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Applied Ecosystem Management: Coordinated Resource Management in the Feather River Watershed

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INTRODUCTION

Coordinated Resource Management Planning is an innovative, and in the last five years, an increasingly utilized approach to resource planning involving multiple agencies and a diversity of public and private land owners. The longest running Coordinated Resource Management (CRM) group and one of the most successful in California is the Feather River CRM. Located in the Northern Sierra County of Plumas, the Feather River CRM encourages local initiative and participation in resource management on public and private land. The group is active on 763,600 square acres of the North and Middle Forks of the Feather River watershed, the headwaters of the California State Water Project and one of the most productive water and power rivers in the Sierra. The purpose of this paper is to identify factors which gave rise to the Feather River CRM, briefly discuss a CRM project, and describe how the group has succeeded as both an institution and process (see Anderson and Baum 1987, for a more general discussion of the Coordinated Resource Management framework). Information for this study was collected primarily through interviews of key Feather River CRM participants and others knowledgeable about the process. Their names are listed in the references.

THE BIRTH OF COORDINATED RESOURCE MANAGEMENT IN THE HEADWATERS OF THE FEATHER RIVER

Fierce polarization around natural resource use and management characterized Plumas County during the 1980's. Like many other areas in the Sierra, anger and distrust fostered a gridlock in which no one party or interest group could fully prevail. Among some residents, however, there was growing recognition that continued battles would only further local anguish as the changing timber industry--important to many local economies--would never be the same, regardless of whether one viewed the changes as driven by environmental restrictions, industry restructuring, or both. These residents also realized that the loss of local control resulting from these battles did not serve any party's interest and that a new mode of cooperative interaction was needed to maintain local representation in the resource management process. They also viewed cooperation as necessary to encourage the considerable creativity needed to develop new economic opportunities in the County.

At the same time, federal and state agencies began to seriously examine the cumulative effects of over a century of logging, mining and grazing, on fisheries, water quality, and rangelands of the watershed. Agency personnel also perceived that social conflicts, as well as inter-agency conflicts over resource management approaches were interfering with the achievement of their institutional mandates.

Similarly, Pacific Gas and Electric (PG&E) recognized the costly, long-term effects of upstream soil erosion which drastically reduced the life-span of its reservoirs and other components of its hydropower infrastructure. For example, accumulated sediment had reduced the capacity Rock Creek and Cresta Reservoirs, two upstream reservoirs, 46 and 56 percent, respectively (Harrison and Lindquist 1995). Because the utility was prohibited by law from flushing accumulated sediments downstream, PG&E proposed to dredge the reservoirs. The cost of dredging was estimated at seven million dollars.

In early 1985, upon hearing of plans for massive investment in dredging that would be paid to out-of-county firms, Leah Wills, from the Plumas County economic development agency, the Plumas Corporation, approached newly elected County Supervisor John Schramel with an alternative plan. She proposed that PG&E’s long-term strategy directly address the sedimentation problem by financing upstream restoration projects as opposed to after-the-fact dredging. By emphasizing erosion prevention, this strategy would not only save the utility money but would direct funds into the local economy and create jobs. It would also provide the basis for initiating environmental restoration projects on a watershed scale throughout the county.

These goals were in accordance with Supervisor John Schramel's agenda of job creation for the county and also attracted the interest of Terrie Benoit of the USDA Forest Service (USFS)

and Richard Flint of the California Department of Fish and Game (CDF&G). Benoit and Flint had both grown interested in local restoration projects in the Feather River watershed but were unable to move forward due to agency inertia and inter-agency conflicts. With the addition of John Sheehan, then of the County's Housing and Community Development Department, Ray Stine of California Department of Forestry, and Mike Kossow, a local environmentalist, the nucleus around which the Feather River CRM, referred to as the "gang of seven," was formed. This group met for many long hours around John Schramel's kitchen table and at the Quincy office of the U.S. Forest Service to outline a stream restoration and erosion control proposal for PG&E.

The first steps in the development of the CRM group were two meetings, the first called by John Schramel in April 1985 with key local players to create a more detailed watershed erosion-control plan. The second, organized by John Sheehan one month later, set up a formal Memorandum of Understanding (MOU) to establish roles and responsibilities for cooperating parties. Twelve federal, state, regional, and local entities signed onto the MOU which included the following objectives: identify erosion sources across the watershed; develop a cooperative regional erosion control plan; design, fund, and implement cost effective erosion control measures; and work with both public and private landowners. In the MOU, signatories agreed to a series of goals and objectives (see Clifton 1993 for additional discussion). These included:

1) Optimize all beneficial uses of water;
2) Emphasize education and prevention over regulation: appeal to "enlightened self-interest;"
3) Resolve participants' concerns through proactive involvement in a consensus-based planning process.

