11 Private Land and Public Goods: Process Lessons from Habitat Conservation Planning

David Ostermeier and Denise Keele
Department of Forestry, Wildlife and Fisheries, University of Tennessee, PO Box 1017, Knoxville, TN 37901-1071, USA

Introduction

In our interconnected, shared-power world, we have the challenge of balancing the rights of using privately held forest resources with publically held rights regarding environmental quality. Private property rights are a fundamental value in the history of our society and are firmly imbedded in both our Constitution and common law (Flick, 1994). More recently, environmental stewardship has grown to also become an important American value and has been incorporated into policy and law through numerous environmental statutes. These private and public rights have not been well integrated but rather have collided, forming deep divisions between people and between and among various institutions including government, the private sector and interest groups within our civic society (Shannon, 1991; Boyte, 1994; Yaffee, 1994; Snow, 2001). These divisions have put in place an adversarial culture and incentives of gridlock common to natural resource policy during the last 30 years (Dukes, 1996; Ostermeier, 1999). The reality of our existence is that we live in a systems world and that we are becoming increasingly more interconnected. Conceptually we recognize this interconnection and the need for cooperation, but our history, culture and incentives in our market-dominated society push us toward competition. This is the paradox of our times, 'we preach cooperation while we practice competition' (Yaffee, 1998).

In this chapter, we evaluate the process of Habitat Conservation Planning under the Endangered Species Act (ESA) to better understand how private and public rights regarding privately held forest resources might be integrated and balanced. In the evaluation we focus on how decision making is conducted in Habitat Conservation Planning and do not evaluate the plans themselves. Our interest is in the process of conservation planning and what we can learn from these processes about the challenges of balancing private and public rights regarding private forest lands.

The Endangered Species Act and Habitat Conservation Planning

The ESA was signed into law in 1973 to protect endangered species. Referring to the Act's regulatory teeth, the ESA has been called the 'pit-bull of environmental legislation' and is a classical federalist statute with significant control embedded in federal hands (Govindan, 1998). Since the late 1970s and as the implications of the act became better understood, the ESA has grown increasingly controversial. Although lauded for its intent and vigorously defended by environmental interests, the ESA has been heavily criticized for its ineffective track record in meeting its intent, recovery of endangered species (Mann and Plummer, 1995; Cheever, 1996; Wilcove *et al.*,

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1996). Associated criticisms include high costs and inefficiency, administrative difficulty and complexity (Clark, 1994; Kellert, 1994), and inappropriate and/or uncertain use of science (Noss *et al.*, 1997). The ESA has also been criticized for its heavy regulatory emphasis, leaving affected stakeholders with the perception, and often the reality, of limited or no possibilities of negotiation relative to land-use rights (Jacobs, 1995; Mann and Plummer, 1995; Lin, 1996). Being locked out of the decision making process that will determine their ability to use natural resources, the regulated community has had little alternative but to accept decisions or to fight them. This had led to considerable conflict between private 'land use' rights advocates and the ESA.

This conflict between the ESA and private rights is crucial to endangered species management given that 80% of habitat is on non-federal land, most of which is privately owned (Hood, 1998). This has the unfortunate impact of placing much of the burden of endangered species conservation on the backs of those who happen to own land where remaining endangered or threatened species may live (Natural Heritage Institute, 2000). Given this and other factors,[1] 'conservation of habitats subject to private rights requires a degree of cooperation by those property owners, which is uncommon in the field of environmental law' (Natural Heritage Institute, 2002: 2). With this in mind, Congress amended the ESA in 1982 through Section 10(a)(1)(B). Learning from the relatively flexible and collaborative San Bruno Mountain Plan in California, Congress developed this amendment, which allows for the incidental take of endangered and threatened species by non-federal entities if accompanied by an approved Habitat Conservation Plan (HCP). Congress intended HCPs to be much more than a permitting procedure. Section 10 sought to build 'creative partnerships between the private sector and all levels of government in the interests of protected species and habitat conservation' (Lin, 1996).

