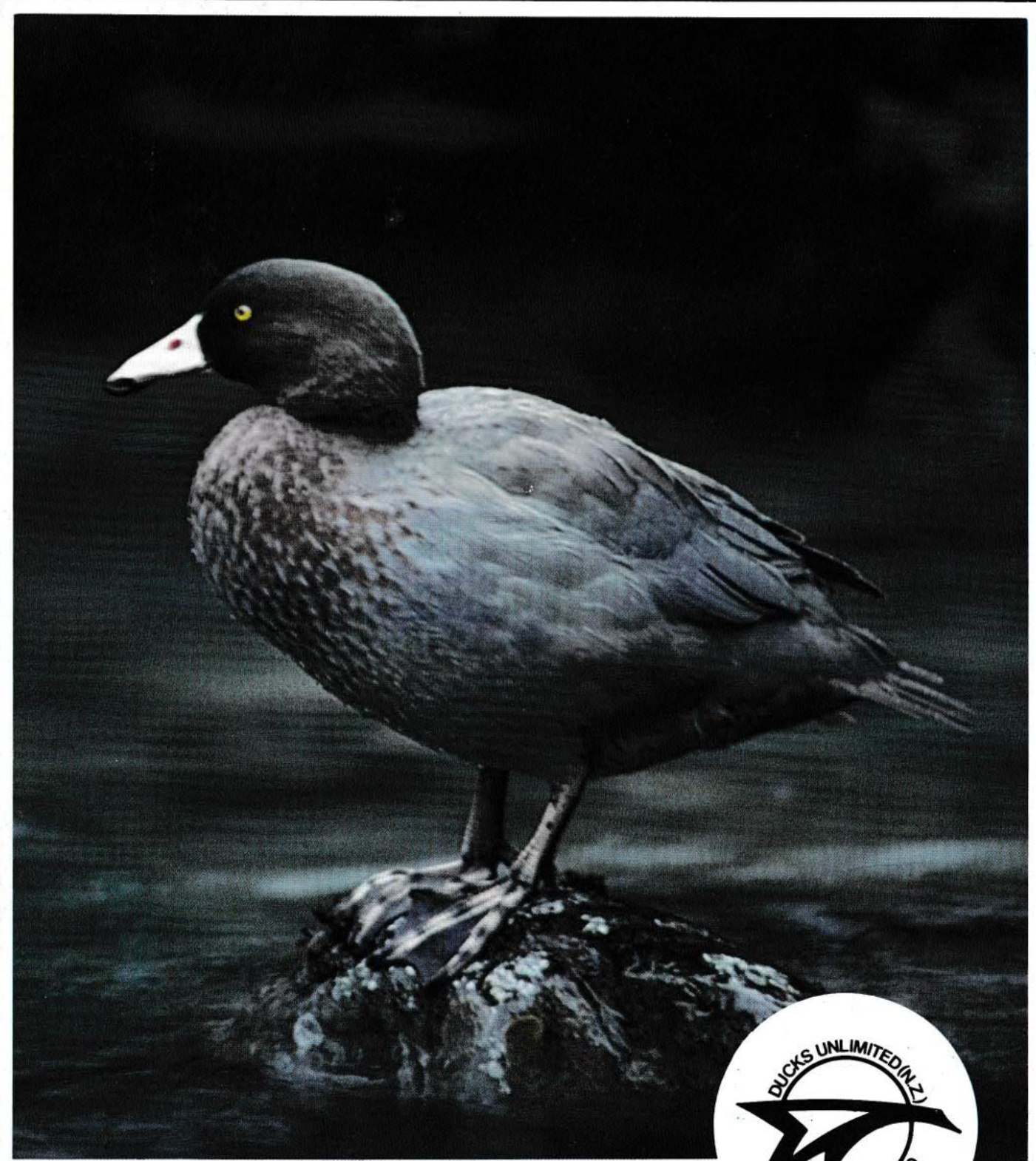


Flight

No.4/83 • ISSUE 38 • DEC 1983

NEW ZEALAND REGISTERED MAGAZINE

DUCKS UNLIMITED'S
QUARTERLY
WATERFOWL JOURNAL



Winchester (NZ) Ltd

is proud to support Ducks Unlimited (NZ) Inc.
in their efforts to propagate and preserve
New Zealand's rare waterfowl.



Brown Teal — 1 male
2 females

Wild population — c1,000
Captive population — c100



WINCHESTER®

MORE THAN A NAME. A LEGEND.

Distributed in New Zealand By: Winchester New Zealand

DUCKS UNLIMITED (N.Z) INC.,

PO BOX 74, HAMILTON, NEW ZEALAND

BOARD OF DIRECTORS AND OFFICIALS FOR 1983-84

PRESIDENT

P.B.C. Pirani 'Branta' Kahikatea Flat Road, Dairy Flat, RD 2, Albany, AUCKLAND.

VICE-PRESIDENT

F.N. Hayes, 17 Wise Street, WAINUIOMATA.

SECRETARY

F.N. Hayes, 17 Wise Street, WAINUIOMATA.

TREASURER

G. Girvan, 77 Waipapa Road, Hataitai, WELLINGTON.

BOARD MEMBERS

M. Timms, 9 Millward St., WANGANUI.

J. Gill, 1 Grosvenor Terrace, Wadestown, WELLINGTON.

A. Elliott, RD 4, PAHIATUA.

J. Campbell, 'Rameslie', RD 1, MASTERTON.

D. McNeil, RD 1, Te Poi, MATAMATA.

I.H. Pirani, PO Box 275, NGONGOTAHA.

Miss D. Pritt, Smith's Road, OHAKUNE.

M. Newcomb, PO Box 1834, AUCKLAND.

J. Glover, Hill Road, PAUATAHANUI.

OTHER OFFICIALS

Membership Secretary

M. Timms, 9 Millward St., WANGANUI.

'Flight' Editor

F.N. Hayes, 17 Wise St., WAINUIOMATA.

LIFE MEMBERS

W. Barrett, Australia

N.C. Cameron, Featherston

P.M. McLeod, Christchurch

I.H. Pirani, Rotorua

Mrs D.G. Pirani, Rotorua

Mrs C.L. Pirani, Auckland

J.H.B. Ward, Huntly

M.J. Bourke, Kimbolton

Ms R. Ward, Auckland

HONORARY MEMBERS

H.A. Sinclair, Dunedin

K.G.W. Wilkinson, Cambridge

TRADE MEMBERS

Rod & Rifle Magazine, Petone

W.H. Day, Winton

Isaac Wildlife Trust, Christchurch

Reloaders Supplies Ltd, Auckland

Tilley Plastics Ltd, Lower Hutt

Wgtm Sporting Arms Co. Ltd, Petone

A.R. Wilson Ltd, Hamilton

Wellington Zoological Gardens

Winchester NZ Ltd

Westpac Banking Corp, Te Aro, Wellington

Reikorangi Pottery, Waikanae

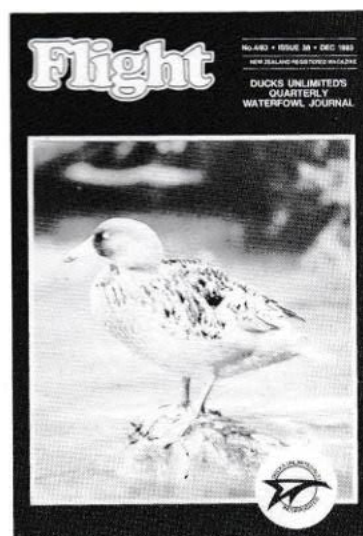
Nga Manu Trust, Waikanae

IN THIS ISSUE

THE NESTING OF GREY TEAL	3
DU NEWS	8
PROJECT REPORTS	10
DU SALES DEPT	14

COVER PICTURE

Blue Duck



Photography: Donald Bate, Neil Hayes, Graham Wilson, Gary Girvan and Ian McFadden.

Ducks Unlimited (N.Z.) Incorporated is a private, non-profit membership organisation dedicated to the preservation, restoration and maintenance of wetlands habitat in New Zealand and to the propagation of the country's rare waterfowl as a valuable natural resource. The organisation was founded in May 1974 by a group of far-sighted conservationists and incorporated by them in June 1975 at Wellington, New Zealand. The national headquarters mailing address is PO Box 74, Hamilton and the registered physical address is 84 Houchens Road, Hamilton. "Flight" is the official quarterly publication of Ducks Unlimited (N.Z.) Incorporated reaching 1100 devoted members and friends concerned with waterfowl conservation. D.U. membership begins at \$3.00 p.a. for Junior to \$12.50 for Full membership with provision for Trade and Life members. Membership of Ducks Unlimited carries with it subscription to this publication. To assure prompt delivery, members who move are urged to forward their new address along with current membership details to national headquarters. Letters and contributed manuscripts and photographs should be addressed to the "Flight" Editor. Views expressed by contributors are their own and do not necessarily constitute those of Ducks Unlimited (N.Z.) Incorporated.

