

**PROCEEDINGS
OF A THREATENED SPECIES
WORKSHOP HELD IN TURANGI:
27 APRIL - 2 MAY, 1990**

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RECOMMENDED ACTIONS ARISING FROM WORKSHOP DISCUSSIONS

While the goal of this workshop was to promote an integrated approach to threatened species management rather than to address in any detail specific management issues, a number of recommendations emerged which require particular actions. These are listed below in the order they appear in the minutes and people responsible for initiating action are identified:

1. There is a pressing need for standardised survey and monitoring techniques to be employed in threatened species management programmes nationally.

Action: Dave Butler (survey co-ordinator, TSU) to assess the extent of the problem and propose mechanisms for standardisation prior to 1991-92 financial year.

2. Criteria are urgently required which will allow threatened species conservataion management priorities to be set to address the current emphasis on a few taxonomic groups.

Action: Alison Davis and Janice Molloy (PSPD) to develop these criteria in consultation with others as soon as possible.

3. Effective sharing of specialist threatened species management skills between conservancies is seen as vital if DOC is to continue to make progress. Skills sharing of "field techniques" is an obvious urgent need.

Action: TSU to liaise with Southland conservancy as they "trial" a skills sharing model during the 1990/91 financial year. Southland to report on the success of this mechanism to TSU. If appropriate, TSU to advocate at Head Office for the implementation of a skills sharing policy to be initiated in the 1991/92 financial year. Dick Veitch (planner, TSU) to develop project and skills registers as a basis for "brokerage" of skills sharing.

4. Conservancy threatened plant registers were confirmed as of high priority. The need for a co-ordinated and integrated approach to threatened plant conservation was re-affirmed.

Action: Mick Clout (S & R) to consider changes to research project reports so that overlaps and gaps between DOC and "loop-funded" projects may be readily identified. Graeme Taylor (Threatened Plants co-ordinator, TSU) to liaise closely with conservancies still compiling threatened plant registers and to support plant recovery initiatives.

- S. Captive rearing should not be seen as a last resort in species recovery management. Rather, it should be considered from the outset and integrated with other management wherever appropriate. There is a clear need for national co-ordination of threatened species captive rearing programmes.

Action: Dave Butler (captive rearing co-ordinator, TSU) to initiate captivity register as soon as possible and to promote captive rearing in recovery programmes currently being planned.

6. Concern was expressed about the implications for management of not treating Fenn traps differently from leg hold traps, and of the inherent difficulties in checking traps every 24 hours as required by law.

Action: Alan Saunders (TSU) to request to appear before the next (September) meeting of the department's Animal Ethics Committee to discuss the threatened species manager's perspective.

7. Advocacy was seen as an important an integral component of threatened species management. Advocacy strategies should be included in recovery plans.

Action: Alan Saunders to develop a national threatened species advocacy strategy in consultation with others as a basis for advocacy opportunities to be developed.

8. There is a need for further discussion on the role and nature of commercial sponsorship of DOC's threatened species management programmes.

Action: Keith Johnston (Public Relations Manager) to re-circulate earlier policies and discussion papers (including criteria for conservancy sponsorships) as many people are unaware of these. Keith to promulgate further discussion amongst managers within the department relating to sponsorship.

9. Strong support was expressed for the concept of species recovery plans. Urgency should be given, however, to the development of an acceptable process for compiling plans and associated policies.

Action: Dick Veitch (planner, TSU) to refine planning guidelines and suggested plan formats as soon as possible.

Alison Davis (PSPD) to develop policies on recovery planning compilation and approval.

10. The TSU and threatened species managers generally should consider carefully and declare their conservation philosophies relating to threatened species conservation. Current attitudes to management are based on assumptions which are being questioned.

Action: All to consider and promote debate.

11. The urgent initiation of formal training and recruitment programmes is seen as being of a very high priority. Training needs to be identified in conservancy Business Plans.

Action: TSU and conservancy staff to liaise with Training and Personnel staff to identify opportunities for the initiation of proper training programmes.

Friday 27 April

Welcome (Paul Dale, Taupo/Tangariro Conservancy). Welcomed participants to Turangi on behalf of the Regional Conservator. Felt a Threatened Species Workshop was timely and looked forward to Turangi staff participating. Explained that Tuwharetoa were unable to be represented due to other engagements.

Introduction (Alan Saunders, Threatened Species Unit, Wellington)

The strong support for the workshop indicated the broad range of species-related activities, the high level of interest and commitment among managers and the pressing need felt by everyone for a meeting such as this. Following feedback from conservancies, the goal of the workshop was determined as:

'To promote a national team approach to threatened species management'

Two objectives were identified to reach this goal:

1. To examine the range of issues faced by threatened species managers, and
2. To further our understanding of the specialist skills available to threatened species managers

Several outcomes were suggested for appraisal at the conclusion of the workshop. Threatened species management is a high priority area for the Department of Conservation and many of these species are in urgent need of attention. Despite significant advances recently in management capabilities (eg predator eradication, captive breeding) a general lack of coordination and direction is increasingly impeding progress. Regionalisation and factionalisation have also mitigated against a national perspective and encouraged an 'us and them' syndrome. Cooperation and skill sharing is critical to the success of management programmes.

International attendees Dr. Andrew Burbidge (Department of Conservation and Land Management, Western Australia), Dr. Barry Reville (Endangered Species Unit, National Parks and Wildlife Service, Canberra) and Ernest Kosaka (United States Fish & Wildlife Service, Hawai'i) were introduced and welcomed.

Keynote Address (Ian Atkinson, DSIR Land Resources, Lower Hutt).

HARD REALITIES AND DIFFICULT CHOICES IN THE MANAGEMENT OF THREATENED SPECIES

HARD REALITIES

Insufficient money

Is what we get spent most effectively in preventing species declines?

Insufficient information

Understanding reasons for a species' decline is essential for writing a recovery plan. Develop more than one explanation. What are the critical observations or crucial tests that need to be made to disprove each explanation? Don't abandon investigation following management decisions that have had to be made before reasons for species' decline are understood.

Human hang-ups

- 1 The over-intellectualizing of conservation. Streamline the necessary paperwork for recovery plans, strategies, priorities, options, etc, so that the hands-on work essential to save species from extinction does not suffer. Ensure that scientific studies seek to solve the problem rather than merely describe it.

- 2 The non-interference syndrome. Intensive manipulation of animals and plants in the field, breeding facility, or experimental garden, is certain to become more important in managing threatened species. Manipulation must always be done with caution but prejudices against such interference will not help to prevent extinctions, cf. Californian Condor programme.