A critical aspect of endangered species management is compliance, and compliance is related to perceived fairness and legitimacy regarding a sanction (Jentoft, 1989). 'To be legitimate, the content of a regulation, the process by which it is made, the way it is implemented, and the effects of its distribution must be perceived as fair by resources users' (Jentoft, 1989: 143). Such legitimacy is particularly pertinent to ESA, given the dispersed nature of habitat across millions of acres of private land. A minimum condition regarding process legitimacy is participation, and in a democracy this suggests that all policy development and implementation must be inherently political, involving all those affected (Kemmis, 1990; Mann and Plummer, 1995; McKinney, 2001). Initial HCP development was modest, given already overburdened administrative agencies, insufficient landowner incentives, and complex and arduous permitting processes (Baur and Donovan, 1997; Thornton, 1997). Reversing this, Secretary of the Interior, Bruce Babbitt, embraced a collaborative approach to endangered species conservation and ecosystem management, and since 1992 over 330 HCPs, covering nearly 400,000 ha, have been developed, with another 200 in preparation (USFWS, 2001). Although the forestry community had little initial interest in HCPs, as Service[2] reforms improved process efficiency and especially after assurances were adopted through 'no surprises and safe-harbour mechanisms', interest increased significantly (Govindan, 1998).

As a more inclusive and goal-oriented policy instrument involving the regulated community and given the high stakes of the ESA, Habitat Conservation Planning has drawn intense interest and scrutiny. Because HCPs involve the regulated community, they have been applauded for their collaborative approach to endangered species management on private land (Reid, 1992; Beatley, 1994). Simultaneously, they have been heavily criticized by the environmental community because of the inclusion of the regulated community and because of their absence of focus on species recovery (Cheever, 1996; Wilcove *et al.*, 1996; Hood, 1998). The inclusion of the regulated community and the assurances of 'no surprises'[3] have led to the criticism that HCPs are 'negotiated settlements of regulatory liabilities, designed to foster economic development free of the risks associated with the occurrence of endangered species on private lands' (Natural Heritage Institute, 2000: 2). Additional criticisms of HCPs include inappropriate and inadequate application of science (Noss *et al.*, 1997; Kareiva *et al.*, 1999), and limited stakeholder participation (Kostyack, 1997; Anderson *et al.*, 1998).

Although numerous studies have sought to evaluate various aspects of HCPs (often dealing with design, product or performance issues, including those cited above), few have focused on the 'processes' that practitioners go through in

developing HCPs.[4] Fifty years of statistical process control, process improvement and total quality management suggest that, in the absence of a good understanding of the issues and processes that practitioners face, meaningful process improvements may be illusive. Given that HCPs include non-federal participants as decision makers[5] (landowners, local municipalities, environmental consultants, state wildlife and fish agencies, and the non-profit sector), analysing how these groups participated is important in gaining a better understanding of these more flexible, goal-oriented policy instruments. Through a greater awareness and understanding of HCP processes, policy makers, the Services, other HCP practitioners, stakeholders and researchers can more effectively work together to improve habitat conservation planning.

Methods

In January 1998, the National Center for Environmental Decision-Making Research (NCEDR) implemented a research project to provide an objective understanding of how HCPs have been developed through the evaluation of a variety of HCP cases from across the country.[6] In this larger study, a broad pool of 50 cases was considered and 31 were chosen for study based on several criteria, including the type of permit applicant (private or public), estimated scope of stakeholder participation, type of land-use involved, scope of species involved (single, multiple), Service region, and status and date of permit. Of the 31 cases, 11 involved private forest lands and are the focus of this chapter on private forestry HCPs. This study is based on qualitative data collected through semi-structured interviews conducted by six trained researchers during the summer of 1998. The pool of interviews for each case was identified by first contacting the Service representative and the permit applicant, and by inquiring about other involved decision makers (snowballing technique (see Patton, 1990)). For each plan, depending on the scope of participation, two to six individuals were selected and asked to participate in the study. However, interviewees always included a representative from the Services and the applicant. All interviews played meaningful roles in the process of developing the HCP.

A total of 41 interviews were conducted for the 11 cases discussed in this chapter. These confidential telephone interviews took between 45 min and 2 h to complete and followed a set protocol. Interviewers used pre-determined prompts in order to reduce bias stemming from the use of multiple interviewers. The interview protocol was tested through mock interviews with professionals who were knowledgeable about the HCP process but who did not participate as interviewees for this study. Interview responses were entered into a computerized database.