"FLIGHT" IS PRINTED BY LITHOGRAPHIC SERVICES LTD, PETONE

NESTING OF GREY TEAL IN NEST BOXES

Ian McFadden

Wildlife service, Department of Internal Affairs, P.O. Box 13, Papakura

Grey teal (*Anas gibberifrons gracilis*) are native to Australia, New Guinea and New Zealand, the New Zealand population being periodically boosted by immigrants from Australia whenever severe droughts affect the continent's interior (Frith, 1967). Despite being the most numerous, most widespread and most mobile of Australia's waterfowl, in New Zealand grey teal have never been common and national surveys conducted in 1972 and 1974 suggested their numbers did not exceed 20,000 (Mills, 1976).

A possible explanation for this small population size is that suitable nest sites are lacking. Grey teal are a hole-nesting species and their most commonly recorded nest sites in Australian swamps are in holes in trees. 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 hole-nesting birds. Ducks Unlimited sought to test this hypothesis by providing an abundance of nesting sites. Their project, "Operation Gretel", commenced in 1975 with the aim of erecting 1000 nest boxes on selected wetlands throughout Waikato, Wairarapa, Manawatu, Canterbury and Otago.

Ducks Unlimited placed their first 150 boxes on a small pond adjacent to the Whangamarino Swamp in Waikato. Box usage increased from three in the first year (1975) to 30 in the third. In 1979 and 1980 I monitored the nesting activities of grey teal in these boxes as part of my Wildlife Service duties. I sought to:

- obtain basic nesting information;
- ascertain the best type and orientation of nest box; and
- determine if the provision of nest boxes increased the population.

STUDY AREA

The pond on Tony Flexman's property at Mangatawhiri, near Pokeno, on which the boxes were erected was about 2 ha in area sited at the edge of the Whangamarino Swamp. The swamp, 7000 ha in area, was dominated by willows (*Salix atrocineria*, *S. fragilis*) with an understorey of cabbage trees (*Cordyline australis*), stinkwood (*Coprosma foetidissima*) and flax (*Phormium tenax*). The extensive range of aquatic and terrestrial plants that provided ground cover included species of *Carex*, *Cyperus*, *Polygonum*, *Potamogeton*, *Rumex*, *Trifolium* and *Juncus*, and raupo (*Typha orientalis*). A similar botanical association dominated the study pond and another 30 ha pond nearby.

Water levels in the swamp fluctuated considerably because of its use as a ponding area by the Waikato Valley Authority (Fig. 1). Levels in the pond were more stable for it was separated from the swamp by a stop-bank and received its water by run-off from a small catchment area.



METHOD

A total of 107 nest boxes were erected on poles 1m above the water surface and placed 4 m apart in five parallel rows (Fig. 2).

Four rows each contained 24 boxes, the fifth, 11. All boxes were rectangular, 300 mm square but their depth was not standard, there being some 450 mm, 600 mm and 750 mm deep. The entrance hole, 90 mm in diameter was located within 25 mm of the removable lid. Approximately equal numbers of boxes were erected with the entrance hole orientated to the four main points of the compass.

In 1979, the boxes were divided into four groups (of 24, 24, 29, 30), and one group inspected every third day so that all boxes were viewed every 12 days. This routine was interrupted occasionally for no inspections were made during heavy rain. In 1980, a closer check on the rate of egg laying was sought. The group of 29 boxes plus one of the other groups in turn were inspected every third day.

In both years all eggs in each box were weighed, measured and numbered, and the

TABLE 1:
Number of new nests established by grey teal in nest boxes in each month. Records for June and July 1979 determined by backdating from hatching.

Year	June	July	Aug	Sep	Oct	Nov	Dec	Total
1979	10	31	31	42	37	1	3	155
1980	0	34	20	39	10	4	2	109

TABLE 2:
Average size of clutches laid by grey teal in nest boxes in each month.

Year	No. of clutches	June	July	Aug	Sep	Oct	Nov	Total
1979	Mean	10.3	10.0	11.0	11.5	10.7	6	10.7
	Standard deviation	2.0	1.5	2.0	2.8	3.2	—	2.5
1980	Mean	—	10.7	10.2	11.7	8.3	9.0	10.7
	Standard deviation	—	2.3	2.8	3.5	1.7	1.2	2.9

presence or absence of down in the box recorded. It was noted that coincidental with the cessation of laying, down was added to the nest. The likely hatching date was calculated as being 26 days (the incubation period as determined by Frith, 1967) from the initial deposition of down. Five days prior to that 'hatching date' an attempt was made to catch and colour band the female on her nest, and when visits coincided with hatching, chicks were caught and marked with web tags.

RESULTS

Duration of Nesting

In 1979, all boxes were first inspected on 16 July. At that time, eggs were present in 32 boxes, and in some it was apparent, from the presence of down and staining of the eggs, that incubation had commenced.

In 1980 all boxes were inspected on 2 July but none were then in use.

More new nests were established in September than in other months in both years (Table 1). However, it was apparent that a high degree of nesting synchrony existed for in both years the nesting season commenced abruptly in early July and ceased abruptly at the end of October.

Clutch Size

A clutch was considered to be complete when no new eggs were added and down was deposited in the nest. In some boxes only one or two eggs were laid and then abandoned. These have been excluded from the analysis. In other boxes eggs were laid but few down feathers accumulated suggesting that if incubation did commence it did not last long. These have been included in the analysis.

The sizes of the 130 clutches laid in 1979 and 105 in 1980 are illustrated in Fig. 3. The mean clutch size in 1979 was 10.7 (S.D. \pm 2.5), the same as in 1980 (S.D. \pm 2.9). However, the 1980 clutches contained proportionately more 8, 9 and 11 egg clutches and fewer of 10 eggs than in 1979. The smallest clutch incubated was of three eggs, the largest contained 24 eggs. Clearly this latter clutch, and the other very large ones were not true clutches but the combined work of two or more females, a point discussed later in this paper.

In both years, clutches laid in September, the month in which most nests were established, were larger than those laid in other months (Table 2.).

Hatching

In 1979, 1542 eggs were laid in the nest boxes; 1398 from 130 clutches were incubated and 1049 (76%) hatched. In 1980, 1229 eggs were laid; 1122 eggs from 105 clutches were incubated and 678 (61%) hatched.

More of the eggs laid early in the season hatched and eggs laid at the peak of the season had the lowest hatching success. Hatching success declined steadily throughout the breeding season in both years (Table 3) and variations in hatching success were unrelated to the sizes of clutches incubated. Eggs which remained in nests from which one or more ducklings hatched were broken open and the state of their contents examined. Of 279 examined, 71 (25%) had yellow "cheesy" contents and were considered infertile; 37 (13%) contained black watery fluid — fertile; the contents of 63 (22%) were fresh and signs of development could not be detected; the remaining 112 (40%) contained embryos, 23 of which were full-term, 37 about three-quarter developed, 39 at half-term and 13 at a lesser stage of development.

TABLE 3:
Hatching success of eggs laid and incubated by grey teal in nest boxes in each month.

Year	No. of eggs	Jne	Jly	Aug	Sep	Oct	Nov	Total
1979	% hatched	81	76	74	69	78	0	76
1980	No. of eggs	—	342	215	445	75	45	1122
	% hatched	—	77	67	47	51	60	61

Thirteen clutches in 1979 and 25 in 1980 were deserted after incubation had commenced. Most desertions occurred in August and September (four each) in 1979 and in September (nine) and October (12) in 1980.

Post-Hatching Survival

Broods of ducklings encountered in nest boxes were fitted with small web tags. This activity did not cause any ducklings to leave the boxes prematurely nor any broods to be abandoned by the parents. Only once did I observe young leaving a box and this occurred after the female had landed nearby and called the ducklings out.

I saw few broods after they left the boxes; the largest newly-hatched brood I saw was of six ducklings which, as I watched, was reduced to four by two pukeko (*Porphyrio p. melanotus*).

To assess the sizes of broods as they left the pond and entered the swamp, a net and traps were erected along the pond's stopbank. Over three days during which time 13 broods left nest boxes, the traps were checked every two hours day and night. Only one brood was caught; the banded female had hatched nine ducklings the previous day, all of which were web-tagged. Only three ducklings were with her at capture and only one was web-tagged.