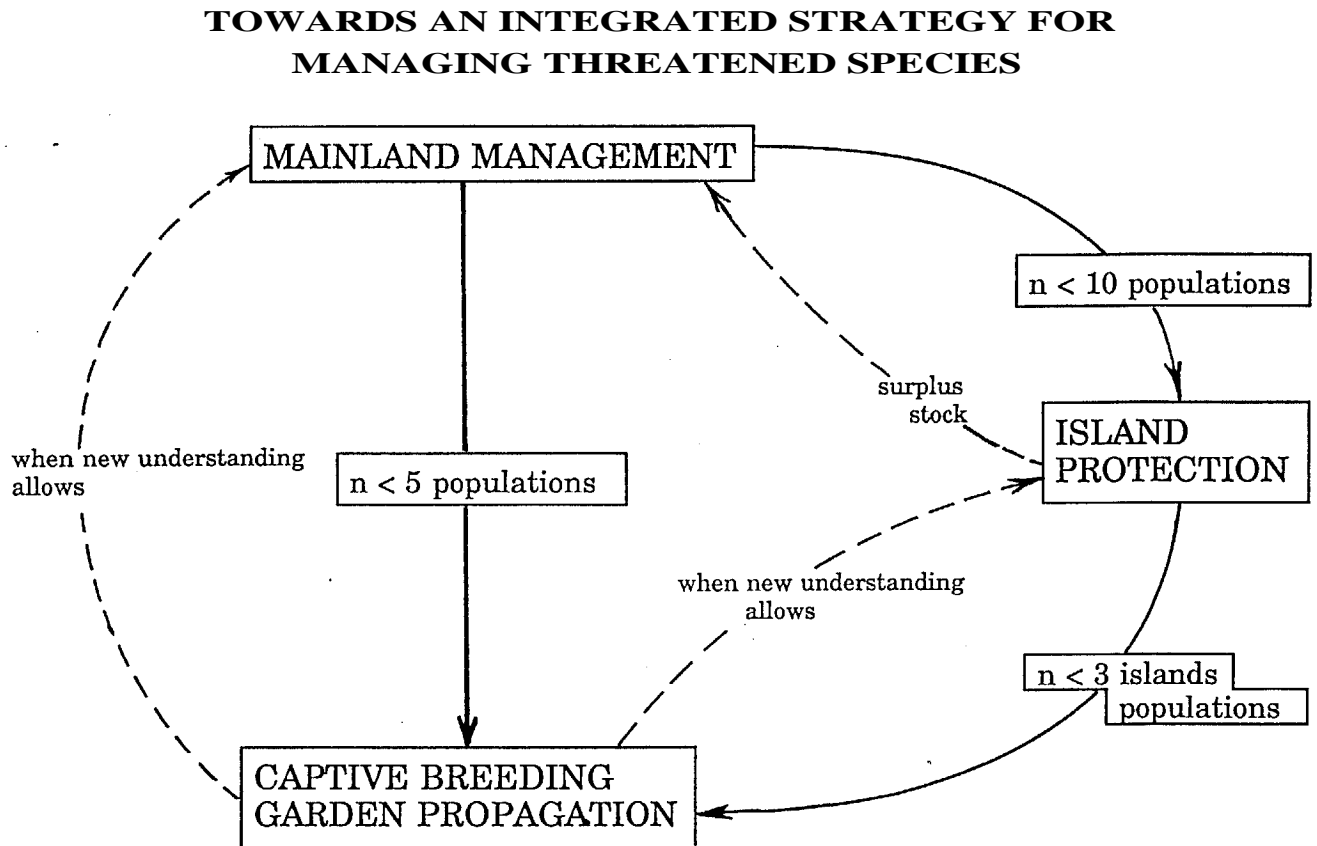
- 3 Competition vs. cooperation. Cooperation inside and outside DOC is essential in threatened species management because human and financial resources are so stretched. Recovery team leaders must ensure that team members know their specific tasks and get credit for their successes.

DIFFICULT CHOICES

Which option is most likely to save a threatened species? Given the central importance of maintaining biological diversity on the mainland, how do we decide when to switch towards other options? Given the advantages of the island option (relatively cheap; insurance value;

replenishment stock for mainland; research information relevant to mainland; high educational value), how far can this option be pushed? How can we integrate our attack on the threatened species problem? (see Figure).

Fig: Towards an Integrated Strategy for Managing Threatened Species



Note: n = number of viable populations. The figures are arbitrary and may need change according to the group of organisms considered.

Functions and Responsibilities of the Protected Species Policy Division (Alison Davis, PSPD, Wellington).

The PSPD has the role of policy development, advice, advocacy and permitting for protected species (Alison Davis, Janice Molloy and Ian Govey), for habitat protection (Pam Cromarty), and CITES (Dick Hutchinson and Janis Freegard). Policies are being developed at present for indigenous species and habitats, islands, species priorities, and guidelines for disposal and use of dead specimens.

Functions and Responsibilities of the Threatened Species Unit (Alan Saunders, Wellington)

The role of the TSU is to promote communication and the development of a national perspective, as well as providing national coordination, specialist advice and assistance. It is not the TSU's role to take over the job of conservancy specialists but rather to enhance outputs through support, advice and assistance when required. The TSU makes recommendations to the Director of PSPD on behalf of project managers, but it does not determine financial allocations, nor hold any funds for individual projects.

The Unit comprises 6 staff - the manager (Alan Saunders), Operations Coordinator (Don Merton), Planning Coordinator (Dick Veitch), Survey Coordinator (Dave Butler), and two generalist threatened species officers (Gretchen Rasch and Graeme Taylor).

Flexibility is needed as the role of the Unit evolves. This will depend to a large extent on feedback from conservancies.

Island Policies (Pam Cromarty, PSPD, Wellington)

A group of policies relating to islands is being developed and they include transfer guidelines, eradication guidelines, revegetation guidelines, an island classification system and an island database. The guidelines have been created for use while an island habitat policy is developed, as this is multidivisional and needs consultation with the conservancies, public, and the Conservation Authority. Transfer proposals should include information on:

1. Objectives and justification for transfer
2. Source population
3. Transfer population
4. Release site
5. Transfer methods
6. Monitoring and management
7. Contingency plan
8. Resources
9. Public perception

Once the proposal is prepared, interconservancy transfers must be approved by the Regional Conservators concerned and the Director of Protected Species after consultation with S & R, TSU, Conservation Board, and other relevant individuals and organizations. Within conservancies transfers must go through the same process, except the approval of the Director is not required. Upon the transfer taking place, permits under the Wildlife Act

must be obtained, a transfer record sheet completed and returned to the Director, and the Director should be kept informed of short and long term outcomes. Eradication currently operates from a conservancy perspective. Head Office will take on a national coordination role if it is seen as necessary. The guidelines suggest that planning eradications should include: the objective (what is the threat to be removed, and what will the result be; site information, target and non-target species to be affected, logistics, and techniques.

SESSION 1: Survey and Monitoring

Overview Dave Butler (Threatened Species Unit, Wellington)

25% of budgeted flora and fauna conservation costs in recent Conservancy Business Plans allocated for survey and/or monitoring. Surveys may involve "snapshot" distribution surveys ("one-offs"), baseline (status) surveys and monitoring programmes. Survey design needs to include scale, coverage, repeatability and any specific information requirements. Monitoring needs to be repeatable. Survey techniques (particularly for groups other than birds) need to be developed.

Mapara: an intensive Threatened Species management programme (Philip Bradfield, Waikato Conservancy)

The Mapara Reserve is a 1300 ha block of cutover lowland forest south of Te Kuiti, containing about 60 kokako. The reserve is being intensively managed and monitored to measure the effect of predator and browser control on the kokako population, and relate these management activities with changes in forest condition, target species and kokako. A very complex work programme is required to achieve this aim, including

- | | |
|---|---------------------------------|
| 1. banding of kokako | 6. Monitoring of rodent numbers |
| 2. biannual kokako censuses | 7. Invertebrate monitoring |
| 3. Goat control - shooting | 8. Vegetation monitoring |
| 4. Possum and mustelid control - trapping | |
| 5. Poisoning rodents | |

The amount of effort required to carry out this programme is greater than originally envisaged, but is necessary in order to understand the complex environment that the kokako live in. Careful monitoring prevents ambiguous results, such as when tracking tunnels confirmed the drop in rodent numbers which was masked by possum interference with bait stations.

Yellowhead Survey (Colin O'Donnell, Science & Research, Christchurch)

In order to measure the perceived decline of this species and the causes of the decline, survey and monitoring took place at a number of levels. An historical review and survey based on 1000 yard grid squares was adequate to document a decline in range. The latter survey was part of a general bird survey. In order to monitor further changes in population, including density, more detailed information was needed, and therefore key monitoring sites had to be selected. Ten sites were selected from a range of population sizes, including centralised high density areas, isolated remnants, and at the edge of the species' range. While the rate of decline was being monitored, attempts were also made to establish the reasons for the decline. Stoats were clearly implicated, and trapping and observation in the Eglington clarified the relationship between the predator and the prey. It was also necessary to measure other environmental factors such as beech seed production because of the complex beech seed - mouse -stoat relationship. It is now proposed to design a management programme which is achievable and cost-effective and which will have the greatest impact for protection of this species.

