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The Autecology and Conservation of the North Island Weka

(Gallirallus australis greyi)

A thesis presented in partial fulfilment of the requirements

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Gary Neil Bramley

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Abstract

I studied a population of weka in the Waikohu Valley, Rakauroa, near Gisborne from March 1992 to January 1994 using radio telemetry to determine productivity, home range size and resource selection by weka. Fifty-six weka were banded and 28 wore radio transmitters for 1-312 days. The population was estimated to be 39 resident adult birds from call count surveys and banding. Most (68.6%) adult birds found during the study were probably males. The Rakauroa weka population may be declining at a rate of 4 birds per year and without immediate management extinction is likely.

Weka productivity was very low, with 12 eggs needed to produce 1 independent chick. Twenty-five breeding attempts were discovered and breeding occurred throughout the year. The reason for this low productivity was not determined, but predation on eggs and chicks by introduced mammals is likely.

The first evidence of predation on adult weka by ferrets (*Mustela putorious furo*) was recorded with 2 radio-carrying birds and 1 other being killed by a ferret. Weka feathers were also found in the gut of a female ferret killed in October 1993. The main cause of weka mortality was being run over by traffic. Six weka died in this way.

Weka were found in damp, scrubby areas and occupied mostly ungrazed scrub and bush and woodpiles within their home ranges. Weka used an average of 10.00 hectares with males using significantly larger areas than females. Adults used larger areas than juveniles. Weka were secretive and crepuscular, generalist feeders who used food in proportion to its availability.

To test the hypothesis that predation on eggs and chicks was limiting productivity of weka pairs at Rakauroa, I compared the productivity of weka in predator free areas with that of weka in areas with a normal predator density (control areas). The two weka pairs I observed breeding in predator free areas reared 5 chicks to independence. Two pairs in control areas reared no chicks to independence despite 3 breeding attempts.

The release of captive-bred weka at Karangahake Gorge by the Royal Forest and Bird Protection Society in 1992 and 1993 provided an opportunity for me to compare the movement, diet and survival of weka at Karangahake with that of weka at Rakauroa. Any difference between weka in the 2 areas may indicate possible reasons for the success or failure of the release. Predation (mainly by dogs, *Canis familiaris*) was found to be the reason why weka carrying radios released at Karangahake failed to persist. Of 17 birds released between October 1992 and March 1993 only one was known to be alive by 24 June 1993. This has important implications for future releases of weka.

The future monitoring and management of weka is discussed in light of my findings. Weka management should begin immediately on the East Coast. Management should aim to improve the production and survival of young weka by predator removal. Areas of scrub and cover should be targeted for management and publicity to lessen the destruction of this habitat and the weka road toll is necessary. The release of weka at Karangahake should not continue, these birds being made available for release at a more suitable site. The release of females (either captive-bred or from offshore islands) into areas such as Rakauroa to improve breeding success and link small remnant populations on the East Coast should be considered.

Contents

, Acknowledgements ii
Abstract
Figures, Tables and Plates xiv
Chapter One: Introduction 1
1.0 New Zealand Weka 1
1.1 Decline of the weka populations
1.2 Weka in the Poverty Bay 2
1.3 Weka Conservation 3
1.4 Research Objectives 4
1.5 The Study Area 5
1.6 Management tool or library archive?
(#)
Chapter Two: Reproduction and mortality in the weka population
at Rakauroa
2.0 Introduction
2.1 Methods 11
2.1.1 Capture, measurement and banding of weka (11);
2.1.2 Radio Transmitters (13);
2.1.3 Tracking and obtaining point locations of weka (14);