Over the two years, 148 ducklings were web-tagged. Eighty-seven fledged young and adults were trapped at the pond in February and March 1980 and 1981 but no web-tagged birds were among them. Mills (1976) reported that 6.3% of grey teal banded as newly-fledged young were reported shot. Although the web-tagged ducklings did not have an obvious band, it is not unreasonable to expect some of the tags to be reported had

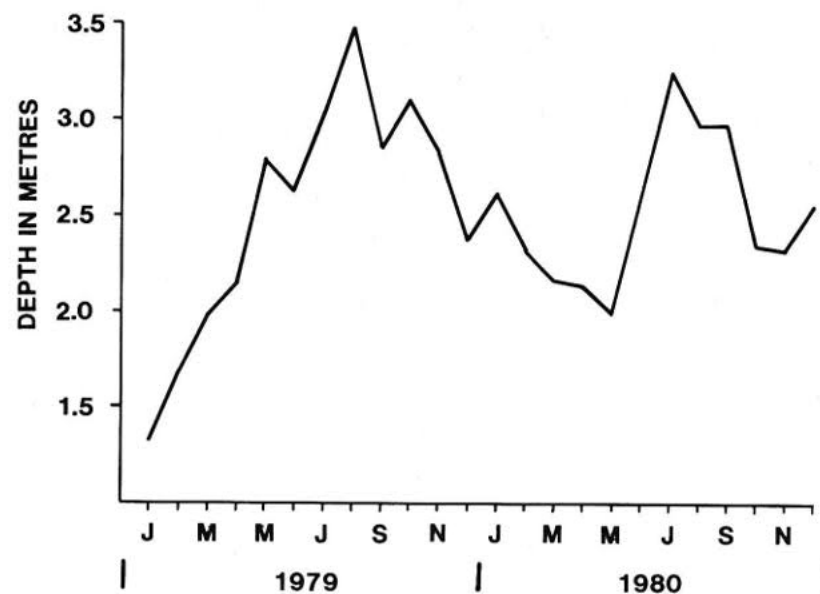


Figure 1: Mean monthly water levels in the Whangamarino Swamp, January 1979 to December 1980.

nesting activity, but with so many of the boxes eventually being used, such a pattern proved difficult to identify.

DISCUSSION

Timing and Duration of Nesting

In southern and northern Australia, nesting of grey teal is seasonal, in central Australia it is aseasonal but in all three areas the onset is determined by the presence of floodwaters (Frith, 1967). When claypans, billabongs and swamps are filled, teal flock into them and breeding begins immediately. But the moment floodwaters begin to recede, breeding may stop abruptly, and the birds may follow the floodwaters to nest again elsewhere.

Water levels in the Whangamarino Swamp are maintained high from May/June until September/October (Fig. 1) by stopbanks and a floodgate and are lowered only after levels in the lower Waikato catchment have receded and the risk of flooding passed. Release of water from the swamp is sudden rather than gradual and a 0.5m lowering may be achieved in less than a week.

The duration of teal nesting may be in-

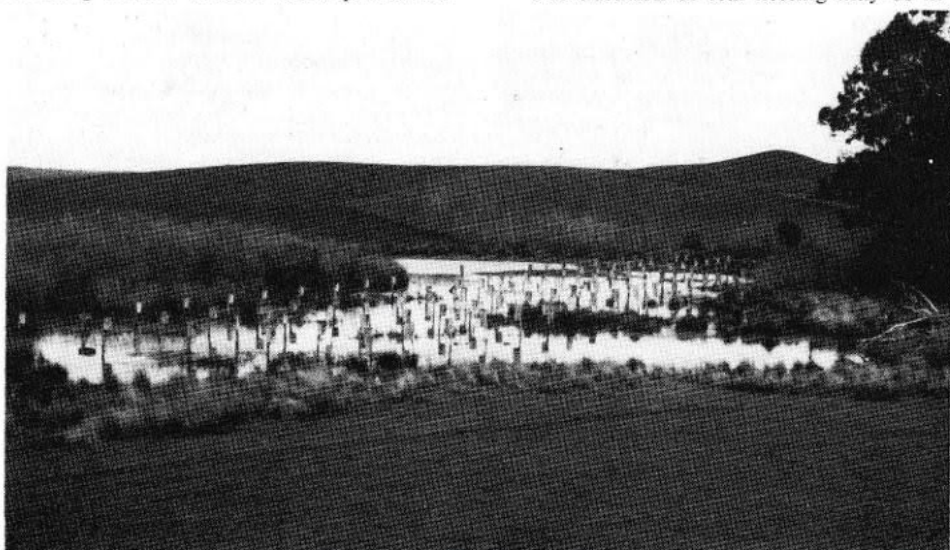


Figure 2: Flexman's pond and the rows of nest boxes.

fluenced by water levels in the swamp. In both years nesting commenced immediately following the increase in winter water levels and ceased once the spring decline in levels was in progress. Further evidence that water levels affect breeding was provided when, in the first week of October 1980, the failure of a stopbank caused a 0.5m decline in water level in the study pond overnight. Clutches were deserted and egg laying virtually ceased.

Coincidental with the cessation of new nesting attempts, the boxes were used by starlings (*Sturnus vulgaris*) and Mynas (*Acridotheres tristis*). Starlings tended to nest in the corners of boxes leaving them suitable for teal. Once starlings had fledged, mynas commenced nest-building, often filling the box to the level of the entrance hole thus preventing any further occupation by teal.

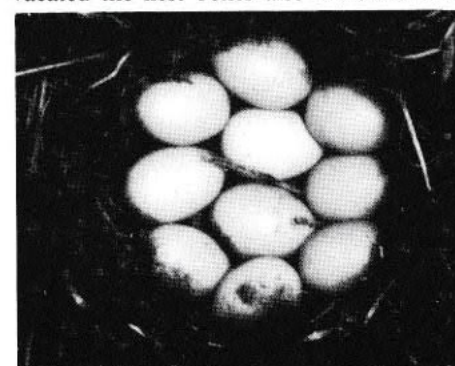
Clutch Size

Few natural nests of grey teal have been found in New Zealand but all authorities record the clutches as ranging between five and nine eggs (Oliver, 1955; Falla, Sibson and Turbott, 1966). The average size of 20 clutches laid by birds held captive by Ducks Unlimited members was 7.5, while Frith (1967) reported that the average number of eggs in 54 nests he found in Australia was 7.9 (see Fig.3). The average clutch size of 10.7 from both years of this study is so much higher than these that it requires further examination.

The distribution of clutch sizes in both years (Fig.3) is skewed, lacking the expected number of small clutches and containing a greater than expected number of large clutches. Additionally, clutches laid in September when most new nests were established were larger than those laid in other months (Table 2), whereas for many species of birds, clutch sizes decline steadily from the start of the breeding season (Lack, 1966). The inference is that many, perhaps most, of the clutches contained eggs laid by more than one female.

In 1980, the frequency of inspections of a sample of nests was increased to once every three days in order to detect dumping of eggs by non-incubating females, but it proved unsuccessful. One box had seven eggs laid over a five-day period, perhaps indicating the laying of two extraneous eggs. After hatching two infertile eggs remained in this nest. A case of positive egg deposition occurred when a nest containing 13 eggs had a further six added midway through incubation, which resulted in desertion of the nest.

The state of development of eggs left in the nest after ducklings had hatched and vacated the nest boxes also indicates that



On the production line.