Rare Plant Surveys (Shannel Courtney, Nelson/Marlborough Conservancy)

Survey is the first step in the conservation of any rare plant. It addresses the basic questions of distribution, and habitat and can begin to identify problems of decline. Management can only be based on a thorough knowledge of the resource. This information can come from many sources, but the results may be piecemeal and an organised survey may be needed. Surveys must be well thought-out, and should take account of analysis of existing information, training, consideration of the scope of the survey and the time available, timing (e.g. during flowering), equipment (maps and photos), and careful documentation including standardised information and a good storage system. One of the benefits of good survey is a habitat model which will help predict the location of further populations.

Priorities for survey can be established by considering:

- | | |
|--------------------------------|---------------------------|
| 1. Degree of threat | 5. Ease of survey |
| 2. Degree of endemism | 6. Time and money |
| 3. Existing survey information | 7. Expertise available |
| 4. Evaluation of past effort | 8. Ease of identification |

Editors' comments: There is a pressing need for standardised survey/monitoring techniques to be employed in threatened species programmes nationally.

SESSION 2: Conservation of Special Groups

Invertebrates (Greg Sherley, Science & Research, Wellington)

Invertebrate species in New Zealand number in the tens of thousands. This presents a conservation quandary which is simplified somewhat by considering that: 1) many species occur on the DOC estate and therefore in protected habitat; 2) many small bodied and/or cryptic species escape the effects of introduced predators such as rats; 3) Sufficient habitat for those species which are threatened often involves relatively small land areas, therefore providing a good conservation return for the investment. Some invertebrates confound things by living in surprising habitat, e.g. Mahoenui weta and gorse. Agencies involved in invertebrate conservation and research include DOC, DSIR, universities and zoological institutions. Advocacy for invertebrate conservation should emphasise important communities of invertebrates and the less dramatic (in size and appearance) threatened species. Future considerations for invertebrates should 1) realise the usefulness of invertebrates for "research-by-management" projects 2) take action on existing knowledge, 3) incorporate invertebrate conservation with conservation of other species, and 4) include all interested agencies. Protection of threatened invertebrates is affordable.

Amphibians (Alison Cree, Victoria University)

Three extinct and three existing species of endemic frogs are known in New Zealand, although recent genetic work indicates that *Leiopelma hamiltoni* varies significantly between its Maud and Stephens island populations. Survey is suggested for *L. hochstetteri* in nontraditional areas like the lower North Island and Nelson and the West Coast. The effects of predation need to be studied. While their status in NZ is threatened, they are of international significance. Valuable monitoring work would measure the effects of land use changes on frog populations. It is expected that these species will continue to decline. Captive breeding could be enhanced by collecting eggs from wild adults after hormone treatment. *L. hamiltoni* (Stephens Island) is extremely vulnerable and requires intensive management, as well as studies of population structure, new habitat and protection of existing habitat.

Reptiles (Dave Towns, Science & Research, Wellington)

Reptile research has been under-emphasised compared to other groups of NZ fauna, despite NZ having an unusually high diversity of these animals. Conservation of threatened species presents a number of problems such as species which are nocturnal and/or secretive, and species like the Otago giant skinks whose habitat does not lend itself to reservation. Existing information on reptiles is readily available through the field guides, atlas, and DOC database. The database can be accessed through Ross Pickard. Priorities for lizard conservation are those species with a high degree of endemism and those in priority ecosystems, such as islands and high country grasslands. Expertise, funding, and technology all exist outside DOC and should be made use of.

Freshwater Fish (Charlie Mitchell, MAFFish, Rotorua)

New Zealand's native freshwater fish are often overlooked in conservation - they are small, cryptic, and occupy habitats (rivers and lakes) which have not received the conservation attention that terrestrial habitats get. Fish are more often subject to direct exploitation (whitebaiting and eeling) and indirect exploitation (forest and waterway modification, predation by and competition with trout) rather than protection. The promotion of the popular trout fishery is often at odds with the protection of native fish. Besides their place in NZ's unique flora and fauna and as part of both the water and forest system, they are important indicators of our land and water use practices. Reserve design around linear habitats such as rivers are difficult, and many species are migratory as well. Protection is possible, and includes reserves created for koaro, captive breeding of Canterbury mudfish, selective fish passes, and spawning ground protection for whitebait species. The technology exists to restore small lakes to their endemic flora and fauna with judicious use of grass carp and rotonone.

Issues:

DOC should monitor closely, through input to MAF, all proposed introductions of exotic fish species.

Native fish should be accorded greater protection under legislation.

Editors' comments: Any one of these taxonomic groups could potentially consume all of DOC's available protected species funds. It is apparent, however, that several taxonomic groups including threatened species have not received the same level of support from conservation managers as others. This imbalance must be addressed. Criteria are urgently needed which will allow for priorities to be set.

Saturday 28 April

SESSION 3: Field Techniques

Predator Control, Graeme Taylor (Threatened Species Unit, Wellington).

Three main objectives a) Eradication - used mainly on islands. b) targetted control - protection of threatened species on mainland. c) non-targetted control - broad protection of habitat. Only eradication and targetted control are efficient and justifiable. Techniques used to control predators include trapping, poisons (mainly anti-coagulants and 1080), shooting and trained dogs. Poison is applied in bait silos, by hand or by aerial drops. Improvements in bait quality, lures and flavours for all predators are currently being developed. Successful predator control is dependent on good initial planning and adequate monitoring of both target and non-target populations. In general, control should aim to hit the target population hard from the outset and maintain the effort until no sign of the predator remains. Thereafter, the site should be monitored for 1-5 years.

Comments:

Research is proceeding on baits for controlling mustelids (Dr. Kay Clapperton), cats (FRI), and rats (DOC). Further work is required on poisons and humane trap design.

There needs to be workforce training in the use of baits and trapping - particularly for inexperienced staff.

Baseline monitoring information is needed in control programmes for large islands

Eradication of rodents on islands should proceed progressively to larger islands.

There should be more encouragement for development of biological control methods.

There is a need for national and regional co-ordination of predator control programmes and information sharing.

Information on biological control is available through various publications. New techniques should be documented and circulated to management staff.

Herbivore Control (Cam Speedy, Tongariro/Taupo Conservancy)

Many threatened species have been reduced in distribution and/or abundance because introduced herbivores (deer, goats, pigs, cattle, sheep, and possums) either compete directly for food or have altered the structure of native forests. The techniques and funding for eradicating these animals are not available, and in some circles, animals such as deer are viewed as a valuable resource to be maintained. Therefore, all we can do is control these animals to an acceptable level. All programmes need clear objectives and analysis of achievability and sustainability. Methods include commercial hunting/trapping, recreational hunting, and official operations, each with its own costs and benefits. As a control operation proceeds, the per-animal cost of control increases. Without continual input into control, animal density quickly returns or exceeds pre-control levels.

Fencing (Graeme Loh, Otago Conservancy)

There is a large number of fencing options available, from natural fences provided by water barriers and cliffs, to large scale 'classic' fencing, to such things as banding trees against possums. Fencing is a useful way of channelling human activity. Fencing can be used indirectly, e.g. excluding rabbits in yellow-eyed penguin habitat which causes the vegetation to respond, making a less favourable environment for predatory cats. When habitats aren't discrete, e.g. central Otago skinks, fencing becomes more difficult.

Revegetation (Dick Veitch, Threatened Species Unit, Auckland)

Revegetation is undertaken on different scales, from recreating habitats on islands to planting individual species like kakabeak. Island revegetation may vary from planting understorey species, planting some canopy species, to planting all types and leaving nature to determine the final composition. Careful techniques ensure the success of planting programmes: root trainers, on-site nurseries, short transplant time and careful planting increase the possibility of success.

