8.0 WILD ANIMAL DISTRIBUTION

This section discusses distribution under separate areas - northern Stewart Island, S.E. Stewart Island and S.W. Stewart Island.

8.1 Northern Stewart Island (Slater 1982)

8.1.1 Whitetailed Deer

8.1.1.1 Altitude

Whitetailed deer showed a distinct preference for the lower altitude habitat. Beyond 200 m altitude, relative density fell off markedly and very few animals were recorded above 300 m and none in the alpine grasslands.

Lower altitude habitat was generally associated with the favoured vegetation associations. The coastal lowland sector received the most use and contained the coastal scrub and podocarp cutover associations which were favoured habitats.

Seasonal movements alter this pattern of use with a tendency to greater summer use of coastal areas.

8.1.1.2 Vegetation

The type of vegetation also influences use of areas.

The coastal water fern association has developed along the northern coastline. This association was receiving heaviest usage but tree seedlings, including palatable species, are growing up through the water fern cover.

The coastal scrub, podocarp cutover and rata/kamahi hardwood association also received higher than average use.

The lowland podocarp forest was receiving very low but widespread usage.

Manuka scrub common on the Freshwater and Rakeahua catchments on terraces and lower slopes was receiving a low usage with

slightly higher use along the major rivers.

Usage of the subalpine scrub zone was so low as not to be measurable.

8.1.2 Red Deer

Red deer were found to be distributed throughout most of the survey area, although in very low numbers.

The highest relative densities of red deer occurred in the Rakeahua catchment and although nowhere were numbers high they do appear to be widespread throughout the catchment.

Further pockets of red deer were located in the Freshwater on the south westerly faces of Thomsons Ridge and also to the west of Upper Island Hill in the Upper Freshwater.

In all other areas numbers appeared to be very low and on many lines no pellets were recorded.

8.1.3 Possums

Possums were widespread generally in low densities.

Highest densities were recorded in the Freshwater catchment and lowest along the north-east and western coastlines. Some pockets of moderate-high density occurred within these otherwise generally low areas e.g. at Little Hellfire there was a moderate density predominantly in the coastal scrub belt and the higher altitude rata/kamahi forest.

Densities in the lower Rakeahua catchment were very low.

In the Adams Hill/Doughboy area densities were above average in sheltered sites. There was little evidence of possums on faces exposed to the strong, wet, westerly wind.

No evidence was found of possums utilising the tussock grasslands above the subalpine belt although, in the past, pellets have been observed in this zone from time to time.

8.2 South-Eastern Stewart Island (Cuddihy 1982)

8.2.1 Whitetailed Deer

The 1979 survey showed high mean densities in the

south-eastern sector of Stewart Island.

In 1980 a 1080 poison operation was undertaken over an area approximately 1000 m wide from the coastline between Big Glory Bay and Port Adventure. Pre and post poison animal assessments showed that whitetailed deer had been reduced by more than 90% within the poison zone.

Subsequent surveys show that the population has recovered to approximately 50% of the pre poison level, through recolonisation and natural increase.

8.2.1.1 Altitude

The survey area did not show a marked drop off pellet density above 200 m altitude. Densities remained high up to 260 m. Adventure Hill lying some 7 km inland contained a significantly higher population than the remainder of the inland zone. Similarly, areas inland on Lords River and closely aligned to the river itself recorded higher populations.

A high density was recorded in the coastal band. (Up to 2.8 km from the coast).

What difference there is in the use of different zones reflects the influence of vegetation association and distance from the coastline.

8.2.1.2 Vegetation

Densities were highest within the coastal scrub/hardwood, rata/kamahi and the lowland podocarp/hardwood associations.

Densities were significantly lower than the mean in the swamp, alpine scrub, manuka, cutover and in the high altitude podocarp/hardwood associations. (Cuddihy 1982).

8.2.2 Red Deer

The survey did not differentiate red deer pellets.

From local staff information it is known that red deer are present in the south east sector. A low population exists around the Toitoi flats and there are reports of infrequent sightings north to Big Glory Bay.

8.2.3 Possums

The density of possum pellets was high.

Although not affected by the 1080 poisoning programme in the Ocean Beach/Port Adventure research area possums were removed by trapping from some zones within the area and trapping has continued as part of the trial.

There was a slightly higher density in a coastal band of 1.2 km than in the area further inland.

Possum densities were high on the flanks of Adventure Hill. Other areas of high population were Toitoi, Lords River and on the headlands on the south-east coast.

Possum densities were highest within rata/kamahi forests. They were lowest in coastal scrub, swamp, alpine scrub, manuka and cutover forest.

