Casting for Conservation Actors

Picking Partnerships for Effective Conservation

For decades, there was a widely held perception within the conservation community that strict protection of individual species and their habitats was the means to success in wildlife conservation. This approach provided the impetus for the creation of thousands of parks -- forming a global system of reserves, with an estimated 12 percent of the Planet's land surface now under some protected status. While restrictions on resource access and use vary by degree, nearly all protected areas feature biodiversity conservation as a principal, though not sole, mandated objective.

Yet conservation efforts have not always been successful. Flawed design of protected areas and management systems; weak application of protected area legislation; human settlements with uncertain status and tenure inside protected areas, and conflicts with communities outside have all conspired to undermine full realization of the biodiversity goals of many parks and reserves. Responses to these complexities vary. On one hand, there are calls to 'harden' protected areas-- strengthening levels of protection and increasing the separation of people and biodiversity. On the other, there is a movement to embrace communities and their livelihoods as a vital, sustainable part of the conservation process. Recently there has been an intensification and polarization of these two perspectives, with the successes and failures of each widely cited as evidence of their superiority or fatal flaws.

"Recently there has been an intensification and polarization of perspectives, with the successes and failures of each widely cited as evidence of their superiority or fatal flaws."

In this fundamental debate, why has so little real progress been made? One answer underlies the oft-cited, iconic endpoints of "strictly protected national parks" and "indigenous extractive reserves" – that is, the failure to acknowledge that there is a much broader range of options for conservation models. Indeed, the endpoints cited reveal two separate domains that have become badly conflated. One is a management system specifying how much access or use is acceptable if resource conservation is the objective (from full protection to maximum sustainable harvest), and the other is recognition of who is engaged in resource management (whether government agencies, NGOs, communities, or individuals).

© WCS/Peter Coppolillo

Assessing management systems and managers independently offers a wealth of new opportunities for conservation. After all, why can't a small group of local people managing village land opt for complete and strict protection? Likewise, it is common for nation-states to choose and enforce resource management strategies other than strict protection. In the end, separating these two axes might not simplify the process of conservation, but it can logically inform our discussion about the breadth of actors that could or should be playing different roles in effectively managing a diversity of natural resources.

So how can management systems and manager competencies be used to identify the best possible mix of actors to tackle different challenges in conserving

wildlife across different contexts? Field practitioners around the world regularly struggle with this issue, and though many have found novel answers, rarely, if ever, have these been captured and made available to others. To address this gap, the Wildlife Conservation Society assembled conservationists from WCS projects in Latin America, Asia, Africa and North America, along with WCS program staff, to draw on their collective experience in addressing the following questions:

- How do we identify an appropriate mix and arrangement of actors and institutions to effect conservation?
- How do ecological, socio-economic, and political factors influence the mix of effective actors and institutions?

Here, we offer a modest step in articulating the logic underlying the identification of the most appropriate mix of actors for wildlife conservation under different contexts. This paper is a descriptive representation of that logic, derived from the point of view of field practitioners who focus specifically on wildlife. While this description distills some best practices, it is not intended to be a prescriptive methodology for choosing management actors with whom to work. Instead, it is offered as a heuristic device to help those who practice, participate in, and fund conservation to talk more explicitly about these issues, and thus enable more effective groups of conservation actors.

Briefly stated, our deliberations have led us to the following conclusions:

- A cohesive, logical framework can help identify actors to effect conservation within different ecological, socio-economic, and political contexts.
- The intensity of management necessary (degree of control over access to and use of resources) is a key factor in designating a management system, defining essential management roles and, thereby, identifying competent and appropriate actors to effect conservation.
- Characteristics of wildlife, their use, and attributes of potential actors are essential factors that influence the type of management system necessary, and therefore the mix of actors likely to be effective in their conservation.
- The appropriate arrangement of actors may change over time according to the challenges and opportunities posed by a dynamic natural resource base, a changing social, economic and political landscape, and evolving attributes of conservation actors.

To explain these conclusions and their underlying rationale, this paper describes the logic behind identifying the most appropriate mix of actors and institutions – based on ecological, socio-economic, and political conditions. A set of case studies illustrating how this logic has been used at a range of sites is available for download of the web at http://www.wcs.org/international/translinks

… the most effective mix of actors to effect conservation is one in which the quality of the actors' attributes matches the specific needs of the management system.

A Logical Framework

As conservationists, how do we recognize, support, and promote the appropriate mix of actors to conserve wildlife in different contexts? How do we articulate this process of building strong constituencies for wildlife conservation in the field? Our logic may provide the basis for design of analytical tools and even suggest guidelines for partner engagement and promotion. It is not intended as a strict methodology, so much as a conceptual framework for describing the logical connections and relationships between management needs, the actors who may meet those needs, and the factors and conditions that influence them.

A framework for identifying the most appropriate mix and arrangement of actors can be represented through two simple diagrams (Figures 1 and 2), built around the central premise of matching management actors (and their skills, capacities, and interests) to the management system required to conserve specific target species or habitats. We believe that it is essential to identify individual or institutional actors who are able, motivated and positioned to address the degree and intensity of management needed to ensure conservation. It is this pairing of (a) man-

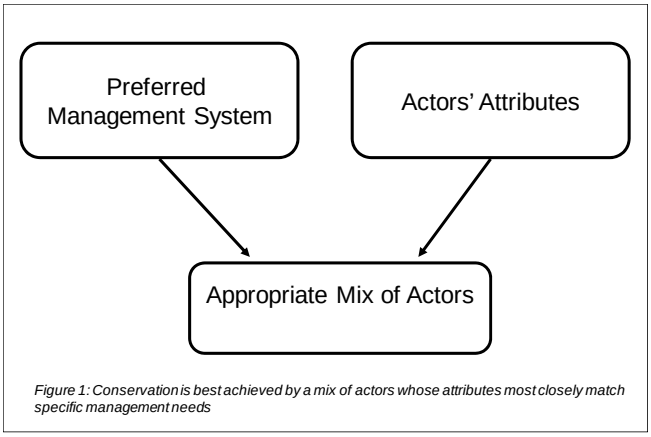


Figure 1: Conservation is best achieved by a mix of actors whose attributes most closely match specific management needs

agement objectives and requirements as embodied in a management system with (b) the attributes of potential actors, that determines who is most likely to be effective in various management roles - thus promising the greatest likelihood of conservation success within different contexts over the long-term.