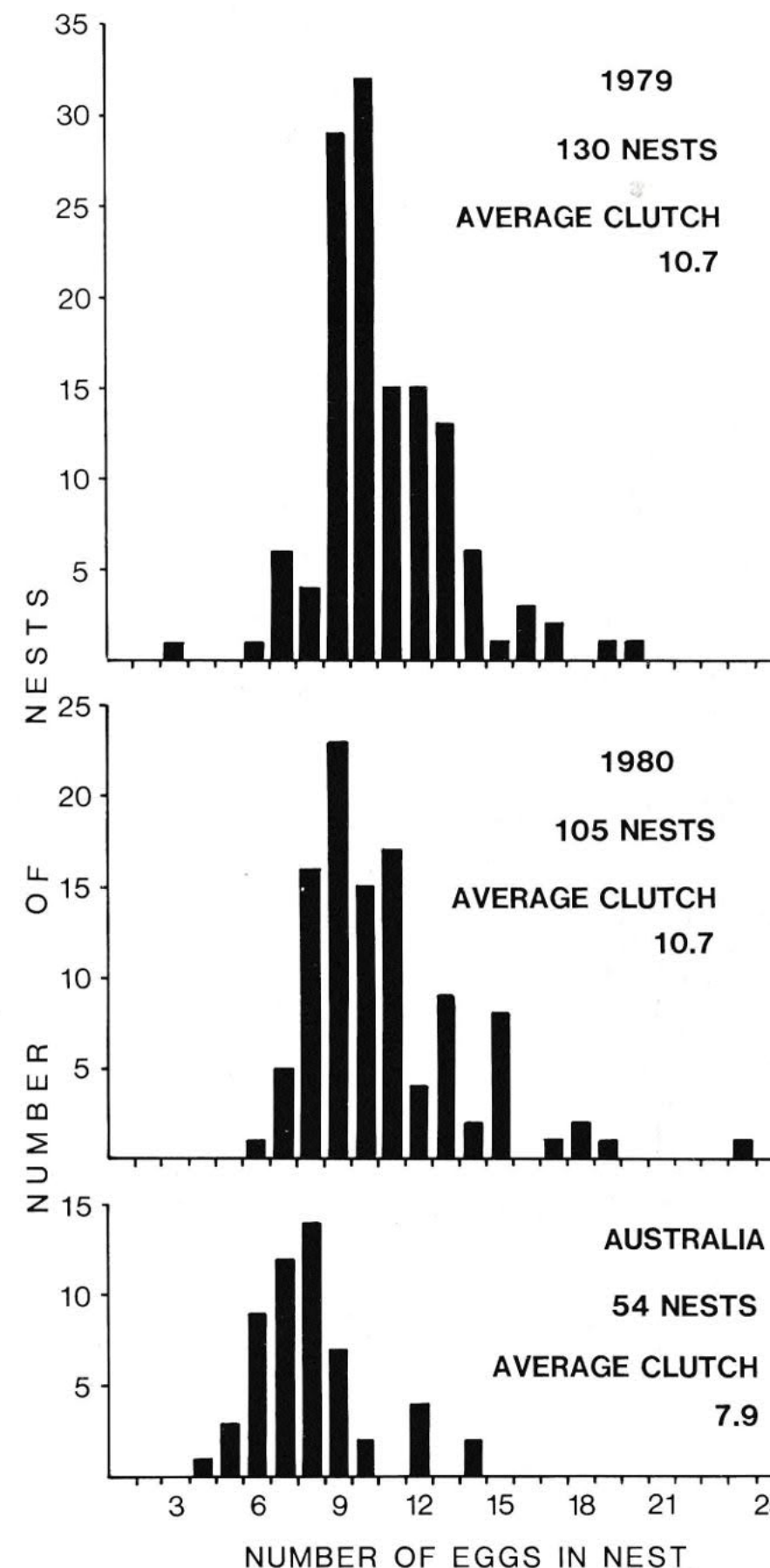


Figure 3: The distribution of the sizes of clutches laid in nest boxes in 1979 and 1980, and that from 54 nests in Australia (Australian data from Frith, 1967).

dumping of eggs took place. For example, 51 (18%) of the 279 eggs examined contained half-term embryos or embryos in a lesser state of development, only four of which showed signs of decomposition. A further 63 (22%) were judged fresh with no signs of embryo development suggesting that some may have been laid the moment the nest was vacated, or late during incubation.

In 1979, all eggs were measured and length v. width diagrams plotted to determine the similarities in shape of all eggs within a clutch. For almost all clutches there were extensive variations in shape, further suggesting the presence of eggs laid by more than one female.

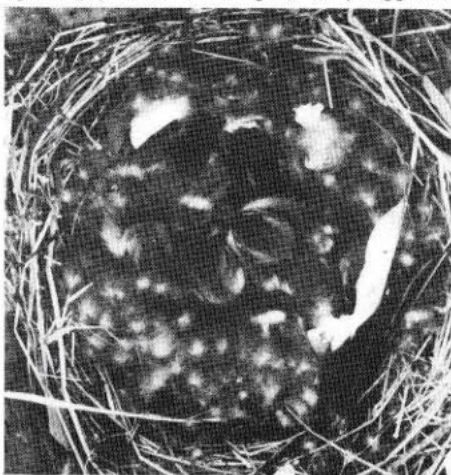
Nest Box Studies

The patterns of use of nest boxes and the suggestion that widespread dumping of eggs may have occurred, are findings similar to those reported by McCamant and Bolen (1979) from their study of nest box use by black-bellied whistling ducks (*Dendrocygna autumnalis*) in Texas. At least 70% of the 778 clutches they found in their nest boxes were considered to contain eggs of more than one female, with only 15% of clutches falling in the 9-18 egg range and presumed to be the eggs of a single hen. Their average clutch size was 30 eggs with 14% of the boxes containing in excess of 50 eggs. Only in one year of their 12-year study were all available nest boxes used; in other years 10-28% of the boxes were not laid in. A mere 20% of the eggs laid eventually hatched, and in those nests from which one or more ducklings emerged only 63% of the incubated eggs hatched.

Such extensive laying of eggs in already occupied boxes indicates a high level of social interaction among participating females and does not necessarily imply a shortage of suitable nest sites. In the whistling duck study, as in this grey teal study, a proportion of boxes remained unused. Some females simply were more attracted to the nests of others than to establishing their own.

Apart from knowing the status of those females which lay in the nests of others, the

important point is whether the behaviour enhances or lowers the species' productivity. If dumped eggs are fertile, deposited before incubation begins and the nest is not deserted, then productivity may not be decreased. If those females which lay in the nests of others eventually establish their own nests, then productivity may even be increased. On the other hand, too many eggs in a nest may result in uneven incubation and a lower hatching rate. Mortality of young ducklings may be excessive if there are more ducklings than the female can properly brood. One study of Carolina ducks (*Aix sponsa*) (Morse and Wright, 1969) suggested



that dump nesting contributed 32% more day-old ducklings to the population than did clutches of single hens. However, Delnicki (1973) felt dump nesting by whistling ducks was detrimental, a viewpoint also gained from McCamant and Bolen's study. Unfortunately my study of grey teal cannot answer this question — but it is one that some future study could pursue at Pokeno or at some other locality where nest boxes have attracted grey teal.

ACKNOWLEDGEMENTS

I would like to thank Tony Flexman for his

willing co-operation; Tony and numerous Ducks Unlimited members for their infectious enthusiasm; John Cheyne for his advice and assistance with the capture of adult birds; and the Wildlife Service trainees who assisted in the field. Dr Murray Williams offered advice and guidance throughout the study and he and Dr M. Crawley made helpful comments on the manuscript. I also thank Malcolm Harrison for advice on statistical analyses.

REFERENCES

- Delnicki, D.E. 1973. Renesting, incubation behavior, and compound clutches of the black-bellied tree duck in southern Texas. M.S. thesis, Texas Tech. Univ., Lubbock. 67 pp (quoted in McCamant and Bolen, 1979).
- Falla, R.A.; Sibson, R.B.; Turbott, E.G. 1966. A field guide to the birds of New Zealand. Collins, London 254 pp.
- Frith, H.J. 1967. Waterfowl in Australia. Angus and Robertson, Sydney.
- Lack, D. 1966. Population studies of birds. Clarendon Press, Oxford. 341 pp.
- McCamant, R.E.; Bolen, E.G. 1979. A 12-year study of nest box utilization by black-bellied whistling ducks. *Journal of Wildlife Management* 43 : 936-43.
- Mills, J.A. 1976. Status, mortality, and movements of grey teal (*Anas gibberifrons gracilis*) in New Zealand. *New Zealand Journal of Zoology* 3 : 261-7.
- Morse, T.E.; Wright, H.M. 1969. Dump nesting and its effect on production in wood ducks. *Journal of Wildlife Management* 33 : 284-93.
- Oliver, W.R.B. 1955. New Zealand birds. A.H. & A.W. Reed, Wellington.

DU NEWS COUNTRY CALENDAR

The DU/Country Calendar programme, screened on TV 1 on 13th September was widely viewed and has created considerable interest in DU and our conservation projects. The programme was every bit as good as expected and concentrated on operation Pateke, operation Gretel and operation Branta, as well as showing highlights of the annual auction and some fine pictures of many other species of waterfowl. Plus a look at some of the native species in captivity at the Nga Manu Trust.

The highlight of the programme was, for many, the superb pictures of flighting Canada's in the Wairarapa — at Jim Campbell's.

For those members who missed the programme there will be a repeat screening on the 19th February next year. DU also has available a VHS video copy of the programme for loan to members. Drop the Secretary a note if you are interested.

