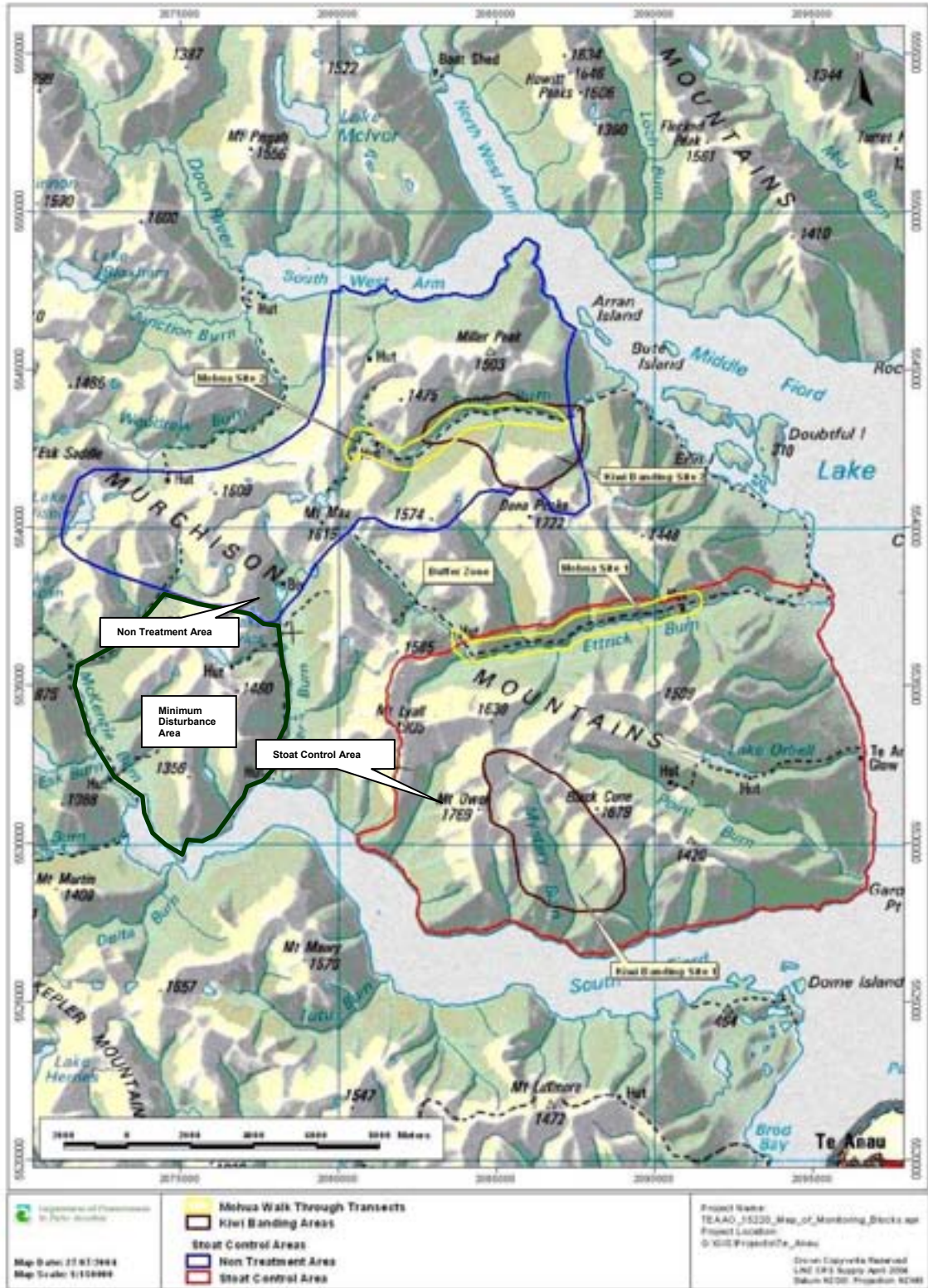