Figure 1 diagrams the overall logic. We assume that conserving wildlife or other biological resources requires a management system – a system that governs access, use, benefits, threats, and species and habitats with the intent of achieving conservation objectives. Such a system involves regulation (formal or informal) of who has an impact on which species and habitats, to what extent, over what time frame and frequency, and in what areas. The degree of access and use within a management system in turn helps to determine the roles of and qualifications for management actors who are likely to be able to ensure success of said system. These qualifications include aspects of ownership and authority with respect to particular sites or resources, motivation to engage in conservation, management capacity, and the power to promote or oppose conservation.

As one considers the actors most likely to make conservation happen, it is important to assess their attributes relative to the qualifications required to implement a management system. While having the mandate, power, capacity and motivation to manage wildlife resources is clearly desirable in all management contexts, some conservation management sys-

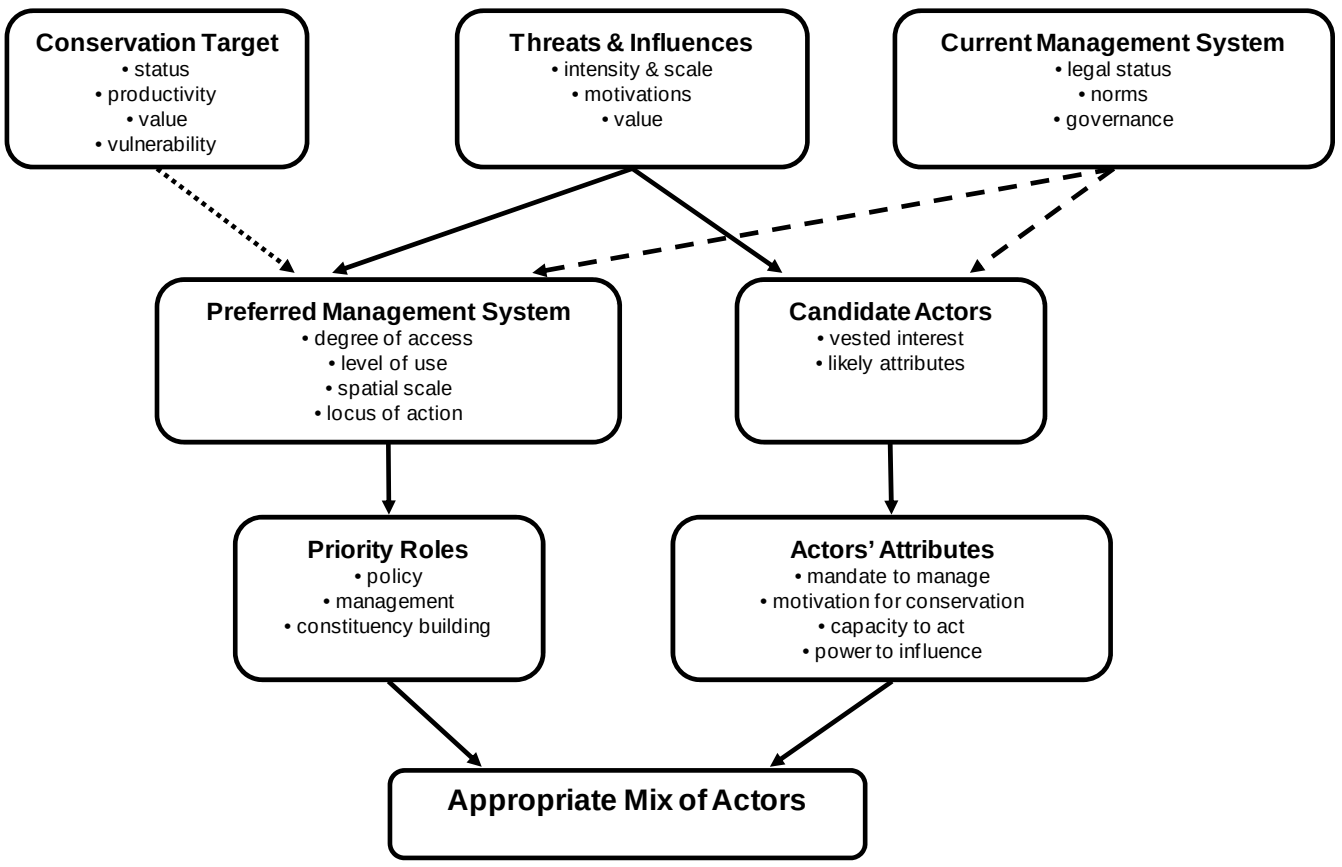


Figure 2: The most appropriate mix of actors to effect conservation is influenced by ecological, resource use, management and human capital factors.

tems demand actors with greater strengths in some or all of these characteristics. Thus, the most effective mix of actors to effect conservation is one in which the quality of the actors' attributes matches the specific needs of the management system.

Figure 2 illustrates greater detail of the overall logic. We argue that three groups of factors are likely to influence the type of system needed to manage a particular natural resource or set of resources.

These are:

- characteristics of the conservation target, including resource status, rarity, vulnerability, productivity, life history, and habitat requirements.
- characteristics of resource use and users, threats, or other influences on these resources, such as the intensity and scale of resource consumption, and the economic, social or cultural value of the resource.
- characteristics of the current resource management system, such as legal mandates, zoning restrictions and the resource governance that already exist, either constraining or providing opportunities for management options.

