

Defining Values in Place: A Practical Application for Visitor Management in Protected Areas

Gordon Cessford
Mike Edginton

Abstract—This paper explores a value specification option to better meet a core information need in protected area management for recreation and conservation. It does not debate the meaning or definition of values, but instead identifies a perspective on values that is aimed at meeting practical conservation management needs. The first part of that perspective involves extracting from the wider values discourse some working pragmatic definition of what ‘Conservation Values’ are. The second involves clarifying how the priority attributes and features of conservation values could be considered management ‘assets.’ Then it describes how the Department of Conservation (DOC) in New Zealand is beginning to implement value-in-place specifications through its Visitor Asset Management System (VAMS). Future directions required to advance this implementation further through a wider range of conservation value considerations are discussed.

The Management Need

Two extensive national workshops were convened in New Zealand by the Department of Conservation (DOC) to identify research needs for improving the management of visitor impacts in national parks and protected areas. The first looked at the physical impacts of visitors on natural and historic resources of conservation significance (Cessford 1997; Cessford and Dingwall 1999). The second looked at the social impacts of visitors to conservation lands (Cessford 1999). Both had the same objective of identifying the key strategic research topics and directions required to provide DOC managers with the information they needed to improve their decision-making capability. Both concluded that the greatest research priority should be assigned to achieving a more systematic definition of conservation values at specific sites. The main reason this priority was emphasized was that such site-specific values were considered the basis for the specification of any site-specific management objectives. Such improved specification of value-based management objectives for defined places can assist conservation managers in:

- Assessing the likelihood of any social or physical impacts developing at places;
- Evaluating the options for management interventions that may be applied at those places;
- Defining the particular types of measurement approaches and indicators required to monitor the outcomes being managed for at those places;
- Identifying key stakeholders and collaborative opportunities for engaging citizens in conservation;
- Determining the optimum topics and approaches for any provision of interpretive services at those places;
- Identifying any potential visitor experience opportunities that may be particularly salient at particular places; and
- Identifying any specific information gaps and related research needs.

The importance of specifically defining such management goals and objectives ‘in-place’ has been widely recognized. When concluding their comprehensive review of visitor impact management, Kuss and others (1990) emphasized that managing visitor impacts must begin with setting specific objectives. A stocktake review of the Limits of Acceptable Change (LAC) planning system after 15 years of application acknowledged that it had omitted a key first step—specification of the desired state (goals) for social and physical conditions at sites (Cole and McCool 1997). The importance of this value specification step was reinforced with reference to other planning systems in other accompanying review papers (Hof and Lime 1997; Nilsen and Tayler 1997). However despite the acknowledged importance of defining values, desired states or management objectives in place, there appears to have been limited advance in practice. As bluntly stated by Cole (2004:p. 16), “the lack of progress in recreation management largely stems from paralysis during the step of specifying desired end states, standards for acceptable impact levels, and for the appropriate experiences or settings in which experiences occur.”

In simple terms, the key questions facing conservation managers are about knowing what is important, where it is located, what threatens it, and how they can best act to manage it. Apart from some consultative processes, such specification of management objectives does not appear to be systematically provided in any of the major recreation planning frameworks being applied internationally. Yet, to most readily identify where issues and impacts are occurring, or more important, where they might be anticipated, managers need a systematic framework for clearly identifying the particular values they are managing for at different sites. The Recreation Opportunity Spectrum (ROS) was discussed

Gordon Cessford and Mike Edginton, Heritage Appreciation Unit, Research, Development and Improvement Division, Department of Conservation, Wellington, New Zealand.

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at the DOC workshops as one example of a framework that goes part way towards fulfilling this need for recreational values at least. But the consensus view of the DOC workshop participants was that this conceptual framework applied at a level too coarse for effective site-specific management (Cessford 1999). The ROS classes can provide the physical and social background setting for more site-specific visitor management areas, but these finer-scale areas will require more site-specific and explicit social and physical management objectives to be set. In order to define such objectives, based on knowing what is important and where it is located, attention needs to be focused on an improved understanding of values-in-place, how to determine these, and on pragmatic ways to apply these more precisely at specific sites.

The Importance of a Value Perspective

It is difficult to conceive of a human problem that would not be better illuminated if reliable value data about it were available (Rokeach 1973). Virtually all people refer at one time or another to their own values, or to values that characterize other people or groups (Schwartz and Bilsky 1987). Debate regarding how national forests should be managed often occurs because different interest groups hold different values (Vaske and Donnelly 1999), and while these may begin with a focus on a particular environmental or resource problem, they quickly become arguments over how people should interact with nature and each other (Gerlach and Bengtson 1994). In fact, it is difficult to find any discussion of the management and use of parks and protected areas without seeing some reference to values—values are changing—we need to manage for multiple values—we need to account for new users with different values from our traditional users (Jakes 1998). Clearly values occupy a central place in natural resource management (More and others 1996) and in all the sciences concerned with human behavior (Rokeach 1973, 1979; Schwartz 1992).