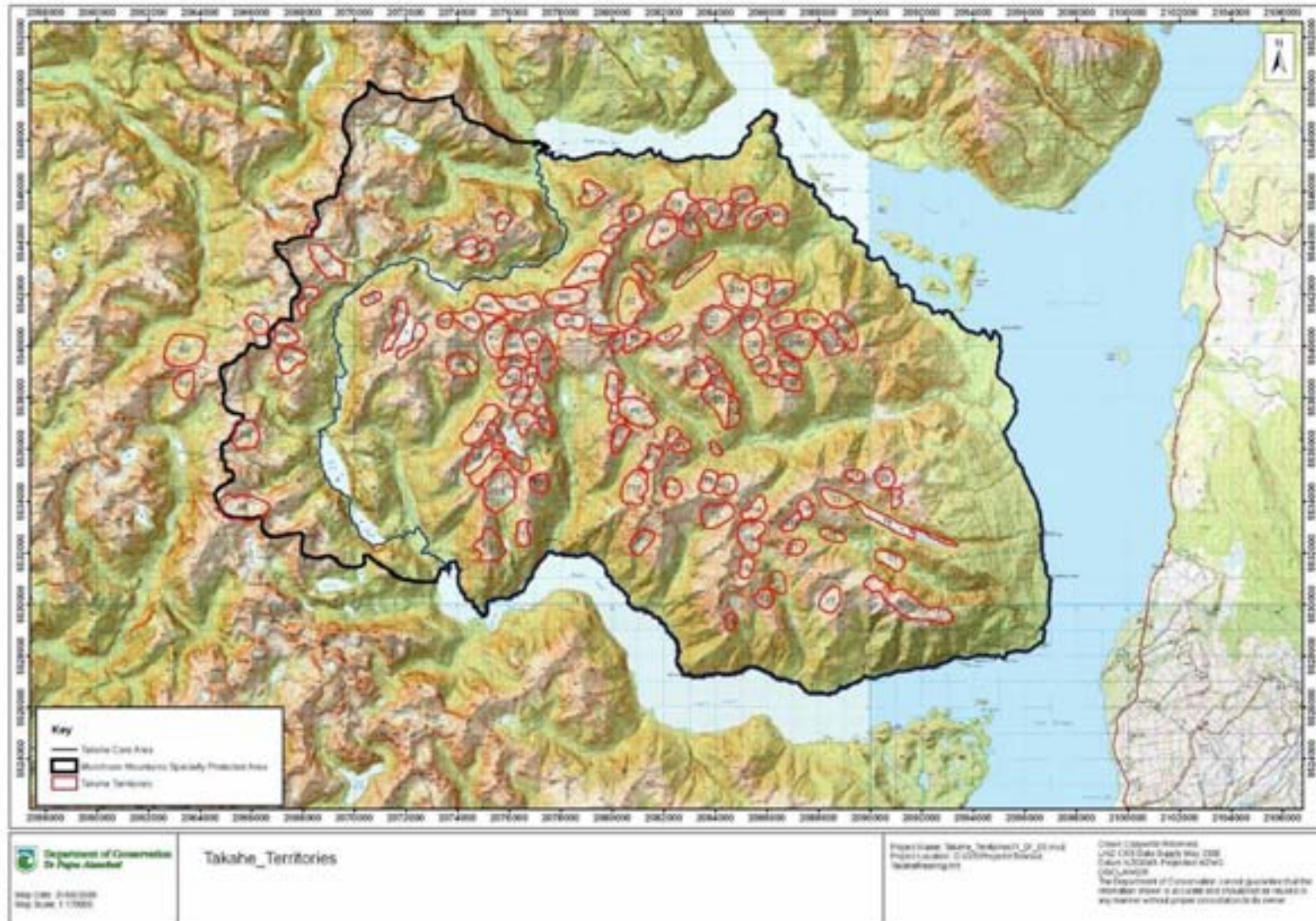


