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Canada Geese at Mitredale' Waimarino. Photo N. Hayes



WINCHESTER

MORE THAN A NAME. A LEGEND.

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Over the past 16 years we've seen some great DU annual meetings, but none were better than this years — at THC Tokaanu on July 14th and 15th. Once again one hundred members attended from many parts of the country — our Patron from Christchurch, Warwick Day and his father from Winton in Southland and Kathy Willis from Willowbank Wildlife Reserve in Christchurch, plus members from all over the North Island. The Honourable John Falloon and his wife Philippa also spent the weekend at THC Tokaanu and I'm sure John will promptly receive an invitation to be present at next years meeting — as his three hours on the piano was something special.

As one who has been directly involved in all but one annual meeting (I missed out in 1977 when in the UK) it has always been a great satisfaction for me to see our annual function so well attended, and to see the financial success of the functions. This year we were up slightly on income, compared to previous years, which in these fairly depressed economic times is an achievement.

While that great auctioneer Bill Wilkinson is responsible for raising huge amounts at the annual auction, the ladies directly involved with registrations, sales table, raffle sales, and procuring auction items, are also indispensable and a vital part of DU annual meetings. And, as I mentioned at the AGM, our three ladies involved at DU Board of Directors level - Glenys, Diane and Marie - are one of the main reasons for DU's continual success. Such has

been the success of DU (NZ) that we now have close to half a million dollars of freehold land and buildings at the Sinclair & Pearce Wetlands. The next period will see a very serious move to eliminate the remaining \$55,000 mortgage on the Pearce Wetlands, as we have much work still to do if we are to ensure healthy waterfowl populations.

Of course, the support from Ducks Unlimited in the USA, who each year for the past 15 years have sent a container of top quality items for us to auction, are also responsible for playing a major part in our success, and we sincerely thank them for this.

Jim Glover retired as a DU Director at the AGM - after 11 years on the Board. Jim's contribution to the ROYAL SWAN project has been outstanding, and the key to the project's success. Jim assures us he will retain a great deal of interest in this project and in assisting DU at every opportunity.

Two new people joined the Board of Directors at the AGM - David Smith from Auckland and Alan Wilks from Greymouth. David has been a DU member for many years and has been the driving force behind the establishment of the NZ Waterfowl and Wetlands Trust. In joining the Board David becomes our second solicitor on the Board. Alan Wilks is also a long time DU member and you no doubt have seen Alan - under his stage name Alan Jervis - at the movies and on television. Most of you will have also noted Alan's wetland creation efforts in FLIGHT No. 62.

It's certainly good to have David and Alan on the Board and I hope their involvement will be a long and happy one.

A new innovation at the annual meeting, and one which proved popular, was the avicultural workshop held on Saturday morning. Twenty members attended and at the conclusion of the one hour session there was unanimous agreement that a similar session should be held next year. An opportunity was taken during the workshop to launch the revised edition of the BROWN TEAL HANDBOOK - and to sell a few copies. This book is now available from our sales section - \$25 - and is a must for all members interested in waterfowl aviculture.

A meeting of DU Chapter Chairpersons was also held on the Saturday morning and this too was very well attended. A well worthwhile meeting resulted and it was apparent that many chapters want to get their teeth into local projects.

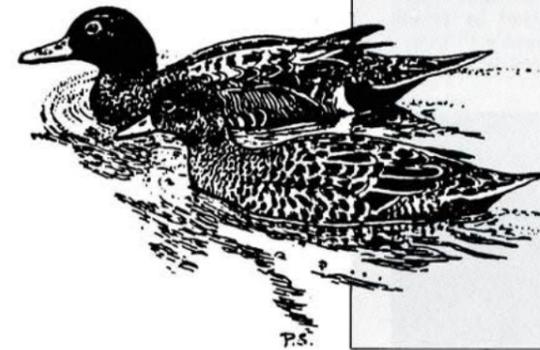
We have already booked THC Tokaanu for the 1991 annual meeting, so get your reservations in as early as possible (Diane already has thirty bookings!).

At our first Board of Directors meeting after the Annual Meeting the subject of hunting and conservation was briefly discussed and, as it is sometime since this was discussed in FLIGHT I thought I would take the opportunity to comment on DU philosophy in respect of waterfowl hunting.

Ducks Unlimited is neutral on the question of waterfowl hunting, so long as recreational hunting demands do not conflict with the conservation and wise management of New Zealand's waterfowl populations. The hunting of game is an emotional issue that is closely tied to the issue of firearms ownership and Ducks Unlimited is not prepared to enter these debates unless the conservation of waterfowl and wetlands is compromised. Notwithstanding this, Ducks Unlimited does recognise that many responsible hunters are conservationists, and spend large amounts of their personal money and time helping to ensure the future of both game and non-game species of waterfowl, along with their habitats.

In a future issue of Flight I hope to expand further on the vital role that waterfowl hunters can, and do, play in the conservation of waterfowl and waterfowl habitat.

Neil Hayes
PRESIDENT



P.S.

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Cover Photo: Jim Campbell receiving a Royal Swan Award from President Neil Hayes.

MISSION STATEMENT

Ducks Unlimited (NZ) Incorporated is a private, charitable, non-profit conservation organisation dedicated to the preservation, restoration, creation and maintenance of wetland habitat in New Zealand, the propagation and conservation of the country's rare waterfowl, and the advocacy of wetlands as a valuable natural resource. This is achieved through six projects each with specific aims. These are: "Operation Pateke", the reduction of the threatened status of the New Zealand brown teal through the release of captive bred birds and wise habitat management; "Operation Gretel", to increase the number of grey teal in New Zealand through the provision of suitable nesting habitat; "Operation Whio", the conservation of blue duck through the release of captive bred birds to expand the species range; "Operation Branta", to establish the Canada goose in the North Island as a valuable recreational resource; "Operation Royal Swan", the conservation of Mute Swan through the establishment of a captive breeding population; and "Operation Wetlands", to preserve, create and manage wetland areas through direct funding, technical assistance and public education of wetland values. The scientific study of wetlands and waterfowl is also encouraged through direct funding.

The organisation was founded in May 1974 by a group of concerned conservationists and incorporated by them in June 1975 at Wellington, New Zealand. Membership, in four categories, is open to anyone who supports the organisation's objectives. Junior membership is \$11.00 per annum. Full membership is \$30 per annum. Trade membership is \$45 per annum. Sponsor membership is a minimum of \$60 per annum and Life membership is \$600.00. Membership carries a subscription to "Flight", the official quarterly publication of Ducks Unlimited which currently reaches 2000 members and friends concerned with waterfowl conservation. Letter, manuscripts and photographs should be addressed to the "Flight" Editor. To assure prompt delivery, members should send subscription renewals and changes of address to National Headquarters at PO Box 44-176, Lower Hutt. Any views expressed by contributors in "Flight" are their own and do not necessarily constitute those of Ducks Unlimited (NZ) Incorporated.

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ASHLEY DOWNS

- South Otago

by
R. Hamish McCallum

If D.U. had been established in the late 1800s then John Gibson would have probably been a foundation member.

John was a native of Glasgow Scotland. When he was 18 his father, a merchant, sent him out to N.Z. to extend the foreign arm of the family business. He was reported as saying to John "When all the gold has stopped glittering, the people of New Zealand will have to depend upon sheep. As soon as possible acquire a sheep run."

So it was to be and in 1869 John acquired a property in the rolling downlands of South Otago near Clinton.

In Britain he had been associated with an orphanage near Bristol known as Ashley Downs; so he gave this name to his station.

In actual fact it was more of a large farm than a sheep station when compared to others nearby. Operated along English lines, extensive areas were cropped and some animals were housed inside at night and in winter.

He soon found out that he would require a considerable water supply to service his facilities. In particular there were chaff-cutters to run, sheep washes and dips to establish, as well as a hydraulic ram to reticulate the water.

To do this he started by damming two small creeks but soon found that he had an insufficient head of water to operate his plant, which was situated half a kilometre away along a water race.

I have often suspected that a lot of this work could have been done more easily using windmills and tanks which he did use in part; but it appears as if he wanted an excuse to establish a large area of water, as he put his staff to work enlarging the dams - not only across the bottom, but up both sides as well in the form of a horseshoe.

He is thought to have used redundant Chinese goldminers for various projects on the station and if so then they would almost certainly have played a part in the damming and water-race construction.

Using horses and drag scoops they excavated an area above the original water line to obtain spoil for the enlarged dam walls. The leftover spoil was heaped into three large mounds which later became islands in the middle of the 10 acre lake created by the project.

Landscape gardeners from Dunedin were called in to plant the area in trees and shrubs. It was to become the largest private collection of such flora in the colony at the time and there is a report that there were some species so rare that he was approached by Covent Gardens in London to supply them with seed.

It must have become annoying to John Gib-

son that he couldn't get a view of his creation from his bedroom window (A problem which many DU members have probably encountered today) so he employed Dunedin architects and builders to design and build for him - a suitable country house on the hill overlooking the lake.

This was to become a 4000 sq. ft. state-of-the-art brick bungalow with such features as acetylene gas lighting, internal telephone, servant paging system, running water and the first flush toilet in the area. Quite impressive considering that it was still the late 19th century; and to top it off he had built on the roof, an observation tower which was accessible by internal stairs and from where he could sit to survey his lake and surrounding estate.

There is no record known to this author as to what wildlife the lake was populated with or whether it was shot or not, but going on British habits of the time, it was more than likely that the area was populated by game birds purposefully.

In 1908 John Gibson sold out and the station was subdivided into smaller farms. One of these included the house and lake.

This situation continued until the 1960s when the house was finally abandoned as a dwelling. In the intervening time the buildings had fallen in need of repair and the land around the lake was badly overgrown with many of the specimen trees having died out.

However after remaining in this state for 10 years, the house, lake and some surrounding property were subdivided off into a 60 acre block, which was bought by a Dunedin entrepreneur and restoration work was begun. A tidy sum was spent on starting renovations to the dwelling and weed trees such as cork-elm and alder together with wild rhododendrons were cleared from the top of the lake, so that once again the occupant of the house could gaze upon his lake.

10 years later in August 1984 I purchased the property. The lake itself was still in good order and miraculously hadn't silted-up as it was never very deep. Having been a Closed Game Area for many years and not shot, it was and still is, a haven for birds, in the season.