These goals were to be met by the following objectives:

1) Improve high quality mid-summer to late-fall stream flows through restoring ground water recharge potential in meadows and uplands;
2) Reduce erosive power of winter and spring storms and flatten storm run off peaks by stabilizing stream banks and upland soils;
3) Prioritize water quality and quantity improvements on lands yielding the highest multiple returns to landowner and other participants;
4) Reduce potential conflicts on more marginal lands by increasing productivity on prime lands.

Virtually all CRM members interviewed agreed, that without the willingness of several organizations to commit money to as yet an unproved process, the Feather River CRM may never have gotten off the ground. PG&E agreed the erosion control strategy would cost less in the long run and serve to leverage the organization's funds and benefit local communities, and therefore provided financial support for the proposed plan. Additional organizations which provided financial support included California Department of Forestry, Soil Conservation Service (SCS) and the Plumas County Housing and Community Development Department. The Plumas Corporation was chosen to coordinate the process because it was widely supported and viewed as a neutral party due to its organizational mandate to attract jobs and economic development to the County. A portion of the funds were used to hire Leah Wills of the Plumas Corporation as erosion control coordinator.

EVOLUTION OF THE FEATHER RIVER CRM

The first project initiated by the MOU signatories was the Red Clover Creek Demonstration Project. Like most later CRM efforts, this project resulted from the convergence of many contributing factors: PG&E was interested in funding a demonstration site to test the erosion prevention approach; CDF&G which had been conducting a cattle exclusion study on a reach of the creek managed by the USFS suggested the same site as a first project; SCS identified an adjacent privately owned portion of the creek as an ideal location; and the private landowner decided that

given the historic damage, a restoration project was worth the risk. The Red Clover Creek Demonstration Project had two characteristics which were critical factors for the emergence of the CRM: speed--it took only six months to design and install the erosion control structures-- and durability--the structures withstood the fury of the 1986 floods. According to Coordinator Leah Wills, by setting a precedent of efficient and effective actions, the Red Clover Creek Project energized the process and proved that continued participation in the CRM was worth member financial and time commitments. It also helped convince local land owners and managers of the potential benefits of a CRM project on their land.

After undertaking several projects similar to the Red Clover Creek Demonstration Project in the late 1980's, signatories to the MOU were presented with the idea of becoming an official CRM group. Up until this point, the group had been operating under the framework of the original MOU. A representative from the SCS suggested the Coordinated Resource Management Planning (CRMP) federal enabling framework (established by the USFS, BLM, Co-operative Extension Service, and the SCS) as a means to foster better coordination among resource management agencies and to gain increased access to federal programs and grants for work on public and private land. Importantly, the CRMP framework would allow existing group processes to continue without constraint while conferring additional advantages including increased legitimacy among federal agencies and expansion of membership. As Mike Kossow, one of the gang of seven, stated, “We were a CRMP but just didn't know it yet.” While formation of a CRMP led to a new institutional structure for the group, members did not hesitate to modify this structure to meet its specific needs and values. The commitment of the group to maintaining a results-focused process and an emphasis on projects as opposed to planning, led the group to drop the “P” (for planning) in the CRMP name and call itself the Feather River CRM.

The Feather River CRM's role subsequently evolved towards the remediation of cumulative watershed damage. The group developed criteria to select projects based on whether proposed projects would address Cumulative Watershed Effects (CWEs). CWEs are a prominent factor in the CRM management area, and are defined as situations in which all or most of the following ecological and institutional characteristics are present:

- Land ownership is intermingled with multiple public and private owners;
- Conflicts over management are likely or occurring;
- Resource benefits extend beyond individual, political, and agency boundaries and jurisdictions;
- Multiple resource uses coexist in beneficial and detrimental ways;
- Causes of degradation are multiple, complex and/or historical in character;
- Resource problems cannot be solved by rest or management changes alone within a reasonable investment period;
- Lasting solutions require comprehensive, long-range strategies.

AN ANALYSIS OF THE CRM PROCESS

The Feather River CRM has achieved considerable success by crafting a process that reflects the particular ecological, institutional and social contexts of the CRM area, and links a range of ecological, institutional and social goals. This section describes components of the Feather River CRM that have been important components of its success.