However, while values are the most widely used means to characterize the human dimensions of natural resources (Williams and Watson, this proceedings), achieving an understanding of them is easier said than done. It is deceptively difficult to answer what seem to be simple questions, such as, “What do we mean when we talk about values?” (Jakes 1998: p. 147) or “What do we mean by value, and what do we value?” (Brown and Manfredi 1987: p. 12). Values may be one of the most dominant topics in social science, but extensive research and debate over many years and many disciplines has not produced any unanimity in definition (Williams and Watson, this proceedings). Value has been the topic of many hundreds of books and articles (Brown 1984), and with all this attention, it is not surprising that value has many meanings. To most people the term ‘value’ carries many vague and diffuse meanings, and even in the social science disciplines of philosophy, psychology, economics and theology, there are about as many definitions of values as there are people who think about them (Smith 1977). The term has acquired different meaning both across and within the social academic disciplines (Brown and Manfredi 1987), having been used variously to refer to interests, pleasures, likes, preferences, duties, moral obligations, desires, wants,

goals, needs, aversions and attractions, and many other kinds of selective orientations (Williams 1979). It is not surprising that Brown (1984) observed many non-economic works on value begin with a discussion of the problems caused by the many meanings. Crick-Furman and Prentice (2000) observed that for the last three decades, while the role of values and value systems has received much academic attention, there has been little success in finding any satisfactory measurement or application mechanism at the site management level. This paper acknowledges these difficulties but is based on the premise that for practical management applications, especially for achieving improved site-specific management objectives, some working conception of values in place must be applied as best practice.

A Pragmatic Perspective on Values

It is important to identify some key descriptive principles of values to lead us toward the pragmatic solution being proposed for consideration. So we do have to ask the question—what are values? Clearly ‘values’ are not distinct physical things in any object sense. There is no such thing as *the* value of an object, because value is a relative rather than absolute concept, and depends both on the contexts of the valuation and the perspectives of those assigning the value (Brown 1984).

The large variety of value classifications that have been proposed do support the practicality of this contextual view of values. Rescher (1977) identified six principles by which values could be classified: their subscribership; the objects at issue; the sorts of qualitative benefits at issue; the purposes at issue; the relationships between subscriber and beneficiary; and the relationship the value bears to fulfilling other values. It is also clear that when applied investigation is made, it is possible to identify a consistent range of overall values held by people at a general contextual level. Many examples exist of comprehensive value classifications that are capable of incorporating almost any value concept raised. These values relate to what people, both as individuals and collectively as social groupings, consider as important desirable outcomes and states of being. Among these, the classification of values derived by Rokeach (1973, 1979) has been possibly the single most influential example. Other value classifications based on motivational perspectives of values (Schwartz and Bilsky 1987; Schwartz 1992, 1994), social sustainability goals/needs (Klessig and Hagengruber 1999), and overall belief systems (Williams 1979) all provide useful examples. Added to these are taxonomies of value meanings developed by Rolston (1985).

But this inclusiveness comes at the cost of being only applicable to very general issues, such as comparison of value orientations between different groups in society. This overall social descriptive utility is of importance to management for some general purposes, but is of progressively lesser validity when dealing with more specific management issues or site-specific situations. In this situation, the context within which values are being considered will direct the type and specificity of values defined. No overall unifying classification framework has emerged that can systematically incorporate all applicable values in any given situation. As with many

researchers before and since, Rokeach (1973, 1979) recognized the presence of different value perspectives within the realm of overall values. It has been acknowledged that while the array of underlying values was relatively consistent among all people, the relative importance of the different values can vary greatly. As demonstrated by the inter-group comparisons made originally by Rokeach (1973), these flexible value systems (or orientations) can vary considerably according to many personal, situational and other context factors. What must also be acknowledged is that there will always need to be consideration of a hierarchy of value perspectives, applying to different levels of value specificity and different orientations of value interest. In other words, investigation of value issues will be about understanding a series of contextual value orientations, depending on the issue being considered.

Rather than focus on the use of value classifications to assist management applications, a more useful understanding of potential value utility is provided by considering a fundamental distinction of value contexts. Based on value overviews in Brown (1984), Brown and Manfredo (1987), Burningham and O'Brien (1994), Kuentzel and Freeman (1994), Kuentzel and others (1997), Williams and Watson (this proceedings), and with reference to perspectives gathered from numerous other literature, it is possible to identify two simplified but usefully different orientations for values - 'held' values and 'assigned' values¹.

Held Values

The 'held' value orientation is based on the premise that people hold many common values, and that these shared values guide behaviors, interpretations and judgments in a society. Values are understood as being beliefs that exist in a given culture and are socialized through culture and learning into our individual identities (Williams and Watson, this proceedings). We are not born with these values, but we are born into cultures, societies, and communities that promote, teach and impart their values to us (Smith 1977). While these values are acknowledged as being no more than socio-psychological constructs, where commonly present, they are pragmatically considered as 'social facts' and as virtual entities in themselves. In other words, they are conceptions of the desirable that people have or 'hold' where the values are implicit in the subject (the individual or the group) rather than attached to the object (Burningham and O'Brien 1994). In fact they are referred to as 'held' values, after the definition as such by Brown (1984). This context is demonstrated in the statement from Vaske and Donnelly (1999: p. 523), "Debate regarding how national forests should be managed often occurs because different interest groups hold different values."