The substance of these interview responses was used to write case summaries, which follow the same format as the protocol. Each summary also includes an introductory section containing brief background information specific to the planning process and outlining characteristics of the plan. Draft case summaries were distributed to the respective case participants, who reviewed the text and provided comments and corrections. The complete text of case summaries was entered into a QSR NUD*IST database to facilitate data coding and qualitative analysis.

Results

Plan variety

Habitat Conservation Planning was developed to help land users become part of the process of endangered species conservation. Although applicant goals vary, all seek some kind of assurances that will enable them to pursue their land management goals while meeting the responsibilities of permit mitigation. These plans are contracts between the Services and the applicant and accordingly address both economic and endangered species conservation interests. Five of the cases in this study were in the southern states, one was in Montana and the remaining five were in the Pacific Northwest (Table 11.1). Nine of the 11 involved species requiring old-growth conditions. Seven of the plans involved single species while the remaining four were multi-species plans. Five of the plans involved industrial timber companies and four were either private landowners or land management companies. The acres covered by the plans varied greatly: the smallest was 1.37 ha; two were between 13 and 30 ha; two others were

Table 11.1. HCP location and characteristics.

HCP case	Location	Old-growth issues	Single species	Industrial timber company
Arcata Redwood	California	X	X	X
Georgia Safe Harbor	Georgia	X	X	
Pender County	North Carolina	X	X	
Plum Creek	Washington	X		X
Port Blakely Tree Farms	Washington	X		
Red Oak Timber Co.	Louisiana	X	X	X
Ribar Timberlands	California	X		
Swan Valley CCA	Montana		X	X
Texas Safe Harbor	Texas	X	X	
Weyerhaeuser	Oregon	X		X
Wilmon Timberlands	Alabama		X	

between 7 and 11 ha; and three were between 140 and 400 ha. From this information, it seems that Habitat Conservation Planning appeals more to larger land owners. Given the resources required to undertake a plan, this is understandable.

In two of the cases, state natural resource and forestry agencies in Georgia and Texas initiated HCPs to help smaller private landowners who may find isolated red cockated woodpecker (RCW) colonies on their land to pursue forest management. In these cases, state agencies are the permit holder and have the ability to extend both assurances and responsibilities to private forest landowners as sub-applicants. In these cases, state agencies play coordinating and facilitating roles to help smaller private landowners pursue their forest management goals while simultaneously trying to meet RCW conservation goals. An important aspect of these plans is that landowners are protected from future ESA restrictions when they cooperate with the services to benefit a listed species. Given these assurances granted to qualifying landowners, these cases are part of a special category of HCPs called 'Safe Harbor Plans'.

A related conservation activity is covered by Candidate Conservation Agreements whereby the landowner and the Service(s) work together on behalf of an imperilled species before it is listed and in ways that address landowner goals. One such plan in the study was the Swan Valley Plan in Montana and thus was unique in that it was an ecosystem or landscape plan involving both private timber company land and Forest Service land regarding grizzly bear conservation. The Plum Creek Plan in Washington also had an ecosystem focus in that it was developed to be compatible with the Pacific Northwest Forest Plan.

Plan involvement

In approving an HCP, the Services must follow public involvement processes required by the National Environmental Policy Act (NEPA). This includes a normal comment period following the listing of a draft plan in the Federal Register. In both of the Safe Harbor plans and in two private timberland cases in the Pacific Northwest, there were considerable efforts to communicate with the public beyond that required by NEPA regulations. In these two timber cases, the outreach was especially notable given the relatively high-profile nature of each case. In addition to this type of communication with the public, there is considerable involvement of specific stakeholders in Habitat Conservation Planning and this is discussed in the following paragraphs.

Types of stakeholders involved

Habitat Conservation Planning is a contract between an applicant and the Service. Some plans involve only these two parties, including consultants and legal representatives. Other cases involve a variety of individuals and groups (see Table 11.2 for a complete list of stakeholders and their roles for each case). In the forestry cases in this study, three involved only the permit holder, associated legal staff and consultants, and the Fish and Wildlife Service (Pender County, Ribar Timberlands and Wilmon Timberlands). In the remaining eight cases, others were involved in a variety of ways and for various purposes. State natural resource agencies were involved in six of the cases, most often functioning in advisory and

Table 11.2. HCP stakeholder involvement.