Weed Control (Warwick Murray, Auckland Conservancy)

A weed is a plant where it isn't wanted. This may change according to individual situations, as gorse is a weed in most circumstances but a valuable habitat in the case of the Mahoenui weta. Conservation weeds which are most in need of control are not necessarily those in the Noxious Plants Act which is intended for agriculture. While we cannot eliminate/control all of the weeds on the DOC estate, we should concentrate on those which:

- change the basic character or structure of our natural habitats, e.g. high country pines;
- affect threatened species of plants;
- affect representative areas which are relatively unmodified, e.g. Raoul Island.

Prevention is the best method of control, achievable through careful soil practices, public awareness, strengthening legislation such as the Noxious Plant Act, and increasing local authority responsibilities for weed control. Chemical means are the mainstay of weed control. There are increasingly sophisticated pesticides, but they face problems of spray drift, downstream effects, and public resistance to their use. Mechanical methods are fairly limited. Biological control has had limited success but may be the best long term prospect. Any control project should include detailed knowledge of the target species biology and its environment.

Capture and Morphometrics (Dick Veitch, Threatened Species Unit, Auckland)

Techniques for capturing birds include mistnets, clap traps, cannon nets, and spot lighting. For fish set nets and electric fishing can be used. Lizards can be captured with pitfall traps. Any capture or handling of animals should be done under the supervision of a authoritative, experienced person.

Morphometrics are useful in determining age classes and sex. Measurements need to be taken on hard parts of animal bodies for greatest reliability.

Animal Marking (Dave Towns, Science & Research, Wellington)

The different applications of animal marking are marking animals to be individually identified, or marking populations to be identified as a group. Temporary marking includes body painting (tuatara), dye marking (sheep), fluoro-paint pellets, nail varnish (insects, lizards), and more permanent marking - digit removal (reptiles, amphibians, and rodents), scale notches,

scute notches, spine removal (weta), and freeze branding (frogs). Other means include eartags, bands, flipper tags, muscle tags, and a variety of flags, streamers, balloons, and radar reflectors. Animals can be tracked and identified through the use of transmitters and isotope tapes. Birds can be identified by voice prints. Faecal analysis can be used to identify individuals or groups through the use of fluorescent dyes, isotopes, hormones, DNA, and bacterial analysis.

Bird Banding (Don Merton, Threatened Species Unit, Wellington)

This session briefly covered the evolution and function of the National Bird-banding scheme, as well as focussing on some practical aspects of capture, handling and banding birds.

Bird-banding in NZ had its origin in the 1930's and 40's. Today, banding of both game and non-game species is administered and controlled by DOC, and has a full-time staff of two. Banding is a practical, cheap and effective means of permanently marking individuals - something which is fundamental to most research and management in free-ranging animals. However, since banding can result in injury or death, it is crucial that appropriate catching and handling techniques are used together with the correct tools and materials. The bird's welfare must always be paramount.

Blood sampling (Alison Cree, Victoria University)

Blood samples are often needed for genetic work and for testing animal health and/or reproductive condition. Done properly, blood sampling does not add to the stress caused to an animal by handling. Knowledge of the animal's vascular system and training from someone with experience will enhance success. Other invasive techniques include laparoscopy (used to observe reproductive condition in tuatara), and ultrasound.

Radio Telemetry (Murray Douglas, Science & Research, Wellington)

Telemetry is used to gather observations which are extremely difficult or impossible to obtain otherwise, or when the method can reduce stress to the "target" animal. Components include the transmitter, receiver and antenna. Transmitter packages are designed for each species, taking into account the 2.5% body weight limit of the package, the range and lifespan of the transmitter desired, and behavioural constraints. These packages may be carried by the animal in a number of ways: collar, harness, or glued. Considerations include:

Is radio tagging the best approach?

Is there time to learn the techniques?

Is the cost justified?

Is there an acceptable way of attaching the transmitter?

What are the consequences if it fails?

Ethics.

Current indicative commercial rates for telemetry equipment:

a	Transmitters	-	unpotted single stage \$220
		-	unpotted 2 stage \$240
		-	fully potted 2 stage \$310
b	Receivers	-	hand held Merlin \$1450
		-	portable synthesized \$2,800
c	Hand antennas	-	3 element folding \$300

Behaviour Manipulation (Don Merton, Threatened Species Unit, Wellington)

In order to achieve recovery objectives in the conservation of almost any threatened animal it is necessary to first rebuild populations to a viable level. Such may be achieved through

- (i) manipulation of habitat or environment; and/or
- (ii) manipulation of the animal's behaviour or physiology.

Although forms of behaviour manipulation have been used for centuries in the management of domestic stock, their application is, in general, a recent innovation in the conservation of free-ranging threatened animal species. New Zealand has played a leading role in pioneering and developing this management concept. Increasingly, our threatened species recovery programmes now involve manipulation or exploitation of aspects of an animal's behaviour or physiology. A classic example of this was demonstrated in the rescue of the black robin, where seven behavioural traits were used or modified to achieve rapid recovery.

Behaviour manipulation is an important threatened species management concept, whose scope and application would seem to be limited only by our knowledge of an animal's behaviour and physiology, and by our skill and ingenuity as wildlife managers.

Species Transfers (Dick Veitch, Threatened Species Unit)

Species transfers to new habitats has often been regarded, along with captive rearing, as a last resort. In New Zealand, however, species transfers have been highly successful (principally birds), particularly after habitat restoration has been undertaken on islands which were part of the species' former range. Over 100 transfers of birds have been undertaken over the last century. From an initial 50% success rate, improved techniques including monitoring and habitat restoration have resulted in a current 95% translocation success rate.

A range of translocation techniques have been developed. three basic bird transfer methods are:

- (1) quick capture, translocate and direct releast
- (2) capture, holding aviary, translocate and direct release
- (3) capture, holding aviary, translocate, pre-release aviary and then release.

The option chosen and the specific techniques of capture, transfer and release depend on the species concerned and our knowledge of their requirements and behaviour. Translocations of endangered birds have averted the extinction of several taxa, and have reduced the risk of extinction in several others. Considerable advances have been made with regard to transfer box and aviary design for birds, and capture and feeding techniques. The number of individuals transferred can be quite low provided the species' limiting factors have been identified and controlled.

Recent advances have been made in New Zealand in transferring threatened reptiles and invertebrates.

Transfer of Other Species (Dave Towns)

Greater problems are encountered when the species to be transferred is small, cryptic or secretive, as many reptiles are. Careful planning is needed in designing the transfer programme, as there may be only one opportunity to carry it out. The selected 'new' habitat should be thoroughly evaluated, distance between capture and release sites should be minimised, and conditions should closely approximate the capture site (if this is believed to be the optimal habitat). Multiple release reduce genetic bottlenecks. Monitoring and habitat restoration should occur following the release. Consideration should be given to long term goals and planning.

Editors' comment: A wide and increasing array of techniques are available to the threatened species manager to measure and manipulate species. As their complexity increases it becomes more important that proper planning and due consultation occurs in order that achievable objectives are met using the most appropriate techniques. It is in the "field techniques" area that skills sharing is most obviously needed.

SESSION 4: CONSERVATION OF THREATENED PLANTS

Threatened Plants in New Zealand (Colin Ogle, Wanganui Conservancy)

Estimates of the number of vascular plant species which may be classified as threatened vary but 225 species is a recent estimate. This is roughly 11% of the total New Zealand vascular flora. The proportion increases to 20% when indeterminate and local species are included. Wetland species make up nearly a quarter of this total. The lowland bioclimatic zone and habitats such as cliff faces contain a higher proportion of threatened species. We know very little about the 'lower' plants. Protecting all these species is made easier if priorities are assigned. Possible areas for emphasis include endemic genera or higher taxa which are highly threatened like some Hebes.

