

SCIENCE & RESEARCH INTERNAL REPORT NO.135

**REPORT OF AN ANALYSIS OF
DOC CONSERVANCY INFORMATION**

by

Malcolm Harrison and Les Jones

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REPORT OF AN ANALYSIS OF DOC CONSERVANCY INFORMATION

by

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ABSTRACT

This report describes a survey and analysis of the information needs of East Coast Conservancy of the Department of Conservation. Forty-five databases of various types were identified as being in current use or required for current use. Analysis showed these could be unified into thirteen "applications" which would help better manage conservancy information. A number of information deficiencies were identified and the means to rectify them is discussed.

1 INTRODUCTION

Since the advent of the computer there has been a complete revision of how organisations should think about their information and information processes (Martin 1982, Veryard 1988, Finkelstein 1989, Battaglia 1991, Johnson 1991, Kerr 1991). Information engineering is a science that has developed out of the quest for proven methods of understanding and describing the role and nature of information in businesses. It is also concerned with simplifying databases as far as possible while maintaining maximum overall business efficiency. Some methods recommended for DOC have been described by Harrison (1991). He developed an overview data model to identify the main components of information DOC uses and to show data interrelationships.

The data models of a business, once they have been brought together and integrated, make up a corporate data model. This provides an inventory of information requirements which is invaluable in helping planning, information systems development and the introduction of data handling efficiencies. It is also a useful tool for comparing available information with required information and identifying and specifying shortfalls. In this study, we set out to examine the information requirements in a selected DOC conservancy and to analyse those requirements. The main objectives were to contribute further to the DOC corporate data model, identify some of the more important information priorities in the conservancy and analyse the data in a way that would allow rationalisation and lead to development of improved information tools.

1.1 What is the Nature of Conservation Information?

Conservation information may be described as the information required to carry out the Conservation Act. It is not sufficient however to merely identify what information is needed but also it is important to know where it is needed, when it is needed and by whom, what form it has to be in, how much there is, how frequently it is needed and how urgently. It is also important to know how often it has to be reviewed and/or updated.

Conservation information can be broadly classified under three headings:

Objects such as artefacts, cultural material, species of plants and animals, landforms, landscapes etc.

Locations of objects, events, sites, opportunities etc.

Subjects such as techniques and methods of establishing values, defining relationships, measuring, recording etc.

An associated factor is often necessary before some information can be properly regarded as conservation information.

Time is required to measure trends and rates of change.

Conservation information is usually a combination of one or more of these classifications plus the time variable which explains in part why conservation information is inherently more complex than that of many other businesses.

Conservation information often becomes more valuable with time.

Its worth increases the more it is shared.

Its value and volume require that it be well managed and well understood.

Much conservation information has to be specifically and actively collected rather than being generated in the normal course of business transactions.

2 METHODS

2.1 Getting Representative Conservancy Information

We collected data on the information conservancy staff use in their jobs from a representative cross section of the conservancy. The method used was to go through the conservancy establishment list and select people from each of the various functional areas. These people were then interviewed and in the course of the interviews they were asked who else should be included in the schedule of interviews. The focus of the

selection was on job content and not on personal profile. As a result interviews were carried out with 28 people. The positions selected for interview are listed in Appendix 1.

Interviews lasted on average one hour and the questions followed a structure which ensured that all the required questions were answered; digressions were allowed in order to gain extra information needed where that seemed sensible. (Appendix 2 User requirements survey -Interview outline.)

The results of the interview were recorded by hand at the time and written up in a structured format as soon afterwards as possible. (Appendix 3 User requirements survey-interview write-up format.) The written up notes were then returned to the interviewed person for verification and, where necessary, correction and amendment. The final notes are filed in the project repository held in Science and Research Division.

2.2 Analysis of the Information

The notes were analysed to identify the various components of information. They were grouped according to either their logical association with others or their similarity of function even though the applications in which they were identified might have seemed to be quite different.

As the interviews and analysis progressed some types of information recurred under different names and in seemingly different applications. These duplications were eliminated and the definitions accordingly widened. The result is a succinct "distillation" of conservancy information.

2.3 Identifying Useful Applications

Interviews often examined processes such as issuing a hunting permit or processing kill returns. While these could be developed as "stand alone" systems, analysis showed that hunting permits and kill returns were part of a continuum. When processes like permits, kill returns and hut use are identified and put together then full systems can be recognised. A little extra effort invested in one "stand alone" system could result, with a little modification, in a substantial reduction of required effort in another.

Whether development of an application proceeds depends on its likely use, the amount of work it would save, the need for a fast response to meet contingencies, deadlines or public expectation, its ability to contribute to accuracy, to carry out complex processes unsuitable for manual operation and its relationship with other applications. It is the task of the sponsor of each application, normally the director or senior manager who wants the application developed, to determine those criteria and advocate its development but it requires EMT's broad executive perspective to set priorities.