Involvement

One of the most significant potential barriers to CRM involvement is landowner fears of coercion, loss of control, or being forced to compromise fundamental values. The CRM group addresses these concerns in at least three ways. First, all projects are initiated on a voluntary basis: a private landowner or public land manager approaches the CRM with a project proposal. Private

landowners work first with the Feather River Resource Conservation District to provide an initial analysis of the problem and set project goals prior to working directly with the CRM. Second, early in the process landowners or managers are asked to identify their "worst fears" or "worst case scenarios" that might result from CRM involvement. Once identified, the CRM is able to address these fears directly. Third, the CRM makes sure it pairs agencies with individuals that landowners tend to trust.

It is important to point out, however, that project initiation on strictly a voluntary basis does have drawbacks. Relying on landowner initiative makes it difficult to create long-term and comprehensive restoration strategies and can leave the overall process vulnerable to changes in the political climate. The process is also less able to accommodate the prescriptions of a comprehensive watershed management framework. In fact, at an early 1996 CRM meeting, the group called for a refocusing of the group's emphasis from discrete projects to a broader watershed management approach. It is too early to tell, however, how this change will affect landowner volunteerism and involvement, and how landowner involvement and project planning will be linked.

Coordination

Julie Spezia, Executive Director of the California Association of Resource Conservation Districts, indicated that based on her first hand knowledge of CRMP groups across the state, behind successful groups is a catalyzing coordinator who keeps participants working together and focused on moving forward. The Feather River CRM coordinator, Leah Wills, describes her role as keeping the process "alive and vital," thereby maintaining the active commitment of the CRM members. According to Wills, because of the pervasive cynicism about the possibilities for change in resource management, commitment to and faith in the CRM process can only be maintained by making successes visible and innovation continual. While this requirement for constant action has contributed to a lack of program stability within the CRM, Wills recognizes that paradoxically, the "mobile anarchy" of constant adaptation to changing circumstances has led to the CRM's longevity and vitality. Wills views her role as a guide rather than a controller of this ever-shifting process. She does not pretend to be "neutral," but rather is explicit about her personal and professional commitment to a vision of economic and ecological sustainability, a vision embraced by most if not all CRM members.

Group Process

CRM members have identified the following qualities which keep the process dynamic and for which the coordinator has responsibility to ensure.

- Maintaining and honoring a diversity of opinions and perspectives.
- Prohibiting the group from attacking an individual or point of view and maintaining an experimental atmosphere in which the group remains open to new ideas and approaches. This experimental atmosphere is matched to both the ecological context of complexity and uncertainty, and to the social context of diverse interests and expertise of the CRM participants.
- Members must believe that "win-win" solutions can be derived from consensus, and that at the same time, expressing differences in a constructive fashion can lead to enriched ideas for everybody.
- CRM project goals and action are determined through a broad consensus decision-making process. Approval by a several CRM committees is required for any CRM project to reach the implementation stage.
- Group adoption of a "no blame" policy. Instead of fixing blame on one individual or entity for environmental damage, which is often impossible given the large spatial and temporal scales of the problems which the CRM group addresses, the group attempts to enlist all party support to solve the problem at hand. By not tagging any one individual or entity as the culprit, defensiveness and hostility is avoided, and feelings of responsibility for the land (which many local landowners and public agency managers do have) can emerge. As Wills noted, "No one wants to shoulder all the burden, but almost everyone is willing to shoulder some of it."

- The group focuses on long-term solutions rather than quick fixes and short-term investment horizons.

Approach to Knowledge and Learning

For each project a Technical Advisory Committee is established to develop and oversee the project design.. This committee includes resource specialists, landowners, and other interested members of the public. CRM resource agency personnel conduct a stringent assessment of a project site and project proposal, and evaluate both its ecological impact and consistency with the CRM's ecological and institutional goals.

An historical baseline is established for each project site. This is developed from available scientific information and landowner knowledge. Development of this baseline yields vital ecological information and, equally important, develops a shared social identity for a project.

Historical baseline information is coupled with agency technical knowledge to determine appropriate interventions. As described by Wills, "The landowners know what happened [to the site] but may not know what to do about it; the agency people know what to do, but they don't really know what happened." On projects which include a large number of landowners, public meetings are held to gather input. These meetings are important not only for information collection, but are important forums for obtaining needed public involvement and support. One land owner involved in the Wolf Creek project in Greenville commented, "We looked forward to the meetings because they told us, 'We need your ideas, we can't do it without you.'"