However it was not a favourite breeding ground because of a very large eel population. But from the 1960s onward tons of eel were harvested and this alleviated things slightly although rats and ferrets continued to be a problem also.

My family actually owned the area for a 10 year period in the 60s/70s and during that time we released three pairs of Canada geese. In conjunction with the Otago Acclimatisation society. Today there is a good population which I share with several of my neighbours and I have often counted a flock of over 30 birds grazing right up to the house in the early morning. However their grazing habits don't seem to bother anyone locally, as I have no reports of any being shot in the area despite there being an allowance for two in the licence for this part of Otago.

Although we have plenty of people visiting, the area remains a wildlife one in every respect rather than a Botanic-gardens type set-up. Even so, I have had ducks nesting in various parts of the garden demonstrating their uncanny ability to sense those seasons of the year when they are safe in the company of humans.

During the shooting season bird numbers swell into the 10s of thousands although peak numbers were probably in the late 70s when a lot more grain was grown around this area than today.

It is amusing to watch a flight of Canada's landing in such a packed area at that time of the year. Resembling heavy bombers returning from a mission they expect right-of way, usually coming in on direct approach, meters above the house and plough into the lake scattering duck refugees in all directions.

Mallards are of course the most abundant ducks although there are also a lot of shovelers. I'm hoping to boost the small number of scaup and to this end am establishing nest boxes.

Around 1982 six black swan signets were pinioned and put onto the lake. After five years they began to breed slowly culminating in one old girl having six signets last season alone. There are large populations of black swan elsewhere in Otago and hence we often get strangers dropping in which hopefully will enhance the blood line. Nearly all the young to date have migrated as I haven't pinioned any and it will be interesting to see if they come back at a later date to nest.

Actually I'm not too keen on seeing a large population of black swans established as they have caused quite a lot of grazing damage around other highly populated areas in Otago. However I can say that I have never seen a swan come out of the water here except to nest on one of the islands which may be due to a sense of insecurity coming from being pinioned.

An illegal immigrant in the last few years is the Australian coot. I have a good sized group of these wee birds and speaking of insecurity - it is interesting to note that when disturbed they seek the company of the swans and rarely take flight unless pushed.

The lake is well stocked with perch and hence we have the attendant black shags as well as blue herons and the occasional kingfisher.

There would probably be greater varieties of small birds around if it were not for the southern migration of magpies. 20 years ago magpies were rare south of Canterbury.

Earlier this year another chapter in the waterfowl saga took place. Following a short notice phone call from Jim Glover, we ripped the back seat out of the old Falcon and headed 300 miles north to Peacock Springs, there to meet Jim and take delivery of a pair of Royal Swans.

Nick-named "Bonny and Clyde" they were put in sacks with their necks sticking out and we proceeded towards home with the pair looking over our shoulders quite literally. Armed with instructions from Jim, we kept the rear windows partially open for ventilation and stopped frequently to lift the birds up so that they could move their legs thus reducing the possibility of them having the circulation to their feet cut off.

They hissed a little at first but soon settled down to feed on bread and water as well as gaze around.



The lake in winter.

We had to break our journey half way at Oamaru and a local hen-farmer gave us an empty run to release them into for the night. The next day we made it home uneventfully but it must have been an unusual sight as I've since been queried about their fate by service station attendants along the route, who have remembered the car.

Once home they were released straight onto the lake with a fair bit of ceremony. I was worried as to how they would get on with the black swans but I needn't have as they mixed together as if they had known each other for years, -too good in fact as I had hoped that the blacks would stake out their territory and keep the whites up at the house end of the lake where I could observe them better.

With that thought in mind I fenced a portion of the lake off a week later and set out to recapture Bonny and Clyde by motor boat. I didn't expect them to swim so fast and in addition; every time we closed on Clyde, he got up and ran on the surface as well. About this time the outboard would usually clog with weed also. However we eventually cornered them and found out that they would surrender peacefully as soon as touched with the crook and assumed that they were only playing with us.

I had two reasons for wanting to contain them: as well as establishing territory, I needed

to be sure that they were getting enough to eat as they were more used to a grain based diet than a weedy one such as we were providing. I also went on a bread scrounging campaign around the neighbourhood to help during this transition period.

However they proved to be expert escape artists so I decided not to harass them too much and instead monitor them from a distance. The next step was to catch them briefly for a check on their condition much along the lines of a fat-lamb drafter, and release them again.

Following Jims' advice I also gave them some access to gravel, as there are no natural deposits around the lake and this appears to be quite necessary in the birds crop to help digest its vegetarian diet.

The ongoing aim is to introduce as many different breeds of compatible waterfowl as is practical and to continue the area as a closed game one. I am a shooter myself but have a place elsewhere.

D.U. members are welcome to drop in if passing, the address being:

Hamish McCallum
Ashley Downs
Clinton

South Otago
Ph. (03) 4157925

or ask anyone in Clinton.

A view of the lake and house.

Predator Control in Action

by
Peter Nola

In this article DU supporter, Peter Nola, relates the predator control efforts at the Windermere Game Bird Conservancy - a group with its headquarters on the property of DU Honorary Member Tony Flexman. It was on Tony's property that Operation Gretel started in 1976.

After noting a serious decline in gamebird (ducks, pheasants and quail) numbers over the past five years, coupled with the odd sightings of ferrets and feral cats, a predator control trapping programme was instituted. In an effort to establish the numbers on the property we shot on. A new trap was devised that would catch,

without failure, anything that entered, alive. The target - feral cats and ferrets.

The property is a large sheep and cattle farm, gently undulating, mainly grassland with many rushes in wet areas, bordered on one side by the Mangatangi River and Whangamarino Swamp, not far from Pokeno, some 65 km from Auckland City. The size of the area is about 400 acres of dry land, with the nearest house, other than the homestead, being some 3 km distant. There are some nine odd ponds, natural and man-made, around the farm and shot over by 10 shooters, who all agreed to take turns in monitoring the programme. Checking and re-baiting was done on a fairly regular basis, every Wednesday and Saturday.

In all, 10 variations and slightly different trap models were experimented with and tested on my neighbours' cats in the city.

The design of the the trap is as follows: about 86 cm long, 46 cm high, 36 cm wide, having a fibrolite door 4 mm thick, chosen for its versatility and stability in all weathers and an aluminium foot tripping plate for its no-rust quality. The frame is made from tanilised timber, 25 mm x 25 mm, drilled and fastened together with 35 mm galvanised nails. The door is fibrolite, 4 mm x 225 mm wide, 275 mm high. A hole is drilled in the centre 50 mm from the bottom. The tripping plate is of aluminium, 22 gauge, 400 mm x 140 mm wide, rolled on to 7 mm aluminium rod for pivoting and held at each side of the cage with timber stops.

The plate is the trigger. The sear is high-tensile fencing wire, 2.5 mm from the centre of the plate, fastened by 35 mm brass ring and cyclone wire clip to act as a differential. The

wire goes at an angle of 45 deg to hole through frame of cage and through fibro door. There are holes in the frame and door twice the diameter of the wire so that the weight of the door in an open position is held by the wire and is holding the plate at the 45 deg angle. The end of the wire is filed smooth and the holes and wire end are greased with dripping or fat. A setting of less than 250 grams can be achieved and all traps are tested by dropping a carpenter's pencil from 300 mm on to the plate to fire the trap.

All wooden parts and fibro door are painted with green fence stain. The plate has two coats of oil-based paint with sand sprinkled on to stop the surface becoming slippery.

For an outer covering we first used 25 mm green plastic coated wire, then 12 mm sparrow mesh, then 25 mm bird mesh. All proved too weak for the teeth of the victims. Trying out the different wire has been expensive. We finally went to 20 mm square welded galvanised mesh, unpainted, in its natural finish. The wire wraps around the cage and joins on the underside, and is fastened to the timber with the smallest galvanised staples.

We tested many baits - quarter of fresh rabbit, small birds, duck offal, fish heads and chicken waste. None were more popular than the other. For us it was easier to use chicken waste. We have used in excess of 400 baits. The bait is placed in the middle and far end of the cage so the victim must step on the plate, either coming or going. The trap fires on foot contact and the guillotine action of the door is

activated while the victim is at least 450 mm away from the door and with its back to the door.

The total cost of the traps is unavailable as only the wire and plates were purchased. The rest was on hand and the work was done in my home workshop. The experiment had to be done to evaluate potential and effect as quickly and as cheaply as possible. The traps are no doubt better all metal, but I have no experience with metal and can only work with wood, and to purchase possum cages was too expensive.

It is not known if this is the best way or whatever - but we are catching!

Possums caused the worst damage to traps through chewing the timber and some traps almost fell to bits as a result. The traps had to be repaired and patched constantly, with many early victims escaping. Twenty traps were made, but because of damage we have never had any more than 15 in the field ready at any one time.

One fault with the trap is that the wind can set it off, as can a hawk landing on top of it. Also it is probably too big for ferrets, stoats, rats and hedgehogs, but maybe the right size for cats and possums. Why possums should "go" for a meat bait we don't know.

The first trap was set at 1.30 p.m. on May 5 1987 and caught a ferret at 4.30 p.m. the same day. Immediately 19 more traps were programmed and all were finished by mid-June.

The catch by May 30 1988 after one full year of operation - we had caught: 54 cats, 59 fer-

rets, 42 rats, 46 hedgehogs, 2 stoats and 237 opossums - 440 total.

During the summer our catch rate declined for, we believe, the following reasons:

- More natural food about.
- Scent of bait not carrying in the long grass.
- Bait going rotten or drying out too quickly in the summer heat.

It looks like the best time is in late autumn, winter, spring, when food alternatives are short and bait life is longer.

After a year's trapping we have noticed a big jump in the number of rabbits and much damage to trees we have planted. In an anticipated likewise jump in rat numbers a poison programme was started at the same time. As to an increase in gamebird numbers, we will have to wait and see.

We now have constructed 20 more traps this year, increasing our activity 100% in an effort to get on top of what now appears to be, or has been, a major problem. The most surprised person has been the owner and occupier as to the numbers caught.

So far after 3 years trapping we have caught: 117 cats, 155 ferrets, 153 rats, 183 hedgehogs, 15 stoats, 7 weasels and 741 opossums = 1370 animals, averaging 1.25 animals per day. As a result of this the birdlife is blooming, but so is the hare and rabbit population - we've shot over 400 in recent months.