Kaka beak - A Case Study (Willie Shaw, Bay of Plenty Conservancy)

Kaka beak (*Clianthus puniceus*) is known in the wild in only 18 populations containing a total of 170 plants. Management of this highly threatened species includes manipulation of the Waikaremoana population, nursery cultivation, planting trials, and survey for other populations. A recovery plan is currently being compiled to integrate this work.

New Zealand Plants - Ex Situ Conservation (David Given, DSIR Land Resources, Christchurch)

While conserving the native flora in its original habitat is the first goal of plant conservation, there are a number of ex situ (offsite) techniques which increase our options. The concept and existence of botanic gardens has been around for centuries. They have a role in: 1) insurance - cultivation of plants in case of loss in the wild; 2) arresting genetic erosion and loss; 3) research and assessment for use; 4) education and publicity; and 5) providing stock for reintroduction into the wild. Other forms of ex situ conservation include seed banks, pollen banks and DNA banks. These have been set up for commercial crops in the main. Wild species pose a number of problems (e.g. seed storage is sometimes difficult). Botanic gardens require a commitment to hardware, expertise, and record keeping. Any ex situ programme must take account of genetic variation, a comprehensive sampling programme, quarantine, and problems of off-site selection. Transplanting back into the wild needs to be well planned with regard to source material and community ecology. Translocations have to be followed up and monitored.

Taupo Nursery (Roger MacGibbon, Taupo/Tangariro Conservancy)

One of the largest native plant nurseries in the country. Full cost recovery - very competitive prices. Already involved in threatened plant conservation and revegetation programmes with DOC. Invited threatened species managers (particularly in the North Island) to contact Taupo nursery staff about plant requirements.

Informal Session on Threatened Plants

An informal gathering of 25 people including most conservancy flora officers, was held with the aim of sharing information of common interest. Topics discussed included the Sites database for threatened plants, currently held by David Given at DSIR - Lincoln. The meeting felt that a central clearing house was needed within DOC for accessing this information and Peter de Lange (Rare Plants biologist) seemed the appropriate DOC liaison person. David Given described how he was working on the database under loop-funding. His current project is sorting the distribution of threatened plants into Ecological Districts. The meeting also discussed the rationale for recovery planning for plants and whether plants would be grouped by taxa, geographical location or ecosystems. No firm conclusions were drawn. People will spend much of the next year preparing registers of threatened plants within their conservancies, compiling site records and carrying out field surveys. The meeting felt there was no need for a special gathering of flora staff during the next year.

Editors' comment: This workshop provided a valuable opportunity for threatened plant managers to discuss common issues and to stimulate information sharing and an integrated approach to plant conservation. Priorities were confirmed for the completion of conservancy threatened plant registers and the development of site records and field surveys.

SESSION 5: Captive Rearing - a Manager's Perspective

Captive rearing overview (Dave Butler, Threatened Species Unit, Wellington)

Outlined a range of objectives for captive rearing of threatened species including advocacy and research as well as breeding. Captive rearing should not be seen as last resort, particularly when few animals are available. Captive rearing needs to be nationally co-ordinated and integrated with other management programmes.

Captive Breeding (Martin Bell, National Wildlife Centre)

Captive breeding is a valuable tool which can increase our management options for threatened species. As well as maintaining a captive breeding population of a threatened species, the techniques for increasing populations in the wild include artificial incubation, egg manipulation, and artificial rearing. A number of misconceptions exist which tend to make people react negatively to captive programmes. Diseases which are sometimes found in captive populations all originate in the wild. They are largely preventable through careful hygienic procedures. Productivity of some species in captivity has been low, but this is due more to programme design problems and can be avoided with careful planning and good liaison with field staff. Imprinting problems can also be avoided with planning, but must be recognised as a useful tool when used appropriately. Captive birds on display are not 'wasted' in terms of their reproductive contribution, they will and do breed when on display. They also play a vital role in advocacy of threatened species management. Captive breeding should not be seen as a 'last resort' and captive options should be considered in all recovery and management plans.

Animal Ethics (Neil Wells)

The Animals Protection Act is intended to give protection to animals used in research, particularly in the laboratory. DOC made an active decision to honour the spirit of the law when it established its Animal Ethics Committee to oversee research work and management procedures carried out by its personnel. The distinction between manipulations carried out for research or for management purposes is often blurred. However, once a management procedure is approved, DOC is free to use it in any number of programmes. The DOC ethics committee meets two times a year and committee members currently include Neil Wells, Don Newman, Martin Cawthorn, Gabriel Deuss, Margaret Dukas, and Burton Silver. One of the most controversial issues, that of using leg-hold traps, is being examined by a MAF working party.

Comments

This was an area of high concern to workshop attendees.

Banning leg hold traps would be catastrophic to management programmes if an alternative kill trap has not been developed first.

Fenn traps are considered as leg hold traps and must therefore be checked daily.

Editors' comment: A meeting of interested workshop participants resolved that the TSU, supported by conservancy submissions should request to appear at the next meeting of the Animal Ethics Committee to discuss the practical implications of recent committee recommendations relating to leg hold and Fenn traps. It was stressed that these representations should be positive in exploring options and alternatives.

SESSION 6: Advocacy

Threatened Species Advocacy (Keith Johnston)

A departmental advocacy strategy is currently being developed in which client groups will be identified. Threatened species and DOC's management of them have a high profile ("warm fuzzies"). Need also to provide bad news as well as good news and to involve NGO's and other groups in advocacy programmes. Opportunities should be expanded to promote other DOC activities when advocating threatened species management.

Advocacy Working Session

Workshop was split into 4 groups:

1 Advocacy and public liaison. Objective of advocacy is to develop public support for threatened species conservation. Important to identify "target" (client) groups and open communication channels. Honesty is a key ingredient. Cultural interaction increasingly important. NGO's have an important role to play.

2 Sponsorship Working Session. Considerable discussion about the concept and morality of sponsorship of DOC activities. Finally resolved that sponsorship would be acceptable if it complemented DOC "core" activities and enhanced conservation outputs. Some people remained sceptical of the morality of joint participation with commercial sponsors with poor environmental records.

Since it is likely that DOC's and a sponsor's priorities may be at variance it was resolved that:

- a DOC's management priorities should be determined at the outset;
- b marketing of our priority projects is essential;
- c lower priority programmes may be sponsored provided sponsorship is additional to core funding;
- d a flexible approach must be maintained (eg to take advantage of Conservation Corps availability for Mana Is. mouse eradication work).

It was recognised that staff needed to have an input into determining the criteria for accepting sponsorships, but that discussions with specific companies should remain confidential. Head Office should re-circulate an earlier discussion paper on these criteria together with a summary of progress and decisions, and examples of the safeguards that could be put in place as in the kakapo/comalco case.

The need for co-ordination of DOC sponsorship bids was re-affirmed although the \$5,000 limit above which clearance was required from Head Office was queried. It was resolved that this policy needs re-confirmation and re-circulation - it is important and many officers were unaware of it.

3 Maori issues and threatened species. Chose kereru as a focus for discussion.

Acknowledged lack of Maori input to discussion (limited perspective). Five issues considered:

- Biological. Research required in population dynamics and impacts of hunting. Island kereru populations for comparison with mainland.
- Social. Kereru have an important social value. Need to survey who hunts kereru and why (difficult prospect!). Establish differences in local perspectives (eg rahui). Resolved that without understanding social content we cannot develop workable or acceptable policies for kereru.

- Communication. Need for interchange of research information to Maori, and cultural perspectives from Maori. Should seek cooperation in social surveys (mutually advantageous). Important to avoid confused messages. Iwi liaison officers are a positive step but all DOC staff have a responsibility to liaise with iwi.
- Treaty of Waitangi. Acknowledge need for partnership approach. Some debate over whether natural laws took precedence over Treaty. Need agreement on concept of 'sustainable' harvesting.
- Legal. Ethical issues may lead to legal changes. Law change to allow kereru harvesting could set dangerous precedents for other protected species. Law enforcement should also be a partnership arrangement.