© WCS/Peter Coppolillo

Together, these factors influence whether a management system should set high or low limits on use, establish areas of greater or lesser protection, control the inclusion or exclusion of certain users, or manage external forces or actions. In turn, the type of management system considered necessary to manage wildlife resources will suggest priority management roles and, thus, define the key attributes of actors needed to adequately fulfill these roles. Specific actors' attributes -- including their interests in conservation, their skills, capacities, power and mandates, among other factors -- reflect their ability to meet management needs and fulfill essential management roles. In other words, the best actors to effect conservation are those whose attributes correspond strongly with the qualifications believed to be essential to the conservation needs at hand. Overall, a functional and effective mix of actors will also depend on actors' ability to work together, to address the scale of action needed, and to establish and enforce resource management norms.

It is important to note that within any given conservation landscape there will be several conservation targets and multiple uses for different natural resources. No single management system (e.g., strict protection or sustainable harvesting) can meet the conservation needs of all wildlife and the economic needs of all natural resource users. So in reality, each large conservation landscape will be a mosaic of different management systems, each favoring particular values of wildlife and natural resources that, in concert, can generate desired ecological, livelihood and existence values simultaneously.

Determining the Level of Management Needed to Effect Conservation

How strictly access and use are controlled and how much information we need to make sound management decisions is determined by: (1) ecological characteristics of the resources that we want to conserve (our conservation targets), (2) how, why, and by whom the resource is used or influenced, and (3) the nature of present resource access, use, rights, and management.

Conservation Targets

We define conservation targets as components of ecosystems that are valued by people and are at risk of being negatively impacted by human activities. These may be species, habitats, or other components of biodiversity. Identifying conservation targets and their desired states allows us to be explicit about what we hope to achieve, and to measure our success. By conserving a set of conservation targets with complementary ecological needs, we save other bio-

diversity sheltered under their collective conservation canopy.

Conservation targets are selected by the 'conservation community', be it a single organization or a set of stakeholders including local individuals and communities, various government agencies, and/or NGOs. Though targets may be as specific as a species or as broad as an ecosystem, each is selected because it is valued, and in some manner threatened by human activities, thereby warranting conservation action.

Though many characteristics of conservation targets could influence the management systems implemented to ensure their long-term survival, there are a few that stand out as particularly important. These include:

- **Abundance** – size of a population or habitat type
- **Distribution** – widespread or restricted, patchy or continuous
- **Fluctuation** – variability in abundance over time
- **Functional role** – ecologically pivotal
- **Productivity** – high to low
- **Resilience** – ability to recover from disturbance
- **Detectability** - ease or difficulty of monitoring
- **Scale** – extent necessary for effective conservation (site, landscape, region, country, continent, global)
- **Irreplacability** –degree to which the conservation site is vital for the overall conservation of the target
- **Life history** –breeding habits, parental investment, etc.

Most of these characteristics relate to a target's vulnerability to disturbance – principally human activities. On the other hand, a target's functional role is an indictor of the degree of impact on an ecosystem's structure and productivity if the target were lost from the landscape.

Linking target characteristics to management systems

Effective conservation is only likely over the long term if the management system is tailored to characteristics of the conservation targets. For example:

- Targets that are rare or restricted in distribution are more at risk of being lost as a result of human activities than are abundant or widely-dispersed targets. Access to, and use of, these targets are thus more likely to require a greater level of control.
- Some species may be locally abundant, but might warrant being managed under a relatively strict system if they are globally scarce. In some cases the opposite may be true, and a locally scarce species may require minimal management because it is abundant elsewhere.
- Highly productive targets are likely to be more tolerant of human pressure and may only warrant strict management if the level of use is so

Table 1. Illustrations of how characteristics of conservation targets may influence management systems.

Target	Characteristics	Management System
Lowland gorillas at site "A"	Locally abundant but globally scarce; low productivity, but highly detectable.	Relatively strict control of access and use.
Private lands linking protected area "B" with protected area "C"	Restricted distribution; little resilience to some threats; functionally important to landscape connectivity.	Landowners maintain their access rights and limit uses to those compatible with wildlife movements.
Mangrove forest at site "D"	Highly productive, critical nursery area for fish populations; resilient to present level of harvesting for building material.	Little active management required at present, but status monitoring is crucial in case threat level changes.

high that they are continuously declining in abundance. Targets that are not productive may be at greater risk of being depleted, particularly if they are also scarce. These may warrant more intensive management.

- Abundant, productive and widely-dispersed targets may be less at risk of significant degradation as a result of human use. As such, few access and use controls may be required, and given the larger margin of error associated with these parameters, may not require much information to ensure their successful management.
- Targets that show extreme fluctuations in abundance over time, and that impact significantly the structure and function of a landscape, may require more information for effective management because uninformed decisions risk adverse consequences.
- Targets that are difficult to monitor may warrant greater control over access and use because it is difficult to assess whether human use is causing a decline.
- Targets such as migratory species may require a larger cast of actors and coordination of management across the range of spatial scales they occupy.

Threats and Influences

The status of wildlife resources can be threatened directly through harvesting or removal of the resource, or less directly by pollution, modified hydrological systems, introduction of non-native species, or altered climates. Human use and dependence on natural resources can also positively influence conservation by providing incentives for sustainability where management systems are defined clearly and implemented soundly.

Just as specific characteristics of conservation targets affect the type of management system that would be appropriate, so too do the threats to, or influences on, these resources.

Knowing whose actions or inactions are causing a direct or indirect threat to wildlife resources can help conservationists to understand whether the threat is due to a lack of awareness, perceived benefit and interest, or a lack of norms and the capacity to enforce them. In addition, understanding who is linked to specific influences – positive or negative - also helps suggest a list of actors who could play roles in effectively managing the threatened resources.