Grey Teal are obviously benefitting from our work and very large numbers are now being seen throughout the area.



The cage trap used in the Predator Control Programme.

NEW MEMBER'S COMPETITION

Following the success of last year's membership drive Ducks Unlimited is again offering all members the chance to win prizes by introducing a new member. Simply fill out the attached coupon, or send us a copy and both you and the new member you introduce will go into a draw to receive prizes from the D.U. Sales Dept. The more members you sign up, the more chances you have of winning.

This will now be a regular feature of "Flight" and the first winners will be announced in the December issue of the magazine. The first draw closes on the 10th November.

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Nesting and Brood Parasitism in Grey Teal

by
Dale Towers

Introduction

The Grey Teal (*Anas gibberifrons gracillis*), as a breeding species is found throughout Australia, Indonesia, New Guinea and some Pacific Islands, and is self introduced to New Zealand (Cunningham, 1955). The presence of this small waterfowl in New Zealand was first recorded by Europeans in 1866 (Frith 1967) but it had probably been present since a much earlier time as the Maori people had named the bird *lete*. Today Grey Teal are present throughout much of New Zealand, however their numbers are still relatively low.

During the early 1970s the theory was advanced that the continuing low numbers of teal in New Zealand was the result of a lack of suitable nest sites. In Australia, where Grey Teal are common, their nests are most commonly located in cavities in trees and stumps. Few nests have been located in similar sites in New Zealand, and indeed, few native or exotic trees in or adjacent to New Zealand wetlands develop holes suitable for such hole-nesting birds (McFadden, 1983).

In 1974 Ducks Unlimited began "Operation Gretel" with the objective to increase the Grey Teal. This was to be achieved by erecting suitable nesting boxes in regions known to hold teal and in the following years Grey Teal begin to utilize these boxes. During 1979 and 1980 Ian McFadden, of the then Wildlife Service, undertook research into the nesting of Grey Teal in nest boxes, at Pokeno (see Flight, issue 38, 1983) and reported on the nesting dynamics of the population. In passing, he made reference to the possible occurrence of brood parasitism among the box users and suggested that more research should be undertaken to assess the impacts of this parasitism, with special attention being paid to its effects on productivity.

This paper reports on the results of this research, which was undertaken during the 1988 breeding season. Box usage, nesting dynamics and the effects of intraspecific brood parasitism among the resident Grey Teal population of Flexman's property at Pokeno, are emphasized.

Method

Data Collection

Data collection began late in June and continued until mid-December, 1988. During the period all 105 boxes were inspected every seven days. The amount of time for each inspection was kept to a minimum, so as not to unduly disrupt the nesting birds. In those boxes containing eggs, the number of eggs, the presence or absence of down and the general condition of the nest was recorded. In those boxes containing recently hatched clutches the presence and number of chorion sac and the condition of any remaining ducklings was noted in an effort to accurately determine the hatching date. Any eggs failing to hatch were removed and their contents examined.

Determination of Brood Parasitism

Four criteria were used to establish which clutches were subject to intraspecific brood parasitism:

- (1) Irregular sequence in egg appearance
- (2) Appearance of new egg/s after the completion of a clutch/Breaks in the egg-laying sequence of more than three days
- (3) Clutch size
- (4) Content of the egg/s remaining after hatching (Non term eggs)

(1) Irregular Sequence of Egg Appearance

While most ducks lay with 24 hr time intervals between each egg (Dorst, 1974), no species is known to lay more than one egg in less than 24 hours (Sturkie, 1977; Welty, 1982; Van Tienhave, 1983). Therefore, the deposition of two or more eggs in a nest in any single day must be attributed to the laying efforts of more than one female, this is known as parasitism.

(2) Appearance of New Egg/s After Completion of the Clutch/Break in Egg-Laying Sequence of More than Three Days

Bullough, (1942) documented the regression in the size of the ovary, and other related reproductive organs after the completion of the clutch. Based on this histological evidence eggs which appear after the completion of a clutch are highly unlikely to belong to the resident hen, and are therefore parasitic eggs.

(3) Abnormally Large Clutch Size

The frequency distribution of clutch size in most birds is clumped and the standard deviation of the mean clutch size is relatively small (Yom-Tov, 1980). Yom-Tov suggested that for species (or populations) where the clutch size is clumped, if any clutch is twice the size of the mean clutch size, or larger, it is reasonable to assume that it was laid by more than one female.

Little data from natural Grey Teal nests has been documented in New Zealand, however, the

clutch sizes of the few that have been located range from five to nine (Oliver, 1955; Falla, Sibson and Turbott, 1966). The average size of twenty clutches laid by birds held captive by Ducks Unlimited members was recorded by McFadden, (1983) as 7.5, while Firth 1967, reported that the average number of eggs in 54 nests he located in Australia was 7.9. Taking 7.5 as the mean clutch size of Grey Teal in New Zealand, it is reasonable to assume that any clutch containing 16 or more eggs is the result of the laying efforts of two or more hens.

(4) Contents Condition of Eggs Remaining After Hatching (Non-term Eggs)

In precocial birds, like Anatidae where hatching is synchronous, parasitic eggs which are deposited after the onset of incubation fail to hatch. Examination of these eggs reveals developing embryos from which the date of parasitism can be determined by back calculation.

Terminology

A nest/clutch is defined as one in which one or more eggs were deposited irrelevant of the occurrence or non-occurrence of incubation. Clutch size is the total number of eggs deposited in a nest, while a successful nest/clutch is one where one or more eggs hatched. The number of hatchlings from a successful nest is the number that successfully emerged from the egg irrespective of whether they left the box or not. Hatchability, is therefore defined as the total number of ducklings that successfully hatched in a nest box divided by the total number of eggs comprising the clutch from which they emerged. Clutches were termed deserted/abandoned in those cases where incubation was not initiated or where incubation was undertaken but terminated before hatching.

Nest box occupancy rate at any time was the number of boxes in which a nest had been initiated, divided by the total number of boxes within the stand, (105). The date of nest initiation for any box was taken as that date when

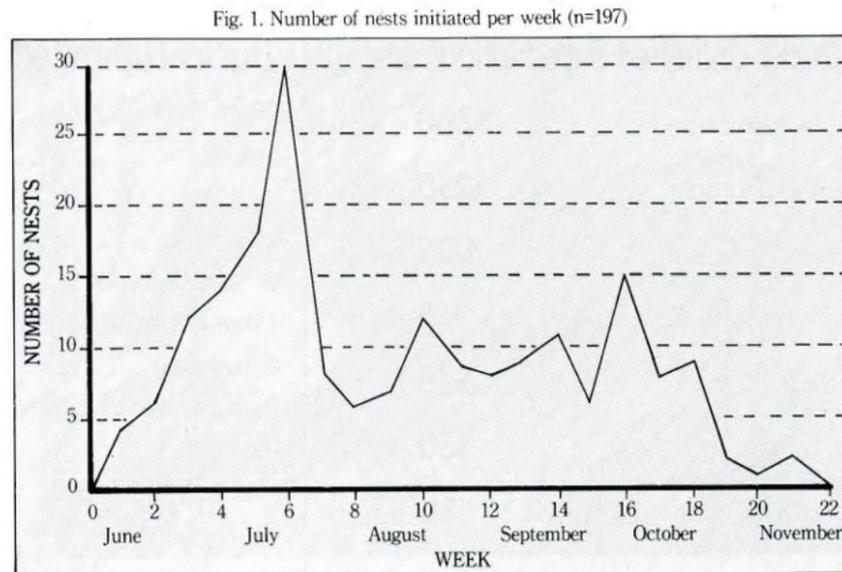


Fig. 1. Number of nests initiated per week (n=197)

the first egg was deposited within that box.

Results

Utilization of Nest Boxes

Boxes of four different dimensions are situated at Pokeno. These have base areas of 472.5cm² and 690.0cm², and volumes (below entrance hole) ranging from 21971cm³ to 44850³ (Table 1). No significant effects were found between the different box base areas or volumes with regard to clutch size, incubation efficiency or parasitic laying levels. Similar

findings arose when box orientation was examined with no significant levels of favouritism for any entrance hole orientation being found. Gilmer, Ball, Cowardin, Mathisen and Riechmann, (1978) also failed to find any significant correlation between box direction in relationship to box usage in their study of Wood Duck. It also appeared that box usage in relation to box location was random.

Box usage during 1988 was not much greater than that recorded by McFadden during 1979,

1980. All 105 boxes contained at least one clutch during the season. Twenty-four boxes were used once, seventy twice and eleven three times.

Nesting Chronology

Laying commenced when the first egg appeared on the 25th of June. Similar initiation dates were also reported by McFadden for both 1979 and 1989. The peak of nest establishment occurred late in July, a second smaller peak occurred in early October (Fig. 1), and the last nest was initiated on the 12th of November. The 1988 nesting season lasted, from first egg laid to last egg hatched, for 24 weeks.

Fig. 1. Number of nests initiated per week (n=197).

Parasitic laying occurred throughout the breeding season with no periods being favoured during this time.

Nest Success

Of the 197 nests recorded throughout the duration of 1988, 172 (82%) experienced some degree of incubation. A total of 141 (72%) were successfully incubated to hatching compared with 101 (78%) and 75 (71%) in 1979 and 1980 respectively.

A total of 56 (28%) clutches were abandoned resulting in 777 eggs being lost. The average abandoned clutch contained 14 (S.D.+5) eggs. An increase in the rate of abandonment was noted towards the end of the season with 37 clutches being deserted during the last 10 weeks of the season. Of these 56 nests deserted, 47 (85%) experienced some degree of parasitism. Therefore, a significantly higher proportion of clutches which were abandoned were subjected to parasitic laying.

Only two clutches experienced predation from ground predators, on both occasions the predator was a Stoat (*Mustela erminea*). Towards the end of the season pirating of boxes by Mynas (*Acridotheres tristis*) and occasionally Starling (*Sturnus vulgaris*) lead to several clutch desertions. These birds often filled the box to entrance hole level preventing further use of the box by Grey Teal.

Clutch Size

The 197 clutches contained a total of 2775 eggs, an average of 14.1 (S.D.+2.5) eggs per clutch is obtained.