'LISTENER' ARTICLE

Hot on the heels of the Country Calendar programme a feature article on DU was published in the October 29th issue of the 'Listener'. Entitled 'Ducking the Issue' (a title which did not greatly impress DU Directors) the article, written by Wellington freelance journalist Jane Westerway, who attended the annual meeting, provided a somewhat controversial look at DU hunter members involvement in conservation — we could certainly not be accused of ducking this issue!! But in addition the article provided some very good material on DU objectives, projects, and how we raise funds. With a claimed readership of around one million we have again gained some great publicity and we thank Jane for her efforts.

MEMBERSHIP

Membership renewal is around 90% at present and is a new record for this time of the year. Total membership is rapidly approaching the 1,000 mark and we should see this figure reached very shortly, particularly after all the publicity we have been getting lately. Horrie Sinclair continues to send us new members and Graham Wilson in Blenheim has sent us a number of new subscriptions as a follow-up in our joint nest box project with the Marlborough Acclimatisation Society.

Recent new members include, Capt. Bill

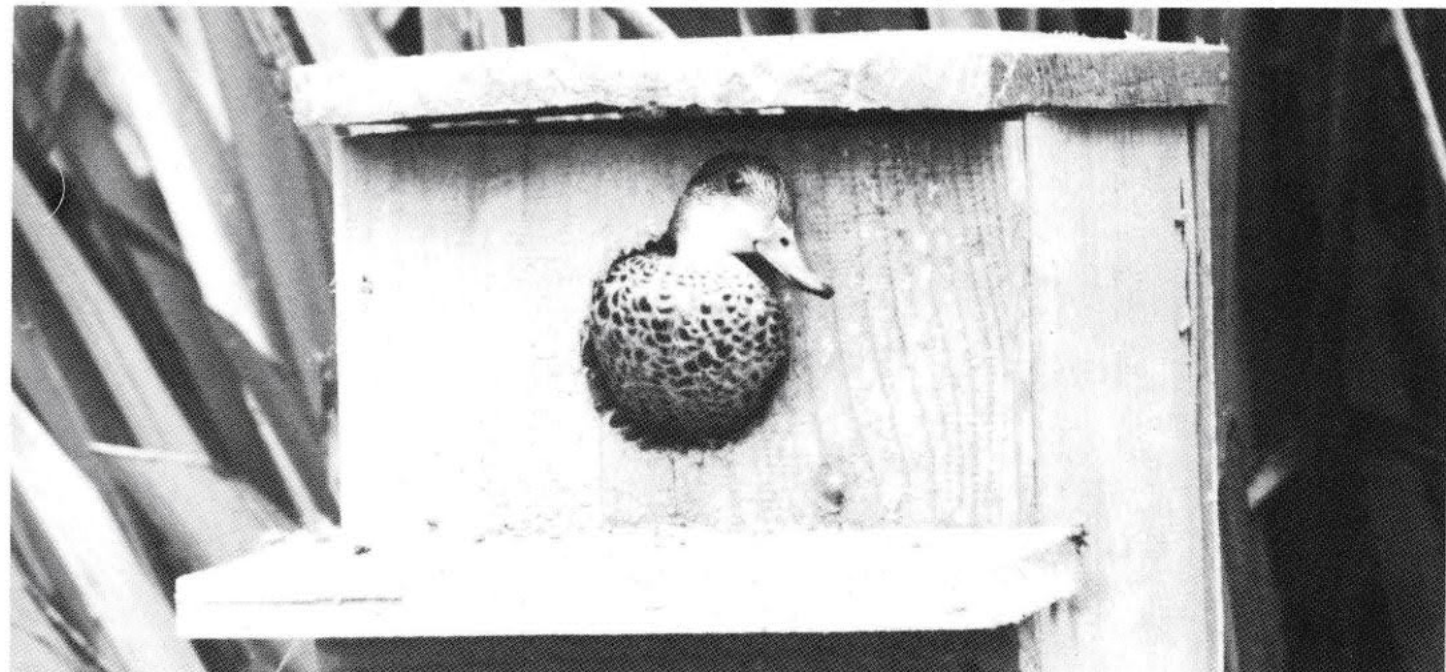
Jones, Master of the Aratika, the Birwick Youth Adventure Trust of Dunedin, Reikorangi Pottery as a Trade member, Dr Tony Cutten of Christchurch, Joe Wallace, President of the Blenheim Rod & Gun Club and Bernie Smith, Secretary of the club.

1984 ANNUAL MEETING

The next annual meeting, which will be our 10th, will again be held at THC Tokaanu. The date will be 14th July 1984, which is again the mid-term break for schools.

DU INTERNATIONAL CLAY BIRD CHAMPIONSHIP

At its September Board meeting DU Directors approved the proposal from the Hamilton Chapter to hold a DU International Clay Bird competition on Friday 13th July — the day prior to the annual meeting — at the Taumaranui Gun Club. The Chapter's aim will be to promote DU, to boost membership and to raise funds for DU. Further details will appear in the March 'Flight'.



Country Calendar team at Jim Campbell's.

1983 ANNUAL MEETING

Many complimentary remarks have been received about the quality of the 1983 AGM minutes published in September 'Flight'. The person responsible for such a fine set of minutes was, of course, Cheryl Pirani the wife of our President. Thanks again Cheryl. Two important names omitted from the list of auction item donors were Andy Garrick of Wellington and Don Eley of Lower Hutt. We apologise to these members (and any others omitted) but with such a great spread of items it was a problem tracking down all the donors. In respect of auction items Wilf Wright of Reikorangi Pottery has already come up with a donation of three superb items of pottery for next years annual auction.

DU TREASURER VISITS DU (U.S.A.)

While on a recent visit to the U.S.A. Garry Girvan called in at DU Headquarters — some 70km from Chicago. Garry was given V.I.P. treatment and he was tremendously impressed by the size of the DU operation, its headquarters and by the very real enthusiasm of the staff. During his visit Garry presented, on behalf of DU (N.Z.) a copy of the Lodge Book of Bird Paintings to DU Executive Director Dale Whitesell, for addition to the DU library. Garry also assisted in raising the N.Z. flag outside the headquarters. Our flag, along with the Canadian, American and Mexican flags, is on permanent display outside the headquarters.

While there Gary was also fortunate to be able to select some of the auction items which DU (U.S.A.) will very kindly be donating to next years auction.



Garry Girvan with Dale Whitesell.



Garry with Mat Connelly DU (U.S.A.) Director.

NATIONAL CONSERVATION CENTRE

We hope that most members have managed to make a contribution to the World Wildlife Fund's National Conservation Centre appeal. The appeal is progressing well and around \$50,000 has now been raised. DU has made an initial contribution of \$250 to the appeal and we are informed that construction of the centre will commence next year.

DU SALES DEPARTMENT

DU Tie now available. A superb quality navy blue DU tie is now available from Box 74 Hamilton. Price is \$12.50 including postage.

'Incubation Book'. We have a very limited number of copies of this excellent book in stock at \$32.00 including postage.

COVER PICTURES

The fine Blue duck picture on the front cover was taken by DU member Donald Bate of Blenheim, and was largely responsible for the decision to experiment with a coloured cover. The shot was taken on the Sabine River, Nelson Lakes National Park on 22.4.83, using a Canon AV-1 with a 200mm lens at 4.5 and an approximate shutter speed of 1/2 second on Kodachrome 25. The camera was rested on a rock and Donald says it was real luck that neither the camera nor the duck moved. (To us it looks more like great photography!) We thank Donald for the opportunity to use this outstanding photograph.

The Winchester Brown Teal photo was taken by Neil Hayes using an OM 1 and Vivitar 300mm lens — on a tripod and on Kodachrome 25 film. (In his back-garden.)

INTERESTING RECOVERY

Someone once said that the life expectancy of a grey duck in New Zealand was no more than one year. In the case of one grey duck this was certainly not true, as Neil Hayes reports that one of his captive reared grey ducks, a male, released in Wainuiomata on 6.1.72 was found dead (possibly hit by a car) in Seaview, Lower Hutt, on 14.10.82. He also reports that a grey duck female that he has had in captivity since it was a duckling celebrated its 13th birthday in October this year. Over the years this bird has reared many offspring, but her breeding days may well be over as over the past two seasons she has been paired up with a Carolina drake!

From information on hand the longest lived duck has been a Mallard drake, who lived to be 29; in captivity, of course.



1983-84 Release Programme. Two liberations have now taken place for the new season — 16 birds released on 12.8.83 and 16 on 30.10.83 — all at the Nga Manu Trust, Waikanae.

OPERATION WHIO

Churchill Fellow. Rod Hall who arrived in early September to search for Blue duck eggs as part of his U.K. Churchill Fellowship left New Zealand in late October without completing his project; which was to obtain Blue duck eggs and take them to the Wildfowl Trust in the U.K. After watching several pairs near Matawai, Rod came to the conclusion that the birds were not yet nesting and that he should return to the U.K., with the hope of being able to return in late November.