2.4 External Contacts

During the course of interviews a special note was made of the contacts that conservancy staff had with outside organisations. The nature of those contacts was also

noted. DOC will frequently be judged on how well it transfers to its "client" outside organisations but there was a limit to what could be gleaned in the survey because the conservancy did not have an established computer network at the time.

3 RESULTS

3.1 General Findings

Note: These results reflect the situation that existed in the Eastern Conservancy in August 1990.

The interviews highlighted a number of general information issues well known to DOC staff:

Many staff felt their information needs were not being met especially with respect to historical information.

Some information already held in the conservancy, and held in a suitable format, could be put to multiple use but other potential users, especially those in Head Office, are not aware of its existence.

Some databases are being independently developed for exactly the same purpose in many different locations.

Information is not always being entered and/or verified by the staff who are best able to do so.

3.1.1 Communications with head office

The volume and complexity of enquiries and the short deadlines indicate there is a need for the development of information systems that provide policy divisions with executive support.

3.1.2 Business planning

Business planning is a complex iterative process which is currently very time and effort intensive. This area merits a separate study to develop procedures and techniques for setting priorities and allocating funds and thereby simplifying the process.

3.1.3 Business objectives

There is a conflict of objective in those business units which are required to meet revenue targets and which also have a conservation advocacy role. Effort spent on one role is often to the detriment of the other role. This "finding" has relevance to business analysis in general and function analysis in particular. It is fundamental to establish the

functions of various activities in DOC before proceeding with the development of a logical model of the information required to carry out those functions.

3.1.4 Historical information

Historical information is very important for both management and business planning. It is hard to acquire in Gisborne. The future availability of historic data for conservation depends on the collection and storage of current conservation information and the provision for its proper management. These are seen as an urgent requirements.

3.1.5 Project management

Conservancy and field centres have implemented their own manual and spreadsheet based financial systems for monitoring expenditure and revenue figures. There are two reasons for the development of these supplementary systems:

Not all managers have access to DOCFIN but need to monitor their operating budgets on a daily basis.

Project and conservancy management need to know what has been committed but DOCFIN does not provide for the record of committals.

Individual time is not always being accurately recorded against appropriate projects and key outputs. One result of this practice is a lack of information for contingency planning: e.g. some conservancy staff are not able to record their time appropriately:

if they are called out to help with firefighting or whale strandings when it is not an integral part of their particular responsibilities.

when they contribute to head office queries and reports. E.g. this user requirements survey has taken about 75 hours of conservancy staff time but none of this was recorded against this project.

3.1.6 Communications

Internal conservancy communication occurs by a mix of technology (e.g. fax, radio, mail, phone) with some parts of the organisation much worse off than others in the systems available to them.

External communications with other organisations is Listed (see Appendix 4) and is made by a variety of technologies. Communication at a personal level is not always possible with "efficient" technology" but it is a special and important requirement of some DOC functions.

3.2 Primary Databases

So far 45 "databases" have been identified. These are collections of information all related to a particular conservancy activity. Some are PC based (using dBase, Excel or some other software package), some are card based and others have not been in any form (but are nevertheless important). These primary databases are listed in Appendix 5.

3.3 Applications

These databases were analysed and linked by function to produce a secondary list of 13 potential conservation applications. In addition to these we also identified Project Management as an important application that was required at the conservancy. Project Management has strong links with both Finance and Personnel databases.

- DISTRIBUTION
- RECREATION
- PERMITS
- DOCUMENTS
- PEOPLE
- RESOURCES
- LEGAL
- LAND
- FIRE REGISTER
- WHALE STRANDINGS
- PERSONNEL
- PROJECT MANAGEMENT
- FINANCE

The relationship between the applications and the primary databases is also shown in Appendix

3.4 Data Models in Preparation

Some of the primary databases have been identified as likely modules and have been analysed to differing levels of detail. A list of data models in preparation is given below.

| APPLICATION | LEVEL OF DETAIL' |
|---------------------------|------------------|
| Management plan* | entities |
| Coastal resources* | attributes |
| Whale strandings | attributes |
| Fencing | attributes |
| Hearings | entities |
| Skills register | attributes |

| | |
|---------------------------|------------|
| Operations* | attributes |
| Statutory land management | entities |
| Law enforcement | entities |
| Permits | attributes |

¹Level of detail as used here is explained in Harrison 1991.

* These models are not entirely derived from information gathered in the Gisborne survey but are supplemented with information from other sources.

Data models are currently held in Science & Research Division and are available from the authors on request.