HCP case	Involvement type			Involvement role		
	State agencies	Federal agencies	Interest groups	Steering or reviewing committee	Technical advisory committee	Plan or mitigation partner
Arcata Redwood	X					
Georgia Safe Harbor	X	X	X	X	X	X
Pender County						
Plum Creek	X	X	X	X	X	
Port Blakely Tree Farms	X		X		X	
Red Oak Timber Co.		X				X
Ribar Timberlands						
Swan Valley CCA	X	X			X	X
Texas Safe Harbor	X	X	X	X	X	X
Weyerhaeuser					X	
Wilmon Timberlands						

reviewing capacities. In the Georgia and Texas Safe Harbor cases, state agencies are the permit holder, assuming leadership roles in facilitating RCW conservation on private lands. In five of the plans, representatives of non-Service federal agencies were involved and assumed advisory or review roles in three of the cases. In the Red Oak Timber case, Forest Service and military lands were part of a mitigation strategy, and in Swan Valley, the Forest Service worked as a partner with Plum Creek timber company on a landscape-level ecosystem plan. Interest groups including both environmental and Native-American interests, were also involved in advisory and review activities in four cases.

Steering and reviewing roles

In three of the cases, non-Service entities played steering and reviewing roles (Table 11.2). In both Safe Harbors (Georgia and Texas), there were formal steering committees established that acted as a senior policy group while various elements of the plan were being developed. These committees included state agencies and a variety of interest groups, including industry and environmental representatives. In both of these cases, these committees no longer functioned once the draft plan was developed, and final negotiations involved the state agency applying for the permit and the Service. In the Plum Creek case, several state agencies and interest groups were asked to review various parts of the plan and acted as an informal review group.

Technical roles

An important characteristic of Habitat Conservation Planning is that it tends to be data- and information-intensive. The HCP practitioners interviewed in this study struggled with a need, on the one hand, to use the best available knowledge and science, and on the other hand with the realities of often insufficient or incomplete information. In six of the cases reviewed, either formal or informal technical review committees were established to address data and information management (Table 11.2). In the two Safe Harbor plans, formal technical review committees were formed whose function involved the development, use and review of technical information relative to the case. In both the Plum Creek and Port Blakely cases, various state and non-Service federal agencies and interest groups provided technical review. In the Weyerhaeuser case, there were collaborative efforts in developing a technical base for the case involving company, university and agency scientists. In addition, formal technical review panels were also convened, in this case by the Audubon Society and the Pacific River Council. Collectively, this demonstrates considerable non-Service involvement. In addition, two of these cases (Plum Creek and Weyerhaeuser) resulted in the development of considerable new information relative to endangered species conservation.

Negotiations

Variability also surfaced regarding how different HCPs integrated multiple interests and negotiated final agreements, and three different decision making strategies emerged. In two routine or 'cookbook' cases (Red Oak Timer and Wilmon), the Service used previous experiences in other plans to help them outline their expectations, and the permittee simply addressed these expectations. There was little negotiation in these routine cases. A second approach consisted of information and options shuttled back and forth between the Service and the permit applicant. Identified as 'shuttle negotiations', this strategy is well described by one service participant as follows: 'these really aren't negotiations *per se* – they (the applicants) present things (information, options or a draft plan) to us and we review it and then give them feedback regarding its acceptability'. All five of these shuttle cases were in the Pacific Northwest and are representative of high-profile, old-growth cases with long histories of adversarial behaviour among participants (Arcata, Plum Creek, Port Blakely, Ribar and Weyerhaeuser). Given the complexity and difficulty of these cases, the Services seemed either unable or unwilling to clearly specify 'what an acceptable HCP should look like'. Characterized as the 'bring me a rock' approach by one company participant, 'we had to keep going back and forth with a new rock (plan) only to find out that it wasn't the right rock'.

The third approach of 'face-to-face negotiation' was found in three cases, two of which were the Safe Harbor Plans in Georgia and Texas. In these latter two cases, the applicant and the Service worked with a steering committee in negotiating elements of the draft plan. Good organizational and facilitation skills were noted to be important, positive factors in the Texas case. The other case employing face-to-face negotiation was Swan Valley. Negotiation here consisted of face-to-face meetings, and small technical groups were used to address difficult issues. These technical groups feed information to a larger policy group that hammered out decisions. A final marathon session was held and, according to participants, was crucial in developing a plan that all parties could accept. An outside neutral facilitator was hired for this session, and participants felt that such facilitation was necessary for them to successfully work through conflict-ridden parts of the final plan.