8.3 South Western Stewart Island

The area to the south of a line between Doughboy Bay and the north arm of Port Pegasus has not been covered by a systematic survey.

Walk through surveys by staff of the Forest Service were undertaken in May 1981, June 1983 and February 1984.

Much of the area is very poor habitat for animals being severely exposed, damp and of unsuitable vegetation associations. There are, however, sheltered sites where deer populations are high.

The sheltered bays of Port Pegasus contain high populations of whitetailed deer in association with podocarp forest and coastal scrub. The damp scrubland immediately to the west of Port Pegasus was almost devoid of sign of either possums or deer. Similar sheltered sites along the western coast also contain high populations.

Possums were at moderate population levels along the north

coastal strip of Port Pegasus and in the sheltered bays to the south.

9.0 PRESCRIPTIONS FOR ANIMAL CONTROL

9.1 Nature Reserves, Scenic Reserves

The provisions of the Reserves Act 1977, in the case of Nature and Scenic Reserves, require that, exotic fauna shall as far as possible be exterminated.

9.1.1 Deer

The major portions of the nature reserves are unsuitable habitat and have not attracted high numbers of deer. Pockets of higher population occur along the western coastline south of Mason Bay and in the catchment of Lords River.

The scenic reserves, with their coastal location, contain higher populations of deer.

It will be unlikely that extermination will be obtainable. An objective of maintaining deer at the lowest possible level is more realistic. Recreational hunting will be encouraged but where the numbers remain high and other methods prove ineffectual use will be made of 1080 gel on tied down, or cut, natural baits.

9.1.2 Possums

Surveys indicate that while the majority of the nature reserve area is unsuitable possum habitat there are areas of higher population associated with suitable vegetation types. In particular Doughboy/Mt Adams, inland Lords River and Adventure Hill, the area adjacent to Kopeka River and small isolated pockets in sheltered areas of coastal strips.

Commercial hunters will be directed to these areas and in remote areas will be provided with relocatable bivouacs and shelter for drying skins.

Population surveys will be undertaken to ascertain the success of commercial operations. Where numbers remain high and other techniques prove ineffectual and there is a demonstrated

need to poison, which over-rides the potential danger to non target species, then aerial poison programmes will be undertaken using 1080 impregnated pollard pellet baits.

9.2 Private Land

The objective of this plan, in relation to wild animals on private land, is to ensure that adjacent land values are not affected by animals from the private land.

This is less likely to occur if wild animal populations on private land are maintained at a moderate level.

The Forest Service will seek liaison with the owners with a view to maintaining surveys of animal populations and will make recommendations to the owners as to the need for an increased level of control in the event of damage to adjacent land.

The Rakiura Maori Land Incorporated manages a major portion of the south-eastern sector namely the area between Ocean Beach and Port Adventure and at Toitoi and Lords River.

The objectives of the society, amongst other things, seek

"2(c) To ensure the retention and preservation of:-

(i) The land in its natural state.

2(f) To promote and encourage the hunting of deer and possum".

9.3 State Forest

The areas of State forest at Abrahams Bay, Big Glory Bay, Port Adventure, Kopeka south and Port Pegasus are considered to be influenced by, and to influence, adjacent land to the extent that control prescriptions will be similar to those for the adjacent land.

9.3.1 Deer

The State forest north of Rakeahua River and around the western, northern and eastern coastlines is of sufficient size to be considered as a separate unit for control purposes.

There is interest by recreational hunting groups in having formal recognition given to recreational hunting on Stewart Island by gazettal of a portion of it as a Recreational Hunting Area.

The most recent survey of these areas of State forest indicates that a satisfactory stage has been reached between the animal population and the vegetation condition. The Recreational Hunting Area proposal is set out in a paper prepared by Cuddihy and Slater 1982.

It will be important to maintain deer density close to the present level and encouragement needs to be given to recreational hunters to do this. This encouragement will be provided in the form of:-

1. Division of blocks into smaller units.
2. Provision of permanent camping sites within the blocks.
3. Publication of a hunting techniques booklet.
4. Publication of regular summaries of surveys and information on deer densities.

It is considered that recreational hunting is an appropriate method of controlling deer in these northern State forests. Recreational Hunting Area status will be further considered.

9.3.2 Possums

The generally low possum densities in this area have been attributed to commercial hunting pressure which has met with reasonable success largely due to easier access to possum habitats. Those areas of higher population are coincident with relative remoteness.

A policy of encouraging commercial hunting will be maintained with accommodation and drying shelter provided in the more remote areas.