© WCS/David Wilkie

Users of wildlife resources who value their persistence are prime candidates for active management roles (see Identifying the Most Appropriate Mix of Actors, below). In cases where consumers of a resource reside far from the boundaries of the landscape, they may have little knowledge that their consumption is a threat, or may not have the legal mandate to directly engage in management of the resource. Thus, a management system addressing threats that originate from "over the landscape horizon" will likely differ from those in which consumers live in close proximity to the resource and have legal tenure over the land.

Among characteristics of these uses, threats, or influences, the following are most likely to affect the management system required:

- **Intensity** – rate of off-take; severity at points of impact
- **Extent** – spatial area affected
- **Source location** – location of source of influence: local, site-specific or distant in origin
- **Timing** – seasonal, annual, decadal, constant
- **Direct or indirect** – directly or indirectly influencing the status of resources
- **Current or potential** – actually occurring or likely to occur
- **Actors** – number and motivations of actors engaged in activities that put natural resources at risk

Different levels and sources of threats - actual or potential - link logically to the type of management system needed to conserve wildlife resources.

Linking characteristics of use, threats, and influences to management systems

Characterizing the human activities that influence conservation targets, and understanding the factors that drive people, businesses and governments to act can help stakeholders to: (a) develop a management system that is likely to abate the direct and indirect causes of threats, and (b) assess the likely level of support for, or opposition to, resource management. For example:

- When conservation targets are heavily harvested or affected by ecosystem degradation, management would likely place greater controls over access, use, or levels of pollution than in systems where resource threats are less intense.
- When negative impacts already exist, active abatement activities will be required, whereas pending threats may be avoided through information sharing, proactive policymaking, and/or incentives.
- When a resource is threatened by the activities of a large number of actors, each of whom has a relatively small impact, restrictions to access may be the best way to ensure conservation. Conversely, exclusion is unlikely to work when a single actor both poses the greatest threat and is economically dependent on the threatened resource.
- Where negative impacts on natural resources are constant, management practices differ from situations in which threats are episodic, or random (e.g., closed seasons are ineffective if a resource is used daily, and daily catch limits are inappropriate if harvesting only occurs in brief periods during the year, such as during an annual migration).
- Where threats have impacts over a large scale, conservation may require a management system that relies on formal regulations to address the relative anonymity of the sources of threats, engages multiple actors with complementary jurisdictions, and/or relies on actors who have the mandate to operate on a large scale. Threats operating on a small scale may be dealt with via more informal measures such as social pressure or economic incentives.
- When the perceived value or threat is local, management will be best vested in the hands of an effective local authority. This would also be the case when external threats might be successfully excluded by local managers. However, when values or threats are more distant or indi-

Table 2. Influence of resource use, users, and threats on management systems: illustrative examples.

Use/influences	Characteristics	Management System
Bushmeat harvesting at site "E"	Commercial hunters from urban areas rapidly deplete large-bodied wildlife from forest opened up by logging.	Strict controls over the exportation of wildlife from the logging concession.
Deforestation at site "F"	Immigrants rapidly colonize the area to acquire land for subsistence agriculture.	Secure land-tenure of long-term residents with prior claims.
Deforestation at site "G"	Long-duration residents expand the area under cultivation in response to commodity prices.	Direct payments to landowners to set aside high biodiversity value lands and connecting corridors.
Acidification of boreal lakes at site "H"	Sulfur emissions from energy plants result in acid precipitation, the mobilization of aluminum, and episodic fish die-offs.	Strengthen national clean air laws and national/state enforcement.

rect and local authority has little influence, management systems may require the mandate and power of an authority at the regional, national, or international level.

- In cases where users recognize the enduring value of a resource, whether cultural or economic, effective management by user agreements or social pressure is more likely than in cases where users view the resource as expendable, making more formal management systems necessary. Perception of value may evolve over time, depending on factors such as changes in technology, access to capital, and resource availability – thus changing the requirements for management.

Combining Characteristics of Conservation Targets and Threats/Influences

We have described the independent effects of the characteristics of conservation targets and the threats and influences upon management systems.

© WCS/David Wilkie

Box 1: Key Elements of Management Systems

Broadly speaking, management systems can be described in terms of: (1) the degree of access to a resource, (2) how much of the resource can be used, (3) the spatial scale appropriate for resource management, (4) the locus of threat abatement, and (5) the amount of information needed to make management decisions. More specifically:

Access to a resource is regulated by defining who has access when. Licensing or the decree of a community elder can limit who has the rights to cut trees, hunt animals or harvest crabs. Entrance fees might reduce the number of tourists that visit a fragile site, and closed seasons control when access to the resource is allowed.

Level of use can be managed (formally or through peer agreement) through quotas, by regulating how people use a resource, or by shifting resource use to alternatives. Minimum size limits and fishing net mesh sizes can ensure that juvenile fish are not harvested. Likewise, land-use zoning and easements can define which modifications to the landscape are permissible and which are not.

Appropriate spatial scale for effective management is determined by the distribution of the resource, as well as geographic mandates and capacities of users or managers. For example, conservation of grizzly bears may require both local-scale management to minimize conflicts with adjacent ranchers and their cattle, and regional-scale management to ensure gene flow continuation across isolated sub-populations of bears.

The locus of threat abatement depends on whether the threat comes from within or outside of a particular landscape. Direct use of resources from hunting or logging might require a more local response and conservation actions within the landscape, whereas threats like acid rain might warrant interventions at the pollution source – well outside the 'managed' site.

Lastly, the amount of information needed to make sound management decisions relates to the risk implied by those decisions. For example, the risk of unintended consequences is likely to be higher when target resources are rare, fluctuate in abundance or play key ecological roles. In these contexts more information may be needed to better inform decision-making and, thus, safeguard the resources.