4 Private land protection.

- Legislation. Protected Areas and Protected Species Legislation development should continue. Input also required with other legislation reviews (eg Maori Affairs Act). Further liaison required between DOC and regional councils re-rate relief for private land protection.
- Mechanisms for protection. Covenants are best option (most flexible). Range from tribunal management agreements through to acquisition criteria for determining land protection Priorities need to be refined and reviewed. Mechanisms for land protection need to be flexible, fast and simple.
- Funding. More dollars should be allocated to protect private lands than being spent on DOC estate. Legitimate to sell land that doesn't have real conservation value.

Sponsorship (Keith Johnston, Head Office)

Sponsorship of threatened species work helps to get the job done but raises a number of issues. Sponsorship should be complementary to DOC funding, but should DOC use it for core activities? It is felt that DOC should be responsible for core programmes, but that sponsorship helps with the lower priority projects or to supplement core programmes. Does the acceptance of outside funding compromise DOC in its conservation/advocacy role in other areas? It is important that we are clear to ourselves and the public about

why we do or do not accept a sponsorship offer. Companies need to be vetted carefully. Sponsorship will not always tie in with DOC priorities for threatened species.

Editors' comment: Advocacy has all too frequently been seen as separate from threatened species management. Effective advocacy is an important and integral part of threatened species management. A number of issues and tasks have been identified for further consideration and action.

SESSION 7: Marine Mammals

Marine Mammals (Mike Donoghue, PSPD, Wellington).

77 species of cetaceans - 36 in New Zealand. Dramatic impacts of past whaling (slow recovery). Outlined main groups of whales around NZ coast and management issues including strandings, disturbance (whale watching) and identification. Discussed status (incomplete information) of NZ cetaceans - several threatened eg blue, right and humpback whales and Hector's dolphin endangered.

Seals and Sea Lions (Martin Cawthorne, Science and Research, Wellington).

SEALS; STATUS AND MANAGEMENT IN NEW ZEALAND

Martin Cawthorn, Science and Research, Wellington.

Species	NZ fur seal	Hooker's sea lion	Elephant seal	Leopard seal
Status	Abundant Increasing	Threatened Declining	Abundant Declining	Abundant Increasing
Population Estimate	(50,000+)	5,000-6,000	750,000	250,000
Distribution	NZ	NZ	Circumpolar Subantarctic	Circumpolar Ice-edge to Subtropics
Max. size (Males)	2.0 160kg	3.5m 450kg	5.0m 3.7t	3-4 500kg
(Females)	1.5m 60kg	2.0m 150kg	2.5 360kg	3-4m 500kg
Fishery Interaction	Yes	Yes	No	No

Management problems: The principal management problem is the interaction of fur seals and sea lions with fishing vessels working near areas of seal concentration, such as rookeries and haulouts. Specific examples are the west coast of the South Island and the hoki fishery, and the Auckland Islands and the trawl squid fishery.

Data are being gathered on seal behaviour in both areas with the assistance of MAF and the fishing industry. These data are being used to find methods to reduce as rapidly as possible the incidental catch of seals to an acceptable level to allow animals and fisheries to coexist.

Secondary management problems include the care and handling of seals which have come ashore exhausted after weathering storms, but otherwise healthy; or injured, diseased, moribund or aged.

The rapid expansion of the distribution of seals around the coast has resulted in juveniles appearing in areas where, previously, they were uncommon. This requires liaison with and education of local people, especially those occupied in coastal inshore net and line fisheries.

Genetics and Management of Threatened Species (Charlie Daugherty, Victoria University)

Genetic techniques have been developed in the last 20 years which allow genetic variation to be estimated through the examination of DNA, proteins, and chromosomes. The preservation of diversity is seen as a central goal of conservation (IUCN). Genetic studies examine variation, geographic distribution of genetic types, and measure gene flow between populations. It can be a tool for determining priorities and an aid in reserve design, population transfers, captive population management, and monitoring. Data have been gathered on a number of lizard species, amphibians, invertebrates and birds. The techniques involve killing small animals (lizards and invertebrates), but larger animals can be non-destructively sampled. Expert advice should be used; it is available at universities and within DOC.

Population Biology (John Craig, University of Auckland)

If conservation relies too heavily on a natural history approach, it can mean that the biases and assumptions of those people driving conservation projects are unacknowledged and untested. This is seen sometimes when a species is transferred from one habitat to an identical one

elsewhere - the assumption being that the habitat of origin is the ideal or optimal one. Theories predict results in a similar way, but are amenable to change with new information. The theory of population biology relating to demography and genetics suggests that populations consist of constant size groups with non-overlapping generations, that reproduction is at random (outbreeding), that there is an infinite gene pool, that all individuals contribute to succeeding generations, and that each character of an individual is represented by a single gene. Studies of many New Zealand species show that few of these assumptions are true in real life. While the conservation of genetic variability is necessary, it must be done in relation to environment and species ecology and behaviour, if the species is to survive. Rules of thumb suggest that a number of populations, including some large (100s or 1000s) should be established, using as many individuals in as many transfers as possible (reducing the opportunity for genetic bottlenecks). They should reflect the existing social system of the species (don't try to outcross a naturally inbreeding group, and vice versa), and spread populations widely to avoid effects of natural catastrophes. Finally, none of this is possible without public support.

SESSION 8: Species, Strategies and Priorities

Introduction (Mick Clout, Science and Research, Wellington).

Developing processes for determining priorities is a pressing requirement for DOC. It is crucial that we allocate our slim resources wisely.

Trends in Threatened Species Policy & Management in Australia (Andrew Burbidge, Conservation and Land Management, Western Australia)

There is increasing importance of threatened species on political agendas and in the minds of the public. This is paralleled by advances in research, active management and advocacy. However, the difficulty of creating new reserves has increased ex situ conservation. Unlike NZ, information in Australia is not disseminated from one department, but ministers have their own staff to advise them on conservation issues. Endangered plants are given official status by notification through a government gazette. In Western Australia, 238 of 12 000 to 15 000 plant species are endangered, but only 8 000 of the total flora have been described. Mammal conservation priorities are based on taxonomic distinctiveness and on the area occupied by the species, so that greatest emphasis is given to the most taxonomically distinct species occupying the least area. Marsupials are the most proportionately threatened group (27% threatened, another 24% potentially threatened).

Science Planning and Priorities (Richard Sadleir, Science & Research, Wellington)

Science planning needs to be flexible in order to address both long term and immediate problems. Long term studies are those on species biology and ecological processes (takahe, blue duck), while immediate problems are ones which arise unexpectedly, like the recent dieoff of yellow-eyed penguin. A logical approach might be to operate on a triage system, where effort would concentrate on those species most in need and most likely to recover with some help. The reality is that funding goes to the most highly endangered species. This needs to be balanced with work on species which are vulnerable at the moment, but not endangered. S & R has a backlog of projects inherited from pre-DOC agencies which are being completed. CAS participate strongly in evaluation of new projects. National and regional needs need to be delineated. There is a need for national priorities from Protected Species Policy Division. Threatened species are only one part of S & R responsibilities.

New Zealand Plants - Priorities for Conservation (David Given, DSIR Land Resources, Christchurch)

Priorities are needed for plant conservation in order to convey to the public what species and habitats are threatened, to set up an order for funding and action, and to make a volume of information more accessible to users. A number of systems exist (IUCN, UK Red Databook Threat numbers). Any system needs to be simple, flexible, and manageable. In New Zealand, priorities could be based on a broad system using Red Data Book categories, geographic distribution and taxonomic distinctiveness, or a larger multifactor approach could be developed (Rarity, vulnerability, achieveability, costs). Other considerations are the degree of threat to the habitat, indeterminate species for which data are lacking, and economics. Priorities are conditioned by human factors such as public appeal.