Participant views

Although all of the interviewees had multiple goals for participating in Habitat Conservation Planning, foremost was working toward better assurances – both economic assurances and conservation assurances. Many of the individuals involved in these cases were pioneers in that HCPs were relatively new and/or that this particular case was the first involving a specific species. Given the voluntary nature of HCPs, all applicants had the choice of not seeking a permit. All cases began with a desire to work within a government programme that sought to integrate economic and conservation goals. Some applicants were primarily interested in clarifying what forest management activities would be allowed and what would be required to mitigate these activities. Simultaneously, at least three permit holders indicated a genuine interest in endangered species conservation. Service employees, and other conservation-oriented participants, indicated that although endangered species conservation was their primary interest, they were also interested in working toward land-user goals. Reducing landowner fears of endangered species and endangered species conservation activities were cited as important participant goals. The attitude and desire to work toward other participant goals was noted to be an important motivating force in these cases, especially during difficult times. This was especially important given the historical adversarial climate associated with some of the cases.

In all cases, the participants indicated that the plan did a relatively good job of working toward the joint goals of economic use and endangered species conservation. Although concerns were expressed, it is noteworthy that the participants felt that the process of habitat conservation planning had produced 'good to very good results'. This seems to be a very supportive statement of habitat conservation planning by these participants, especially given the youth of these mechanisms and the complexity and politically charged nature of some plans. Associated with this, participants uniformly

felt that during the process they had developed an improved working relationship with other participants. Given the development of this type of 'civic capital', future collaborative activities should be more effective.

Two very specific participant concerns expressed by applicants were Service bureaucracy and an absence (in some cases) of Service leadership and facilitation. Some of this is related to the fact that HCPs were new mechanisms and Service experience was limited. Given this youthful nature of HCPs, there was both internal and external pressure on service biologists to 'get it right'. In addition, there seemed to be little attention given to process management, including roles of different process participants and rules of engagement. In the absence of up-front clarification, assumptions about roles and who would play them were made by both Service and non-Service participants, and problems surfaced when these assumptions differed. Linked to this, participants reported that many Service employees seemed to have excessive work demands reducing their ability to focus on process management and leadership. Specific bureaucratic concerns were in cases where it was necessary for applicants to deal with multiple Service layers including legal staff. These cases were most prevalent in the high profile plans of the Pacific Northwest where the Service was under considerable pressure to 'get it right'.

Participants also indicated that the presence or absence of HCP experience was very important. The existence of a template or similar plan provides a 'conventional wisdom', especially on the part of the Service to help clarify their expectations. Participants also indicated that the most important training for these processes was past experience. This indicates the importance of institutional learning and a need to pass learning to new participants. Experience seemed to be most important around issues of process management regarding data and technical information and effective means of integrating interests and negotiating critical decisions.

Discussion

Balancing public rights regarding endangered species with privately held forest resources is a difficult task and set within an often adversarial climate. Habitat conservation planning is one attempt to deal with our 'shared-power-world' whereby decision makers are faced with the reality of sharing decision making processes and power (Bryson and Crosby, 1992). As noted earlier in this chapter, Congress intended HCPs to create 'partnerships between the private sector and all levels of government in the interests of protected species and habitat conservation'. By creating HCP mechanisms, Congress developed a more inclusive policy instrument, one that brings together the regulated community, the Services and, potentially, other stakeholders to address endangered species conservation on private land. By evaluating the participants' perceptions of the forestry cases they were involved in, what can we say about such partnerships? Four summary points are discussed.

(1) Congress initiated HCPs when it amended the ESA in 1982, and the executive branch of government – Interior Secretary Bruce Babbitt and the Fish and Wildlife Service – put significant efforts into developing, refining and improving HCPs in the 1990s. This has resulted in considerable growth of forestry HCPs in the last decade, 11 of which have been evaluated here. The private landowners and timber companies studied here were part of a pioneering group seeking to integrate economic and conservation decision making with the Services through forestry HCPs. Habitat Conservation Planning represents a possible way that forest owners can work together with the Service and other participants to address both economic and endangered species interests. It is noteworthy that the participants in these cases felt that the HCPs had produced 'good to very good results' and that during the processes they uniformly developed improved working relationships with other participants. These process perspectives – of those who struggled through these cases – suggest that meaningful and working partnerships have in fact been formed, and that HCPs are addressing Congress's intent of private–public partnerships. As an important process outcome, good working relationships among HCP participants may provide needed civic capital for post-plan adaptive management changes.