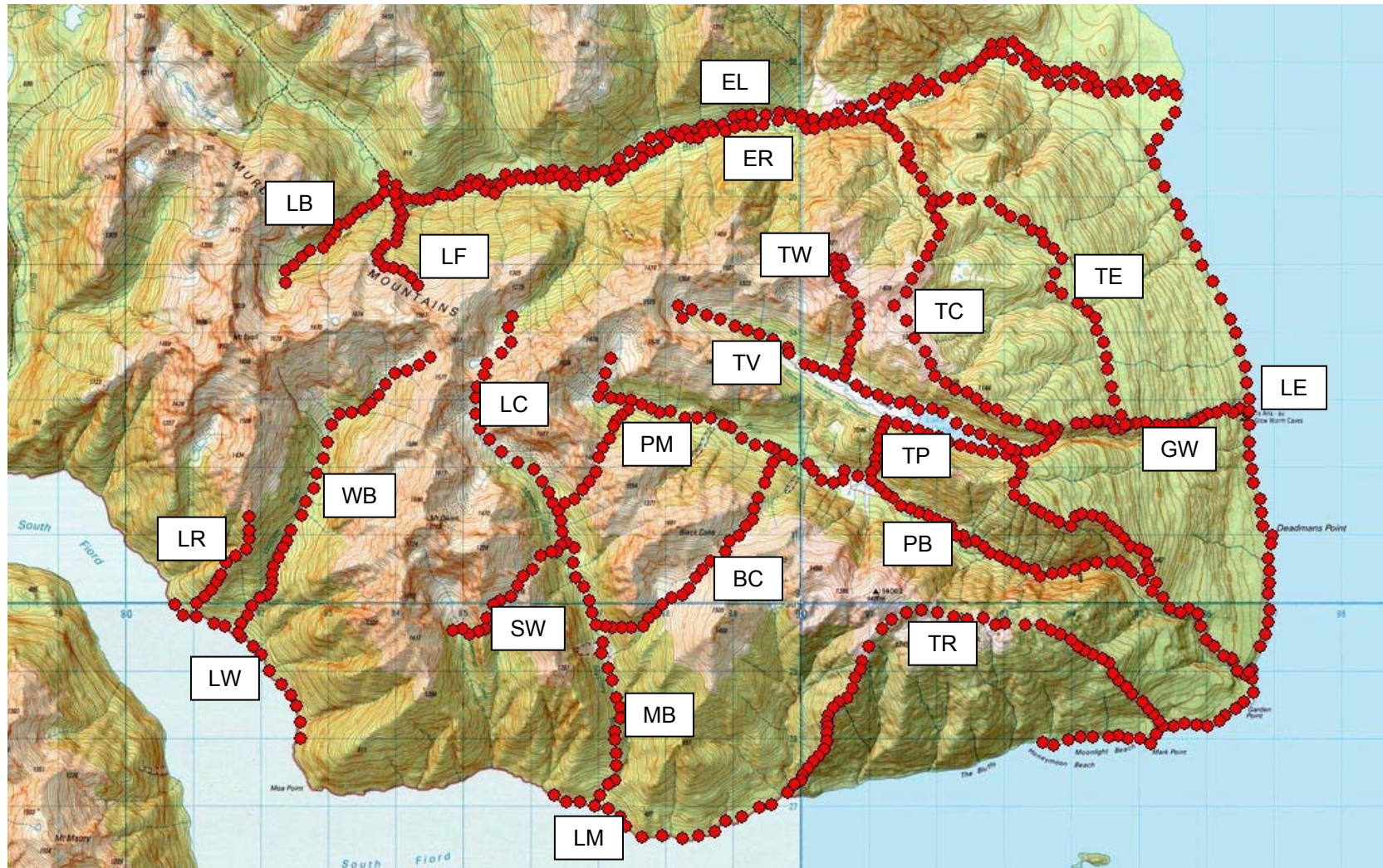
APPENDIX A - Murchison Mountains stoat trapping: layout of experimental and monitoring areas