As McFadden found, clutch size distribution is skewed towards the larger sizes (Fig. 2) by separating normal and parasitised nests (Fig. 3), it becomes clear that this skew is the result of parasitic laying. Lack, (1966) found that in many species of birds, clutch size declined steadily from the start of the breeding season. The size of normal clutches did display such a decline while parasitised nests showed the opposite trend, increasing in size with the advancing season.

In those clutches where incubating began the clutch sizes ranged from 6 to 29 eggs, while the range for parasitic clutches was from 8 to 29.

The maximum clutch size found for normal nests in this study was 14 eggs. No nest with 16 more eggs was found that did not fulfill at least one of the parasitic criteria. However 45% of clutches with a clutch size less than 16 were classified as dump nests. Of the 197 clutches, 132 (67%) were subject to some degree of parasitism, an increase on that found in 1979 and 1980.

Parasitism

Brood parasitism would seem to be a com-

Fig. 2. The frequency distribution of clutch size (n=197)

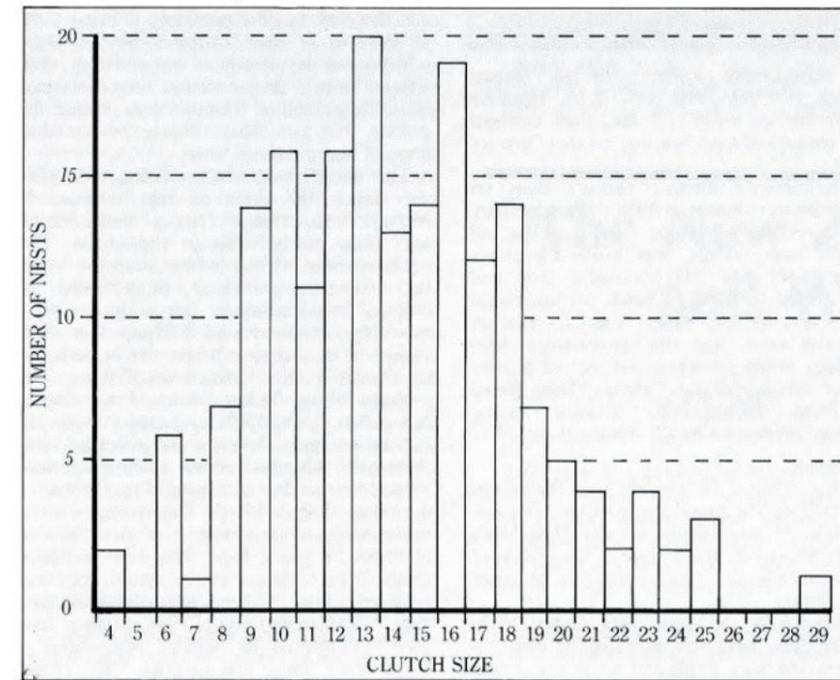
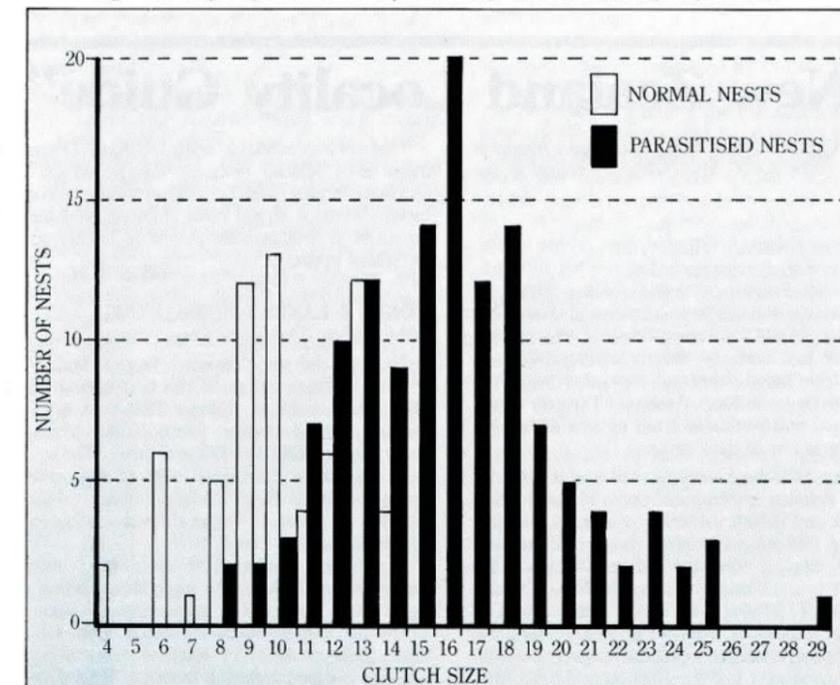


Fig 3 The frequency distribution of parasitised (n=132) and normal (n=65) clutches



	Jne	Jly	Aug	Sep	Oct	Nov	Total
No. of clutches	6	79	36	37	36	3	197
Mean clutch size	10.5	14.2	15.9	14.4	12.8	8.7	14.1
Standard deviation	2.3	4.5	4.1	4.4	4.3	4.5	4.6
No. of eggs	63	1121	572	532	461	26	2775
No. of ducklings*	32	403	228	285	230	22	1200
Mean No. ducklings*	5.3	7.3	9.1	9.5	10.0	11.0	8.5
% hatch	50.8	36.2	39.9	53.6	49.9	84.6	43.2
No. clutches deserted#	0	0	3	15	14	23	56

*No./mean number ducklings ultimately emerging from clutches initiated in that month
#Number clutches deserted in that month

mon phenomenon in the breeding biology of this population of Grey Teal. Sixty-seven percent of the 197 clutches investigated during this study were classified as parasitic. This represents an increase of 31% from 1979 and an increase of 15% from 1980. During 1988 706 eggs were classified as parasitic, (laid by a hen other than the clutch owner). Of these 402 (57%) were laid prior to incubation while 304 (43%) were laid after incubation had commenced. This latter 43% were deposited evenly throughout the period of incubation. Those eggs laid after the onset of incubation failed to hatch therefore they reduced the hatchability of parasitic clutches.

Hatchability and Productivity

A total of 1200 ducklings emerged from the 2775 eggs laid during 1988, a 43% hatch. During 1979, 76% of the 1049 eggs laid hatched while 61% of the 678 eggs hatched in 1980 (McFadden, 1980). The figure obtained for 1988 represents an average of 8.5 ducklings per successful clutch. This is an increase of 0.5 duckling on 1979 and 2.0 ducklings on 1980 figures.

Parasitised nests contained at least 6 more eggs than the average normal nest during 1988. The mean number of ducklings emerging from the average normal clutch was 7.65, while 8.85 emerged from the average parasitic clutch. Hatchability in successful parasitised clutches

was considerably lower than in normal clutches, 57% compared with 76.5%. However on average an extra 1.2 ducklings emerged from parasitised clutches due to their greater size.

To estimate the effects of parasitic laying on population recruitment in 1988 the productivity of a theoretical population, assuming that all clutches were normal, was made. Flexman's impoundment had 141 successful grey teal nests during 1988. Mean hatch per successful normal nest for this season was 7.65. Had all successful nests had this productivity 1079 ducklings would have emerged. Actual production for this period was 1200 ducklings. Based on these assumptions, parasitic laying increased production by 121 ducklings or 12%.

Discussion

Firstly, it must be stressed that the results presented in this paper are from only one season, however, when compared with McFadden's results as well as those cited in the literature, certain trends and conclusions can be tentatively drawn.

All boxes in the study area proved to be suitable. The base area provided by even the smallest box was ample and when one considers that the smallest box had a diagonal length of 31 cm while the body length of a female Grey Teal is approximately 20cm, excluding the head and neck it is easy to see why. Sufficient

space (volume) was also available with an average sized hen, sitting on the largest clutch, (29 hens) occupying 11.6% of the volume available in the smallest box and only 5.7% in the largest box. The provision of adequate room is very important as several studies have documented the existence of a correlation between a reduction in clutch size and incubation efficiency with reductions in nesting space (Lohrl, 1974; Ludescher, 1973; Balen and Boody, 1976; Karlsson and Nilsson, 1977).

Box location at Pokeno seems to be of little importance in relation to box usage. All boxes are, however, in close proximity to heavy cover at Pokeno. At the Ngaruawahia box stand where cover is present at one end only there appears to be a preference for those boxes closest to the vegetation (Dumbell pers comm), suggesting that new boxes should be placed in areas of heavy natural cover.

The period over which nesting took place was much the same as that recorded by McFadden. However, the peak of nest initiation took place much earlier in the season. This peak coincided with a sudden 17cm rise in the impoundments water-level. In Australia the onset of breeding among teal is usually determined by the presence of floodwaters or sharp increases in the already present waterbodies (Frith, 1967). When claypans, billabongs and swamps fill teal flock to them and reproduction is initiated. Frith, (1967) suggested that the teal take advantage of the plant and insect food that developed shortly after such waterlevel increases, thereby increasing the number of ducklings that survived. The second peak in initiation may represent the first nesting attempts by young hens who were unable to establish nests earlier in the season, combined with re-nesting by hens who lost their first clutch. Similar patterns of nest initiation have been documented for similar populations of Wood Duck (Jones and Leopold, 1967; Morse, 1969).

The large increase in parasitism among the teal since 1979 and 1980 most likely accounts for the increase in the average clutch size and

decreased hatchability recorded. Similar findings have been documented for Wood Duck populations where there has been similar increases in population size over several years (Morse & Wight, 1969; Haramis & Thompson, 1985; Semel et al, 1988). Several researchers (Clawson, 1975) have suggested that such an increase in brood parasitism is the result of limited nesting sites and increased population densities (Jones & Leopold 1967). This may be the case at Pokeno where there are at least two hens per box. However, others (Morse & Wight, 1969) have found no such correlation. Semel et al (1988) suggested that box visibility strongly affects the incidence of parasitic laying. As the boxes at Pokeno are located in an open area, and as they are all situated together, their high visibility may be the reason for the increase in parasitism noted.

Predation was never an important factor in 1988. The predator guards fitted to the box poles meant access to the boxes was near impossible for ground predators while the predator trapping program that is carried out around the site meant that the number of such predators was kept to a minimum.

It would appear that parasitic laying at Pokeno during 1988 was not detrimental to productivity. This finding is supported by those of Grice and Rogers, (1965) who presented evidence that parasitic nesting can contribute to increased production of ducklings. Such findings have lead several researchers to conclude that parasitism is a biological mechanism whereby population productivity is increased or at least maintained even though there are certain physical restrictions such as limited nest sites.

