planning and trade-offs (R6783 and R6919) and pollution (R7111 and R7668) and findings from this literature review confirm that cases for co-management research should include: several habitat types, different types of marine resources, scales from community to national management, marine protected areas and interactions with tourism at the very least.

## **2.2 Pro-poor perspectives**

DFID-NRSP (2001) emphasises the importance of a systems perspective on what is poverty and pro-poor, and how to address them. The concepts of poverty and the development of pro-poor strategies are complex social, cultural and economic issues (Centre for Development Studies 2000). Eradication or alleviation of poverty is often accompanied by attention to sustainable livelihoods (Carney 1998; Geoghegan and Smith 1998; Dorward et al. 2001).

In many parts of the world such as the Asia-Pacific region the focus is on alternative livelihoods where the coastal resources are severely depleted and habitat degraded. Seamount farming is also option in both the Asia-Pacific region and the Caribbean (Smith 1997). In many Caribbean cases resources are still adequate for use to be sustainable if supplementary livelihoods are found to ease the pressure without completely changing lifestyles. This is the situation in Belize where fishermen displaced by MPAs are being re-trained to be flyfishing and other nature tour operators to obtain added income in the tourist season, and increase compliance with restrictions on fishing (Heyman and Hyatt. 1996; Heyman and Graham 2000).

Although this initiative may be considered a pro-poor strategy it does not necessarily follow that it was specifically intended and designed as such. Poverty and pro-poor orientation by stated objective and implementation were not prominent in a recent institutional characterisation of Caribbean MPAs (Geoghegan et al. 2001). Statements such as improving welfare and the quality of life, without explicitly mentioning poverty, are more typical of planning documents for small-scale fisheries in the region (e.g. Government of Barbados 1993). For the research this means that attention must be paid to both direct and indirect, positive and negative impacts on poverty by both public and private sector initiatives. The attention of Caribbean governments to poverty has been relatively recent in most places. A series of poverty assessment studies from the mid-1990s to the present provide fairly current data (e.g. Kairi Consultants 1999a and b).

Institutional analysis will provide the researchers with insight into how social and economic institutions interact with each other and contribute either to the perpetuation or reduction of poverty. Only a few of the conceptual considerations for the research framework are briefly introduced here. First is that poverty in the Caribbean is often associated with youth, the proportions of the poor under 25 years of age being typically larger than the proportion in the general population (Brown 2001). Therefore both age and gender are important variables. Brown (2001) borrows the typology of C.Y. Thomas to distinguish between the chronic, structural and seasonal poor in the Caribbean. He uses fishermen as an example of the latter. He also recognises the three categories of employed, unemployed or outside of the labour force that an individual can fall into during employment surveys. Fishermen and other coastal resource users in the informal sector may easily slip through this net.

Often critical to the success of co-management is the extent to which community-based organisations can engage in poverty eradication and alleviation (Centre for Development Studies 2000). Brown (2001) stresses that pro-poor strategies must address causes that operate at the micro as well as the macro levels, and it must be ensured that government policy effectively engages these causes either directly or by creation of a facilitating environment for action by other entities. The preceding and other perspectives will inform the research and assist in making this study unique in its attention to poverty in a coastal resource use context.

### 3 Co-management research framework

#### 3.1 Definitions and degrees

The several definitions of co-management generally centre around the common theme of sharing management responsibility and authority between government and stakeholders (e.g. Pinkerton 1989; McConney 1998; Brown and Pomeroy 1999; Pomeroy 2001; Berkes et al. 2001). The fundamentals of what co-management should be in theory, and is in practice, have been extensively researched with examples from most parts of the globe (Jentoft 1989; Kuperan and Abdullah 1994; Pomeroy and Berkes 1997). A point widely accepted is that co-management encompasses several possible arrangements often depicted as a scale constructed from the relative balance of responsibility and authority (Pomeroy and Berkes 1997; Berkes et al. 2001). See Figure 1.