¹ A third type of 'discourse' values relate to a perspective on 'held' values that emphasizes their essentially transitional/transactional nature and the changes that can occur in them. With new experience, insight and perspectives, people and sometimes groups can alter the value composition and saliency within their personal 'held value' assemblages (Smith 1977; Burningham and O'Brien 1994; Kuentzel and Freeman 1994; Kuentzel and others 1997; Williams and Watson, this proceedings). For the purpose of this paper, space constraints, and acknowledging this distinction, all reference to 'discourse values' can be included implicitly in discussion of 'held values' above.

Further to this, it has been determined that 'held' values can be viewed as being either desirable 'end-states' or 'modes of conduct' (Brown 1984; Rokeach 1973). Values that can be considered desirable end-states such as freedom or happiness are most commonly referred to as 'terminal' values. These are values in the context of desired goals or outcomes—the 'ends' values. Values that can be considered desirable modes of conduct such as honesty, loyalty and compassion are most commonly referred to as 'instrumental' values. These are values in the context of desired ways of being and behaving—the 'means' values.

Overall, there appears to be general agreement in the literature that there are five main features that are common to most definitions of the value concept (Rokeach 1973; Schwartz 1992, 1994; Schwartz and Bilsky 1987). As presented by Schwartz (1994), a value is "a belief; pertaining to desirable end states or modes of conduct; that transcends specific situations; guides selection or evaluation of behavior, people and events; and is ordered by importance relative to other values to form a system of value priorities" (p. 20). These shared 'held' values are what most sociologists think of when the term 'values' comes up (Williams and Watson, this proceedings), and have been the subject of extensive research effort for many years. However, this conception of socially held value, independent of the value object, fundamentally differs from the value concepts underlying any discussion of assigned values in park management. While focus on 'held' values is useful to managers for understanding the motivations, attitudes and preferences of visitors in general terms, more specific and finer scale issues of site-based management concern require consideration of another value orientation that emphasizes a more 'theme' and 'object' orientation

Assigned Values

The 'assigned' value orientation is based on the premise that definable objects hold some value for people, which they have attributed to those objects individually, or as part of some wider social perspective. This is where values are linked to the object rather than the subject (Burningham and O'Brien 1994), as is the case for 'held' values. In this context, the term 'object' often has a broad meaning. When describing such objects, Brown and Manfredo (1987) included a variety of physically definable things including goods, services, ideas, behaviors, opportunities, outcomes, experiences, and benefits. More usually, as they themselves note, value is assigned to the more tangible phenomena. In this context, value is usually derived from the function that an object is perceived to serve for providing desired outcomes. These outcomes may range from some form of personal psychological affirmation, through market consumption, to some more abstract contribution to an ecosystem life support role. This orientation also encompasses the particular value systems of worth and exchange associated with economics, based as they are on the evaluations of potential utilities of objects. These sorts of values are the subject matter for research questions or management statements about the 'values of something'. Brown (1984) refers to this as the 'object realm' of values, and values in this context are usually referred to as 'assigned' or 'attributed' values. In other words, these are the values specifically associated with object things, and the

contributions made to other desired outcomes by these object things.

Another key distinction among these object-oriented values is also apparent because there are values about things and values of things (Brown and Manfredi 1987). As put by Burningham and O'Brien (1994), this is the distinction between the value attributed to an object due to either some intrinsic quality or relational quality of the object itself. This is emphasized through the way we ask the following questions: What *are the values* of that object? What *is the value* of that object? The former question addresses the concept of an object holding a set of 'values' for a number of attributed reasons, each collectively important to social groupings of varying size and perspective. These are the values 'about' the object. Usually those reasons will be related to preferred attributes of, or preferences associated with, the object; its meanings; and the desired outcomes to which it contributes. This perspective is often a holistic and descriptive view of the object in itself, and may refer to a variety of valued features.

By contrast, when asking the second question, what is the value of that object, we are engaged in some form of direct context-related valuation. These are the values 'of' the object. Here we are making a judgment about the functional worth of something—for what purpose or outcome does that object have value, and how relatively valuable is it in doing this when compared with the contributions of other objects, or application of the object for other outcomes? What does it represent or mean to us that we assign it 'value?' Clearly, this will depend on the context from which we are asking the questions. Of particular interest here is that Brown (1984) stated that assigned values can be specified as particular types, such as social values, historical values, commercial value and recreational values. To that list we could add conservation values. The objects of our attention do not change, but what changes are our views of those objects (Brown and Manfredi 1987). If our interest is historic resource management, our objects value context could be in the extent of its role in contributing to our desired historic outcomes.

Such a distinction between held and assigned values is fundamental (Brown 1984). On the one hand we might say that someone "has a value" or we talk of someone's "values," and on the other hand we might refer to "the value" or "the values" of an object, or that an experience "has value." The assigned values relate to the importance of the thing being valued. With these subtle but quite fundamental distinctions, it is often not always clear whether held or assigned values are being implied. These values are, after all socially defined constructs, in what Brown (1984) refers to as the 'conceptual realm' of values. We are either talking about the values that people hold which affect how they relate to some conservation issue or relationship, or the values specifically associated with different things in conservation. These distinctions could be endlessly debated, but from a pragmatic management perspective, the main requirement is that when discussing value issues, the value context is made explicit. This type of assigned-object value perspective relates well to management practice, as managers practically deal with physical things and their meanings in specific places. Improved contextual understanding and specification of assigned values in place gives managers better information on site priorities, and a better context for judging such

priorities and setting appropriate site-specific management objectives.