Most often, though, it is the combination of these factors that gives us the best snapshot of the vulnerability of wildlife resources to human activities in any particular situation and, therefore, this combination that best informs the type of management required. While it is true that highly productive wildlife populations can sustain

For each existing or desired management system at a site, there is a corresponding set of management roles and activities that, if implemented well, is likely to positively affect conservation of wildlife and natural resources at the site.

higher rates of harvesting and may require less stringent management controls than a slow-growing resource with only relatively light harvesting, if pressures on a productive resource increase beyond sustainable levels, stricter management may become necessary. Likewise, in cases where scarce, vulnerable resources are not under current or potential pressure, they may not demand explicit regulation or enforcement: existing informal, social norms may be adequate. Clearly, it is the combination of (a) the pressures on conservation targets, and (b) the characteristics of these targets to withstand such pressures, that determines the likelihood of loss or extinction of species and communities at a site and, in turn, indicates the type of management system necessary to ensure effective conservation.

Characteristics of Existing Management: The Current Cast

Conservation efforts never start with a blank slate. Rather, they evolve from existing resource management systems that are built on a longer history of systems. (This is true even when the 'system' might simply be the absence of explicit resource management.) Characterizing the present management system is an important step toward identifying the most appropriate mix of actors to effect conservation because it helps document: (1) the current level and purpose of resource use, (2) traditional or formal rights pertaining to resource use, (3) formal or informal norms and institutions governing resource management, and (4) technical and financial means employed to manage natural resources. This assessment can, in turn, help identify opportunities for improving the present system and, at the same time, expose constraints to change. Understanding the existing management system, including who plays each 'role' right now, also helps practitioners generate a candidate list of actors with vested interests in the use and/or management of wildlife. In this way, it is possible to identify the best actors to play key conservation roles or those who have the potential to attain competence with sufficient support.

Key Roles for Conservation Actors

Regardless of the most appropriate management system for a given site, a standard set of management roles and activities is typically necessary to positively affect conservation. Many of these roles can be summarized under the following headings (though additional, more specific, or alternative roles may sometimes be useful in various contexts):

Box 2

Mandate to Manage
Mandate to manage is defined here as the recognition of legal or moral authority, or the ownership of land or resources. Ownership implies recognized or legal rights; authority assumes jurisdiction over a given area or natural resource (conferred through legal or social processes). This qualification can be related to issues of legitimacy and credibility, although ownership and/or authority do not always connote legitimacy.

Capacity to Act
The capacity to act is predicated on having relevant knowledge, skills and resources. The latter can include both human and financial resources, while skill sets might include a broad range of aptitudes in everything from conflict resolution, writing and communication, to strategic planning and research. Knowledge refers to the information required for effective decision-making and action.

Motivation to Conserve
Motivation refers to an actor's interest in a conservation-related objective, activity or role. In general, the efficiency of conservation interventions by an actor positively correlates with the motivation of that actor. However, motivated actors can be either supportive of or opposed to conservation. Motivated actors tend to perceive a benefit from either conservation or subverting conservation, and are thus less passive than indifferent actors. Benefits may be material or economic in nature, or may be cultural, ethical or spiritual.

Power to Influence
Power refers to an actor's political, economic and/or social influence. Without politically powerful allies, a conservation program's efforts remain vulnerable to negative influence. Power in itself does not define an actor's value to conservation, but rather it is how that power is applied which could impact conservation positively or negatively. In this way, references to the actors' 'Motivation to Conserve' will indicate how these actors are likely to wield their power.

Policy

Policy activities broadly include:

- Generating reliable information relevant to the formulation of norms.
- Creating the legal, regulatory, and/or socio-political framework for conservation.
- Facilitating public debate of proposed norms.
- Facilitating public debate on the values of biodiversity.
- Establishing systems of due process and legal recourse.

Management

Management encompasses the following activities:

- Enforcement of norms, ranging from formal or governmental law enforcement to informal social pressure or incentives.
- Coordination, execution and facilitation of management activities; provision of financial and human resources; logistical support; maintenance of offices, bases, materials, and other supportive roles.
- Monitoring a system's response to standards, regulations, and use (including both social and biological monitoring).
- Building actors' capacities to participate in conservation-related activities and interventions.

Constituency Building

Activities dedicated to growing political and financial support for conservation objectives and interventions include:

- Raising awareness of the importance of conserving biodiversity.
- Creating social and/or economic incentives for conservation.
- Lobbying decision-makers to create an enabling policy framework for conservation.
- Encouraging opinion leaders to advocate for conservation.

While in principle any management system will need to define, address and fulfill most or all of these roles, their relative importance varies according to the nature of the specific management system - and most particularly, the level of control deemed necessary over access to and use of wildlife resources. Thus, in a chaotic or lawless landscape under great pressure, conservation practitioners may place greater priority on the role of enforcement than on monitoring. Alternatively, a relatively stable site with motivated partners may need to emphasize capacity-building above all else.

Different Actors' Attributes for Different Management Roles

Defining the required management system for any given conservation target enables the associated identification of priority management roles. Likewise, determining priority management roles can indicate the most important attributes or qualifications of any actor to fulfill a specific policy, management or constituency-building role. Toward these ends, we propose the following attributes of actors as critical and comprehensive in playing key conservation policy, management and constituency-building roles (recognizing that specific situations might lead to a consideration of disaggregated or alternative attributes.):

- **Mandate to manage** – in terms of authority and/or ownership
- **Motivation to conserve** – for economic, cultural and/or ethical reasons
- **Capacity to act** – encompassing skills, knowledge and resources
- **Power to influence** – in political, economic and/or social regards

Though these qualifications of actors are important for all policy, management and constituency-building roles, their relative importance varies according to the type of management system considered desirable. For example, in a context where conservation targets are not under significant pressure, building capacity to manage resources for the future may be a higher priority than creating and enforcing formal

Tables 3a and 3b: These tables represent the logic involved in identifying and prioritizing conservation management roles and, in turn, pinpointing the qualifications necessary to fill those roles. The schematic is intended to elucidate the logic rather than define a selection process. Alternative roles and actors' qualifications may be considered for a particular target, scale of operation, or period of time. These tables illustrate the priority attributes needed under two different conditions: Table 3a illustrates a situation where conservation targets are not currently under significant pressure, while Table 3b illustrates a scenario where a target species is highly threatened by poaching pressure. In the first situation, it is advantageous to build capacity (to increase the ability to protect the resource in the future), while in the second case it is imperative to create and enforce rules that allow conservation of the threatened species at the present time.