(2) The non-Service HCP participants in these forestry cases played various roles, the two most common of which were the development and management of data and technical information, and providing guidance and review services. The development of HCPs is the responsibility of the

applicant and associated decisions are often information-intensive. In some cases, developing the data and information is done primarily by the applicant and/or a consultant, in consultation with the Service. In other cases, developing, using and reviewing data and technical information has involved input and review by a variety of knowledgeable individuals. In still other plans, developing and managing data and information were collaborative efforts. Although participants in this study noted data problems, including uncertainty regarding key issues, they generally felt that the data and information were appropriate and adequate for the decisions that had to be made. Although these perspectives are in conflict with other evaluations of the scientific merit of HCPs (Kareiva *et al.*, 1999), it is significant that the participants themselves felt that data and information supported the decisions they had to make.

(3) The tensions between private and public rights were most difficult to address in cases where the decision environment had been impacted by adversarial politics. In the plans evaluated in this study, this was especially true for those set in the Pacific Northwest involving old-growth histories and politics. In such settings, bureaucracies tend to become bureaucratic as pressures grow to 'get it right'. One place the 'get it right' phenomenon was felt was with data and information. Faced with the complexity and uncertainties involved in these cases, and since the Service was the judge of objectivity, the Service was the locus of pressure to 'get it right'. This locus can, however, be shifted. In collaborative negotiation and conflict resolution, objective standards are normally defined as 'a standard all sides can view as fair or objective' (Fisher and Ury, 1991). Using such objective standards seemed to have worked well in the Weyerhaeuser case where scientific review panels were convened by the Audubon Society and the Pacific Rivers Council. It is important to note that these reviews resulted in significant substantive changes being made to the plan. Objective review has the potential not only to result in better substantive decisions, but can also reduce stresses and pressures on the Services. Given the conflict-ridden environment that the Services often operate within, such a reduction can be significant. The use of objective or scientific peer review has been suggested for HCPs (Kareiva *et al.*, 1999; Natural Heritage Institute, 2000), and this study suggests that such a review would have important substantive and process benefits.

(4) An associated concern of process complexity and leadership arose in several of the cases. In the high profile cases like those in the Pacific Northwest, decision making was reported to be overly time consuming and often involved multiple organizational layers. Shuttle negotiations were found to be problematic and especially frustrating for the applicant. In the Arcata case, participants perceived a vacillating level of Service involvement, producing confusion regarding negotiation authority. The iterative style of negotiation in Port Blakely resulted in multiple decisions going up the Service chain of command. Important decisions will require multiple views in any bureaucracy. However, these views must be effectively coordinated and communicated so that participants are not surprised. Improved process management should provide important benefits to all cases, but especially these more difficult ones.

In some plans, Service representatives assumed leadership roles, while in other plans non-Service leaders emerged. Both seemed to produce relatively effective results, suggesting that both Service and non-Service personnel can facilitate good process leadership. In the other cases, however, participants were critical of an absence of guidance and leadership and were frustrated by a dynamic, opaque decision framework that provided too many surprises and time delays. This suggests that early communication and consensus regarding process mechanisms, rules and roles are very important. In addition, given that most HCP are multi-year plans, efforts should be made to periodically revisit these process management issues.

Conclusions

Habitat conservation plans are part of a broad category of policy instruments trying to balance private and public rights regarding natural resources. These relatively new policy instruments are normally complex, involve multiple stakeholders and often are several years in development. A central challenge that they collectively face is improving process management so that better decisions are reached (effectiveness) and less time is consumed through using more efficient

processes (Yosie and Herbst, 1998; Sexton *et al.*, 1999). Improved process management will necessitate that enacting agencies develop process and facilitation capacities not historically needed. Decision theorists suggest that, especially when dealing with hard choices in difficult environments (often the case in HCPs), effective process management and facilitation are critical (Raiffa, 1982; Bazerman, 1998). The results of this study support this need for improved process management and suggest that significantly more attention and resources should be devoted to process management in at least the following areas.