Acknowledgements

I would like to thank Tony Flexman for his willing help and for allowing access to the study area, Dr Benno Meyer-Rochow, for his project supervision, and Geoff Wise for his comments on the manuscript. The financial backing received from Ducks Unlimited has made this work possible and deserves special thanks.

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The New Zealand Waterfowl and Wetlands Trust

by
Grant Dumbell

Elsewhere in this issue of "flight" members will find reference to a new organisation, The New Zealand Waterfowl and Wetlands Trust. This charitable trust has been set up by the D.U. Board of Directors to act as a companion body to Ducks Unlimited and has the aim of providing a solid base for the future expansion of our organisation. The need for some form of companion organisation became obvious over the last year, and the board eventually decided to establish the trust modelled on the Ducks Unlimited Foundation which was formed by Ducks Unlimited Inc in the United States several years ago.

The trust is controlled by a board of five trustees, who are appointed by the Ducks Unlimited directors, and it has as its main objective the provision of funding for Ducks Unlimited's projects. This means that large one-off contributions to Ducks Unlimited can be held in the trust and released to the specific projects for which they were granted in line with the project's demand for expenditure. The main benefit of this is the separation of the money holding and the money spending functions so that as much value for money as possible can be achieved. This way the Ducks Unlimited board can get on with the job of developing our conservation projects while the Board of Trustees acts to ensure that funds are being used in the right place, bringing enhanced accountability and credibility to the whole operation.

A quick glance at the annual accounts of Ducks Unlimited will show how vulnerable we have been, in the past, to large swings in our income. In the years from 1984/85 to 1988/89 our total income grew from \$35,000 to over \$220,000, then in 1989/90 it plunged to \$119,000. However, this was not as crippling as it could have been as in the 1989/90 year, \$103,000 (87%) came from sustainable income such as subscriptions, chapters, the A.G.M., and the national raffle. When this is compared

with the 1987/88 year a completely different picture emerges. During that year our total income was \$193,000 but only \$50,000 (26%) came from sustainable income. It is not hard to imagine the predicament we would have been in if the income retraction over the last year had occurred two years earlier. We now have a much stronger balance sheet and it is the intention of the trust to strengthen it even further.

This will be achieved through the trust acting as a capital fund for Ducks Unlimited. This way large one-off contributions can be used to generate an income for our projects every year. Once this capital fund is large enough, it will be possible for Ducks Unlimited to undertake large long term projects secure in the knowledge that the required funding will be available. This will obviously make our planning and budgeting a lot easier, it will reduce our reliance on our narrow funding base, and will result in our ability to further increase our commitment to the conservation of waterfowl and wetlands. This in turn will have positive benefits for each and every member of Ducks Unlimited as our fixed overhead costs reduce relative to our operational funds.

To establish the trust the D.U. Board of Directors appointed five members of Ducks Unlimited as trustees. David Smith was the author of the trust deed and has now been elected as the Chairman of the Board of Trustees. Neil Hayes and Jim Campbell were appointed as D.U. Directors to sit on the Board of Trustees, where Neil is now the trust's Treasurer, and Don Merton, from the Dept of Conservation, has also accepted an invitation to join the Board of Trustees. As Ducks Unlimited's Executive Director I have also been appointed to the trust where I fell the position of Secretary. Having the trust constituted this way means it is closely bound to Ducks Unlimited, yet retains a valuable measure of independence in order to remain objective. This way the trust will be able to fulfil its mission of providing meaningful financial support for Ducks Unlimited while D.U. can get on with the job of conserving this country's dwindling wetlands and protected waterfowl.

Flight Book Reviews

"Birds of New Zealand Locality Guide"

by
Stuart Chambers

The popularity of Stuart Chambers' book was best illustrated at the recent AGM Auction where this book was most sought after and received very stiff bidding during the evening. Designed as a guide book, it introduces the reader to a full variety of New Zealand birds, both native and introduced. Armed with road maps and this book, you can set off on expeditions around the countryside with a very good chance of locating and viewing the species you seek. The last part of the book is devoted to several excursions you can take and lists the birds you can expect to see.

The colour photography in the book is of good quality and I found it of assistance being a casual birdwatcher. The one small niggle I had was there was no mention of the Manganui-te-ao in the Blue Duck section, however it does not detract from the book which was my pick

due to its practicality and ease of use. Available from Sales Dept at \$50.00, it is value for money.

'ERIC HOSKINGS WILDFOWL'

published by Croom Helm Ltd

Eric Hoskings is a world renowned photographer of natural history subjects, and received an OBE in 1977 in recognition of the importance of his work. In this book Hoskings provides the magnificent photographs, with the text by Dr Janet Kear, Assistant Director of the Wildfowl and Wetlands Trust as well as being a curator of one of their projects.

I found the book easy to read and it provided quite detailed information on wildfowl (ducks, swans and geese) including courtship, nesting, feeding and a special chapter on wildfowl and people. Species from throughout the world are featured and there are several New Zealand waterfowl featured both in the text, as well as photographs. It is interesting to note that the cover photograph is our native grey duck in flight.

This book is available from DU Sales Department at a special price of \$30.00, which is excellent buying, and I would especially recommend this book if you have children, as I have no doubt it will provide plenty of background for school projects.

PONDS & LAKES FOR WILDFOWL

published by The Game Conservancy

Next to the very popular 'Ducks, Ponds & People' this has got to be the best selling book we have on habitat creation. This book arrived as an updated version of 'Wildfowl Management on Inland Waters' and it is the better buy, and has a hard cover. 90% of the content is applicable to New Zealand habitat creation and the excellent drawings throughout are easy to follow.

The book considers both sides of managing wetlands and includes an interesting section on controlling underwater plant growth without chemicals. An excellent reference book, which really belongs on every wetland owner's bookshelf, it can be purchased from DU Sales Dept.

The 1990 AGM

by
Marie McEntee
D. U. Secretary

Neil Hayes opened the meeting and welcomed those present, particularly the Honourable John Falloon and Mrs Philippa Falloon, John and Bunny Mortimer, Lady Diana Issac, Don Merton, and Paul Martinson. Neil also noted the attendance of several long standing members of Ducks Unlimited, and those who had travelled long distances to attend, especially those from the South Island. Apologies were received from 26 members and were sustained on the motion of D. Pritt/G. Hansen.

PRESIDENT'S REPORT: Neil Hayes summarised his President's report, as published in the June issue of "Flight". He noted several high points from the year's activities of Ducks Unlimited, including the continued appointment of Dr Grant Dumbell, as Executive Director, Brendan Coe's generous donation to the Pearce Wetlands, by covering the production costs of the last four issues of "Flight", and the finan-

cial success of the growing chapter network, which raised \$42,000 in the last financial year. Neil also commented on Ducks Unlimited's project successes, including continued support for two waterfowl research programmes and the extension of predator control programmes. Membership increased steadily over the past 12 months, and Neil reported that we have again received outstanding support from both Ducks Unlimited Inc and Ducks Unlimited Canada for our work. In summing up, Neil thanked all Ducks Unlimited members for their valuable support, and paid special tribute to the three women involved with the Board of Directors, Glenys Hansen, Diane Pritt and Marie McEntee.

FINANCIAL REPORT: This was presented as published in the June issue of "Flight". After members were given time to assess this, Neil commented on a new financial initiative adopted by the Board of Directors. This has involved the establishment of the New Zealand Waterfowl and Wetlands Trust as a charitable trust. The board established this to help secure a permanent funding base for all Ducks Unlimited's projects. The board of trustees is David

Smith, Grant Dumbell, Neil Hayes, Don Merton and Jim Campbell. Neil then asked David Smith, the trust's chairman, to give a brief overview of the trust. David said the main aim of the trust was to give Ducks Unlimited's projects greater stability, by providing a capital fund for the generation of annual project funds. This would then remove the vulnerability of project funding caused by large swings in income. The trust will work closely with Ducks Unlimited's Corporate Sponsorship programme. The President's Report and Financial Report were adopted on the motion of N Hayes/A Wilks. The meeting then approved the continued appointment of Eastwood and Partners of Masterton, as auditors, on the motion of N Hayes/D Pritt.

ELECTION OF DIRECTORS: The retirements of Brendan Coe and Jim Glover were tabled and accepted with regret. Neil commented on the work of Brendan and Jim, and said their involvement with the board will be sadly missed. N Hayes/A Elliott then moved that G. Hansen, C. Hoosen and D. Johnston be made permanent directors and this was carried. A. Tannock and D. Rice stood for reappoint-

ment, and D. Smith and A. Wilks were nominated to fill the vacant two positions. There being no further nominations, N. Hayes declared their appointment.

OPERATION PATEKE: Project Supervisor Neil Hayes.

Neil reported on the year's successes. 101 Brown Teal had been reared by DU members. 67 had been released in Northland on the Purua Peninsula, as well as 3 pairs onto Urupukapuka Island and 3 pairs onto Tiri Tiri Matangi Island. Since 1976 DU have released 1276 captive bred Brown Teal into the wild, with many of these reported to be surviving well. Neil reported on the recent establishment of the Brown Teal recovery programme, which was to be run in conjunction with The Department of Conservation, under the chairmanship of Dr Grant Dumbell. With DoC's support, DU was now available to begin further research into the Northland Brown Teal, using radio transmitters. DU was also considering funding a masters student from Auckland University, to continue this research over 12-18 months. N. Hayes also reported that the up-dated Brown Teal handbook was published. In summing up, Neil thanked those members who were directly involved with the project, particularly Eric Fox of the Otorohanga Zoological Park, who had successfully raised 22 Brown Teal over the past year. Lady Diana presented Eric with, THE BROWN TEAL BREEDER OF THE YEAR AWARD.

EXECUTIVE DIRECTOR'S REPORT: Grant Dumbell reported on the main events of his activities over the last year including the formation of the New Zealand Waterfowl and Wetlands Trust, the expansion of the chapter network and the beginnings of a Corporate Sponsorship programme. Grant reiterated David Smith's comments about the need to form the Trust to bring stability to the funding of D.U.'s projects, and backed this up with a breakdown of D.U.'s finances for the past five financial years to show how the organisation's funding was vulnerable to changes in total income. However, Grant said that with the expansion of the chapter network D.U. was now more reliant on sustainable sources of income than large one-off donations which have dominated our funding in recent years.