APPENDIX B - Map of the takahe territories in the Murchison Mountains



APPENDIX C – Murchison Mountains trap lines



APPENDIX C – Murchison Mountains trap lines

BC	Black Cone
EL	Ettrick Left
ER	Ettrick right
GW	Glowworm Caves
LB	Lyall Burn
LC	Lake Creek
LE	Lakeshore Ettrick
LF	Lyall Faces
LM	Lakeshore Mystery
LR	Lyall Ridge
LW	Lakeshore West
MB	Mystery Burn
PB	Point Burn
PM	Point Burn to Mystery
SW	Sheerwall Creek
TC	Takahe Centre
TE	Takahe East
TP	Takahe Valley to Point Burn
TR	Tor's Ridge
TV	Takahe Valley
TW	Takahe West
WB	William Burn

APPENDIX D – Murchison Mountains trap catch



Figure D.1 Stoats August 2002 to May 2003 (●) Trap caught a stoat (○) Trap caught no stoats

APPENDIX D – Murchison Mountains trap catch

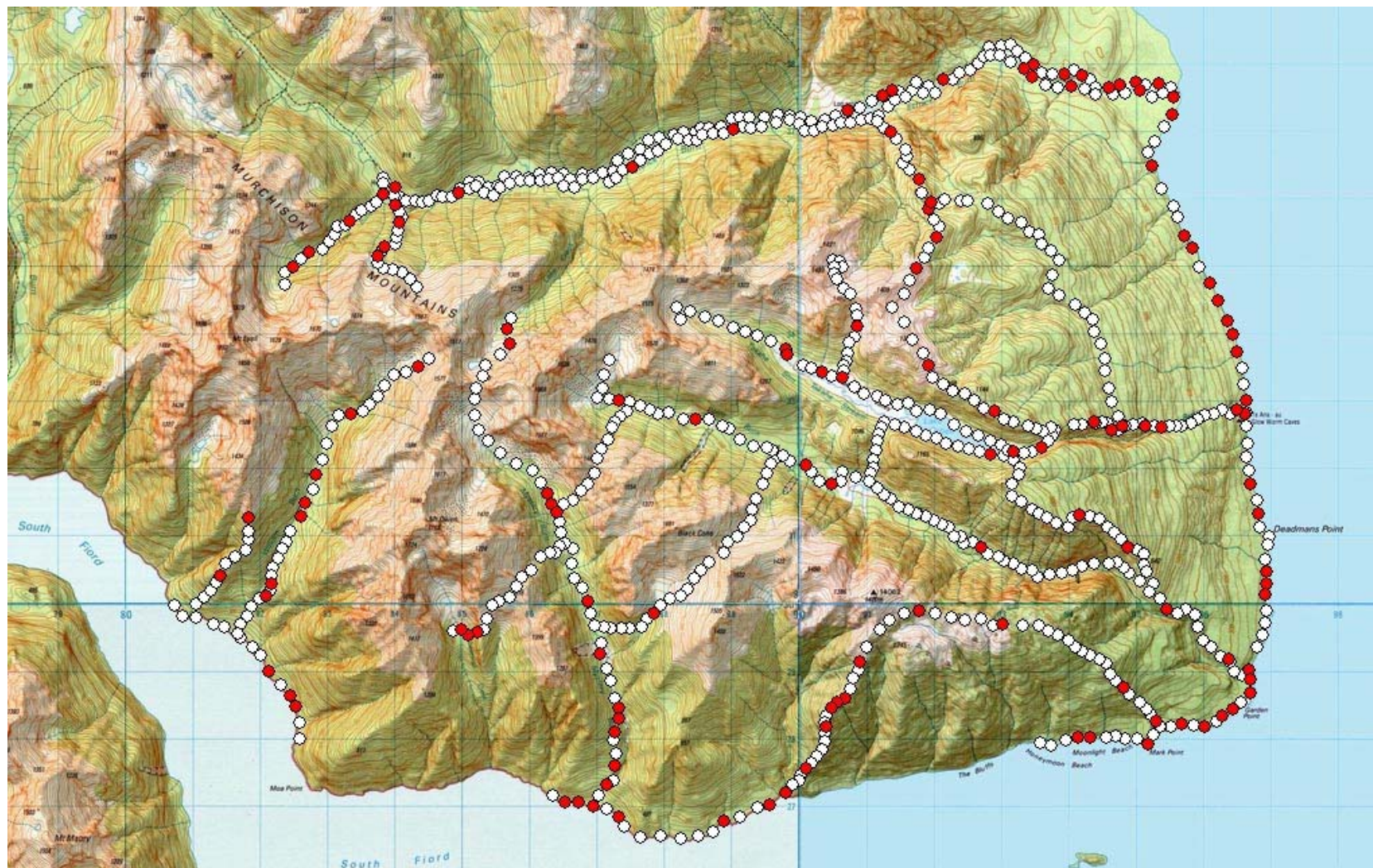


Figure D.2 Stoats August 2003 to May 2004 (●) Trap caught a stoat (○) Trap caught no stoats

APPENDIX D – Murchison Mountains trap catch



Figure D.3 Stoats August 2004 to May 2005 (●) Trap caught a stoat (○) Trap caught no stoats