1. Early and clear articulation of who will be part of the decision making environment. This includes multiple level Service personnel and legal staff, as well as multiple levels of the permitting entity (if applicable) as well as other stakeholders (if involved).
2. Early and clear articulation of what the roles of the different players will be. This is especially important relative to process leadership roles, communication roles, facilitation roles (normally around negotiations), data development and management roles, and negotiation roles. How power, roles, rules for participation, and other elements of process management are designed, controlled and shared is critical for effective and efficient processes. One non-timber HCP example of more intensive process management is Clark County Nevada, where an outside process facilitator worked with the applicant throughout the 6-year history (Ostermeier *et al.*, 2000).
3. Early and clear articulation of how negotiations around key points will be conducted and how conflicts will be resolved. Objective and professional facilitation of key negotiations and conflicts is suggested, especially for more complex and difficult cases (Bazerman, 1998; Ostermeier *et al.*, 2000).
4. Continuous attention should be paid to process monitoring and evaluation to foster process learning, improvement and adaptation.

It should be noted that early and clear attention to process management does not mean inflexible process management. As mentioned in point 4, continuous attention to monitoring and adaptation should facilitate cycles of action and reflection so that needed process changes are made. Without such attention, conditions are set that almost ensure dysfunctional processes.

Endnotes

[1] See the Natural Heritage Institute study for a thorough discussion of these factors.
[2] 'Service' refers to US Fish & Wildlife Service; Services includes the National Marine Fisheries Service.
[3] '. . . private landowners are assured that if unforseen circumstances arise, the Services will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources beyond the level otherwise agreed to in the HCP . . .' (USFWS, 2001).
[4] An exception to this is Lin's (1996) study which evaluated participants' experiences with HCP processes.
[5] Decision makers in this study are those who play meaningful roles in HCP decision making processes. Although some HCPs involve a variety of participants, others involve only the permittee and one of the Services (US Fish & Wildlife Service and National Marine Fisheries Service). It is important to note that the issuance of an Incidental Take Permit (ITP) based on an HCP is a decision made solely by one of the Services.
[6] For more information on this study including research methods, see Ostermeier *et al.* (2000) and http://www.ncedr.org/casestudies.hcp.html

References

Anderson, J. *et al.* (1998) *Balancing Public Trust and Private Interest*. University of Michigan School of Natural Resources and Environment, Ann Arbor, Michigan, 40 pp.

Baur, D.C. and Donovan, K.L. (1997) The no surprises policy: Contracts 101 meets the Endangered Species Act. *Environmental Law* 27(3), 767–790.

Bazerman, M. (1998) *Judgement in Managerial Decision Making*, 4th edn. John Wiley & Sons, New York, 179 pp.

Beatley, T. (1994) *Habitat Conservation Planning: Endangered Species and Urban Growth*. University of Texas Press, Austin, Texas.

Boyte, H.C. (1994) Reinventing citizenship. *Kettering Review* (Winter), 78–87.

Bryson, J.M. and Crosby, B.C. (1992) *Leadership for the Common Good*. Jossey-Bass, San Francisco, California, 380 pp.

Cheever, F. (1996) The road to recovery: a new way of thinking about the endangered species act. *Ecology Law Quarterly* 23(1), 1–78.

Clark, J.A. (1994) The endangered species act: its history, provisions, and effectiveness. In: Clarke, T.W. *et al.* (eds) *Endangered Species Recovery: Finding the Lessons, Improving the Process*. Island Press, Washington, DC, pp. 19–43.

Dukes, E.F. (1996) *Resolving Public Conflict: Transforming Community and Governance*. Manchester University Press, 183 pp.

Fisher, R. and Ury, W. (1991) *Getting to Yes*, 2nd edn. Penguin Books, New York, 187 pp.

Flick, W.A. (1994) Changing times: forest owners and the law. *Journal of Forestry* May, 30–33.

Govindan, S.J. (1998) "Taking" steps to protect private property and endangered species: constitutional implications of habitat conservation planning after Dolan v. Tigard. *Emory Law Journal* 47, 311–340.

Hood, L. (1998) *Frayed Safety Nets: Conservation Planning under the Endangered Species Act*. Defenders of Wildlife, Washington, DC, 115 pp.

Jacobs, H.M. (1995) The anti-environmental 'wise-use' movement in America. *Land Use Law* 47(2), 3–8.

Jentoft, S. (1989) Fisheries co-management: delegating responsibility to fisherman's organizations. *Marine Policy* 13(2), 137–154.