A Value in Place Context For DOC

When exploring means to achieve a more pragmatic contextual direction for value specification, Rokeach (1973) observed that one basis for deriving a more useful contextual value classification was that it was just as meaningful to discuss 'institutional values' as it was to discuss 'individual values.' Expanding on this, Rokeach (1979) distinguished cultural, societal, organizational and group values at a sociological level from individual values at a personal psychological level. Whatever terminology we accept for labeling collective value orientations, this perspective is important in providing a pragmatic means of coping with the immense possible variety of value combinations. However, when discussing the lack of any generally accepted theories for value classification, Schwartz (1994) did note that Rokeach had suggested an approach which he had never really elaborated on—to classify values according to certain societal institutions with which they could be associated. In that context, Rokeach (1973) had defined an institution as a social organization that has evolved in society and has become associated with the task of maintaining and enhancing selected subsets of values, and in their transmission across generations. Subsequently, when discussing this concept specifically as a form of value 'specialization,' Rokeach (1979) stated that, "It is as if the total spectrum of human values has, through a process of evolution or historical development, been divided up and 'assigned' to the several social institutions for their specialized transmission and implementation" (p. 51). Following this lead, the institution of religion can be defined as one specializing in the transmission, maintenance and enhancement of a cluster of values identified as 'religious values.' Similarly, the institution of science specializes in a cluster of values we might call 'scientific values.' Other types of institutional orientations referred to in the same manner by Rokeach (1973, 1979) included political, economic, legal, organizational, group and family. Notably absent from these examples was any mention of an environmental institution. By definition, such an environmental institution would be those social arrangements specializing in the transmission, maintenance and enhancement of what we might term 'environmental values.'

In most societies such an environmental institution would incorporate the central and local government agencies with environmental responsibilities, various non-governmental bodies and advocacy groups, and other groups and individuals actively involved in environmental use and protection. It is these environmental values that are the main institutional concern of land management and conservation agencies such as DOC. Such an institutional perspective on value classification is a very useful way (Williams 1979) in which to concentrate on a particular set of values that are prominent for a particular functional purpose.

The purposes of conservation management agencies are refined through guiding legislation from an interpretation of what society wants, and how it would like the agencies to achieve this. As stated by Eagles and McCool (2002),

"Parks are political manifestations of a society's interest in protecting its natural and cultural heritage" (p. 148). These conservation purposes are broadly defined through legislation and statutory management processes that include specification of objectives that guide an agency's work. The fundamentals of DOC's value context are derived primarily from the Conservation Act 1987², where the key functions are broadly to:

- Manage land and other natural and historic resources held under the Conservation Act;
- Preserve indigenous freshwater fisheries, protect recreational freshwater fisheries and habitats;
- Advocate conservation of natural and historic resources generally;
- Promote the benefits of conservation of natural and historic resources to present and future generations;
- Prepare, provide, distribute, promote and publicize conservation information; and
- Foster recreation and allow tourism, to the extent that the use of any natural and historic resource is not inconsistent with its conservation.

To represent the institutional values it represents, DOC has defined its mission: "To conserve New Zealand's natural and historic heritage for all to enjoy now and in the future," and its vision: "New Zealand's natural and historic heritage is protected; people enjoy it and are involved with the Department in its conservation." This mission, along with that of many similar management agencies³, is indicative of priority being assigned to a quite consistently oriented set of values. Based on the fundamental premise of protecting indigenous environmental qualities, allowance is also made for protecting features of historic and cultural heritage, and for allowing qualified contemporary uses for recreation and tourism. Taken together, this value orientation can be most appropriately termed 'Conservation Values.' These conservation values would be assigned to those things that are of importance for 'conservation purposes.'

To help achieve this vision and fulfill its legislated conservation responsibilities, DOC identified two outcomes that represent its overarching conservation purposes. These were developed using the Conservation Act as a guide, and in particular the Act's definition of conservation: "The preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations." On this basis, DOC's main conservation purposes are to achieve the two ultimate outcomes of:

- Protection: New Zealand's natural and historic heritage is protected and restored; and
- Appreciation: People enjoy and benefit from New Zealand's natural and historic heritage and are connected with conservation.

These have been refined into more specific intermediate outcomes that provide more refined conservation value contexts. While the first five are normally associated with 'Protection' and the latter three with 'Appreciation,' together they represent the core institutional values that are DOC's fundamental business. While these could be reformulated in more value-oriented terms, it is clear that in terms of being desired outcomes they are fundamentally value statements:

- The natural character of managed places is maintained or improved.
- The damage from harmful organisms established in New Zealand is reduced.
- Managed threatened species have a lower risk of extinction.
- A representative range of New Zealand's environments is protected.
- A representative range of historic and cultural heritage is protected, restored and interpreted.
- People are aware of, understand and make valued contributions to conservation.
- People have access to and use a range of quality recreation resources.
- Appropriate business (concession) opportunities are allowed and operate in conservation areas.

With these desired outcomes conceptually specified as the conservation values that DOC is striving for, a major advance toward defining values in place has been achieved. The next step toward that goal is by applying an 'assets' approach to consideration of these values. There are numerous definitions of the term 'asset,' as any online search will show. However the common themes emerging from asset definitions emphasize intrinsic components of object, value, importance, advantage, responsibility and control. Assets are things that are valued, which can confer some advantage and are under some form of control. If these types of 'assets' can be defined in place for recreation and conservation management purposes, then the potential of management systems such as LAC could be more readily fulfilled, and processes such as management planning more comprehensively informed.