Table 3a.

	Qualifications			
Roles	Power	Capacity	Motivation	Mandate
Policy: Create norms				
Management: Enforcement				
Management: Coordinate/facilitate				
Management: Monitor				
Management: Build capacity				
Constituency building				

Table 3b.

	Qualifications			
Roles	Power	Capacity	Motivation	Mandate
Policy: Create norms				
Management: Enforcement				
Management: Coordinate/facilitate				
Management: Monitor				
Management: Build capacity				
Constituency building				

High Priority
Medium Priority
Low Priority

norms. Given this, motivation and capacity may be the most important attributes to advance conservation, more so than power and mandate (Table 3a). Table 3b depicts a different scenario, in which a globally irreplaceable target is highly threatened by uncontrolled poaching, and where formal and informal governance is weak. In this case, creating and enforcing norms are priority short-term roles, and power and capacity are the most important attributes of competent actors.

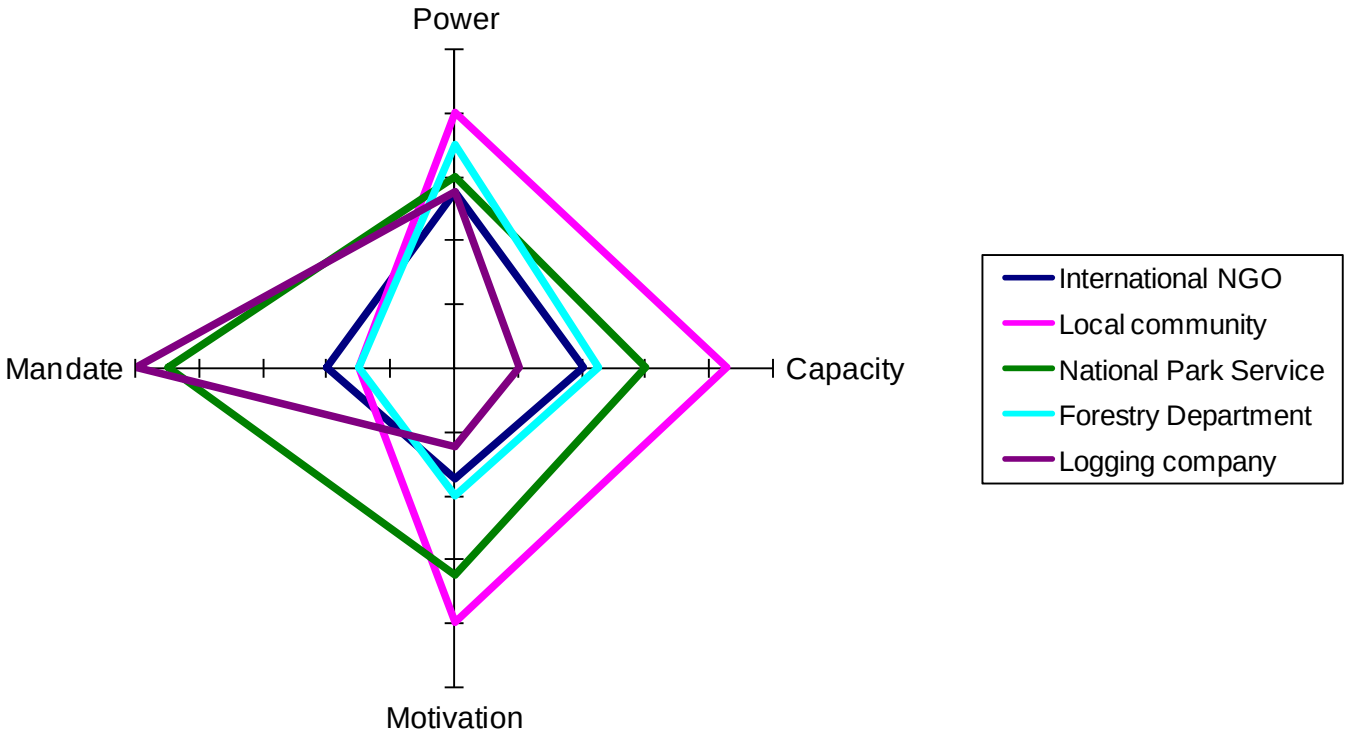
Identifying the Most Appropriate Mix of Actors

At any given conservation site or landscape, a large number of stakeholders may have vested interest in, or be potentially affected by, conservation. However, not all stakeholders will be critical actors in effecting conservation. By determining what type of management system is needed to ensure conservation, and by characterizing the priority roles that must thus be filled, we can identify a short, prioritized list of candidate actors. These candidates are those most likely with the capacity, power, mandate and motivation to undertake these roles – or who have the potential to develop these attributes over a time period consistent with conservation needs.

Using Radar Diagrams

Visual tools for comparing the strengths of actors

One simple way to think about the most appropriate individuals, groups, firms, organizations and alliances to assume priority roles in a particular management system is to 'locate' actors along axes that represent important qualifications needed to fulfill these roles. The attributes that an actor possesses can be represented as a point along four axes indicating their mandate to manage, capacity to act, motivation to conserve and power to influence relative to other candidates at that site. It is important to note that capacity, mandate, motivation and power are composite, multi-faceted qualifications, and that indicating an actor's attributes as a location along an axis is a subjective judgment. We can formalize and graphically display our subjectivity by ranking actors' perceived competence as low, medium or high, or along a scale from 1 (low) to 5 (high) (with high competence near the center: see example in Figure 3). The different strengths represented along an axis are only meaningful relative to the position of other actors (i.e., being positioned closer to the center of the diagram indicates greater strength relative to actors positioned further from the center). The absolute location of an actor, then, is mean-



ingless, making a comparison across radar diagrams developed for different management systems inappropriate.