The expansion of the chapter network now meant that almost 70% of members are in a region which has a chapter committee. This compares with less than 40% a year ago. Membership had also progressed well throughout the year with a gross increase of 21% being achieved. Unfortunately this had been offset by a large number of members which did not renew their subs. In general, regions with a chapter committee had superior membership growth than regions without a chapter committee.

The establishment of a Ducks Unlimited Corporate Sponsorship programme was now well advanced with two proposals having been put to companies. It is planned to follow these up with further approaches throughout the year. The board is currently considering how best to structure this programme, however, it is envisaged that larger contributors will receive larger benefits for their association with Ducks Unlimited and that this programme will be the main source of funds for the Trust.

GUEST ADDRESS: The Honourable John Falloon spoke briefly about his association with Ducks Unlimited which he had been introduced

to through his wife's efforts with the Mute Swan project. He said that they have a variety of waterfowl on their property in the Wairarapa, where he found them to be a great form of relaxation. John then talked briefly about the need to have taxation benefits and subsidies for all nature conservation, and he congratulated Ducks Unlimited on their successful work as a private conservation organisation.

GUEST ADDRESS: John and Bunny Mortimer, co-authors of "Trees for the New Zealand Countryside", presented a slide lecture on wetland planting. Bunny concentrated on native trees and plants, while John talked about exotic plants that could be used around wetlands. This presentation was well received by the audience, many of whom are involved in planting their own properties in various parts of the country. John and Bunny generously donated proceeds from their book sales over the weekend to Ducks Unlimited.

SINCLAIR WETLANDS MANAGER'S REPORT: As Mr H. Sinclair was unable to attend, Jim Campbell gave this report. Jim said he had recently spent three days with Horrie in Otago, during a trip when he and two other DU members planted 530 trees at the wetland. He was pleased to report that water levels at the wetlands were up, despite the weather being relatively dry in Otago. There had been an extensive predator control programme running over the past year, and Horrie had reported that results were good. The display pond had now been fenced and captive birds were being transferred there as they became available. Jim also reported that visitor numbers to the wetland are on the increase.

WETLANDS REPORT: Presented by Jim Campbell. Jim reported that this was an area that needed a lot more finance devoted to it. He said that there was now a movement amongst chapters, to locate areas in their regions, which could be developed by the chapter as a local wetland project. Such projects however, needed board approval and financial help. Jim also spoke about the issue of rates on wetlands, suggesting that there should be a rates dispensation for areas that were retired to wetland. He said that due to reduced QEII funding, DU had received little financial support from the QEII Trust over the past year. Most wetland development had been privately funded. Jim thanked B. Coe, J. Glover, and N. Hayes for their efforts with wetland conservation over the past year.

PRESENTATION OF THE BILL BARRETT TROPHY: This award is made each year to the Ducks Unlimited member that the board feels has made the greatest contribution to the aims and objectives of Ducks Unlimited in the past year. This year Don Merton presented the trophy to Brendan Coe for his outstanding contribution to Ducks Unlimited, particularly his considerable financial input to the Pearce Wetlands, and his contribution as editor of "Flight". Brendan gave a brief reply thanking the Board for the award.

OPERATION WHIO: Project Supervisor, Neil Hayes. Neil Hayes reported that there were now 11 pairs held in the captive breeding programme. Unfortunately breeding results were low, to increase breeding, DU was currently trialing

a natural pairing programme. Currently DU had an excess of male Blue Ducks, however with the support of DoC, Neil reported that DU was hoping to extract a few females from the wild. There had been one captive breeding group meeting this year and a Liaison Group meeting, which Grant Dumbell had attended. The Liaison Group included representatives from DU, the DoC Threatened Species Unit and the Science and Research division, as well as DoC representatives from regions which have Blue Duck in them. The group's aim was to implement the recovery strategy for the Blue Duck. In summing up, Neil said that Ducks Unlimited's role is to run the captive breeding programme, which is seen as having an important role in saving this duck from extinction.

OPERATION ROYAL SWAN: Project Supervisor, Jim Glover.

Jim reported that this would be his fifth and final report, as he was retiring from the board. He reported that since 1986 DU and DoC had moved 103 birds, with most surviving well in their new surroundings. Jim thanked Lady Diana Issac for breeding the birds, and DoC staff for helping recover them. So far this year 13 birds had been transferred. Now that members were building up within regions, Jim said that DU was looking at doing regional transfers rather than only from Peacock Springs. Jim reiterated that anyone wanting Mute Swan should place their name on DU's waiting list.

OPERATION ROYAL SWAN BREEDER OF THE YEAR AWARD: Joint winners.

Robin Borthwick and Jim Campbell who each bred two Mute Swans.

OPERATION WHIO BREEDER OF THE YEAR AWARD: Joint winners.

The Otorohanga Zoological Society and The National Wildlife Centre who each bred two Blue Duck.

EDITORIAL REPORT: Presented by Gary Girvan.

Gary reported that "Flight", which was again published in colour, served as an excellent means of communication with DU's members. It acted as a show piece for DU, as it appeared in libraries and DoC offices around the country, as well as in living rooms overseas. He congratulated and thanked Brendan Coe as editor of "Flight", and Lithographic Services for their donation of the production costs over the past year. Although Brendan was retiring from the board, he was still willing to remain as editor of "Flight". Gary also thanked the advertisers for their continued support, particularly Winchester N.Z. for their sponsorship of the back page. In conclusion, Gary encouraged members to write articles for "Flight" and to send in any relevant photos.

OPERATION GRETEL: Project Supervisor, David Rice.

David reported that this project had been in abeyance for a few years. He reported that there were several hundred operational nest boxes. The board had allocated money for repair and erection of existing boxes, as Grey Teal will not breed in boxes surrounded by weeds. David hoped to have 100 further boxes erected for the breeding season. Each chapter was now being asked to nominate a liaison person for the project. David thanked Howard Egan for his work in surveying the lower North Island boxes.



DU's Patron Lady Isaac presents Eric Fox with the Brown Teal Breeder of the year award.



Don Merton QSM presenting Brendan Coe with the Bill Barrett Trophy.

GUEST ADDRESS: Mr Don Merton Q.S.M. reported on the re-structuring of DoC over the past three years. He explained about the Threatened Species Unit which he was currently involved with. Don said that DU can offer the unit a lot of help with their expertise with waterfowl and wetlands. He reported that island transfers which have been the backbone of policy decisions in the past, now have to be rationalised, as there were too many species and not enough islands. Don said that the Threatened Species Unit was now trying to develop recovery plans for each species. In conclusion, Don Merton said he looked forward to his role as trustee for The N.Z. Waterfowl and Wetland Trust, and he also thanked Du for their efforts with waterfowl conservation, stating that DU was an organisation of doers rather than talkers.

Neil Hayes then explained that the meeting had omitted confirming the minutes of the 1989

AGM, which had been published in the September issue of "Flight". On the motion of A Elliott/G Hansen they were accepted as a true and correct record of the meeting.

GENERAL BUSINESS: Neil Hayes informed the meeting that the DU National Shoot would be held at the Taupo Gun Club on September 8-9th 1990. He then went on to explain about a new selection of books currently available in the sales items. The meeting closed at 5.30pm.

CONFERENCE DINNER/AUCTION: Over 90 Ducks Unlimited members and friends enjoyed the hospitality of Dulcie and Keith Barnett for the annual conference dinner. This began at 7.00pm and was followed by the traditional fundraising auction under the control of Bill Wilkinson and Allan Elliott. This year the main auction contained 68 items and grossed \$11,500, while the silent auction of 111 items raised a further \$2,400. The Board of Directors

would like to thank all donors to the auctions especially Ducks Unlimited Canada and Ducks Unlimited Inc who both generously sent items at short notice. The full list of donors is: Babich Wines, Villa Maria Wines, Independent Liquor Ltd, Waimarino Wines, Waimarino Livestock Ltd, Diane and Audrey Pritt, Hunting and Fishing Ltd, Brendan Coe, Andre Terpstra, Winchester (NZ) Ltd, Halcyon Publishing Ltd, Paul Roman (USA), Bud Phelps (USA), Jack Kamman (USA), D.U. Inc, D.U. Canada, Dave Johnston, Bob Reed, Ted Hansen, J. Cook, Alan and Di Wilks, Chris Hooson, Alan Fielding, Michael Hucks, Warwick Day, T. and S. Caithness, Don Merton, Caroline Carey, Howard Egan, Dulcie and Keith Barnett, Colleen Hansen, Gary Girvan, Stewart Chambers, Jim Campbell, Neil Hayes, Mark Timms, S. and M. Hawkins, Reloaders Supplies, Lady Diana Issac, T. Nooyen, Tony Reiger (USA), Marj Dumbell, Jim and Doreen Glover, Alan Elliott.

CANADA GOOSE BANDING

Ducks Unlimited is currently applying for a Canada Goose banding permit so that we may begin a banding programme for geese in the Central North Island. When this begins we are planning to run a Junior Members event where our younger members can participate in the programme and get some first hand experience with waterfowl management. Details will be published in a later issue of "Flight", however we will have to combine the banding with the time that the geese are flightless during their moult in the summer.

ATTENTION LIFE MEMBERS

It has come to our attention that some Life Members may not have a Life Membership Certificate. If this applies to you, please contact the Secretary so that we may rectify this.

TIRITIRI MATANGI ISLAND

The DoC caretakers on Tiritiri, Barbara and Ray Walters, have reported that the Brown Teal released onto the island in 1987 have bred yet again. Barbara first saw the ducklings when they swam out of cover to be fed in early August. At that stage, it was estimated that the ducklings were already 3 weeks old and as usual the drake was in close attendance, and attacked two pukeko's intent on stealing their food. On average, wild Brown Teal only successfully raise one duckling per year whereas the Tiritiri birds are currently averaging two ducklings per year.

NATIONAL RAFFLE

All members should have received a book of tickets for the D.U. annual national raffle. So far the return rate has been very high and we would like to thank all those members who have responded promptly. If anyone would like further tickets please write to the Secretary. First prize is the magnificent Paul Martinson original painting, "Whio", which appeared on the cover of the June issue of "Flight".