3.5 Entities Identified to Date

Entities are identified and then, as a result of analysis they are refined and defined. Ideally the sum of all the DOC entity definitions should be a total definition of conservation information. Unfortunately differences between some entities, while appearing to be very small, are from an information point of view actually very considerable. To be specific about these differences and make them as obvious as they really are requires often wordy and complicated entity names and/or definitions. No doubt as time goes by and we become more familiar with our information some of these definitions and entity names will be simplified, but at the moment we must make a start and to build the DOC data dictionary. A list of entities and their draft provisional definitions is given in Appendix 6. This list of identified entities with definitions should provide a starting point for discussion leading to definitions with DOC-wide acceptance and use. Before those discussions can start there is a further level of detail required which sets out exactly what information is associated with each of the entities. For example the entity

PERSON consists of:-
 forename
 surname
 address
 phone number

with possible additional fields of:-
 name to be called by
 title

Each field requires a format specification to be standard throughout DOC. Agreement must be reached on how long each field will be, how many lines should be available to record address, should there be a difference between residential and postal addresses and what are the rules to deal with Mac or Mc in a surname etc.

In the process of deriving entities, even further detail was required in the form deriving their associated attributes. Although not listed here the attributes of most entities are available but in most cases they do not have format specifications.

3.6 Contacts

Appendix 4 lists all the external contacts identified during interviews. No attempt was made to further evaluate "contacts". Some external contact lends itself to direct linkage with outside computer systems -such as with IRD and with DSW? -while other contacts would be unsatisfactory if made by computer -such as with local Iwi.

4 DISCUSSION

Information analysis is an ongoing iterative process of developing individual applications within the context of the whole of all relevant information systems. The applications identified and modelled have to be reviewed in the light of the whole and-modified where appropriate.

This report aims to start the process of building an information system which is as integrated as is practically possible. We have identified possible applications and shown how many of them are interrelated. It is now over to the users to accord them some order of priority. Those with high priority can be further developed as models until they meet the requirements of all users. This report has attempted to list the major users of the applications so, after confirmation that the user list is comprehensive, all interests can be sure of an input into development. Appendix 5 sets out the databases against the conservancy groups which could use them. This table is qualitative only and further work is required to add a quantitative dimension.

The derivation of most of the entities represents a major part of the work completed. It is proposed that each of the applications listed be published separately, showing entities, attributes and relationships. Many of the applications are already in draft form. It is proposed that the development of draft applications would proceed in consultation with sponsors who would take responsibility for future control of the application. The benefits of such models will increase as the Department implements them as new applications and moves to a more integrated database structure.

5 ACKNOWLEDGEMENTS

This survey was made possible only by the considerable help from a great many people throughout DOC, particularly those in the East Coast Conservancy. Terry was an early contributor to the selection of the conservancy and the pilot survey. The conservancy management team provided support while in the conservancy and encouraged staff to assist with their time for interviews. Throughout the conservancy the staff were welcoming and unstinting in their effort to provide the information sought. Some of the interviews dealt with complex information and we are grateful to all the staff for their patience. Sarah Wilson provided advice and we are grateful to Rob McColl and Euan Nicol for their reviews of drafts of this report.

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Appendix 1: The positions selected for interview.

Personnel administration officer
Personnel officer
Receptionist
Information officer
Business finance manager
Senior finance officer
Manager protection use and advocacy
SCO coastal and marine
CO coastal and marine (Opotiki)
SCO recreation tourism and fire
SCO wild animal control adventive plants
SCO protected species habitat
CO protected species habitat
Draughting officer (contract with DOSLI)
CO statutory management
Conservation Board executive officer/secretary
CO journalism & information
CO education & community involvement
SCO management/statutory planning
Regional Conservator
Operations manager
Gisborne field centre manager
Wairoa field centre manager
Aniwaniwa field centre manager
CO field centre support
Murupara field centre manager
CO field centre support
Opotiki field centre manager
CO Taneatua field base
CO Taneatua field centre support
Manager Waikaremoana motor camp
Conservation worker Waikaremoana motor camp
Manager Telecoms
Manager Morere Springs
Manager Matawhero Nursery

Shared positions:

*Lawyer (Rotorua based), *Statutory management planner (Rotorua based),
*Advisory scientist (Napier based), *Archaeologist (Gisborne based)

Non-established positions:

* Iwi liaison, * Maori land.
* not interviewed.

Appendix 2 User requirements survey - interview outline.

(Note that this outline was sent in advance to people selected for interview.)

What are you required to achieve?

- What are your most important responsibilities? (Maximum of ten)

How are you going to meet them?

- What are the main activities involved for each of your responsibilities?
(Maximum five per responsibility)

Is there anything likely to prevent you from succeeding?

- What are your main problems? (Maximum five per responsibility)

What information is most important to you to achieve your goals?

What sort of information do you need? (Maps, photos, data, references, etc)

How often do you need it? (Hourly, daily, weekly, monthly, yearly)

How urgently do you need it? (Immediately, same day, overnight, few days, few weeks, longer)

How much do you need? (A4 pages, hours of conversation, minutes of phone time,....where these measures apply.)

How vital is it?