When referring to the concept of managing for values in place, the main pragmatic conclusion made here is that for practical management purposes, conservation values should be as much as possible conceived of as physical things that are managed, and in that context should be dealt with in asset management systems. Or in other words, all conservation assets that you have a management interest in should be in an Asset Management System. By this approach, the things that are important for advancing all our conservation value outcomes can be identified, located, monitored and managed relative to other things that affect them. How this can be practically achieved is demonstrated by the use DOC is making of its Visitor Asset Management System (VAMS)

² Other legislation exists in support of this but is not explored in this example of the conceptual approach.

³ Similar mission statements include that of Parks Canada, "Building our Future Together;" the U.S. National Parks Service, "Caring for America's Heritage;" the U.S. Forest Service, "Caring for the Land and Serving People;" Environment Australia, "National leadership in the protection and conservation of the environment;" and, The New South Wales Parks and Wildlife Service, "Working with people and communities to protect and conserve natural and cultural heritage in the NSW landscape."

tool and the possibilities suggested for its functional expansion.

The Visitor Asset Management System (Vams)

While there may be many expressions of value, value classifications and significant theoretical and conceptual advances, none of this aids managers if it cannot be applied to specific decision-making contexts. This relies on specific and systematic links being established between values, places, issues and management specifications. Asset management is the combination of management, financial and operational practices applied to an asset with the objective of providing the required beneficial outcomes in the most cost effective way. It can advance the desired conservation outcomes from stewardship responsibilities by providing improved:

- Accountability identification and evaluation
- Ability to demonstrate that goods and services are delivered effectively and efficiently
- Ability to balance service/price quality tradeoffs
- Ability to benchmark against other organizations
- Communication with all stakeholders (internal and external)
- Understanding between stakeholders and managers
- Stakeholder satisfaction
- Risk management—assessing consequences of failure
- Decision making process—assessing alternatives and priorities
- Financial efficiency through cost benefit analysis
- Forward capital expenditure planning and funding bids
- Recognition of all costs of asset stewardship responsibility

In this regard DOC has a powerful and unique tool designed by managers for managers. VAMS is effectively an applied data warehouse. However, it goes beyond simply being a repository for information. It is based upon a purpose-based definition of particular geographic places (sites) and includes specific links and processes to enable the programming, prioritizing and reporting of specific work tasks (fig. 1). These are based on a set of 'rules' written into the operating system, which are driven by programmed lifecycle models and condition standards for key 'assets.' In simple functional terms VAMS is based on defining particular spatial places and then attaching indexed links to key data stored elsewhere, which can be referenced to that place. Processes and tools for asset inventory, assessment monitoring, priority setting and work scheduling are also incorporated. Best practice operational procedures and standardized data management hardware and software are provided at the field office level, and the centrally managed national data management system is supported with dedicated technical support and helpdesk staff.

Each 'site' is an objectively defined spatial area based on the type of visitor use, known uses, the facilities provided there, the most efficient management of the area, plus a dose of informed common sense about what is going on there. At present, the spatial units of VAMS are defined predominantly on the basis of visitor use sites where a large variety of visitor management assets are located. This definition is a pragmatic knowledge-based qualitative process rather than a data-based quantitative specification. More objectively defined, the management assets at these sites are those physical 'things' that require management investment of time and resources to manage them to set standards of safety and service quality.

The entire visitor management network on the conservation lands managed by DOC, which comprise approximately

Figure1—Key components of VAMS.

Assets	Anything that DOC does work on. Each asset has its own unique number which is stored on the VAMS database, along with inventory, work task and life cycle data. Each asset record contains specific information relating to that asset.
Sites	A defined area of particular management interest. Definition was initially based around locations of visitor facilities and services, including standards for meeting specific visitor needs. But sites can be conceptually defined on any basis.
Life cycle modeling	Developed for all assets and facilities to provide staff with an effective way to cost, prioritize and program work and to produce national figures to support bids for additional funding. Standard models are proved but these can be customized.
Work tracking	Work planning systems to show for every asset what work was planned, has been done, when it was done, what still needs to be done, and financial implications.
Reporting tools	Standard reporting formats to provide answers to specific questions, and utility to develop customized queries as required.
Datalogger function	Standardized handheld data loggers used for all field data collection and transfer to VAMS databases in the office. Supporting information and operational procedures are also included for specific tasks as required.
Datalogger programs	Programs provided to enable staff in the field to inventory, inspect and record work electronically, to download data, and to transfer software upgrades to any field equipment requiring it (for example, visitor counters).
System support	Specialist staff supporting the VAMS system, regular upgrades as required, and helpdesk services for specialist functions through specialist software providers.
Best practice guidelines	Operational tasks are supported by a best practice guideline and manual system, key steps of which are built in to VAMS tasks and processes on the data loggers.