REMEMBER ALL TICKET BUTTS MUST BE RETURNED BEFORE 22 OCTOBER 1990

NORTHERN SHOVELER SIGHTED

While visiting the Makatu Estuary near Te Puke to look at the possibilities for D.U. involvement in the restoration of the estuary, Grant Dumbell and BOP Chapter Chairman David Crawford made a positive sighting of a Northern Shoveler. The single bird was associating with several N.Z. Shoveler drakes and one Shoveler duck but was clearly distinguishable by its prominent colouring. Normally the easiest way to see a Northern Shoveler is to refer to the Readers Digest Book of New Zealand Birds, however D.U. has received several records of Northern Shovelers from different parts of the country this year.

PINK EARED DUCK SIGHTED

D.U. was recently asked for information regarding the presence of Australian Pink-eared Ducks in New Zealand, as a positive sighting was reported from the Mangere Sewerage

Treatment Ponds in Auckland during June. It seems that this may be the very first live Pink-eared Duck recorded in N.Z, although the bird has been recorded in sub-fossil deposits.

D.U. APPRECIATION CERTIFICATES

The Board of Directors has introduced an Appreciation Certificate to acknowledge both members and non-members who offer extra assistance to D.U.'s aims of conserving New Zealand's waterfowl and wetlands. The first recipients of these have been long standing supporters of D.U. including Reloaders Supplies, Mark Newcomb, D.U. Canada, D.U. Inc and Canadian Airlines.

EKETAHUNA CHAPTER DINNER/AUCTION

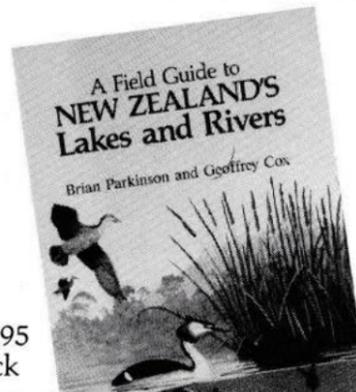
This will be held on September 8th at Masterton and will again be an enjoyable evening for all. A report on the success of the evening will appear in the December issue of "Flight".

EKETAHUNA CHAPTER SHOOT

The annual Eketahuna Chapter Simulated Field Shoot will be held at the Eketahuna Gun Club grounds on the 4th November 1990 starting at 10 am. All members and non-members are welcome to participate. For further information contact Glenys Hansen, R.D. 3, Eketahuna.

EKETAHUNA CHAPTER FAMILY DAY

The Hon John Falloon and his wife Philippa have offered to host the Eketahuna Chapter Family Day at their property, Bowlands, north



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paperback

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A fascinating guide to the freshwater habitats of New Zealand's flora and fauna. The book covers both the North and South Islands and describes in detail each habitat – from thermal regions to subterranean waterways, looking at streams, rivers, lakes, swamps, and bogs. The text is accompanied by superb illustrations to aid identification. It is a convenient size for the traveller-naturalist to use

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of Masterton on Sunday 25 November. The day will begin with a visit to Jan and Bill Clinton-bakers' waterfowl collection on their property at Gladstone then will move to Bowlands for a barbecue lunch. Non members are welcome to attend. All chapter members are particularly welcome to attend. Chapter members will be contacted by mail, or for further details contact Alan Wilks on (0553) 49-729.

AUCKLAND CHAPTER'S ACTIVITY

When finally the weather was on our side, a collection of Auckland members and Friends of Tiritiri Matangi Island travelled to the island to release a further six Brown Teal on Sunday July 8th. This event received brief coverage on TV3 National News. Six participants had the rare opportunity to release the birds after being winners in a lucky draw. The Friends of Tiritiri made a generous donation of \$200.00 to Ducks Unlimited to help offset the costs involved in taking the birds to the island.

CONGRATULATIONS TO GORDON ELL

Ducks Unlimited would like to congratulate Gordon Ell on his election to the Presidency of the Royal Forest and Bird Protection Society. Gordon has been a member of Ducks Unlimited for several years and we are looking forward to a closer working relationship with Forest and Bird as a result of Gordon's success.

PEARCE WETLANDS FUNDRAISING

Since the June issue of "Flight", fundraising for the Pearce Wetlands has continued at a quick pace, with the highlight being the establishment of three further Pearce Wetlands Foundation Sponsorships. Of these, the Directors would like to pay special tribute to the Heseltine Trust of Fielding. After making an initial donation of \$500, the Trust has followed this with a further contribution of \$1000, an outstanding contribution to wetland conservation in New Zealand.

D.U. Directors Gary Girvan, and Chris Hoon, with Caroline Carey, have also subscribed to the fundraising efforts for the Pearce Wetlands by taking up Foundation Sponsorships. Further donations have also been received from D. Weston of Greytown and from the Ornithological Society of N.Z. D.U. thanks all contributors for their help with this major project.

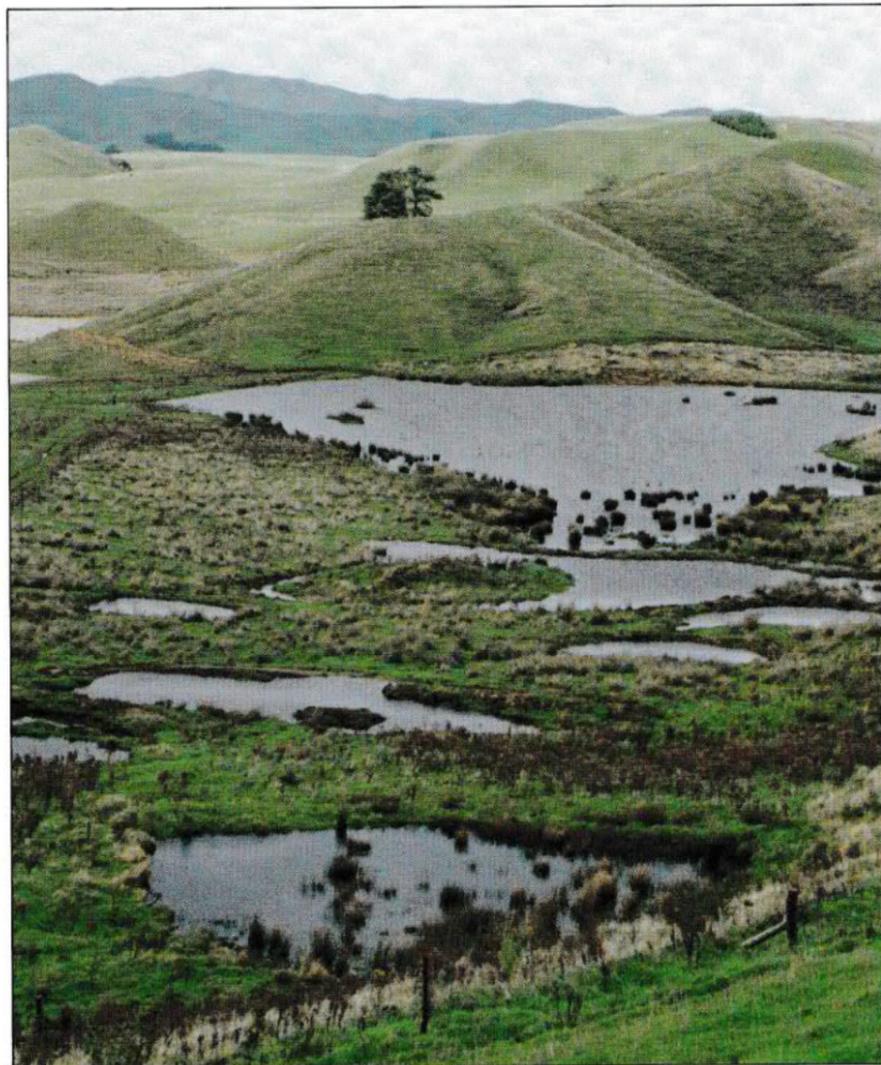
THANKS TO CANADIAN AIRLINES

D.U. has recently renewed a long standing relationship with Canadian Airlines who have generously donated the air freight to bring our D.U. Canada items to New Zealand in time for the A.G.M. Over 100 kg of freight was carried free of charge, thanks to D.U. member Stephen Rice, who arranged for the shipment to come directly from D.U. Canada in Winnipeg.

For the first time, D.U.'s local chapters have been able to obtain items from D.U. Canada and these will be available for members to bid on at the coming chapter dinners. Now these sought after items will be available outside the AGM so keep your eyes on D.U. News for notification of all chapter events.

GREY TEAL BOXES

Since the June "Flight", a further 160 Grey Teal nest boxes have been readied for the 1990 breeding season. Howard Egan has single handedly serviced and repaired over 100 boxes in



The recent habitat creation efforts of DU member Bud Jones. A fantastic achievement for wildlife.

the Wairarapa and Manawatu areas while the Auckland Chapter covered a further 50 at Ngaruwahia. With the addition of the several hundred private boxes that have been erected on member's properties we are confident that over 10,000 Grey Teal eggs will be laid this year in a D.U. box somewhere in the country. There are plans being made to drastically increase our input into this successful and long running project.

MEMBERSHIP

The board would like to thank all members for their prompt replies to the 1990/91 membership renewal notices. These funds allow us to produce "Flight" to its current standard and having them flow in promptly allows us to keep subscriptions down. D.U. is now one of the cheapest conservation groups to belong to and every year we return half of each ordinary subscription to each member in the form of "Flight". The other half goes directly to supporting our conservation projects in the field.

1990 SPONSOR MEMBERS

As membership renewals have continued to arrive we have found a steady flow of members choosing sponsor membership for themselves

and their families. In addition to the sponsor members noted in the June "Flight" we would like to thank the following:

Silver Sponsor: Mr J. Töcker, Palmerston North

Bronze Sponsor: Nick Burrows, Sydney, Australia
Mr & Mrs John Dyer, Auckland
Allan Elliott, Pahiatua
Ian Jensen, Otaki
Nga Manu Trust, Waikanae
Kerry Oates, Porirua
Mr Rivers, California, U.S.A.
John Sax, Auckland
Andy Tannock, Palmerston North
Mangonui-Whangaroa Acclimatisation Society, Kaitiaki
Mark Timms, Wanganui
Alan and D. Wilks, Greytown
Caroline Carey, Wellington

The 1990 Sponsor Certificates have now been posted, so all sponsor members can display their support for waterfowl and wetlands.