Drawing lines to connect the locations of an actor along each axis results in a multi-sided polygon that visually depicts the overall, comparative strength of an actor to fulfill a desired role. By overlaying these diagrams for multiple actors for any given role enables us to review the relative strengths of different actors. We can thus use this assessment to help identify a complementary mix that is most likely to support conservation success. Different roles under different management systems may require different strengths and attributes, such that the shape of the polygon that depicts a 'strong' actor will vary. For some roles power, mandate and motivation may be the highest priorities; for others, capacity and mandate may be key.

In some cases it may be desirable to work with an actor who is not particularly strong across all axes, but who has the potential to become so. For example, an indigenous group may have strong traditional claims to territory, but no capacity to control outsider use of its resources. The group would rank highly on the mandate axis, but weakly on the capacity axis. Field practitioners might still engage them in management activities because of moral authority and legitimacy, and presuming a potential to attain greater management capacity over time.

The analysis represented in Figure 3 describes dominant factors driving strategic and logical decision-making in the field. However, it is important to note that encouragement of actors in particular roles may also be influenced by other considerations. For example, a commercial resource extraction company may wield significant power, but may lack motivation, mandate or capacity for conservation. Given the firm's power and potential to impact the landscape, its engagement is imperative so that it might be swayed in conservation-favorable ways.

The optimal mix of actors to effect conservation

When considering an optimal mix of actors, efficiency suggests that we ought to engage actors with multiple strengths rather than multiple actors with single strengths. That said, while a radar diagram may reveal a single actor who is relatively strong in all four qualifications, the need for checks and balances may warrant engaging additional (and even relatively weaker) actors to fulfill a particular role.

The appropriate mix also depends on interactions among and between actors, including their subjective perspectives and their perceptions of the legitimacy of others. In some cases, an actor's participation might diminish the motivation and power of other actors. The opposite is also true: a relatively weak actor might significantly strengthen the attributes of other actors. For example, a foundation could include a director with no direct management role at the site, but her reputation and ability to build consensus may reinforce other actors' motivation or capacity and, thus, support the sustainability of the management system itself.

© WCS/Amy Vedder

In addition, scale is an essential characteristic to consider. The scale at which a conservation target functions, a threat acts, and an actor has interest or influence can strongly determine the effective mix of actors. For example, it may be that one actor is well-positioned to tackle a needed management role, but can only be effective at the scale required for conservation with the support of others.

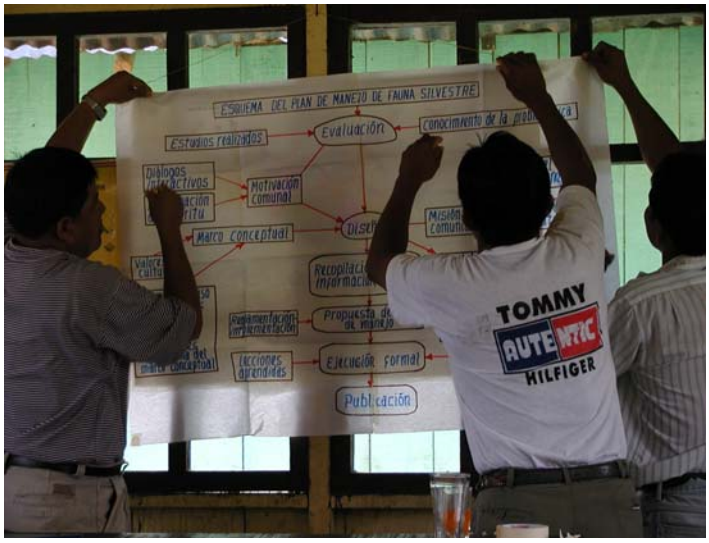
Visual tools for strengthening individual conservation actors

While these radar diagrams depict the logical thinking behind identification of appropriate or preferred conservation actors, they can also signify attributes of actors that, if strengthened, would increase the

likelihood of conservation success at a site. Indeed, the diagrams may articulate gaps in attributes that need to be strengthened for particular actors if they are to assume an important and effective conservation management role. For example, an actor may have the legal mandate to manage wildlife, but have little or no motivation to do so. By working to increase the motivation through public awareness initiatives or economic incentives, conservationists might enhance the actor's interest - and thus more fully realize the conservation potential – of the actor.

Similarly, a diagram may illustrate how far the present actors are from attaining certain attributes, in which case other actors may have to be brought in or new alliances formed. (For example, if national law only allows hunters' associations to manage wildlife, it might be necessary to find or create such an organization.)

Over time, the process of strengthening actors or engaging new ones might result in substituting or replacing existing actors with others. At the onset of a project, for example, an international NGO may have the strongest relevant capacities for certain roles. But the tenets of subsidiarity (i.e., management by the lowest competent authority) suggest that a more appropriate arrangement for sustaining success in the long-term would include a local actor with increased capacity. Updated radar diagrams over time can thus reveal progress in a conservation process; the appropriate mix of actors, as suggested by the diagrams, will likely evolve with the actors' changing competencies.