Where do you get it from? (Your office, your conservancy, within DOC, non-Govt., other Govt...)

How do you get it? (Phone, letter, verbally, radio, maps, files, references, DOCnet...)

What information do you provide?

What form is it in? (Currently, ideally)

How urgently are you required to provide it?

How often do you have to provide it?

What is it for?

How important is it?

To whom do you provide it? (your office, your conservancy, DOC, other Govt., non-Govt.)

Do you charge for it?

How is your job likely to change?

Are any of your responsibilities changing? (how and why)

Which of your responsibilities depend significantly on availability of operating funds?

What effect do seasonal or yearly changes have on your job? (e.g. fire control)
What new projects, within your area, do you consider should be undertaken?

Appendix 3 Interview record format.

Conservancy:
Position number:
Date:
Interviewed:

Responsibilities:

Activities:

Issues of concern:

DOCnet:

DOCfin:

Conservancy:

DOC:

Information requirements:

Some sources of information:

Information produced:

External contacts:

Critical success factors:

Future changes to jobs:

General comments:

Conservancy External Contacts

| Number of people interviewed | Total | Conservancy Management 4 | Finance 3 | Conservation 3 | Land Management 1 | Information Education 2 | Support 3 | Field Centre 8 | Business Unit 4 |
|----------------------------------|-------|-----------------------------|--------------|-------------------|----------------------|----------------------------|--------------|-------------------|--------------------|
| External Organisations: | | | | | | | | | |
| District council | 12 | 2 | | 1 | 1 | 1 | 1 | 5 | 1 |
| Police | 12 | 2 | | | | | | 7 | 3 |
| Maori community groups | 11 | 2 | | 1 | 1 | | 1 | 5 | 1 |
| Schools | 8 | | | | | 2 | | 5 | 1 |
| Regional Council | 6 | 1 | | 2 | | | 1 | 2 | |
| Suppliers & trades | 5 | | 1 | | | | | 2 | 2 |
| Tourist operators | 5 | 1 | | | | 1 | 1 | 1 | 1 |
| DOSLI | 4 | 1 | | | 1 | 1 | | 1 | |
| Eastlands promotional council | 4 | 2 | 1 | | | 1 | | | |
| Helicopter operators | 4 | 1 | | 1 | | | 1 | | 1 |
| Customers | 3 | | 1 | | | | | | 2 |
| Deerstalkers association | 3 | 1 | | | | | | 2 | |
| Fire Service | 3 | | | | | | | 2 | 1 |
| Friends of Te Urewera | 3 | 1 | | | | | | 1 | 1 |
| Landowners | 3 | | | 1 | 1 | | | 1 | |
| Newspapers local | 3 | | | | | 1 | 1 | 1 | |
| Radio station Local | 3 | | | | | 1 | 1 | 1 | |
| Timberlands | 3 | | | | | | | 2 | 1 |
| Concession holders(& applicants) | 2 | 1 | | | 1 | | | | |
| Dept. Labour | 2 | | 1 | | | | | 1 | |
| E.C. Conservation Board | 2 | 1 | | | | | 1 | | |
| Farmers (= occupants?) | 2 | | | | 1 | | | 1 | |
| Fish & Game Council | 2 | 1 | | | | | 1 | | |
| FRi | 2 | | | 2 | | | | | |
| Health Dept. | 2 | | | | | | | | 2 |
| Inland Revenue | 2 | | 2 | | | | | | |
| Land transfer office | 2 | | | | 1 | | | 1 | |
| Pig hunting clubs | 2 | | | | | | | 2 | |
| Royal Forest & Bird | 2 | 1 | | | | 1 | | | |
| Tasman Forestry | 2 | | | | | | | 1 | 1 |
| Waikaremoana boating assn | 2 | | | | | | | 1 | 1 |
| ACC | 1 | | 1 | | | | | | |
| Botanists | 1 | | | 1 | | | | | |
| Choral society | 1 | | | | | 1 | | | |
| Civil Defence | 1 | | | | | | | | 1 |
| Cleaners | 1 | | 1 | | | | | | |
| Community College | 1 | | | | | | | 1 | |
| Contract hunters | 1 | | | 1 | | | | | |
| Courier companies | 1 | | | | | | 1 | | |
| Department of Social Welfare | 1 | | 1 | | | | | | |
| Dept. for youth affairs | 1 | | | | | 1 | | | |
| DSIR | 1 | | | 1 | | | | | |
| Forestcorp | 1 | 1 | | | | | | | |
| Green party | 1 | | | | | 1 | | | |
| Greenpeace | 1 | | | | | 1 | | | |
| Historic Places Trust | 1 | 1 | | | | | | | |
| Honorary rangers | 1 | | | | | | | 1 | |
| Hospital Board | 1 | | | | | | | | 1 |
| IHC | 1 | | | | | 1 | | | |
| Landcorp | 1 | 1 | | | | | | | |
| Law Society | 1 | | | | 1 | | | | |
| Lawyers | 1 | | | | 1 | | | | |
| Libraries | 1 | | | | | | 1 | | |
| Local Polytechnic | 1 | 1 | | | | | | | |
| MAF | 1 | 1 | | | | | | | |
| Manula society | 1 | | | | | 1 | | | |
| MOT Aviation Division | 1 | | | | | | | 1 | |
| Mountain Safety Council | 1 | | | | | | | 1 | |
| Non-specific Govt. Depts. | 1 | | | | | | | 1 | |
| Park user groups | 1 | | | | | | | 1 | |
| Private hunters | 1 | | | 1 | | | | | |
| Public Relations Office | 1 | | | | | | | 1 | |
| Sponsors | 1 | | | | | 1 | | | |
| Tramping clubs | 1 | 1 | | | | | | | |
| Travel & accomodation | 1 | | 1 | | | | | | |
| Universities | 1 | | | | | | | 1 | |
| Vehicle registration | 1 | | 1 | | | | | | |
| Volunteers | 1 | | | | | | | 1 | |
| Waioa Angling Association | 1 | | | | | | | 1 | |
| Works and Development | 1 | | | | | | | 1 | |
| # DIFFERENT CONTACTS | | 20 | 10 | 10 | 9 | 15 | 11 | 32 | 16 |