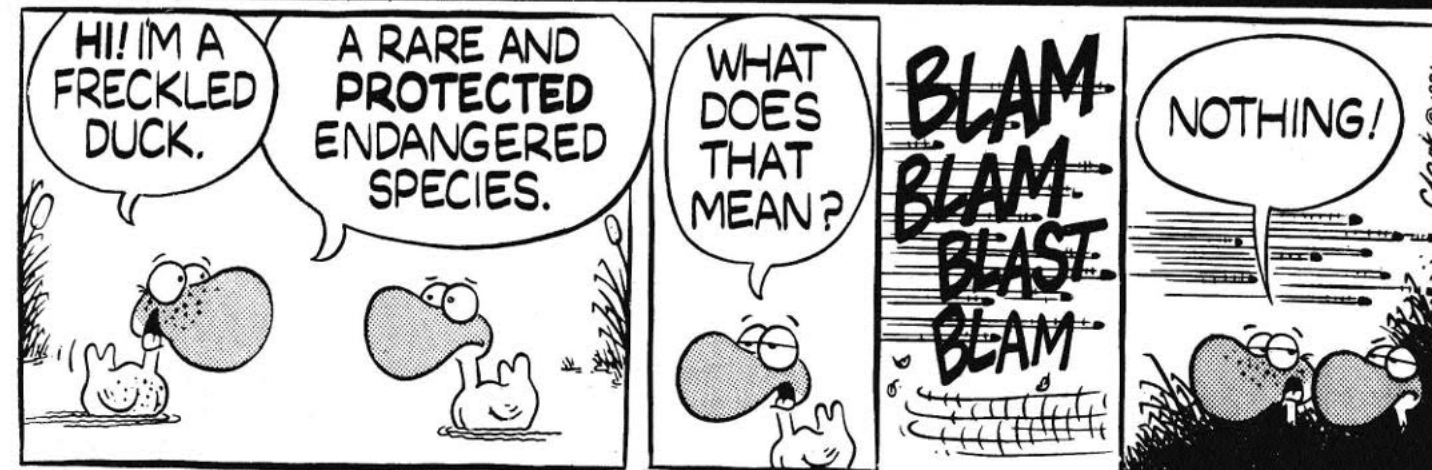
During Rod's six week stay in New Zealand many DU members became involved in his project and we would like to thank the following for their assistance; Ian Pirani, Neil Hayes, Horrie Sinclair, Barry Rowe, Alasdair Lees and Ron Goudswaard at Wellington Zoo, June Mayors at Hilldale Zoo, Jim Glover, Peter McLeod, Peter McKenzie, Bill Clinton-Baker, and Sharon Walker at the Isaac Wildlife Trust. Naturally Rod received very considerable assistance from the Wildlife Service and we are confident that what we see as an important international PR exercise (one that would really put N.Z. on the world conservation map) will be successful. As we have stressed so often over the past few years, **now** is the time to learn as much as possible about Blue ducks and aviculture presents a well recognised and established method for studying wild birds. After all, we know virtually nothing about Blue ducks at present; a small amount of research has been done by two **American's** on Blue ducks (with no published data to date!) and Dr Murray Williams is doing a

OPERATION PATEKE

1983-84 Breeding Season Progress. John Gill has already reared 10 Brown Teal for the new season — 7 females and 3 males fully feathered before the end of October! Good numbers are also being reared by other members and hopes are high that we will beat last seasons 112.

Brown Teal at Wellington Zoo. Two recent visitors to Wellington Zoo's main pond have been two Brown Teal. A male bird arrived during the hunting season and stayed for nearly two months. Then a female arrived shortly after the male had departed and stayed for several weeks. While this again shows that Brown Teal are occurring in areas where they have not been seen for many years, the really intriguing factor in these two appearances is that neither bird was banded!! This means that they must have been wild bred birds, as all captive birds are banded as are all those we release into the wild.

THE SWAMP, with WART the frog



Courtesy of The Waikato Times

study at present. But the overall input has been pretty dismal.

1983-84 Breeding Season. This has also been dismal to date with two **infertile** clutches being reported.

OPERATION GRETEL

Marlborough. Graham Wilson DU member and Councillor of the Marlborough Acclimatisation Society, reports that he and his team have erected a total of 26 nest boxes as part of a joint DU/Marlborough Society project. 7 boxes were erected adjacent to Vernon Lagoons, 5 boxes have been erected at the Tuamarina Ponds, 8 at Lake Elterwater and 6 at Lake Jasper. The current thinking with nest boxes is to spread the boxes around rather than see too many boxes in an area that **may not** be used. This joint project is a good example of what can be achieved and we thank Graham and the Marlborough Society for their efforts.

Barton's Lagoon. At Labour weekend a DU working party removed 19 nest boxes that were sitting on dry ground at the lagoon (see last 'Flight') and re-erected 14 of them on the main lagoon. While the habitat on the main lagoon is not in the same class as the drained area it is capable of good grey teal production and John Barton, the owner, has been carrying out some important tree planting work in a new area of water that has been completely fenced and a more stable water level established. Three DU Directors met John Barton recently to discuss the drained area. The meeting was of value and we are hopeful that we may eventually see some of the drained area returned to wetlands. The Directors also took the opportunity to thank John for his kind permission



A nice line of boxes.



Bernie Smith and Stan Stevens working at Lake Jasper, Marlborough.

for us to use the area and to offer DU assistance to improve the habitat.

Wairarapa Catchment Board. We have decided not to make further comment about the Catchment Board's work at Barton's Lagoon as the Board has just experienced some really interesting changes in the recent local body elections. The good news is that Ian Buchanan, Senior Field Officer with the Wellington Acclimatisation Society, has been elected to the Wairarapa Board, along with a couple of other pro-environmentalists. Ian polled an impressive number of votes and this should be a clear indication to the Board about which way the voters are thinking!

Dunedin. Horrie Sinclair reports an exceptional breeding season in his wetlands. Five grey teal boxes have been used, with 22 out of 27 eggs hatching successfully and a further 16 eggs being incubated at the time of writing. Horrie has also found several other grey teal nests on top of the nigger heads. Other species are also breeding extensively. Horrie also reports that he is now collecting Mr Muldoon's pension and will be able to spend more time in the wetlands!

Masterton. Bill Clinton-Baker reports that he is becoming embarrassed by the numbers of grey teal breeding on his dam — all the birds must have seen 'Country Calendar' — and he has a flock of 20-30 using the dam. This is further clear evidence of the value of DU nest boxes as four years ago grey teal were few and far between in the area. Bill also reports that the dabchicks are back and currently rearing two offspring.

Pokeno. An inspection by Paul Pirani and Ian McFadden in early September revealed 56 boxes in use and 600 eggs!

Ngaruawahia. Dudley Bell reports 250 eggs on the go in late September and over 50 of the 69 boxes being used at the Mountley site.

OPERATION BRANTA

A disgusting move by High Country Federated Farmers to promote the poisoning of Canada geese in the high country of the South Island prompted DU to become **political** and a number of parliamentarians



Boxes at Vernon Lagoons, Marlborough.

were circulated with a DU letter that was written to the Federated Farmers High Country Committee. DU is currently compiling an extensive dossier on the Canada goose problem and it already makes interesting, and

depressing, reading, e.g. of the most vociferous farmers who are demanding the poisoning one has 200,000 acres and less than 1,000 geese, and the other has 4,000 acres and less than 300 geese. And when we ques-

tioned five hunters who recently attended 'culling' operations on geese in the South Island all were adamant that they saw no goose problem. Our dossier will be published when complete.

WANTED ALIVE

is a campaign being promoted by the New Zealand Wildlife Service to make every New Zealander aware of the extremely precarious state of some of our unique native animals. For years the staff of the Wildlife Service has laboured to save a number of species teetering on the edge of extinction. Now YOU can show your concern and help in a personal way.

This superb full-colour painting by Janet Marshall, printed to the highest international standards by New Zealand craftsmen, has been produced in support of "Wanted Alive". By ordering a copy now you will be making a positive commitment towards our efforts to save the Chatham Island black robin, kakapo, takahe, black stilt, blue duck (to name only a few), from extinction.

WE WILDLIFERS ARE DEDICATED—ARE YOU?

Send \$4 today for your copy of this beautiful poster and help save our feathered friends from a fate they don't deserve.

"WANTED ALIVE", New Zealand Wildlife Service, Department of Internal Affairs, Private Bag, Wellington.