				x
		2.1.4	Recovering the radio transmitters (15);	
		2.1.5	The listening sites and listening for calls (15);	
		2.1.6	Annual call counts (16);	
		2.1.7	Nightly variation in calling (17)	
2	2.2	Results		17
		2.2.1	Number of weka wearing radios (17);	
		2.2.2	Reproduction (20);	
. *	(4)	2.2.3	Nesting Behaviour (22);	
		2.2.4	Mortality of adult weka (23);	
		2.2.5	Variability and seasonality of calling (25);	
÷		2.2.6	The effect of weather conditions (25);	
		2.2.7	Estimated population from annual censuses (29);	
		2.2.8	Estimated population size from trapping data (29);	
εl		2.2.9	Population trend (30)	
- 3	2.3	Discuss	ion	31
а . Э.				
Chapte	er Tl	hree: Pa	tterns of habitat use and food intake by weka at	
		Ra	kauroa	38
	3.0	Introdu	ction	38
	3.1	Method	S	40
		3.1.1	Measuring home range sizes of radio-carrying	
			weka (40);	
		3.1.2	Habitat use of radio carrying weka (41);	
		3.1.3	Measuring habitat availability (42);	

-		- xi
	3.1.4	Sampling available animal prey (42);
	3.1.5	Sampling available fruit (44);
	3.1.6	Weka diet measured using faecal and gizzard samples
		(45);
	3.1.7	Weka body weight (46)
3.2	Results	
2	3.2.1	Home range use by weka (46);
7. 380 - 2	3.2.2	Weka activity (56);
e.	3.2.3	Diurnal Activity (59);
	3.2.4	Fruit availability (63);
	3.2.5	Invertebrate availability (63);
	3.2.6	Presence in the diet (65);
	3.2.7	Annual variation in body mass of adult weka (65)
3.3	Discuss	sion
10		*
Chapter F	our: Pr	edator removal experiment and juvenile weka
	di	spersal

	uis	persai	10
4.0	Introdu	ction	76
4.1	Method	s	78
s	4.1.1	Sightings of cats and ferrets (78);	
 ÷.,	4.1.2	Assignment of weka pairs to treatment and control	
5 4 10		groups (78);	a 1
	4.1.3	Capture and removal of cats and mustelids (78);	
	4.1.4	Predators (81);	

		X11
	4.1.5 Identification of prey in cat and ferret guts (81);	0
5	4.1.6 Breeding by pairs in treatment and control groups (8	1);
	4.1.7 Survival and dispersal of juvenile weka (81)	
	4.2 Results	82
	4.2.1 Observations and capture of predators (82);	
	4.2.2 Sex ratio of the predators (83);	
	4.2.3 Gut contents of predators (83);	
	4.2.4 The effect of predator trapping on weka reproduction	n
	(84);	
	4.2.5 Dispersal of juvenile weka (85)	
×	4.3 Discussion	87
Chaj	oter Five: Movements, diet and survival of weka released at	
	Karangahake.	93
	5.0 Introduction	93
	5.1 Methods	95
	5.1.1 RFBPS Preparation of weka for release (95);	
	5.1.2 Weka at Rakauroa (96);	
	5.1.3 Release of weka (96);	
	5.1.4 Radio tracking (97);	
	5.1.5 Dispersal from the release site (98);	
٠	5.1.6 Diet Analyses (98)	1
	5.2 Results	99
	5.2.1 Radio Survival (99);	3

	8 x	xiii
5.2.2 Home range of weka (102);		٠
5.2.3 Predictors of survival (102);		
5.2.4 Weka dispersal (105);		
5.2.5 Weka diet (106);	*	
5.4. Discussion		108
	*	
Chapter Six: Weka conservation and management		114
6.0 Introduction		114
6.1 Implications of my study		115
6.2 Future Research		119
6.3 Summary		119
Appendix 1: Plant species referred to in Figure 3.13		121
Appendix 2: Seasonal abundance of invertebrates at Rakauroa	a	123
Bibliography		128

ф ж.