Existing Databases and Their Relationship With Proposed Applications

| Databases:- | Total Applications | Distribution | Recreation | Permits | Documents | People | Resources | Legal | Land | Fish | Whale | Finance |
|---|--------------------|--------------|------------|---------|-----------|--------|-----------|-------|------|------|-------|---------|
| Areas requiring legal protection | 1 | | | | | | | | Y | | | |
| Areas with legal protection | 1 | | | | | | | | Y | | | |
| Distribution of endangered species | 1 | Y | | | | | | | | | | |
| Contacts - people of interest to DOC | 3 | | | | | Y | | | | Y | Y | |
| Permits | 3 | | | Y | | | | | | Y | Y | |
| Concessions | 2 | | | Y | | | | | | | | Y |
| Facilities | 4 | | Y | Y | | | Y | | | | | Y |
| Hearings - water rights etc. | 1 | | | | | | | Y | | | | |
| Properties of interest | 1 | | | | | | | | Y | | | |
| Sites of interest | 3 | | | | | | | | Y | Y | Y | |
| Aerial photographs | 1 | | | | Y | | | | | | | |
| References | 1 | | | | Y | | | | | | | |
| Filing system | 1 | | | | Y | | | | | | | |
| Newspaper clippings | 1 | | | | Y | | | | | | | |
| Newspaper notices | 1 | | | | Y | | | | | | | |
| Maps | 1 | | | | Y | | | | | | | |
| Skills register | 2 | | | | | Y | Y | | | | | |
| Finance:- | | | | | | | | | | | | |
|allocation commitment expenditure | 1 | | | | | | | | | | | Y |
|operational - man days, campout etc. | 0 | | | | | | | | | | | |
|cash register | 0 | | | | | | | | | | | |
|stock management | 0 | | | | | | | | | | | |
| Fire register | 1 | | | | | | | | | Y | | |
| Recreational opportunities | 1 | | Y | | | | | | | | | |
| Historic resources | 1 | | | | | | Y | | | | | |
| Recreational use | 1 | | Y | | | | | | | | | |
| Equipment register | 2 | | | | | | Y | | | Y | | |
| Land register | 1 | | | | | | | | Y | | | |
| Leases | 2 | | | | | | | | | | | Y |
| Licences | 2 | | | | | | | | | | | Y |
| Kill returns | 1 | | | | | | | | | | | Y |
| Photographs | 2 | | | | | | | | | | | Y |
| Wild animals - distribution and abundance | 1 | Y | | | | | | | | | | |
| Weeds - distribution and abundance | 1 | Y | | | | | | | | | | |
| Statutory land management | 1 | | | | | | | | Y | | | |
| Land allocation | 1 | | | | | | | | Y | | | |
| Law enforcement | 1 | | | | | | | | | | | |
| Cultural material | 5 | Y | | Y | | Y | Y | Y | | | Y | |
| National sponsors | 1 | | | | | | | | | | | Y |
| Delegation register | 1 | | | | | | | Y | | | | |
| Fencing | 2 | | | | | | | | Y | | | Y |
| Whale stranding | 1 | | | | | | | | | | Y | |
| Volunteers register | 2 | | | | | Y | | | | | Y | |
| Resource management | 2 | | | | | Y | Y | | | Y | | Y |
| Number of existing databases.... | 4 | | | | | | | | | | | |
|in proposed applications | | 4 | 3 | 7 | 7 | 5 | 6 | 3 | 8 | 6 | 6 | 9 |

Appendix 6 A list of entities identified to date draft provisional definitions.