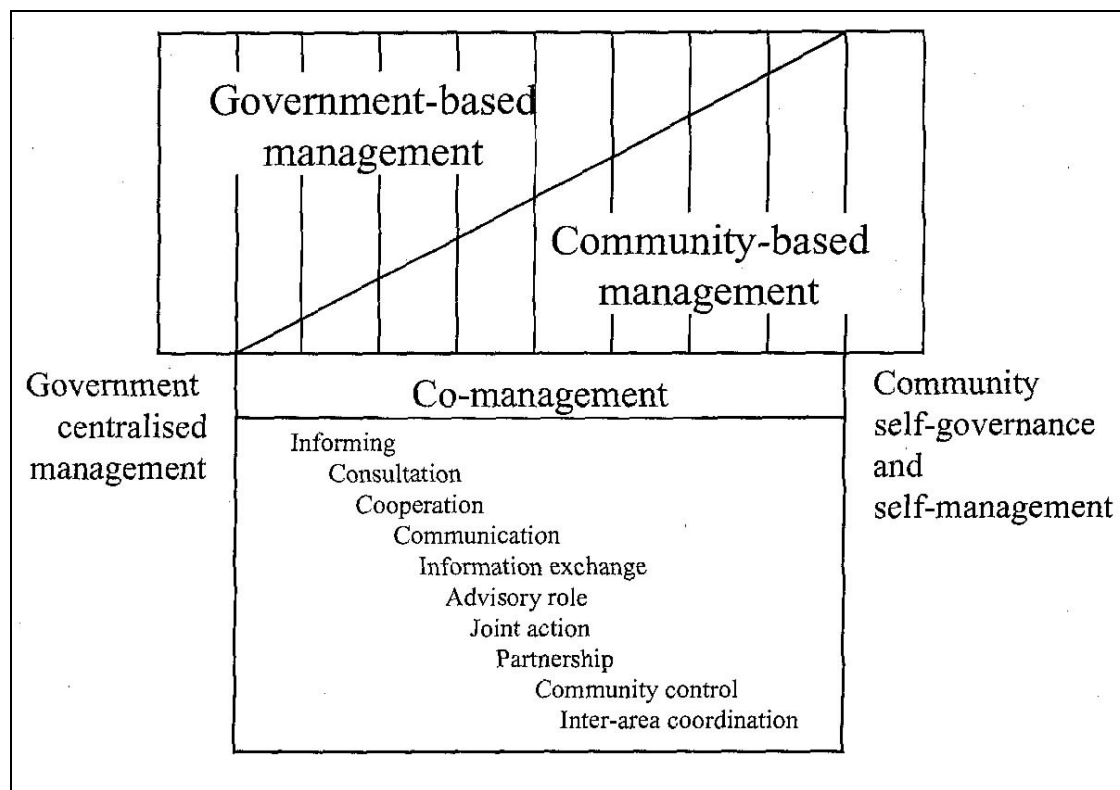


Figure 1. Sliding scale of co-management (based on Berkes via Pomeroy and Williams. 1994).

However different authors recognise various shades of fineness in the distinctions between positions on the scale, as is the case for the concept of participation (Arnstein 1969). For some time CANARI has used the term “participatory management” for what some would consider to be co-management, and much of the Caribbean literature that is most accessible is on this theme (Almerigi et al. 1999; McConney in press; McConney et al. 1998; and Williams et al. in press). The Caribbean Conservation Association’s Coastal and Marine Management Program (CaMMP) recently started to examine co-management arrangements in several Caribbean countries under the Coastal Resource Co-management Project (CORECOMP), but publications are still in preparation (e.g. CCA 2001). What is apparent from all of the literature is that the concept of co-management is not yet common in the Caribbean, especially among resource users, although it is rapidly gaining popularity in government and NGO circles (Almerigi et al. 1999; CANARI and National Environment Trust 1999; CANARI 1999d; CANARI 2000b; CANARI 2001; CCA 2001).

Therefore, regarding the scale of co-management used in this study, conceptual and practical issues are the degrees of co-management and labels to employ. Based on the preceding international and Caribbean literature it was determined that three degrees and labels would be most appropriate. Simply informing was excluded, and the lowest rung was labelled “consultative co-management” which represents what is most common in several locations described in the literature (Brown and Pomeroy 1999). People understand the term “consultation” and it is commonly used. See Figure 2.

	<b>Consultative co-management</b>	<b>Collaborative co-management</b>	<b>Delegated co-management</b>	
<i>Government has the most control</i>	Government interacts often but makes all the decisions	Government and the stakeholders work closely and share decisions	Government lets formally organised users/stakeholders make decisions	<i>People have most control</i>

*Figure 2. Degrees and labels of co-management (Adapted from: ICLARM and IFM 1998)*

The next step up is one of more than communication and advice, but also some level of joint action and decision-making. This is where several countries seem to be headed. The term “collaborative co-management” was preferred to “cooperative co-management” because it connotes stronger relationships bordering upon partnership, and the use of “cooperative” may be confused with the formal organisation types of the same name (Kurien 1988; McConney et al.1998).

The highest rung was termed “delegated co-management” that includes, but is not limited to, community-based management. The prevalence of national co-management structures was remarked upon on the literature, especially for fisheries management (e.g. Jacobs 1998). Few countries in the Caribbean appear to be at this level, but it is not uncommon in other developing countries (Baird 2000).

Establishing successful co-management is seldom immediate. Like most participatory process it tends to take time and careful tending. Pomeroy (1998) recognises three phases of co-management and describes the sequence of steps within these in some detail. A much-simplified version is in Figure 3.