Priorities for Species Recovery (Janice Molloy, Protected Species Policy Division, Wellington)

With over 500 taxa of threatened plants and animals, DOC needs some way of allocating scarce resources. A national framework is needed to increase accountability. We need to identify what criteria are relevant for ranking species and determining priorities, and how each criterion should be weighed in relation to the others. Possible criteria are:

degree of threat	recovery potential
taxonomic importance	cost of recovery
cultural significance	recreational/tourism values

Any system needs to be tested and changed if necessary for widespread acceptance. We must recognise that political tampering and other unforeseen influences may change application of the system.

A discussion paper 'setting priorities for species recovery' was distributed.

Greater problems are encountered when the species to be transferred is small, cryptic or secretive, as many reptiles are. Careful planning is needed in designing the transfer programme, as there may be only one opportunity to carry it out. The selected 'new' habitat should be thoroughly evaluated, distance between capture and release sites should be minimised, and conditions should closely approximate the capture site (if this is believed to be the optimal habitat). Multiple releases reduce genetic bottlenecks. Monitoring and habitat restoration should occur following the release. Consideration should be given to long term goals and planning.

Editor's Comment:

Public and interest group involvement in the setting of species management and research priorities is important. Preparation of a departmental species conservation strategy will do much to foster public comment and feedback. The Science and Species Recovery Planning processes should also promote consultation and informed debate about management objectives and priorities.

SESSION 9: Recovery Plans

Recovery Planning in Hawai'i (Ernest Kosaka, US Fish & Wildlife Service, Hawai'i)

The Recovery Team/Recovery Plan approach is part of the federal Endangered Species Act. One of the major strengths of the act is that it requires all federal agencies to operate with consideration of endangered species. Plans go through several stages, including: 1) a technical draft, which is circulated to specialist and participating groups; 2) a second draft, which includes analysis of comments from (1) and is circulated to participating groups; 3) a final draft, which is available for public comment for 90 days; and 4) the final Recovery Plan, signed by the Regional or National Director of the Fish and Wildlife Service. These plans are prepared by staff or by contract or by teams, and take from 2--7 years on average to produce.

Recovery Plan Process and Approval (Alison Davis, PSPU, Wellington)

The main objective of species planning is to identify the species conservation status, management and research requirements, actions needed for the species' conservation and priorities for the allocation of resource.

The process of consultation during plan preparation and a resolution of various kinds of plans and strategies is required.

The selection of species for recovery planning and management has been largely ad hoc to date. A Species Priority Strategy is urgently required to establish these priorities.

There is no statutory requirement for the department to prepare recovery plans, however, provision for species plans does exist under Section 41 of the Wildlife Act. In the absence of improved legislation for species planning we need to establish a process through which plans may be prepared and approved.

Two alternative processes were discussed which differed essentially in the timing of consultation, in particular, the extent of consultation with the New Zealand Conservation Authority. No firm resolution was received from the workshop on which of these options was preferred.

Recovery Plan Format (Dick Veitch, Threatened Species Unit, Auckland)

The process of plan preparation and their formats is still evolving. Plans must provide enough information to empower a manager to manage, and must be readable and easy to follow. Content and detail may vary from species to species.

In brief, a recovery plan should contain an abstract and critical path which outlines for quick reference the need for proposed management, its timeframe and costs.

An introduction section should describe the species and its conservation status as well as introducing goals and objectives, the recovery group and its establishment. The species' past and present distribution, habitat requirements and known threats should be addressed within the plan, and comment provided on its recovery potential. A full range of management options should also be outlined and brief evaluations of each given before management priorities are set. Information needs must also be determined to justify research proposals.

A work plan identifying tasks, their timeframe and approximate costs should be included, showing opportunities for public involvement. A simple 'critical path' diagram is an ideal way of illustrating concurrent tasks. References and other detailed information may be appended to recovery plans as well as a list of authoritative people who may be contacted for further information.

Concluded that as a minimum requirement recovery plans must be sufficient to allow projects to be prepared for budgetary approval, and that sufficient detail is provided for managers to determine day to day management requirements. The ideal document would allow people at all levels to understand the needs and proposed action without needing to refer to other documents.

Recovery planning for brown teal (Grant Dumbell, Ducks Unlimited, Auckland)

Outlined issues and considerations as leader of the brown teal recovery group. Discussed conservation goals as distinct from objectives. Differences between goals and objectives need to be explained, as does responsibility for goal setting.

In brown teal example a range of "stakeholders" including Great Barrier Island residents tangata whenua, Ducks Unlimited etc need their views represented in a recovery group. Goals and objectives must be regularly restated and tested. Stressed that recovery plans must be dynamic in order to meet changes yet must continue to move towards stated objectives and goals.

Discussed process of recovery planning for brown teal including identification and prioritising of objectives and circulation of draft plan for wider comments.

Conservation philosophy and its consequences (Murray Williams, Science & Research, Wellington).

The way we act in everyday life, how we respond to events around us, even what food we choose to eat is based upon a (often undeclared) philosophy. From that philosophy flows your attitude (your policy) and from that, your action.

So it is with species conservation. We have policy documents for this and that, and management plans galore which reflect those policies. But, what is the policy based on? What is DOC's declared conservation philosophy? And what is the conservation philosophy that lies behind the activities and deliberations of PSPD and the TSU?

I am not aware these philosophies have been declared, and I am forced to use the next best thing (perhaps!) of the natural heritage of New Zealand". For species conservation, this probably boils down to "maintaining existing genetic diversity".

There is nothing too contentious in this approach I suggest, but let's look at a consequence of it. Implicit is that each "genetic parcel" is of equal value and status at this moment of time. We take a snapshot in evolutionary time and try to maintain all existing forms, the common and the rare. We cannot take account of the processes or events that cause that rarity or commonness.

When we respond to this philosophy and the ensuring policy, we find we cannot spread our resources everywhere, we prioritise and always the rare, the near extinct get a large slice (perhaps all) of the cake.

An alternative philosophy is to "maintain existing genetic diversity" recognising the processes that have created the present diversity, those which maintain and influence it and those which will shape it in the future".

This is not too different from the earlier philosophy but with very major differences in consequence. For a start, we can recognise that mammalian herbivores and carnivores are new selective forces in New Zealand and are here forever. Secondly, we can draw a distinction between biological processes and direct human impacts e.g. landscape fragmentation. Thirdly, we can direct attention further up the biological scale - at the community level, not just the species level. Fourthly, we will see that most of our rare species are already "extinct" - they have NO biological future in New Zealand except as a museum specimen on a remote offshore island - in isolation and maintained there by constant human intervention.

Are we aware that our present approach to species conservation is (based?) on a highly questionable philosophy? Do we ever debate the long-term consequences of our activities? Are we not a little like the early Christian missionaries in our approach - unquestioning of our philosophy, zealous to a fault, unresponsive to a dynamic biological (= cultural) context?

How we as species managers handle New Zealand's biological heritage depends, ultimately, on a firmly stated, frequently debated, coherent conservation philosophy, - not policies stemming from a philosophical vacuum or dinosaur. A first step in the process of questioning and debate is to appreciate our own, individual conservation philosophies - have you ever questioned yours? Have you ever expressed it? I have and I use it as a prop and a benchmark regularly - and I share it with you

"I live in a land of astonishing relief and beauty - respect it!

I am surrounded in nature by a wonderful diversity of form and function - keep it!

I am but a visitor to this land - enjoy it, share it, and when I depart, take only its aroha."

Yes, folks, I have your religion too!

SESSION 10: Training (Bella Ansell, DOC Training Unit, Wellington).