(Note the use of TYPE in an entity name describes a classification of management convenience for that entity. Management convenience may include legal or taxonomic classification. E.g. a "Species type" could be "pest", "indigenous", "insect" etc. and a particular species could be classified in more than one "Species type".

| | |
|---------------------------|---|
| ACT | an act of law under which DOC has a responsibility or involvement. |
| AUTHOR | a sole or joint writer, cartographer, photographer or artist etc. responsible for the creation of a document. |
| COASTAL STRUCTURE | a building, piece of equipment, device or other facility made by people which is fixed to the land and on the coast. |
| COAST SUB-UNIT | the smallest unit of division of the coastal resource inventory. |
| COAST UNIT | a unit of the coastal resource inventory. |
| COAST SUB-UNIT CONCESSION | a concession within a coast sub-unit. |
| COAST SUB-UNIT DOCUMENT | a document with relevance to a coastal sub-unit. |
| COASTAL ZONE | a specified part of the coastal transition from inland to the deep sea. |
| COASTAL ZONE DESCRIPTION | a description of one or more aspects of a coastal zone. |
| COASTLINE | a specified part of the coastline being a major subdivision of the coastal resource inventory. |
| COMMUNICATION | any communication with DOC to or from any person or organisation outside DOC. |
| CONCESSION | a contractual agreement between DOC and another party to allow a structure on or for the exploitation of a specific part of the DOC estate. |
| CONCESSION TYPE | a classification of the types of concessions allowed by DOC. |

| | |
|------------------------------------|---|
| CONSERVATION AREA | a conservation area as described in the Conservation Act Part III. |
| CONSERVATION AREA CONDITION | a condition which applies to permits issued for all blocks within a conservation area. |
| CONSERVATION AREA POLICY STATEMENT | a DOC policy statement associated with a specific management plan and applying to a specific conservation area. |
| CONSERVATION BLOCK | a defined area of the DOC estate referred to on a permit. |
| CONSERVATION BLOCK CONDITION | a condition which applies to all permits issued for a specific block. |
| CONSERVATION UNIT | an area of the conservation estate which has been identified by name by conservation management purposes and which has a single legislative status. |
| CONTACT | a person holding a key official or administrative position in an organisation or within DOC or is of interest to DOC. |
| CONTACT TYPE | a classification of a contact. |
| DOC BOUNDARY FENCE | a fence or part of a fence on a DOC boundary which has only one non-DOC property adjoining it. |
| DOC FENCE | a fence that DOC owns or has an interest in. |
| DOC FENCE MAINTENANCE SCHEDULE | a maintenance schedule for a DOC fence. |
| DOC OBJECTIVE | a DOC corporate objective. |
| DOC POLICY | a policy of DOC which may or may not be stated. |
| DOC SKILL | a conservation skill of real or potential value to DOC. |
| DOC SKILL TYPE | a classification of a DOC skill. |
| DOCUMENT | published or unpublished identifiable printed or written material including photographs, paintings, maps and diagrams etc. |

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| DOCUMENT TYPE | a classification of a document such as a map, aerial photograph etc. |
| DOCUMENT AUTHOR | an author, cartographer, photographer, artist etc. who produced or helped produce a document. |
| DOCUMENT LOCATION | the place where a document is usually to be found, or, when on loan, is to be returned. |
| DOG | a registered dog identifiable by DOC. |
| DRAFT MANAGEMENT PLAN | a management plan made public and for which submissions may be made and incorporated. |
| EVALUATION | a value judgement or measurement of a conservation parameter. |
| EVALUATION PERSON | a person who makes an evaluation. |
| EVALUATION POINT | a place for which an evaluation has been made. |
| EVALUATION REPORT | the record of an evaluation. |
| EVIDENCE | an item, statement or recorded statement submitted to a court of law |
| EVIDENCE TYPE | a classification of evidence presented by DOC. |
| GEOGRAPHIC LOCATION | the geographic location of a place of interest to DOC which allows accurate location and relocation and usually in the form of a grid reference or latitude and longitude. |
| HEARING | a court or tribunal hearing in which DOC has involvement. |
| INCIDENT | an incident that may have statutory consequences for DOC. |
| INCIDENT DATE | the date upon which an incident took place. |
| INCIDENT PLACE | the place at which an incident occurred. |
| INCIDENT TIME | the time at which an incident took place. |
| INCIDENT TYPE | a classification of an incident. |