i.	(II),

Figure	1.1 p	8	The study area, Waikohu Valley, Rakauroa.
	4		a a a a a a a a a a a a a a a a a a a
	2.1	18	Trapping success for weka at Rakauroa.
	2.2	19	Morphological measurements of weka.
	2.3	21	Timing of nest events at Rakauroa.
	2.4	24	Mortality of weka at Rakauroa.
	2.5	26	Seasonal calling of weka at Rakauroa.
×	2.6	28	Location of calling birds during annual censuses.
	3.1	47	The number of point locations making up home
29 - ski			range estimates of weka at Rakauroa.
	3.2	48	Home ranges of two adult male weka.
	3.3	48	Home ranges of two adult male weka and a
			bird of unknown sex.
	3.4	49	Home range of the pair a-yr and a-wb.
	3.5	49	Home range of the pair yw-a and a-yb.
	3.6	55	Availability and use by weka of vegetation
			classes in their home range.
	3.7	57	Movements made by weka between consecutive
			radio fixes.
	3.8	60	Time-activity budget of visible weka at
			Rakauroa.
	3.9	60	Activity of weka in Autumn.

se d'é re o a

xiv

÷.

Figure	3.10	61	Activity of weka in Winter.
	3.11	61	Activity of weka in Spring.
	3.12	62	Activity of weka in Summer.
	3.13	62	Activity of weka combined for all trips to the
			study area.
	3.14	64	Seasonal availability of fruits to weka at
			Rakauroa.
	3.15	66	The use of diet items by weka at Rakauroa.
	3.16	67	Presence of diet items in the gizzard of dead
			weka.
	3.17	68	Availability and use by weka of diet items in
			Spring, 1992.
	3.18	68	Availability and use by weka of diet items in
		ä.:	Summer, 1992/93.
	3.19	69	Availability and use by weka of diet items in
			Autumn, 1993.
	3.20	69	Availability and use by weka of diet items in
			Winter, 1993.
	3.21	70	Availability and use by weka of diet items in
			Spring, 1993.
	3.22	70	Availability and use by weka of diet items in
			Summer, 1993/94.
	3.23	71	Weight of adult weka caught at Rakauroa.

xv

Figure	2	4.1	79	Location of experimental treatment and
	2			experimental control weka pairs.
				8
	8	5.1	100	The number of point locations contributing to
				Home range estimates at Karangahake and
		* ·		Rakauroa.
		5.2	103	Median survival of birds released versus length
				of time spent in the aviary at Karangahake.
		5.3	104	Median survival of birds released at
				Karangahake versus age.
	2	5.4	104	Median survival of birds released at
(#				Karangahake for each contributing aviary.
Table		2.1	23	Nest occupancy by weka at Rakauroa.
		2.2	27	Effect of weather, month and location on
				weka calling.
		2.3	29	Population estimates from annual censuses.
		3.1	51	Habitat use by weka at Rakauroa.
		3.2	52	Habitat use by weka in Spring.
		3.3	53	Habitat use by weka in Summer.
		3.4	54	Habitat use by weka in Autumn.
		3.5	54	Habitat use by weka in Winter.
		3.6	58	Hours spent in the field per weka seen.
		3.7	58	Observations of banded weka.

a wolites

	4.1	83	Animals trapped during predator removal.
	4.2	85	The outcome of breeding efforts by experimental
	S.		treatment and experimental control weka pairs.
	-4.3	86	Dispersal by juvenile weka.
Table	5.1	101	"Survival" of radio transmitters at Rakauroa and
			Karangahake.
	5.2	101	Fate of radio-carrying weka at Rakauroa and
			Karangahake.
	5.3	102	Home range size of weka at Rakauroa and
			Karangahake.
	5.4	106	Post-release dispersal of weka at Rakauroa
			and Karangahake.
	5.5	107	Diet comparison at Rakauroa and Karangahake.
Plate	2.1	12	Trapping weka at Rakauroa.
	2.2	26	Ferret predation on weka.
			2 °.

5.1 100 Weka release at Karangahake.