Small working groups were convened to discuss the need for training, problems being encountered and possible solutions. A strong view emerged that threatened species management required a range of specialist skills - few of which were being shared or re-inforced currently. Problems identified included the lack of recruitment policies, an aging of specialists leaving less skilled and experienced staff at the "sharp end" and a general lack of commitment by the department to specialist training. These problems are increasingly apparent - not only in terms of outputs but also at a personal level where people's career paths are now being affected as well as their job satisfaction.

Several training options were raised including the clear need for a mechanism to facilitate the sharing of specialist skills around the department, the need for formal recruitment and training programmes including theoretical and practical training and identification in Business Plans of training requirements.

Participants were encouraged to explore ways by which they could "help themselves" in obtaining and developing the required skills. Communication and development of the concept of skills sharing in threatened species - related areas were seen by participants as important opportunities to develop our own potentials.

There is a deeply-held and uniform concern, however, that without a comprehensive formal training syllabus including provisions for the recruitment and training of new staff there is likely to be a marked erosion of specialist threatened species management skills within the department. This will inevitably result in a reduction in our ability to meet the increasing challenges facing threatened species.

"Skills sharing" impromptu discussion

About 20 conservancy representatives held an impromptu evening meeting to discuss practical mechanisms to effect inter- (and in-ter-) conservancy skills sharing. Apart from formalised skills sharing set in departmental structures (eg inter-conservancy office solicitors and archaeologists), several conservancies have already acknowledged the need to share specialised staff in business plans by allowing a percentage (eg 10%) of staff time for unprogrammed work. Other conservancies have no such flexibility. It was felt that skills sharing is equally applicable to most DOC activities but that threatened species programmes highlighted the urgent need for these exchanges. It was suggested that the movement of a small number of specialists between conservancies to assist in particular projects was a very effective and cheap way of training operational staff as well as developing a national perspective amongst DOC staff.

It was generally agreed that:

- inter-conservancy skills sharing is important if DOC is to achieve many of its outputs. Threatened species management is a good example of the need for such exchanges.
- apart from assisting in the attainment of project objectives, skills sharing is a cheap and effective training mechanism.
- a procedure was discussed (the "Southland model") whereby all conservancies should allow for skills sharing within key outputs. Provided all conservancies participated and the process was co-ordinated nationally, few additional costs would be incurred and planned outputs would still be achieved.
- it was suggested that the TSU produce a threatened species project list showing projects where skills sharing may be required and their national priorities. The TSU could act as a "broker". TSU should also be responsible for maintaining a skills register.

Workshop Summary (Alan Saunders, Threatened Species Unit)

The goal of teamwork stated at the beginning of the workshop was seen to be achieved throughout the five day period as people worked together to discuss many issues and achieve progress on a number of them.

There is growing pressure for threatened species managers to achieve even greater successes. Setting priorities and national coordination will be increasingly important if these targets are to be met.

Feedback already received suggested that the objectives of the workshop were achieved. The workshop organisers had taken a risk in avoiding addressing technical details, but this had been done to avoid "losing" people, which would have been contrary to the teambuilding goal. A lot of positive energy was created and the TSU is more convinced than ever of the need for these meetings.

Thanks were extended to Janet Owen, Director PSPD, as the sole representative of DOC's senior management, the international visitors and to conservancy representatives for attending.

Conclusion (Janet Owen, Director PSPD)

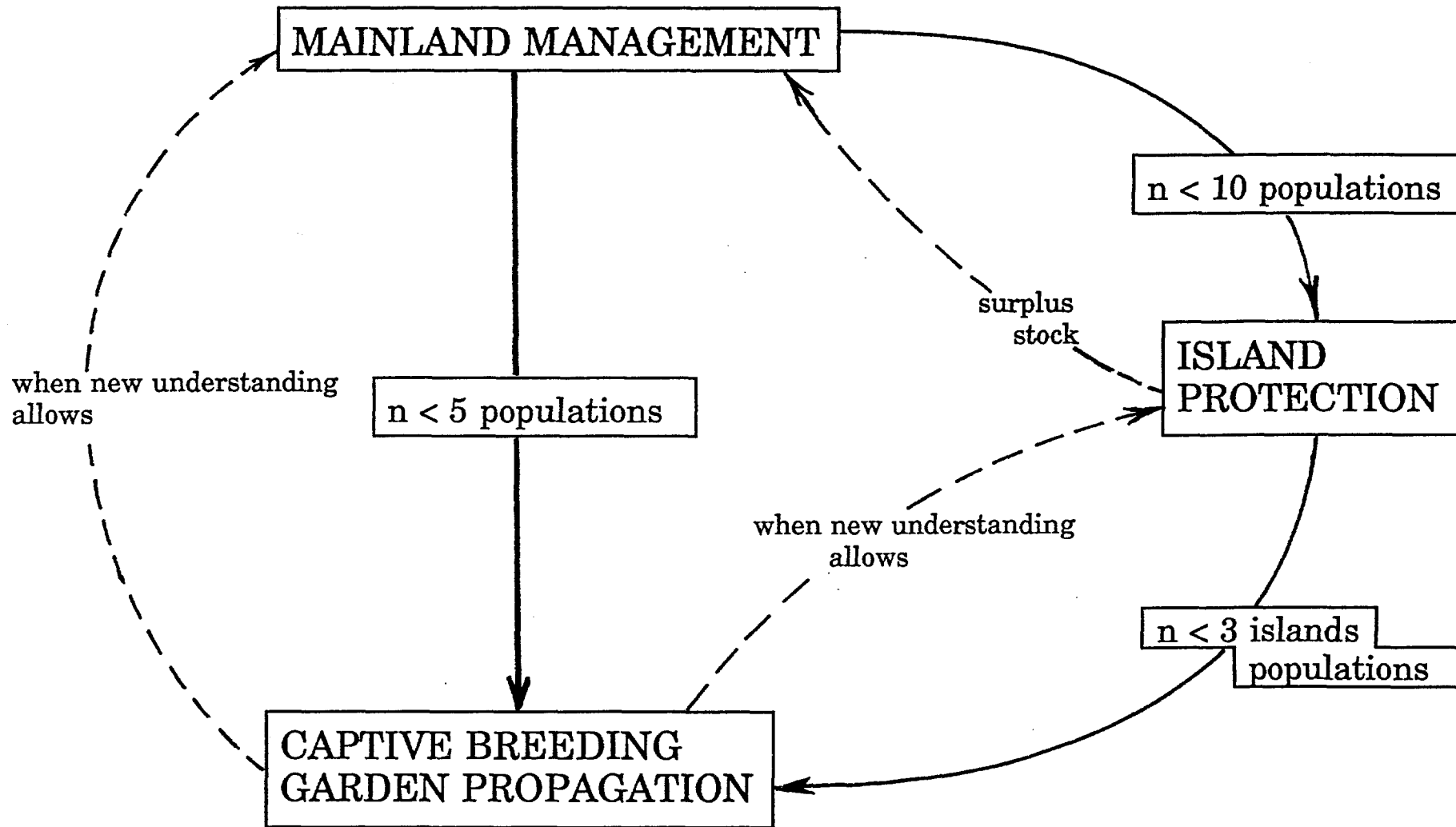
Was impressed by the teamwork and productive discussion which she observed during the workshop.

Stressed the four 'p's:

- priorities: the need to establish acceptable priorities for threatened species management.
- participation: mechanisms need to be established to facilitate public and user group involvement leading to acceptance and agreement.
- planning: planned approach to threatened species management was vital if the department is to properly manage.
- positive action: once recommendations have been agree, need to "get on with it".

Janet thanked everyone for their participation.

TOWARDS AN INTEGRATED STRATEGY FOR MANAGING THREATENED SPECIES



Note:

n = number of viable populations. The figures are arbitrary and may need change according to the group of organisms considered.