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| INVOLVEMENT | the role of a person in an incident. |
| INVOLVEMENT STATUS | the status of a person who has been convicted of an offence, is being tried for an offence, or has been acquitted of an offence at an incident. |
| ITEM | an object or species of interest to DOC. |
| ITEM AT INCIDENT | a species or artefact that is a subject in an offence or in evidence. |
| ITEM IN SITE | an item (object or species) recorded at a specific site. |
| ITEM IN SITE RELATIONSHIP | the relationship between two items at a site. |
| ITEM TYPE | a classification of items relevant to DOC. |
| ITEM TYPE IN SITE | the relationship between item types at a specific site. |
| JOB SKILL | a skill required to complete a DOC job. |
| JOB SPECIFICATION | specified requirements to be carried out by the person in a specific established position. |
| JOB TASK | a task which is part of duties required to be carried out to fulfil the requirements of a job. |
| KILL RETURN | a report of the number and species of animals killed in an area, at a time and by a person or persons specified on a permit. |
| MANAGEMENT BLOCK | an area of the DOC estate which is identified within DOC, formally or informally, for management purposes. |
| MANAGEMENT PLAN | a DOC management plan prepared, according to the Conservation Act, a specific area of the DOC estate. |
| MANAGEMENT PLAN AMENDMENT | an amendment to a management plan which is the result a management plan review. |
| MANAGEMENT PLAN OPINION | the epitome of a public opinion elicited or expressed in the preparation of a management plan as described in the Conservation Act Part III section 11(b). |
| MANAGEMENT PLAN POLICY STATEMENT | a DOC policy statement with relevance to a specific management plan. |

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| MANAGEMENT PLAN REVIEW | a statutory review of a management plan. |
| MANAGEMENT PLAN SUBMISSION | a submission to a management plan written or recorded as received by DOC according to the Conservation Act part III section 11. |
| MANAGEMENT TASK | a task with direct relevance to a part or parts of a management plan. |
| NON-ITEM FEATURE | a feature of a site not being an object nor a species. E.g. strong winds. |
| NON-ITEM FEATURE RELATIONSHIP | a relationship between one feature and another. E.g. large fetch and potential for high seas. |
| OBJECT OF INTEREST | a specimen or artifact for which DOC has a statutory responsibility to protect and/or administer which DOC suspects may be involved in illegality. |
| OBSERVATION OF ITEM | an observation of a specific item (object or species) at a specific site on a specific occasion. |
| OFFENCE | a legal offence for which DOC has statutory involvement - usually an offence against the Conservation Act or any of the associated acts. |
| OFFENCE AT AN INCIDENT | a particular and specified offence that is suspected was committed at a specific incident. |
| OWNERSHIP TYPE | a classification of ownership of property e.g. private, company, crown etc. |
| PERMIT | written permission authorising access or an activity on a specified part of the DOC estate, or the possession, handling, killing or taking of otherwise protected species of plants or animals. |
| PERMIT DOG | an identifiable (by DOC) dog referred to on a permit. |
| PERMIT HOLDER | a person to whom a permit is issued and who is responsible for meeting the conditions of the permit. |
| PERMIT LINE | a single line of a permit specifying a single species, a specific area, or a specific period of time within the conditions applying to the whole permit. |

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| PERMIT TYPE | a classification of permits. |
| PERMIT TYPE CONDITION | a condition which applies throughout DOC to all permits of that type. |
| PERSON | a person known to DOC and whose address is kept by DOC. |
| PERSON INTEREST TYPE | a classification of DOC interest in people. |
| PERSON OF INTEREST | a person with a skill, influence or information of use or potential use to DOC. |
| PERSON SKILL | a specific skill which is held by a person. |
| PERSON TYPE | a classification of a person. |
| PROPERTY | a continuous area of land under a single title. |
| PROPERTY OF INTEREST | a property of interest to DOC. |
| PROPERTY OWNER | a person who owns, or part owns, a property of interest to DOC. |
| PROSECUTION | a court action in which DOC lays charges or is otherwise involved in the laying of charges. |
| REFERENCE | documentation which identifies any written or recorded material. |
| REFERENCE TYPE | a classification of reference material according to such things as writings, maps, photographs or recordings, copyright and format. |
| SITE | a place of interest to DOC for any conservation reason direct or consequential. |
| SITE DESCRIPTION | a recorded description of a specific site with respect to specific interests as a result of a specific survey. |
| SITE DOCUMENT | a document or part of a document with relevance to a specific site. |
| SITE GENERAL DESCRIPTION | a general description including all major aspects of a site. |

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| SITE HEARING | a specific hearing with relevance to a specific site. |
| SITE IN PROPERTY | a specific site or part of one in a specific property or part of one. |
| SITE INTEREST | a reason for DOC having an interest in a site. |
| SITE INTEREST TYPE | a classification of the types of interest DOC may have in a site. |
| SITE RELATIONSHIP | a relationship between one specific site and another. |
| SITE RELATIONSHIP TYPE | a classification of the types of relationships that may exist between sites. |
| SITE SURVEY | a specific inspection of a site. |
| SITE SURVEY TYPE | a classification of a site survey. |
| SITE VALUE | the value DOC accords a site. |
| SITE VALUE BY INTEREST TYPE | the value DOC holds for a particular site with respect to a specific interest type. |
| SPECIES | a formally or informally recognised species of plant or animal. |
| SPECIES TYPE | a classification of species. |
| STRANDING | a specific incident in which one or more marine mammals is stranded at a single site. |
| STRANDING ANIMAL | a specific animal at a specific stranding. |
| STRANDING AT SITE | a specific stranding at a particular site. |
| STRANDING DOCUMENT | a document with relevance to a specific stranding. |
| STRANDING PERMIT | a permit issued for a specified animal or animals at a specific stranding. |
| STRANDING PERSON | a person associated with a particular stranding. |
| SUBJECT | a subject with relevance to DOC. |