OPERATION PATEKE

The final results for the 1989-90 captive breeding part of the brown teal recovery programme were 101 brown teal reared by members. Successful breeders were as follows;

Otorohanga Zoological Society	22
Charlie Money, Dargaville	14
National Wildlife Centre	10
Ann Graeme, Tauranga	9
Neil Hayes, Wainuiomata	7
Kiwi Park, Auckland	7
Mary Atkinson, Hanmer Springs	5
Ron Munro, Invercargill	5
Wellington Zoo	4
Jim Glover, Pauatahanui	4
Murray Powell, Hamilton	4
Glenys Hansen, Eketahuna	3
Wilf Wright, Waikanae	3
Roy Dench, Ohaupo	2
Clayton Putt, Taupiri	2
Total	101

The 101 birds reared brings the total reared since the project started in 1976 to 1,275. An excellent achievement by all involved.

Of the 101 birds reared 69 were released on to the Pururua Peninsula lake, near Kerikeri, in April; 3 pairs were released onto Urupukapuka Island, in the Bay of Islands in April; and in early July 3 pairs were released onto Tiritiri Matangi Island in the Hauraki Gulf.

The 1990-91 captive breeding season is

already in full swing, with lots of broods on the go. Captive numbers will be boosted this season - thanks to Dave Johnston at the Broadlands Wildfowl Trust, Reporoa, completing five aviaries for five pairs of teal, and Russell Langdon of Ashburton who is taking an extra pair. There has, however, been some delay in getting mated Paris to these people as (at the time of writing - mid August) we are in the middle of a radio telemetry experiment and six brown teal in our current flock mating programme are running around with transmitters strapped to their back. Some of these birds have now been carrying transmitters for over two months, with no ill effects of any sort. When the trials have proven to be successful a limited trial on wild brown teal in Northland will take place. Eventually we hope to attach transmitters to some of our captive reared birds, prior to release, so we can track their movements.

There are a number of vital factors about Northland brown teal that we urgently need to know if we are to save the species on the mainland. Grant Dumbell will be supervising this research, thanks to financial support from the Dept of Conservation, and we will keep you well informed on progress. Grant is also currently writing a comprehensive recovery plan for brown teal.

The opportunity was taken at the annual meeting in July to launch the revised edition of our Brown Teal Handbook. Copies of this publication are available from DU's Sales Section for \$25. Even if you are not a brown teal breeder there is much in the Handbook that is relevant

to keeping a whole range of waterfowl in captivity - aviary construction, ponding, cover to use in the aviary, feeding and maintaining birds in good condition, etc.

OPERATION WHIO

The 1989-90 captive breeding programme for blue ducks resulted in 2 males being reared at the Otorohanga Zoological Society and 1 male and 1 female at the National Wildlife Centre. Bearing in mind that this was really the first year of the programme it is pretty encouraging. The bad news, however, is that we have 8 surplus males on hand and only 1 female.

To ensure that the 1 spare female ends up with a male of her choice we are carrying out a small scale flock mating project. Once a pair bond has been established the birds will be sent to Ron Munro in Invercargill. Ron will then have two pairs on hand in their own specially built aviaries.

The Department of Conservation have assured the Blue Duck Captive Breeding Group that a good number of female blue duck will be brought in from the wild, after the breeding season, to give us vital new blood - and vital females.

Overseas the Wildfowl and Wetlands Trust in the UK have had another good season with blue duck and six birds have been reared - 2 at the Trust's centre at Arundel in Sussex and four at the Trust's new centre in South Wales.



Ducks Unlimited
EKETAHUNA CHAPTER

SIMULATED FIELD SHOOT

Eketahuna Gun Club
NOVEMBER 4th, 10am

- ★ BYO Lunch
- ★ Ammo Available
- ★ Good practice round for the 10th and 11th.



Fish & Game Council Team Shoot
SOS SAVAGE MEMORIAL
Chapter Challenge Team Shoot
5 SHOOTER TEAMS

EKETAHUNA GUN CLUB

20 YEAR ANNIVERSARY SHOOT

10th and 11th November 1990

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ABC Grades .22 Rifles value \$350 ea.
Sportshooter Grade optional use 20 gauge

DAY 2

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ABC Grades .22 Rifles value \$350 ea.

Meals and ammunition available

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Phone I. Lucas for enquiries (059) 25712

Project Reports

NATIONAL KEA AND KAKA DATA BASES

Last year a request for information on sightings a kea and kaka was made, with the intention of establishing a long term database looking at species distribution and status. Since then I have received a range of sightings from members of the public as well as interest groups and government agencies throughout New Zealand.

The information from these sightings has been put onto computer. Some of the main areas that I have received sightings for so far are:

Nth island kaka, from Whangarei area, Hunua, Urewera, Pureora, Kaimanawas, Tongariro

Sth island kaka, generally lower altitudinal valleys from Mt Richmond, Nelson Lakes, Victorias, Paparoas, Western Alps, South Westland, Fiordland.

Kea, generally higher altitudinal ranges from Mt Richmond, Nelson Lakes, Kaikouras, Victorias, Paparoas, Arthurs Pass, Remarkables, Mt Aspiring, Fiordland.

It is impossible to say whether either species is increasing or decreasing in distribution or abundance with only one years' information, the data I have so far is fairly sparse and tends to reflect the popularity of recreational areas. Also kea and kaka tend to vary between being very conspicuous and quite secretive which makes it difficult to accurately say how many there are, particularly in the short term. I hope that by receiving sightings over many successive years any trends in species distribution and status will become more apparent.

Could you please keep reporting to me any sightings of keas or kakas, stating accurate location (map reference preferable), altitude, date and time, number of birds.

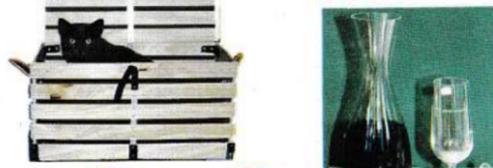
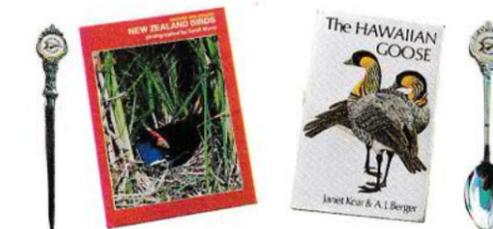
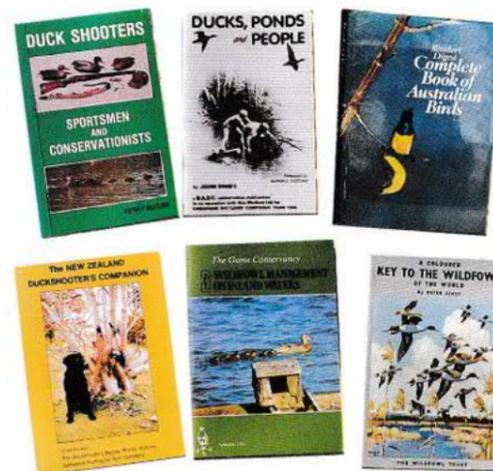
Please send any sightings to,
Michael Wakelin
Science and Research Division
Department of Conservation
P O Box 10420
WELLINGTON

OPERATION GRETEL

The grey teal nest box project has been well and truly resurrected this year, thanks to the efforts of Howard Egan in Wellington and David Rice in Auckland. One area we have fallen down on over the last few years is in the maintenance and inspection of the teal boxes, but thankfully this has now been rectified.



Glenys Hansens 'Maternity Ward' for hatching duck eggs under bantams.



NATIONAL SALES ITEMS

BOOKS

Duckshooters: Sportsman & Conservationists	\$20.00
Complete Book of Australian Birds (Readers Digest)	\$85.00
Coloured Key to the Waterfowl of the World	\$14.50
Ducks, Ponds and People	\$14.50
New Zealand Birds	\$11.30
The Duckshooter's Bag	\$8.00
The Duckshooter's Companion — Duckshooter's Bag & Gamebird Hunting	\$15.80
The Hawaiian Goose	\$25.50
The Mute Swan	\$51.00
Wildfowl Management on Inland Waters	\$21.50
Birds of New Zealand Locality Guide	\$50.00

VHS VIDEOS

River in Question — The Manganui-a-te-ao	\$66.50
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APPAREL

DU T-shirt — White (SM, XOS only)	\$40.00
DU Hat — Red/Fawn (one size fits all)	\$25.00
DU Jersey — Red/Green/Blue (state size)	\$68.50
DU Polo Shirt — Dark Blue	\$35.00

BADGES

DU Decal	\$ 1.20
DU Lapel Pin	\$ 5.60
DU Cloth Shoulder Patch	\$ 9.60
DU Canada 50th Anniversary Badge	\$ 5.60
DU Duck Head Badge — Large Gold	\$ 6.75
DU Duck Head Badge — Small Gold/White/Green	\$ 5.60
DU Duck Head Stick Pin	\$ 5.60

STATIONERY

DU Ballpoint Pens — per box of 10	\$11.20
DU Maxipens — per box of 10	\$11.20
DU Maxipens — single	\$ 1.50
Janet Marshall Bird Cards — set of four	\$ 6.00
Waterfowl Writing Paper and Envelopes — set of 10	\$ 9.00
Waterfowl Note Paper and Envelope — set of six	\$ 6.00
Mallard/Canada Card — For framing	\$ 6.00
Postcards — Mute Swan/Brown Teal 10 Pack	\$ 4.00

GENERAL

Janet Marshall Print signed, Russell Jackson Print signed.	\$85.00 EA
Canada Goose Place Mats — set of six	\$28.60
Canada Goose Coasters — set of six	\$11.65
Mallard Duck Coasters — set of six	\$11.65
Fenn Traps Mk 6	\$28.00
DU Duck Head Flag 62cm X 44cm	\$41.00
DU Cam-o-paint	\$10.00
DU Ashtray	\$ 4.60
DU Bottle Opener	\$ 4.20
DU Key Ring	\$ 4.60
DU Key Ring Nail Clippers	\$ 4.20
DU Letter Opener	\$ 4.20
DU Tea Caddy Spoon	\$ 4.20
DU Teaspoons	\$ 4.20
Number Plate Surrounds (Pairs) Red, Blue, Green	\$33.00
Engraved Crystal Wine Glasses (Set of 6)	\$75.00
Engraved Crystal Whisky Glasses (Set of 6)	\$75.00
Engraved Crystal Decanter	\$50.00
Roll Bag	\$24.00
Camo Pack	\$36.00

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