© WCS/David Wilkie

Value of this Framework

The importance of this logical framework – defining needed management systems based on the characteristics of conservation targets, threats and existing management systems; identifying priority conservation roles based on needed management systems; and ranking the competence of each actor using radar diagrams – is its utility for illustrating the complex and reiterative thought processes behind defining the particular management systems needed to effect conservation, and identifying and engaging the most local competent actors for promoting effective conservation. More specifically, it articulates the logic underlying an assessment of the mix of actors and institutions for any particular conservation effort across a full range of management systems and spatial and temporal scales. As such, it provides field-based conservationists with a common way of looking at their contextually unique circumstances, such that strategic planning, analysis, and implementation can be more transparent based on shared principles.

Conclusions: Toward Better Practices

The principle of subsidiarity argues that to maximize efficiency, matters of governance should be handled by the lowest competent authority. This is based on a general principle of public affairs: that the closer the locus of decision making is to the people it affects, the more likely it is to be based on reliable information and the more likely the process will reflect the interests of those affected. This principle is often interpreted to mean that local communities should always have the authority and responsibility for conserving wildlife. Others assert that biodiversity is part of the national or international patrimony and, as such, state agencies rather than local people should always hold management authority over access to and use of these resources. This paper argues that, from the point of view of field practitioners, there is no simple, universal answer to the question of who should be managing wildlife or, more generally, conserving natural resources. This understanding leads us away from simplistic paradigms. Instead, we explore systems of wildlife management and re-

source conservation that depend upon strategic, contextually-influenced mixes of actors and institutions, each fulfilling particular roles according to their strengths and the management requirements deemed necessary. The resultant mix of actors at any given site is, therefore, dependent on a combination of ecological, socio-economic and political circumstances as well as the attributes of those with a vested interest in wildlife resources. Because this logic results in unique arrangements of local people, community groups, companies, governments and non-governmental organizations, the debate of community-based vs. state-based conservation is superseded by a more sophisticated scenario that seeks the most local authority with the competence to manage wildlife resources effectively.

Deciding where to build housing, develop industry, or conserve biodiversity is more likely to address local interests and concerns when it is the purview of village or town councils, than if it were the mandate of the United Nations. As a result, local compliance with regulations is more likely. Similarly, a landowner who walks her property regularly is more likely to understand maintenance needs than a distant national forest agency that may never have visited the site. Thus she may be the better steward of the forest.

That said, the principle of subsidiarity does not always adequately address the fact that the interests of the most local competent authority may conflict with the interests of the broader national or international society. When society values a resource more than local people, a system of checks and balances may be needed such that the resource governance system is composed of a mix of actors that reflects both local and broader societal interests.

© WCS/Amanda Fine

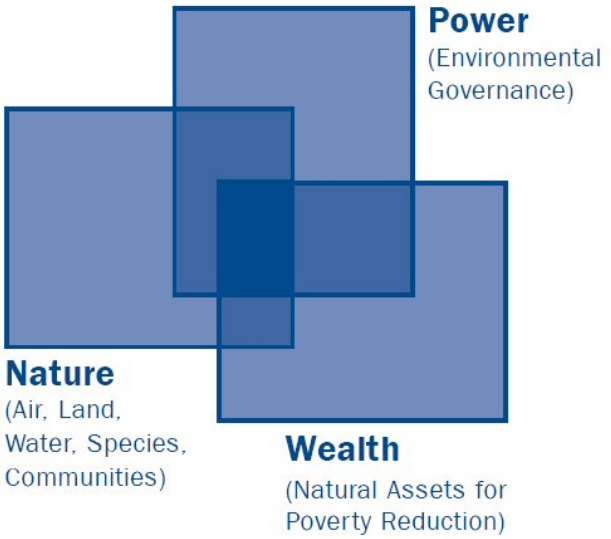
Similarly, though it is relatively easy to identify the lowest authority, subsidiarity requires that the authority be competent to affect resource management. Too often this two-part test is separated so that local communities are always identified as the lowest, and national agencies are always deemed competent. Clearly, both determinations are simplistic, polarized and restrictive in their real-world applications.

© WCS/Sergio Hoare

The logical framework presented here highlight four major conclusions supported by WCS field experience in identifying and engaging the most appropriate actors to effect conservation. These are:

- A cohesive, logical framework can help identify actors to effect conservation under different management contexts.
- The intensity of management necessary (degree of control over access to and use of resources) is a key factor in designating a management system, defining essential management roles and, thereby, identifying competent and appropriate actors to effect conservation.
- Characteristics of wildlife resources, their use, and attributes of potential actors are all essential factors in influencing the type of management system necessary, and the mix of actors likely to be effective in their conservation.
- The appropriate arrangement of actors may change over time according to the challenges and opportunities posed by a dynamic natural resource base, a changing social, economic and political landscape, and evolving attributes of conservation actors.

As a general principle, then, management systems at a given site should help define the appropriate mix of actors with the power, capacity, mandate and motivation for assuming the roles required for advancing conservation. Recognizing and enabling individual actors, institutions, organizations and partnerships capable of fulfilling the roles required to manage conservation resources is a challenging and important undertaking. By identifying and engaging this important 'cast of conservation actors', we take a critical step toward ensuring that the long-term conservation needs of wildlife and wildlife habitats are met.



Translinks is a multi-year program funded by the United States Agency for International Development (USAID) designed to better understand how linking poverty alleviation (Wealth) with good governance (Power) and sustainable management of natural resources (Nature) can positively transform the practice of development and biodiversity conservation. This new program of the Wildlife Conservation Society brings together a unique partnership of NGOs and Universities with distinct but highly complementary skills and experience in conserving biodiversity, governing access to and use of natural resources, and securing livelihoods of the rural poor.

TransLinks

Contact
Dr. David Wilkie
Living Landscapes Program
Wildlife Conservation Society
2300 Southern Blvd.
Bronx, NY 10460 USA
Email: TransLinks@wcs.org
http://www.wcs.org/international/translinks

This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the conditions of the Cooperative Agreement No. EPP-A-00-06-00014-00. The contents are the responsibility of the lead partner and do not necessarily reflect the views of USAID or the United States Government.