Pre- implementation →	Implementation →	Post- implementation
Realise need for change	Try out new management	Maintain best arrangements
Meet and discuss change	Educate people in new ways	Resolve conflicts and enforce
Develop new management	Adjust and decide what is best	Accept as standard practice

Figure 3. Phases of co-management  
(Based on: Pomeroy 1998)

Very much like the African cases (Normann 1998; Sverdrup-Jensen and Nielsen 1999), the Caribbean is generally at the pre-implementation or early implementation phase (McConney and Mahon 1998; McConney 1998). A few situations such as the Soufriere Marine Management Area (Renard 2000) may be mature enough to be labelled post-implementation, but personal interaction with the stakeholders suggest that they do not see it that way. A very significant consequence of this state is that neatly comparing “before” and “after” conditions arising from a co-management intervention such as a discrete project will be less feasible in the Caribbean than other locations such as in Asia where much of the literature on methodology originates (e.g. Pomeroy and Carlos. 1997; Pomeroy et al. 2001).

### 3.2 Selected framework

The methodology referred to above for the African and Asian cases was developed in stages by the International Centre for Living Aquatic Resources Management (ICLARM) and Institute for Fisheries Management and Coastal Community Development (IFM) (ICLARM and IFM 1998). See Figure 4. The source publication and Halls et al. (2002) provide excellent descriptions of the conceptual underpinnings and development of the framework that will not be repeated here.

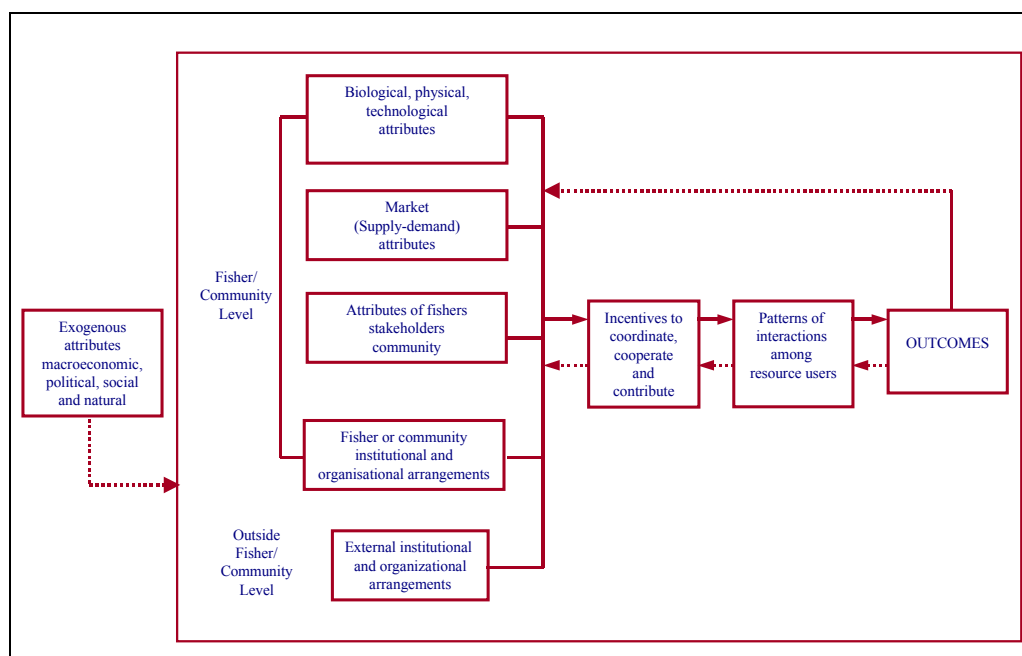


Figure 4. ICLARM/IFM Institutional Analysis and Design Research Framework  
(Source: Halls et al. 2002 via, ICLARM and IFM 1998; adapted from Oakerson, 1992)

The main analyses that comprise the framework are extracted into Box 1, and are reflected in the logical framework for this project in terms of the assessments to be performed. Institutional analyses are of critical importance in researching co-management (Renard 1991a ;Noble 2000). However, this project goes further by paying more attention to integrated coastal management and pro-poor perspectives than in most of the studies previously cited that use this research framework.

*Box 1. Main analyses included in the framework*

1. Institutional Arrangements Analysis: This component links contextual variables characterizing key attributes of the resource (biological, physical) and the resource users (technology, market, social, cultural, economic, political) with the management institutional arrangements (rights and rules). The contextual variables are each composed of a number of attributes. A causal relationship exists among and between the contextual variables, the institutional arrangements (the focus of the analysis) and the resulting transactional (action) situations. The institutional arrangements and the contextual variables affect the actions of the resource users and authorities responsible for fisheries management by shaping the incentives and disincentives they have to coordinate and cooperate in resource governance, management and use; the incentives, in turn, shape the patterns of interaction and behaviour between the co-management partners, i.e. the types of co-management arrangement established and the way it functions.