30 percent of New Zealand's land area, is currently managed through VAMS in this manner. To date this network comprises 4,142 sites (for example, track, road, amenity area, historic) including 211 defined as actively managed historic sites subject to visitor use. Included within these sites are over 12,800 km (7,954 miles) of walking/hiking tracks; almost 1,000 backcountry huts; over 13,300 structures of various types (for example, bridges, boardwalks, stairs, jetties, moorings, boardwalks, picnic tables, water supplies, visitor counters, etc.); over 1,500 direction and interpretation signs; 1,600 toilets; 26 visitor centers and over 2,300 km (1,429 miles) of roads. This is a very detailed and comprehensive system, covering a wide variety of different components in a systematic standardized system. Data are stored in a tiered structure from the level of individual assets, which are located within the next category level of 'site,' ordered together within 50 management areas which are then grouped into the 13 conservancies that comprise DOC's national management responsibility. Figure 2 shows a small example of this extensive coverage. This system effectively links systematically defined assets and sites in space with integrated management processes.

The information stored about specific assets can be as extensive as desired or available. For example, in relation to huts it can include hut location and setting (such as, ID numbers, GPS references, photos, diagrams); physical attributes (such as, substructure, superstructure, internal fittings, engineering reports, photos, diagrams); services provided (such as, provision of hut wardens, cleaning services, information services); and work requirements (such as, work history, schedules, costings). Information about visitor sites includes: physical components; summary detail about any known natural, historical and social values associated with the location; characteristics of the visitor experience that make the place special; levels and types of use; management intentions for the site; publications and information resources applicable to the site; links to other sites with similar management requirements; and, impacts considered to affect the area. If new opportunities and resources arise that could enable improved information to be added, processes exist for regular VAMS updates and new component implementations as required. In this respect, VAMS is a living system that is constantly evolving, and it is this capability that is enabling it to be used to deal with other types of non-visitor assets and values.

Initially VAMS functioned as a facility asset management system, but over time it has become apparent that this very practical functionality could be applied to other aspects of sites visited by people. If we could define a physical facility 'asset,' its state, lifecycle, threats and maintenance requirements, why couldn't we do so for any other defined 'assets'—namely the valued 'things' we are striving to protect? The first expression of this approach applied to the historic sector, which developed HAMS (Historic Asset Management), based on actively managed historic assets and sites. HAMS was originally developed independent of VAMS but the obvious synergies were soon recognized and it was integrated into VAMS. This added around 650 new actively managed historic sites and 1,601 historic assets to VAMS. The next VAMS enhancement project underway is to import data from New Zealand's national archaeological database to create a new set of archaeological sites within the VAMS framework. DOC

manages the Central Index of New Zealand Historical Sites on behalf of the New Zealand Archaeological Association. This includes over 60,000 defined archaeological sites, of which around 12,000 are managed on conservation lands by DOC. The aim is that these be incorporated into VAMS and managed alongside the existing historic and visitor assets. These developments represent a direction being taken that aims to apply an 'asset paradigm' to further areas of DOC business in order to more widely realize the benefits already demonstrated for visitor management. Attempting to apply such an assets paradigm to other themes of conservation value represents a very challenging direction, but one that seems worth exploring given the potential demonstrated to date.

New Directions With VAMS

VAMS provides a management system through which conservation values, defined in asset terms, can be systematically located in place and managed. An enhanced capability to do so for a wider range of conservation values would significantly advance the ability of conservation managers to systematically define values in place, to compare the interactions of value priorities in these places, and from these considerations derive more site-specific management objectives. This kind of value in place system, set as it is in a spatial framework would lend itself to positive applications through other powerful management tools such as Geographic Information Systems. These can display this type of spatial information, but it is important to recognize that they are only the front end interface that is reliant on a larger data warehouse type of functionality behind the scenes. VAMS is our pragmatic means to organize this information in the structured and integrative way that can allow powerful GIS applications to be applied to best effect. It reflects its origin in a visitor facility management perspective, but the vision is that this asset management functionality could be applied to wider natural and historic assets - with the assets being both the values and the threats to them that we are trying to manage. The status and relationships between different asset types can then be reported in a consistent way.

The first and major challenge from this point is to increase understanding and acceptance that such an asset paradigm is worth exploring. Second is to determine various means by which to do this, with the wider range value information that is DOC's core business. This is obviously far too vast a task to be done as a single exercise. But thematic value directions derived from DOC's intermediate outcomes as listed previously can offer new perspective on developing more pragmatic value subdivisions and asset definitions. For example, arranged according to the three main disciplinary areas of management and research that characterize most conservation management agencies, the key thematic value themes could be those values and assets associated with:

- Physical and Biological Values
 - Maintained and improved natural character
 - Reduced damage from harmful organisms
 - Reduced risk to threatened species
 - An improved representative range of environments
- Social Importance Values
 - An improved representative range of historic and