Monitoring of implemented projects is conducted to track project performance relative to the goals of individual projects and the overall CRM framework. Monitoring allows CRM agreements to be revisited if project goals are not being achieved as predicted. Monitoring of CRM projects has also generated considerable direct benefits to the local high school and community college students. The Plumas County Unified School District and the Feather River Community College, both CRM signatories, have had students actively involved in collecting data for CRM projects. Both the School District and the Feather River College have ongoing monitoring training programs. Some CRM members note that the caring attitude fostered in these youth toward the local environment is one of the most satisfying accomplishments of the CRM.

Harrison and Lindquist (1995) estimated that CRM projects over the long-term may reduce waterborne sediment to upstream reservoirs by 50 percent, but, to date, there has been inadequate monitoring to verify this estimate. Most CRM project monitoring has focused on bank and channel stabilization on individual projects. Monitoring is needed that isolates and quantifies aggregate erosion control benefits from CRM projects in the Feather River headwaters. Limited funding and the individual project focus of the CRM group have contributed to this lack of comprehensive data. Obtaining funding for monitoring has been problematic because monitoring is extremely costly and offers little in the way of visible returns. The lack of a comprehensive monitoring program has contributed to unresolved divisions within the CRM about how to evaluate successes and failures of projects and project methodologies, and makes it more difficult for organizations like PG&E to justify continued investment.

The CRM group places a priority on actions over issues. This is based in the larger conception of the CRM as "implementors" as opposed to decision-makers. The CRM takes on projects around which general community and agency consensus either already exists or is probable. The CRM, then, is used as a forum by which local consensus can be "put on the ground" to begin reaping both social and environmental benefits. Paralleling this pragmatic stance is an experimental approach to projects in which mistakes are not feared, but drawn upon for lessons on future improvement. In this dynamic and ground-based approach to learning ideas from all CRM members are welcomed. This has been especially important in facilitating the participation of landowners in the CRM projects by reducing the divisions between "expert" and "non-expert" knowledge and the associated resentment caused by perceptions of "expert arrogance." Finally, in addition to the diffusion of specific erosion control and stream restoration techniques both within and beyond the CRM group, the CRM has created a general climate of inquiry in which agency

personnel and area residents develop watershed protection projects matched to local ecological and social conditions.

CONCLUSION

The ability of a wide range of individuals representing such varied (and often historically conflicting) institutions to come together around a common goal has been deemed the most important success of the CRM. One observer noted that the CRM group represents an important evolutionary phase of bringing communities together around the practice of sustainable development, that is not theoretical, but concrete and grounded. In the roughly ten years of operation, specific accomplishments of the Feather River CRM include: initiation of 38 watershed restoration projects on 4100 acres, rehabilitation of 14.5 stream miles, and four million dollars contributed to the Plumas County economy, most of it through the creation of local jobs.

A fundamental quality of the CRM process has been that members have been able to subjugate their individual differences to the larger mutual goal of healthy communities in a healthy watershed. By uniting diverse interests around common goals, the Feather River CRM has reduced tensions and increased cooperation both between public agencies and private landowners, and between agencies themselves. By demonstrating the benefits of cooperation, the CRM has created an atmosphere in the community for increased trust which catalyzes other community building activities and allows other consensus-based initiatives such as the Quincy Library Group to grow and flourish. CRM members recommend that the practice-derived knowledge and social learning generated through the CRM's projects should now be allowed to “trickle up” to better shape state and federal policy to local social and ecological conditions.

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List of Individuals Interviewed

Terrie Benoit, USDA Forest Service, Plumas National Forest. 8/17/95
Michael De Lasaux, U.C. Cooperative Extension Service. 9/15/95
Robert Farnworth, Landowner; Director, Feather River Resource Conservation District. 8/16/95
Richard Flint, California Department of Fish and Game. 8/18/95
Louise Gallagher, Landowner, Greenville. 8/16/95
Dennis Heiman, Regional Water Quality Control Board. 8/18/95
Mike Kossow, Meadowbrook Conservation Associates. 9/5/95
Donna Lindquist, Pacific Gas & Electric, 9/13/95
Robert Meacher, Plumas County Board of Supervisors. 8/15/95
John Schramel, former Plumas County Board Supervisor. 8/16/95
Cindy Wallach, California Department of Parks and Recreation. 8/18/95
Reyna Weyrauch. Natural Resource Conservation Service. 8/23/95
Ray Whitely, Soper-Wheeler. 8/23/95
Leah Wills, CRM Erosion Control Coordinator, The Plumas Corporation. 8/15/95
Jura Young, The Nature Conservancy. 9/5/95

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