2. Co-management Performance Analysis: The co-management arrangement results in outcomes. These outcomes will, in turn, affect contextual variables as well as behaviour of resource users, other stakeholders and public authorities. Time is a critical element. All the contextual variables can change through time. This may cause change in institutional arrangements which, in turn, affect incentives, patterns of interaction and outcomes. The outcomes of co-management institutional arrangements can be evaluated in terms of e.g. management efficiency, equity, and sustainability of resource utilisation.

3. Characteristics of Successful Co-management Institutional Arrangements: The most important aspect of this analysis is the specification of what conditions and processes bring about successful long-enduring, fisheries co-management arrangements. From the analysis we can identify a list of principles and propositions about conditions and processes.

Source: ICLARM and IFM 1998

It is not the intention here to go into the details of the field methods, but suffice it to say that those used in the bulk of the previous studies are applicable here with some modifications. The modifications are both conceptual and logistic, and they are inter-connected.

The cases in this project, as previously stated, are likely to be in the pre-implementation or early implementation phases. However, whereas the African cases were largely descriptive, it would be desirable to have some quantitative analysis for the Caribbean. Yet a constraint is that the data to perform either the typical (Katon et al. 1999; Pollnac et al. 2001) or more sophisticated (Halls et al. 2002) statistical analyses are not going to be readily available. Project resources do not permit extensive and intensive collection of data to a high level of detail over the very different ecological situations and institutional arrangements to be researched and compared. Therefore, compromises must be made to facilitate an emphasis on largely qualitative



understanding of the conditions and factors for successful co-management, but with relatively simple quantitative treatment of the data where feasible.

Natural resource assessments (e.g. Neilson et al. 1999; Mahon and Oxenford 1999) are more common and advanced in the Caribbean than socio-economic and institutional assessments of coastal resources and communities. Several of the investigative methods applied in other regions (e.g. Bunce et al. 2000; Pido et al. 1997; Pomeroy and Trinidad. 1996) can be used “as is” or adapted to the Caribbean.

Specific examples of where methodologies may be adapted include eliminating the temporal comparison of the results of co-management interventions, and focusing instead within the present timeframe on perceptions of potential for success and experiences with the early phase. Comparison may be between groups “inside” the initiative and those “outside” across all types of stakeholders. Design and field-testing of research methods starts with inception workshops.

## 4 Conclusions

The following conclusions drawn from this report are also listed in the Inception Report.

- ◆ Relatively little has been written on coastal resource co-management in the Caribbean
- ◆ Much of this information is in reports of NGOs, presentations and grey literature
- ◆ Articles on Caribbean coastal co-management in mainstream journals are very scarce
- ◆ Several Caribbean coastal co-management initiatives are only recently documented
- ◆ The fundamental reason for all of the above is that co-management is new to the region
- ◆ It was an overlooked approach to governance in the colonial history of much of the region
- ◆ Newly independent countries and their people did not immediately seek co-management
- ◆ In general, popular participation in resource governance is becoming more sought after
- ◆ Driving forces for this demand are both bottom-up and top-down, but quite often the latter
- ◆ Because the concept of co-management is fairly new, it is not widely known or understood
- ◆ Language limitations restrict the focus of this research to the English-speaking Caribbean
- ◆ The cases of established co-management in the English-speaking Caribbean are few
- ◆ Research on guidelines for Caribbean co-management will focus on potential for success
- ◆ Measurement of potential can be grounded by case studies of initiated co-management
- ◆ The Analysis of Co-management Arrangements in Fisheries and Related Coastal Resources Research Framework developed by the International Centre for Living Aquatic Resources Management (ICLARM) and the Institute of Fisheries Management and Coastal Community Development (IFM), revised in 1998, is the most appropriate research framework to use in R8134
- ◆ The methodology of using this research framework will be modified from studies in other regions, because “before and after” comparative co-management analysis is not feasible

## 5 Literature

In order to avoid overwhelming the text, not all of the following references are cited in the report. However, all are relevant and accessible to the project directly or through various partners. For the most comprehensive on-line listing of Caribbean documents on participatory management visit the CANARI web site at [www.canari.org](http://www.canari.org). Many of their holdings are listed, unsorted, here. Additional literature will be available on the CCA’s CaMMP web site at [www.ccanet.net](http://www.ccanet.net) as the project proceeds. Persons using the following list are advised that the bibliographic styles of the source databases were retained, and hence they differ throughout the list.

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