THOUGHTS IN A MAIMAI – 18th MAY 1968

by Greg Kelly

In the interesting short story below Greg Kelly shows that there is far more to duck hunting than pulling the trigger. In fact duck hunters often see more of nature than many bird watchers! Greg Kelly, now well into his 90s and living in Taupo, will need little introduction to many DU members, as he was for many years the Arms and Ballistics Officer with the NZ Police Department and the author of 'The Gun in the Case' and 'Gun in the Hills'.

Today is my first chance to get a shot at duck, for early in the season my lagoon at Hector Romayne's property was almost dry because of the prolonged dry summer and autumn.

I slept well until 4am after my journey to Romayne's, rose at 5.15. Mary was up soon after and cooked me two poached eggs perfectly, no mean feat on a Primus stove.

Hector and I left at 6.30. It was foggy as he climbed into his tractor seat, and I into the trailer. It is always a thrill to me, this chugging, grinding, jerky trip up and over grassed ridges and along winding tracks just wide enough for the two huge rubber-tyred rear wheels.

When the track ended, we off-loaded and Hector helped me with my gear. It was only a few hundred yards to the maimai up the steep pinch from the tractor terminus to the rim of a sharply edged basin top of the ridge. I made it without a pause — the first time I had done so in years, said Hector.

I looked down and saw the pool dimly through the fog.

By 7am I am in the maimai placed on a sugarloaf of sandstone about half-way along the pool. It is a maimai with a difference. A trench had been dug into the mound on the off-side of the pool with a waterproof cover disguised with greenery. This meant it was back on to the water, giving the birds a better chance when they pitch in. The hunter had to back out of his trench stepping round one side or the other. Of course the ducks exploded into the air, and shooting was more difficult and much more exciting.

But on this morning by 8.30, not a duck has been sighted, or heard. The temperature is cool but not uncomfortably so, and so far no rain has fallen although I am prepared for it. The pond is like a green mirror. Hector's good sheep are reflected in the surface, six close together and one aside and alone. Fantails are flying in and around as I sit, also larks. The fantails' chirping short sweet note, the others are silent. My seat is hard, just a sack on an upturned oil drum. No excuse for this, as I have my car cushion with me. I will now use it. In a few minutes it will be 9am and I'll have my cup of tea.

A White Rainbow! A perfect arch reaching from the water's edge on my left and bending across my front against the blueing and brightening sky, it rests on the bank on my right. It is quite the most unusual phenomenon I have ever seen and there's not a vestige of colour in it. It looks to be five feet wide, but must be wider than

this estimate. Suddenly, the vision vanishes and bright sunlight arrives to divide the picture on the water with a jagged line formed by the outline of high crags and shadowless surface. The sheep have all gone.

A white rainbow or luminous ring, I later learned from Dr Cobham Brewer, is sometimes seen in alpine regions opposite the sun in foggy weather. Scientifically it is known as the "Circle of Ulloa", named after Antonio de Ulloa (1716-1795), a Spanish naval officer who founded the Observatory at Cadiz.

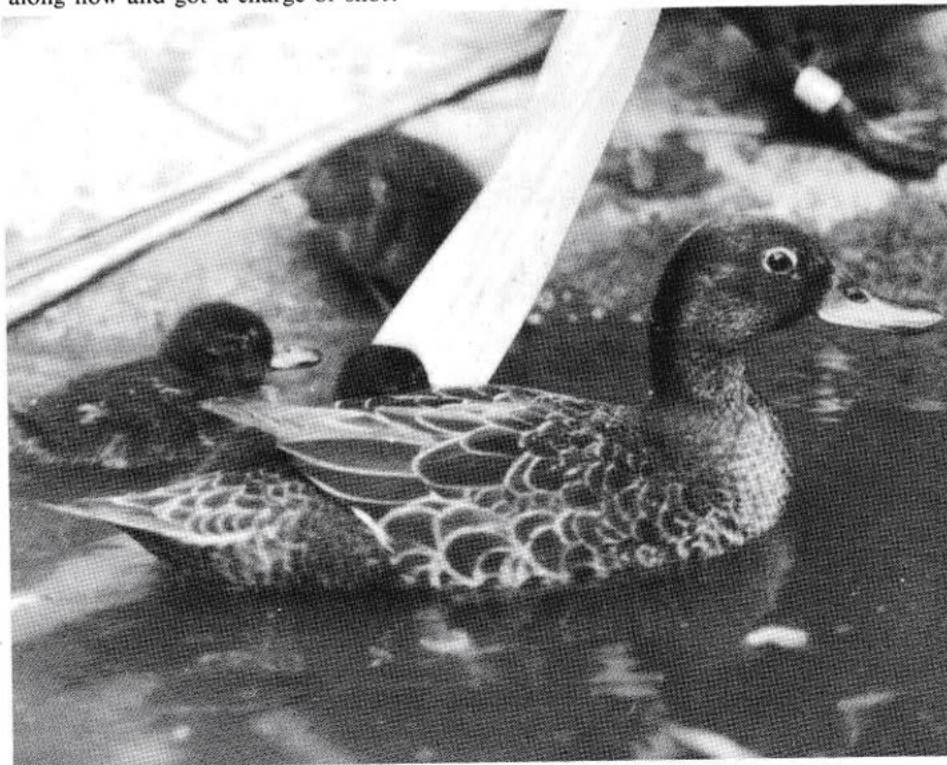
Where are the wild goats? Every year their bleatings have been heard from the highest peaks on the ridge. Perhaps those indefatigable meat hunters have killed them. Where can they be found? I am sad to miss their voices. No blackbird, starling, thrush. No tui or bellbird. Where are they? Moreover, where are the ducks I've come so far and so expensively to meet?

10.15: A blackbird tears past shrieking his panic note. Wild pig have been rooting along the ridge. One patch is quite close to my "hide". Wouldn't it be strange if one came along now and got a charge of shot?

1.15: My vigil has not be rewarded and my gun barrels are clean. It seems useless to wait but I'll stick this dull wait out for three hours longer. That will show my patience and satisfy myself that it's time I gave up this form of sport. Strangely, at this moment, some form of aquatic life is moving in the water below me. Can they be tadpoles just hatched? The rings are small but in several places. As no bubble appears on the surface I feel that gases are not the cause of these, but animal life. I'm familiar with gases of decomposition of vegetable matter on ponds of this kind. Whatever is moving down there, they are not numerous at the moment.

1.30: Still no sign of duck and here am I, in my 81st year, sitting in this maimai high in the Ohura hills. Am I happy? Yes, I'm enjoying this experience, and enter the sixth hour of my vigil without a moan. It is now raining; another half hour and I'll return to my friends' homestead with a clean gun.

Was the white rainbow prophetically ringing down the curtain on my hillside pool? It proved so to be, but cannot dim the recollections of many memorable shoots and friendly country hospitality.

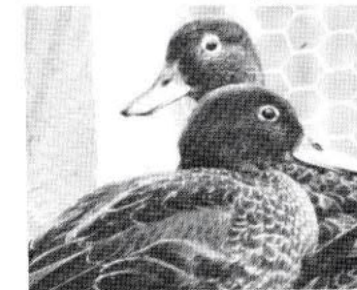


SPORTSMEN & CONSERVATIONISTS

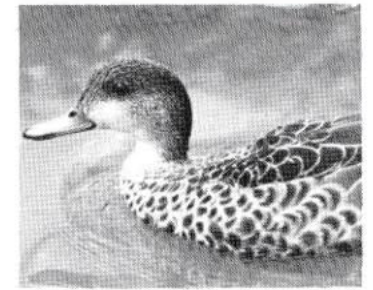
Why not support D.U's waterfowl project?



OPERATION 'BRANTA'
(Canada Geese)



OPERATION 'PATEKE'
(Brown Teal)



OPERATION 'GRETEL'
(Grey Teal)

JOIN

DUCKS UNLIMITED (NZ) INC.

P.O. BOX 74, HAMILTON

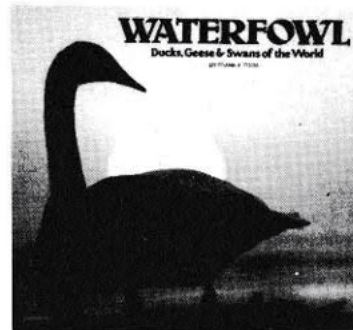
Full membership	\$12.50 year
Supporter membership	\$7.50 year
Junior membership	\$3.00 year
Trade membership	\$20.00 year

or write for further details

Name

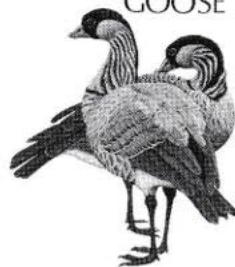
Address

D.U SALES DEPT



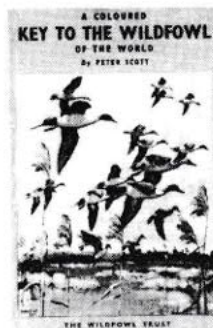
Waterfowl: Ducks, Geese & Swans of the World by Frank Todd. This is the ultimate in waterfowl books and a must for all DU members. 400 pages covering the status of the world's waterfowl, their aviculture and general management. Also contains excellent chapters on photography and on hunting and conservation attitudes. Price \$49.50.