If in those localised areas identified as containing moderate populations those populations cannot be reduced and maintained at low levels by commercial hunters Forest Service hunters will

carry out control measures using cyanide and traps.

9.4 Mason Bay Crown Land

9.4.1 Deer

The Mason Bay/Freshwater area recorded very high densities of deer in 1975. The densities are now significantly reduced.

The low significance of deer is attributed to the presence of sheep and the recreational hunting and trapping of live deer which was encouraged by the previous occupier.

Deer make a minor contribution to vegetation modification at present and consequently no official control programmes are necessary whilst this situation persists.

9.4.2 Possums

Possum populations are currently at a low level, and whilst this situation continues no additional control will be necessary.

9.5 Other Crown Land

Animal control on these miscellaneous pockets of Crown land will be undertaken as for the adjacent land in similar fashion to the prescriptions for the isolated pockets of State forest.

9.6 Special Areas

9.6.1 Ecological Areas (State Forest)

Although none currently exist in State forest, investigations into the advisability of gazetting ecological areas are currently proceeding.

Wild animals and ecological areas are incompatible.

Where ecological areas are gazetted wild animal control will be aimed at achieving the lowest possible level of animals.

Official control methods would involve tied down and cut natural bait poisoning for deer and intensive trapping and ground laid poison for possums.

9.6.2 Paterson Inlet Islands

Several islands in Paterson Inlet have either had no wild animals, or now contain such low numbers, that their vegetation is in near pristine condition.

The objective is to exterminate wild animals and to remove any which migrate there.

9.6.2.1 Deer

Intensive ground hunting has been successful in the past and will be repeated in the future.

9.6.2.2 Possum

Methods will include fixed poison bait stations, intensive trapping and ground laid poison.

9.6.3 Kakapo Area

The catchments of Pegasus Creek, Robertson River and Seal Creek from the coast to the summit of the Tin Range are known to be inhabited by kakapo.

While it is unlikely that high populations of deer and possums would compete for the birds' food supply the extent of any present conflict is not known. Deer and possum populations in areas away from the sheltered coastal pockets are low, and are not considered a current risk.

If, in future, the presence of wild animals is established as creating a risk to the birds' well being the Forest Service will undertake control measures following consultation with the Wildlife Service and the Dept. of Lands & Survey as to the area to be treated and appropriate methods to be used.

9.6.4 Codfish Island

There are advantages in having an island free of wild animals for the purpose of liberation of endangered bird species. This led to the Wildlife Service investigating practical aspects of eradicating possums on Codfish Island.

An eradication programme will be undertaken.
An investigation is necessary to determine the likelihood of success, the most appropriate method and the resources required

Discussions will be held with staff of Wildlife Service and the Dept. of Lands & Survey.

9.7 New Species

The likelihood of the introduction of new species of wild animals is remote. The most likely introduction will be goats either released, or escapees, from gardens or sections in Halfmoon Bay.

Goats, restrained or contained behind fences, are not considered wild animals but the potential for their spread to forest is of concern.

Encouragement has been given to the local authority, the Stewart Island County Council, to investigate ways to reduce the risk of spread through the introduction of regulations to control use of goats.

Close liaison will be maintained with the Council.

A policy of extermination will apply to all species of wild animals, not currently present on the Island, should they become established.

10.0 CONTROL METHODS

10.1 Deer

10.1.1 Ground Hunting

10.1.1.1 Government Hunters

Ground hunting was undertaken by the Internal Affairs Department from 1930 to 1952. Between 1937 and 1952 6380 deer were destroyed. Although ground hunting will be used in restricted areas this method is not currently favoured for large scale operations because of the following factors:-

(a) The cost of supporting hunting teams in the field is high.

(b) There is a shortage of hunters with the experience and skills necessary to be successful on the Island.

(c) There are available, methods which are more cost efficient.

10.1.1.2 Recreational Hunters

Recreational hunting has taken place since 1920 (under licence until 1925 when all protection was removed). Recreational hunters are reporting kills of between 550 and 600 kills each year, a kill ratio of approximately .1 kill per man day spent on the block.

Recreational hunting will be encouraged as a front line control method in the first instance.

It is considered that the present effort will be sufficient in those areas with moderate populations but will not be adequate, in the short term, in areas of high population.

10.1.1.3 Commercial Hunters (ground)

When it was possible to deposit carcasses at a freezer in Halfmoon Bay there was a keen, local interest in meat hunting. Since game packing regulations have closed the freezer the interest has waned.

Because of the length of the transport time to freezers on the mainland, and the cost of establishing a separate facility on Stewart Island, this method cannot, currently, make a contribution to deer control.