Kareiva, P. *et al.* (1999) *Using Science in Habitat Conservation Plans*. The National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara, American Institute of Biological Sciences, Washington, DC, 50 pp. + appendices.

Kellert, S.R. (1994) A sociological perspective: valuational, socioeconomic, and organizational factors. In: Clarke, T.W. *et al.* (eds) *Endangered Species Recovery: Finding the Lessons, Improving the Process*. Island Press, Washington, DC, pp. 371–389.

Kemmis, D. (1990) *Community and the Politics of Place*. University of Oklahoma Press, Norman, Oklahoma, 142 pp.

Kostyack, J. (1997) Habitat conservation planning: time to give conservationists and other concerned citizens a seat at the table. *Endangered Species UPDATE* 14(7&8), 56–59.

Lin, A.C. (1996) Participants' experiences with habitat conservation plans and suggestions for streamlining the process. *Ecology Law Quarterly* 23, 369–439.

Mann, C.C. and Plummer, M. (1995) *Noah's Choice: the Future of Endangered Species*. Alfred Knopf, New York, 238 pp.

McKinney, M.W. (2001) What do we mean by consensus? Some defining principles. In: Snow, D. (ed.) *Across the Great Divide: Explorations in Collaborative Conservation and the American West*. Island Press, Washington, DC, pp. 33–40.

Natural Heritage Institute (2000) *Where Property Rights and Biodiversity Converge: Lessons from Experience in Habitat Conservation Planning*. http://www.n-h-i.org

Noss, R. *et al.* (1997) *The Science of Conservation Planning*. Island Press, Washington, DC.

Ostermeier, D. (1999) The role of institutions in ecosystem management. In: Peine, J. (ed.) *Ecosystem Management for Sustainability: Principles and Practices Illustrated by a Regional Biosphere Reserve Cooperative*. Lewis, Washington, DC, pp. 457–474.

Ostermeier, D., Bidwell, D. and Schexnayder, S. (2000) Habitat Conservation Planning: current processes and tomorrow's challenges. *Environmental Practice* 2(2), 166–175.

Patton, M.Q. (1990) *Qualitative Evaluation and Research Methods*. Sage, Newbury Park, California.

Raiffa, H. (1982) *The Art and Science of Negotiation*. Harvard University Press, Cambridge, Massachusetts, 360 pp.

Reid, W. (1992) *The United States Needs a National Biodiversity Policy*. WRI Issues and Ideas Paper, World Resources Institute, Washington, DC.

Sexton, K., Marcus, A.A., Easter, W.K. and Burkhardt, T.D. (1999) *Better Environmental Decisions*. Island Press, Washington, DC, 450 pp.

Shannon, M.A. (1991) *Is American society organized to sustain forest ecosystems?* Paper presented at the Society of American Foresters National Convention in 1991 at Bethesda, Maryland, USA.

Snow, D. (2001) Coming home: an introduction to collaborative conservation. In: Snow, D. (ed.) *Across the Great Divide: Explorations in Collaborative Conservation and the American West*. Island Press, Washington, DC, pp. 1–11.

Thornton, R.D. (1997) The no surprises policy is essential to attract private dollars for the protection of biodiversity. *Endangered Species UPDATE* 14(7&8), 65–66.

US Fish & Wildlife Service, Division of Endangered Species (2001) *Habitat Conservation Plans and the Incidental Take Permitting Process, February*. http://endangered.fws.gov/hcp/

Wilcove, D.S. *et al.* (1996) Rebuilding the ark: toward a more effective Endangered Species Act for private land. 5 December. http://www.edf.org/pubs/Reports/help-esa/index.htm

Yaffee, S. (1994) *The Wisdom of the Spotted Owl: Policy Lessons for a New Century*. Island Press, Washington, DC, 377 pp.

Yaffee, S. (1998) Cooperation: a strategy for achieving stewardship across boundaries. In: Knight, R.L. and Landes, P. (eds) *Stewardship Across Boundaries*. Island Press, Washington, DC, pp. 299–324.

Yosie, T.F. and Herbst, T.D. (1998) *Using Stakeholder Processes in Environmental Decision Making: an Evaluation of Lessons Learned, Key Issues, and Future Challenges*. Ruder Finn Washington, Washington, DC, 72 pp.