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| SUBJECT DOCUMENT | a document with relevance to a specific subject. |
| SUBMISSION | a presentation by DOC at a hearing -distinct from evidence. |
| SUBMISSION AUTHOR | a person responsible for the preparation and or presentation of a submission. |
| SUBMISSION ITEM | an artifact or species which is the subject of a submission. |
| SKILL TYPE | a specific classification of convenience to DOC of a specific skill. |

The following entities are given without definition. They all relate to statutory land management and have very precise legal definitions which, in the interests of being correct, await an authoritative source for their definition.

CERTIFICATE OF TITLE
 COURT ORDER
 CROWN GRANT
 CUSTOMARY LAND
 DEPOSITED PLAN
 ENCUMBRANCE
 GAZETTAL OF PUBLIC USE
 INVESTIGATION OF TITLE
 LAND DISTRICT
 LAND TRANSFER OFFICE
 LOT ON DEPOSITED PLAN
 MAORI BLOCK
 MAORI LAND COURT DIRECTIVE.
 PARCEL
 PARTITION
 PARTITION ORDER
 PARTITION ORDER APPROVAL
 SECTION OF SURVEY DISTRICT
 SURVEY BLOCK
 SURVEY DISTRICT
 SURVEY OFFICE S
 URVEY PLAN
 UNDIVIDED SHARE

Primary Databases

Areas requiring legal protection.
Areas with legal protection.
Distribution of endangered species.
Contacts -people of interest to DOC.
Concessions.
Facilities.
Hearings -water rights etc.
Properties of interest.
Sites of interest.
Aerial photographs.
References.
Filing system.
Newspaper clippings.
Newspaper notices.
Maps.
Skills register.
Payroll (wage workers).
Personnel Information and Payroll Service (PIPS for salaried employees).
Finance - allocation, commitment and expenditure.
 - operational -man days, campout etc.
 - cash register.
 - stock management.
Fire register.
Recreational opportunities.
Historic resources.
Recreational use.
Equipment register.
Land register.
Leases.
Licences.
Kill returns.
Photographs.
Wild animals - distribution and abundance.
Weeds -distribution and abundance.
Statutory land management.
Land allocation.
Law enforcement.
Cultural material.
National sponsors.
Delegation register.
Fencing.
Whale stranding.
Volunteers register.
Resource management.

Applications and their Databases

DISTRIBUTION DATABASE

- distribution of endangered species
- wild animals -distribution and abundance
- weeds -distribution and abundance
- cultural material

While endangered species and pests may seem to be at opposite ends of the spectrum of function the information required to deal with these two very different DOC functions is virtually identical except for the status of the species in question. Both require management and records of distribution and abundance are fundamental to that management.

RECREATION DATABASE

- recreational opportunities
- recreational use
- facilities

PERMITS DATABASE

- permits
- concessions
- leases
- licences
- kill returns
- facilities
- cultural material

The "permits" and "recreation" databases are closely related in that both allow people to exploit the DOC estate. In one case the people that do, have to be registered and may have to pay compensation in return for specified rights. Kill returns could be seen as payment for the right to hunt at a specified time in a specified place. In the other case exploitation is involved, actually or potentially, but although the time and place are recorded the people are not specified.

DOCUMENT DATABASE

- aerial photographs
- photographs
- references
- filing system
- newspaper clippings
- newspaper notices
- maps

PEOPLE DATABASE

- contacts
- volunteers register

skills register
resource management -strong link
cultural material

RESOURCES DATABASE

resource management
skills register -link
facilities
equipment register
historic resources
cultural material

LEGAL

law enforcement
hearings
delegation register

LAND DATABASE

fencing
properties of interest
sites
areas requiring legal protection
areas with legal protection
land register
land allocation
statutory land management

FIRE REGISTER

sites
permits
resource management
contacts
equipment
fire register

WHALE STRANDINGS

whale stranding
volunteers
contacts
sites
permits
cultural material

PERSONNEL DATABASE

Payroll
PIPS
Skills Register

Volunteers
Delegation Register

FINANCE

allocation of funds
commitments
expenditure
cash register - Z1, Z2
stock management

Note that "Finance" covers only conservation finance. Head office finance and its interrelationship with conservancies is beyond the scope of this study and should be the subject of a separate study.