The HAWAIIAN GOOSE



Janet Kear & A.J. Berger

The Hawaiian Goose by Janet Kear & A.J. Berger. This outstanding book is an absorbing account of the world's most successful waterfowl conservation project. 154 pages covering the entire Hawaiian Goose project, which has seen the population rise from 30 birds to over 2,500. Price \$22.50.



A Coloured Key to the Waterfowl of the World by Peter Scott. 96 pages with coloured plates and notes detailing the status of the waterfowl of the world. Price \$8.50.

DUCKS, PONDS and PEOPLE

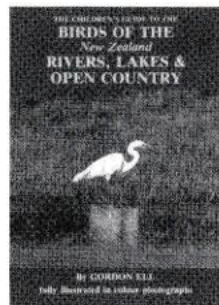


by JOHN SWIFT

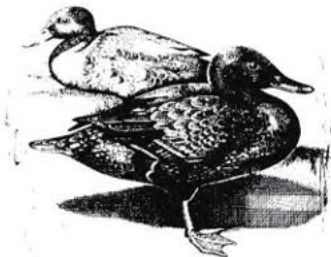
Ducks, Ponds & People by John Swift of B.A.S.C. 112 pages provide a guide to the management of small lakes and ponds for waterfowl. (DU's best selling book.) Price \$7.50.



Wildfowl Management on Inland Waters by the Game Conservancy. 100 pages covering the construction of habitat for waterfowl, planting, loafing and nesting rafts, nests, and propagation. Price \$9.50.



The Children's Guide to the Birds of the New Zealand Rivers, Lakes and Open Country. New from DU sales division is this delightful booklet written by DU member Gordon Ell. This 16 page booklet provides details about birds most likely to be seen on our rivers, lakes and open country and contains 27 superb photographs by well known photographer Geoff Moon. It is a must for the kids. Price \$5 incl p&p.



New from DU sales division. A greetings card showing our rare Brown Teal in pen and ink by Wellington artist Pamela Matthews. There are ten cards and envelopes per pack. Four cards are in a plain finish, three in a silver finish and three in a bronze finish. Very high quality and only \$5 per pack incl p&p.



Ducks Unlimited membership badges, sized 5/8" diameter, featuring the corporate symbol in gold/white/blue are available from DU Headquarters, PO Box 74, Hamilton. Price \$5 each.



Gamebird Hunting by Tom Caithness. 96 pages covering problems, questions and answers on gamebird hunting in N.Z. Price \$7.00 incl p&p.



Duck Shooters Bag by Murray Williams. 120 pages covering facts, figures and wildlife management of waterfowl in N.Z. Price \$7.00 incl p&p.

ORDER FORM
PLEASE ALLOW APPROX. 3 WEEKS FOR DELIVERY
TO: DUCKS UNLIMITED (N.Z.) INC., DATE.....
PO BOX 74
HAMILTON

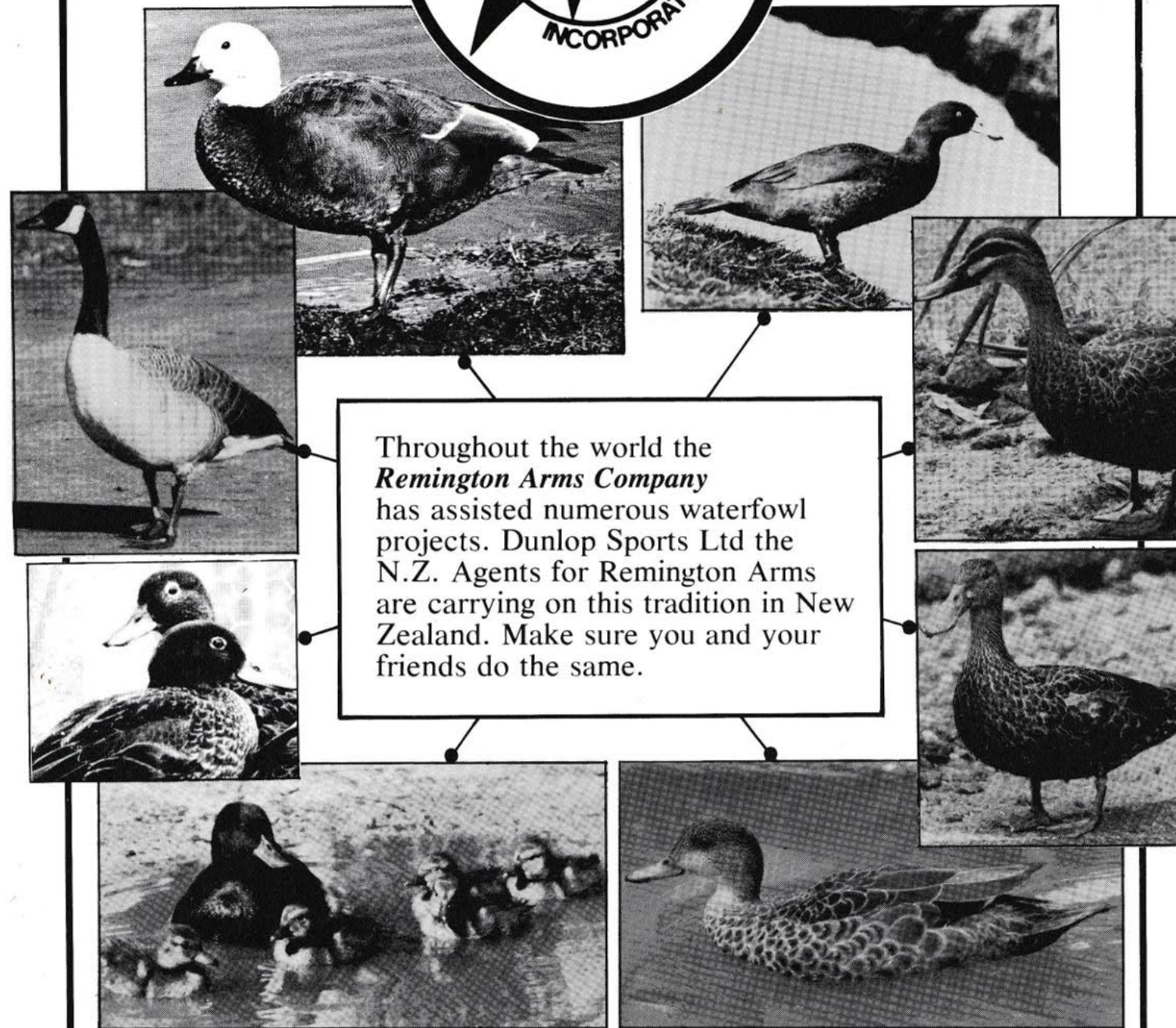
PLEASE POST ME THE FOLLOWING (All prices include postage)

	Cost each
Waterfowl: Ducks, Geese & Swans of the World	\$49.50
A Coloured Key To The Waterfowl of the World	\$8.50
Ducks Ponds & People	\$7.50
Wildfowl Management on Inland Waters	\$9.50
The Duckshooters Bag	\$7.00
DU Badge(s)	\$5.00
Brown Teal Greetings Cards (per pack of 10)	\$5.00
Ducks Unlimited (N.Z.) Decals	\$1.00
Birds of the NZ Rivers, Lakes and Open Country	\$5.00
The Hawaiian Goose	\$22.50
Gamebird Hunting	\$7.00
DU Tie	\$12.50

I ENCLOSE MY CHEQUE FOR \$..... IN PAYMENT

NAME (Please print).....

ADDRESS.....



Throughout the world the **Remington Arms Company** has assisted numerous waterfowl projects. Dunlop Sports Ltd the N.Z. Agents for Remington Arms are carrying on this tradition in New Zealand. Make sure you and your friends do the same.

Remington Arms Company

DISTRIBUTED IN N.Z. BY
DUNLOP SPORTS (N.Z.) LIMITED
PO BOX 58065 EAST TAMAKI AUCKLAND