10.1.2.2 Commercial Recovery (aerial)

Commercial interest in the island began in the late 1970s and reached a peak in the period late 1980 to the beginning of 1982. The permit returns for aerial recovery for the calendar year 1981 indicate that approximately 300 whitetailed deer and 51 red deer were recovered from Stewart Island.

It is considered that the recovery operators have assisted to achieve low populations in the northern coastal regions.

The continuation of this contribution relies on the incentive provided by whitetailed carcasses and live red deer hinds. Unless farming whitetailed deer becomes profitable this method cannot be relied on to provide long term effect.

10.1.3 Poisoning

10.1.3.1 Ground Application

The method of applying 1080 poison, in a gel on natural baits, proved very successful on whitetailed deer. A F.R.I. trial carried out in 1980 in a kilometre wide strip between Ocean Beach and Port Adventure produced kills estimated in excess of 90% of the population in some areas.

Birds were monitored by Wildlife Service and F.R.I. staff and were not affected and this method is considered the most efficient available at present.

10.1.3.2 Aerial Application

Five operations, using 1080 carrot, were carried out in the period 1970 to 1976. The prime target was possums and the poison was restricted to the coastal forests between Saddle Point and East Ruggedy. There were reports of some whitetailed deer being killed.

In view of the success of hand laid poison on natural baits, and the minimised danger to other wildlife in the use of natural baits, aerial poisoning is not favoured for use against deer on Stewart Island.

10.1.4 Miscellaneous Control Methods

10.1.4.1 Capture Pens

Capture pens are used on private land. During the initial phase of live capture several applications were received to place capture pens on Stewart Island.

These were turned down on the basis that they involved monopoly rights of Crown land, damaged the immediate habitat and presented an eyesore. Subsequently the lack of success in farming whitetailed deer has led to a lack of interest in obtaining live animals except to fulfill a small demand for animals for zoological parks.

It is considered that capture pens are not warranted on Crown land.

10.2 Possums

10.2.1 Ground Hunting

10.2.1.1 Government Hunters

The factors which weigh against the use of Government employed hunters on a broad scale, on deer, also apply to possums.

The possum trapping project carried out in the highest density area along the coast in the vicinity of Chew Tobacco saw about 360 possums killed in an area of approximately 88 ha indicating a density of approximately four possums/ha. This resulted from several months work and it was considered that, at the end of the trial, few animals remained. In small areas such as this one intensive control can be achieved for special purposes by the use of ground hunters.

10.2.1.2 Commercial Hunters

The volume of requests for permits to hunt possums varies significantly according to the expected financial return on skins.

The remoteness and the climate require a high degree of efficiency and skill and the transport and material costs are relatively high.

While it is considered that commercial hunters can make a contribution to possum control there will be a need to use other methods in priority areas e.g. kakapo area, Codfish Island.

10.2.2 Aerial Poisoning

This method, using predominantly carrot bait, is widely used for large scale work throughout New Zealand.

Of the five aerial drops carried out between 1970 and 1976 only the last was systematically assessed for effectiveness. The opinion was that the sowing rate of 1080 dosed carrot was too low. The acceptance of the bait by possums was almost 100%.

Before 1080 poison can be used on Stewart Island any project requires the consent of the Minister of Forests. Uniform sized pollard bait offers less risk to birds and would now be preferred to carrot.

The ability to spread large quantities of bait over extensive areas by aerial application and its proven effectiveness against possums makes this method an attractive one. However the results of the Forest Research Institute trial will be required before the various values at risk can be weighed in order that a recommendation can be made to the Minister of Forests.

11.0 ADMINISTRATION

The Conservator of Forests, New Zealand Forest Service, Invercargill has the responsibility for implementing this plan.

The officer in charge, New Zealand Forest Service, Halfmoon Bay, is responsible for day to day management of the wild animal control programme.

11.1 Hunting Permits

11.1.1 Deer Hunting Permits

Hunters are required to collect permits from the joint Forest Service/Lands and Survey office at Halfmoon Bay.

Permission to hunt deer is required from the landowner for all private land.

11.1.2 Possum Hunting Permits

Permits for State forest will be issued by officers of the Forest Service.

Permits for other Crown land will be issued by officers of Lands & Survey.

Permission to hunt possums is required from the landowner for all private land.

11.2 Review

The plan is considered as under constant review and the need to make major changes will also require that the public be given the opportunity to comment.

Changes in, animal populations, vegetation condition, policies of local and land controlling authorities or Government are examples of factors causing major review.

11.3 Reporting

An annual report will be prepared by the Forest Service on progress on wild animal control.