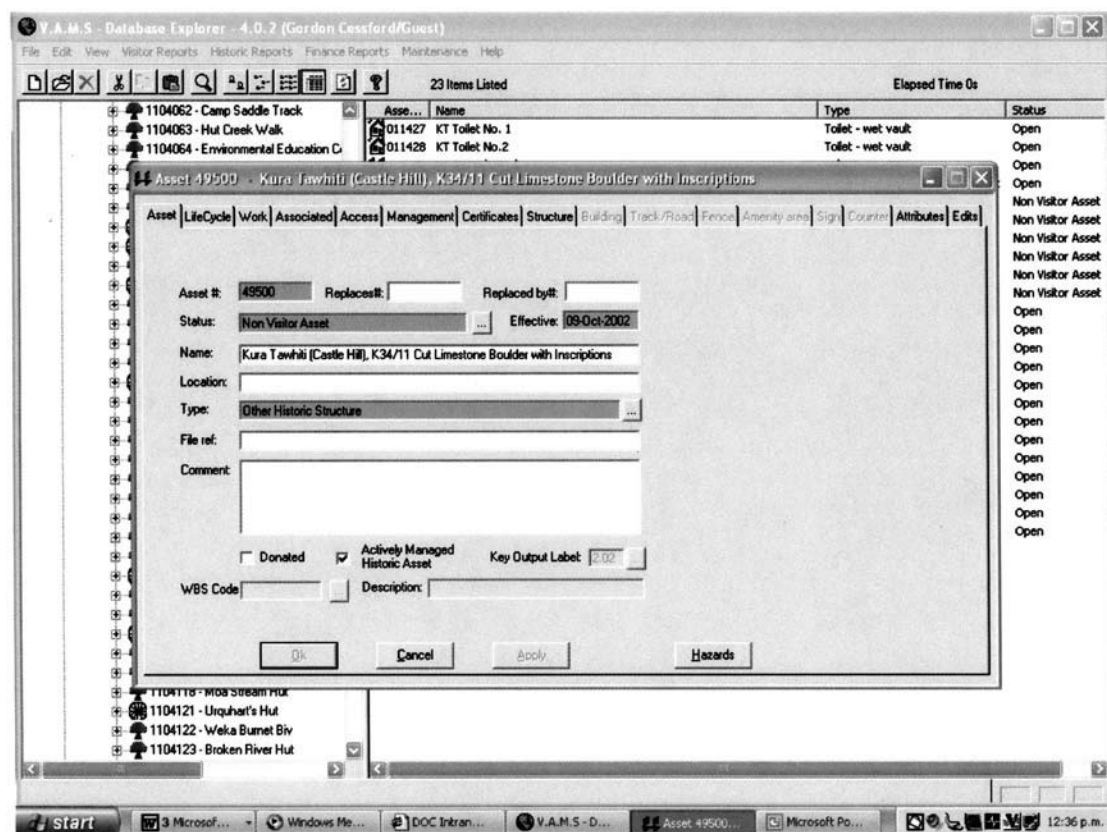
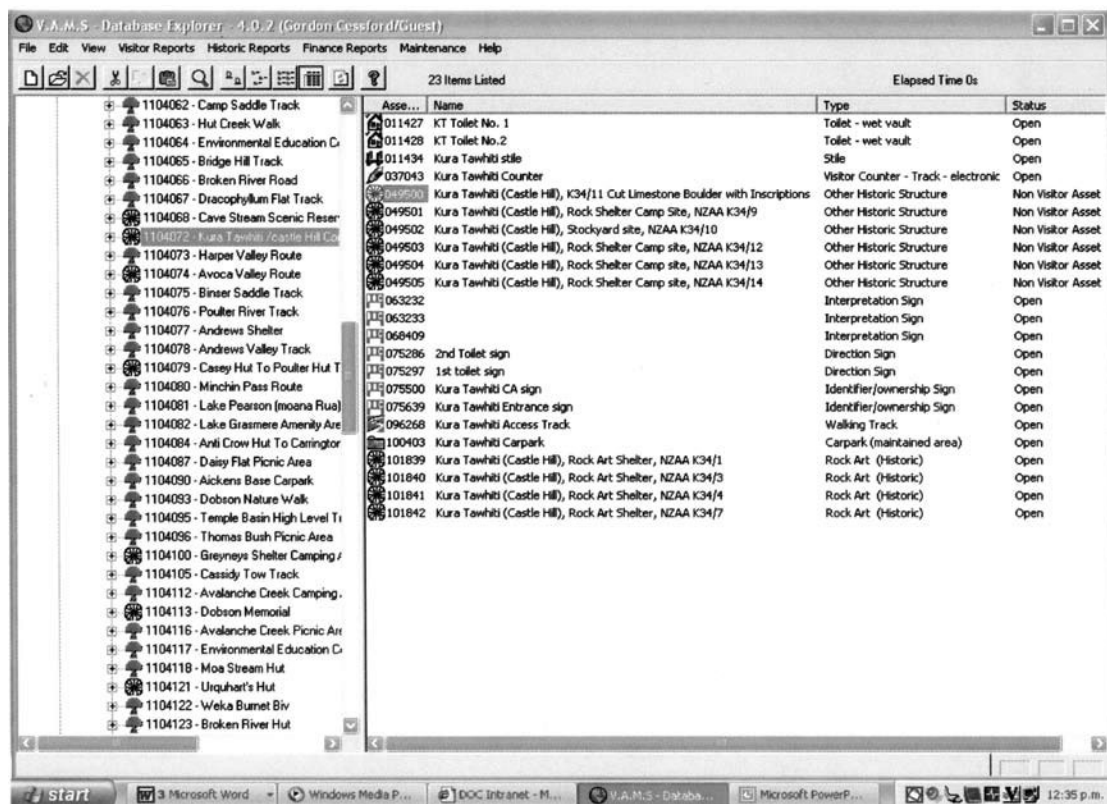


Figure 2—Sample pages from the online Visitor Asset Management System (VAMS).

cultural heritage

Opportunities to improve conservation awareness and contribution

- Visitor Experience Values

Access to and opportunities for quality recreation experiences

Opportunities for appropriate business opportunities

What would be the assets associated with any of these? Where are they located and what is their status? Answering these questions remains the main challenge even if an asset approach is accepted. But an asset approach does give a pragmatic and integrated management template within which existing knowledge can be reformulated, new knowledge created, and all knowledge better applied. Some direction is possible by considering the current state of asset-related knowledge in the three main management and research disciplinary areas referred to.

When considering physical and biological values, the taxonomy, classification, inventory and specialist conditional research is extensive here. Much of what is fundamentally required in establishing an asset management approach has been done. While the range of this work is diverse, fragmented and inconsistent, the basic understandings and specifications for an assets perspective are largely in place. The important features are known and identified, and much specific research on asset status, interactions, threats⁴ and management has been done. After the visitor facility basis for developing the VAMS approach, and the archaeological database information, the next most accessible sector for large scale and systematic specification of values in place is the biophysical sector. The major direction required here, assuming an asset approach is supported, is towards establishing initiatives for coordination and standardization of information towards an outcome of this type of asset-based system. In this information age, we pose the question, why should information users have to repeatedly seek and query the information holders when needs arise? Could not the information be documented and shared as a best practice resource accessible to all? In DOC there is currently extensive effort being made to secure resources to initiate development of a Natural Heritage Management System (NHMS). While this is not yet being conceived of in asset management terms like those of VAMS, there is potential that part of its direction could provide the outcome of site specific natural values in place which could be incorporated into a future evolved version of VAMS.

When considering the visitor experience and social importance values, the taxonomy, classification, inventory and specialist conditional research is much less defined. Unlike the physical and biological sector the criteria for determining importance is much less consistently defined and much more contextually subjective. The need to engage in much more cumulative research and community discourse is clear here. New research tools need to be developed to provide us with more specific value definitions than are possible through conceptual frameworks such as ROS. Some of the current work in DOC is attempting to derive more refined visitor expressions of values in place. For example, a recent case study of the Kura Tawhiti Conservation Area assessed the mainstream sources of conservation value information that were available, and conducted an on-site user survey to try and gain an additional refined visitor perspective on what they

valued there. Another recent methodological development project is attempting to determine if the use of a combination of open-ended qualitative enquiry coupled with a cognitive mapping approach can identify what visitors consider the special experiential features of specific places. This is being done in an attempt to develop a monitoring-style tool to provide information that could be added to sites defined in VAMS. The main effort required here is in developing tools or approaches that can provide such refined site-specific value references. As for determining social importance outside of that included in physical and biological disciplines, the main approaches remain those based on consultative processes.

On this basis, the most significant gains in the shorter term could be made by developing the acceptance and means by which the physical and biological values could be treated in an asset context. For other social and experience based values, more methodological development is required. In the short term, any site specific highlights raised by particular research work can be added to VAMS sites. The main pragmatic advance that could be made in the short term would most likely be based on identifying specific groups of visitors, probably based on activity type, and undertaking targeted consultations to identify their priority places. DOC and others are exploring these within many different management processes and they do offer some degree of promise, but need much more research capacity devoted to them and more systematic frameworks in which to be applied. This paper has described one example of some of the new management concepts that are developing and being debated. Some of these are moving toward having the infrastructure and processes in place to apply value specifications to place. But more innovation is required to derive systematic means to actually identify those value specifications. In the meantime, managers will do what managers have always done - they'll do the best they can with what they've got.

Conclusions

It is acknowledged that the complexity of the natural and socio-cultural values related to conservation on public lands makes the concept of 'conservation values' very broad. In the natural environment, there are many different types and scales of natural systems, each containing many different types of features and qualities that people may value. And paralleling this natural complexity are equally complex social (such as, cultural, community, political economic) and psychological (such as, moral, experiential, emotional, intellectual) systems that contain a wide range of different valuation modes and perspectives. But there are pragmatic management choices and directions that can make this complexity more manageable. To reiterate the quote by Cole (2004), "the lack of progress in recreation management largely stems from paralysis during the step of specifying desired end states, standards for acceptable impact levels, and for appropriate experiences or settings in which experiences occur" (p. 16). This paper has proposed a potential direction to help overcome such paralysis.

Given the inherent complexities in a value-oriented perspective, a pragmatic management response has been based on the conclusion that 'we can't manage values but we can manage assets - turn values into an asset context and we have something concrete to work with.' Developing this very

pragmatic value-asset approach has been of great value for visitor management by DOC in New Zealand. It could also represent a potential advance toward establishing a common language of reference for dealing with the extensive variety and volume of issues and interests that are often competing in places managed by conservation managers. From this pragmatic perspective, there appear to be more essential similarities than differences in the various value components included under the label of 'conservation values.' Important conservation and recreation things can be identified and located in place. This common understanding offers a very practical opportunity to apply a more unified values approach to management, and better guidance toward determining site specific conservation management objectives. If it is possible to advance this opportunity as a 'big vision,' in a few years time we may be talking about an acronym for the thing that the VAMS could begin evolving into—CAMS—the Conservation Asset Management System.

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⁴ One conceptual advance recently suggested refers to the concept of threats being assets. Given that a threat to other values is an important thing that we have to actively manage, treating it in asset terms allows us to manage it using all the advantages of an asset management system.