APPENDIX D – Murchison Mountains trap catch



Figure D.6 Weasels Winter 2005 to Spring 2005 (no weasels caught before Winter 2005) (●) Trap caught a weasel (○) Trap caught no weasels

APPENDIX E – Murchison Mountains tracking tunnels

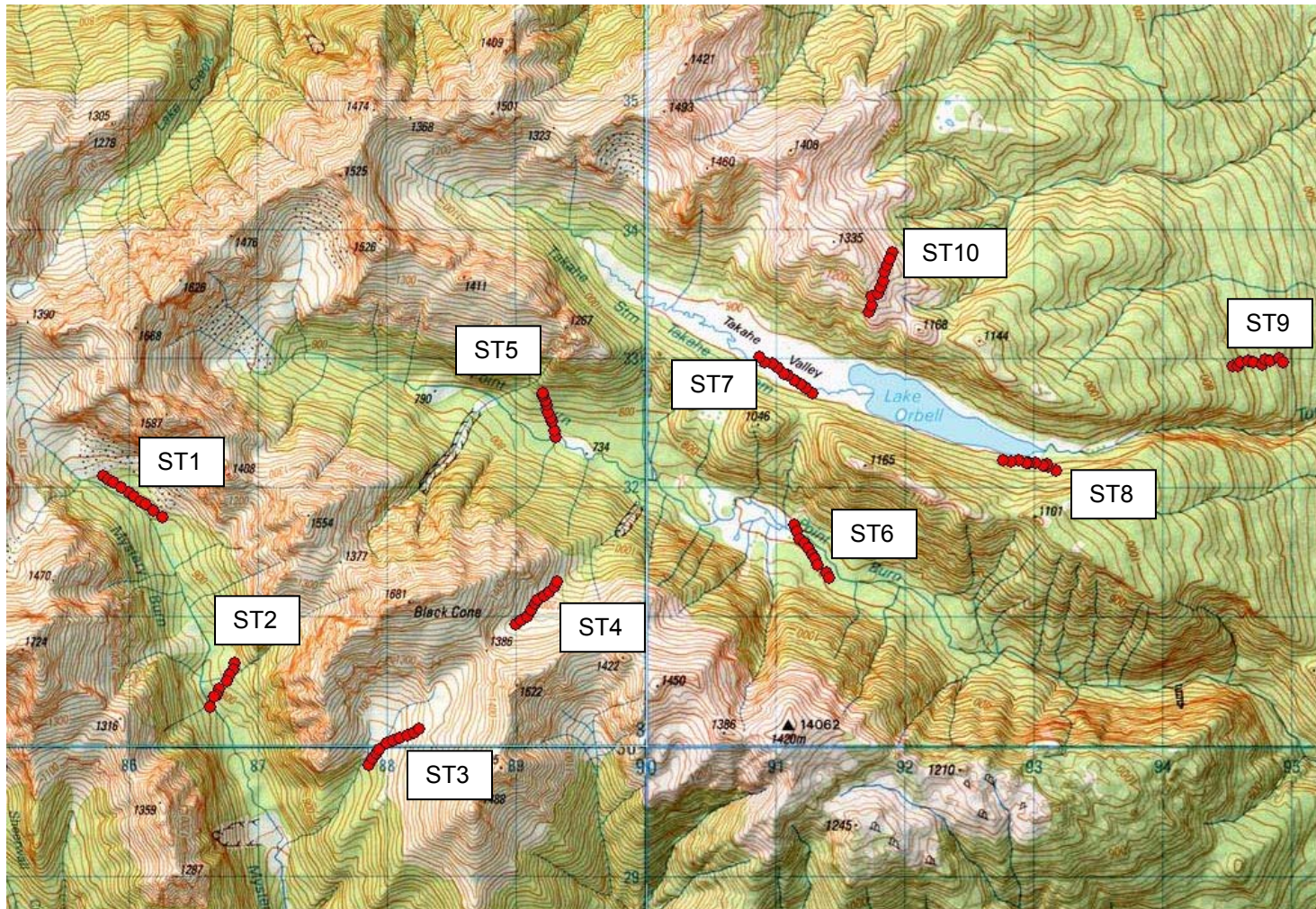


Figure E.1. – Murchison Mountains Tracking Tunnels, Stoat trapping area

APPENDIX E – Murchison Mountains tracking tunnels

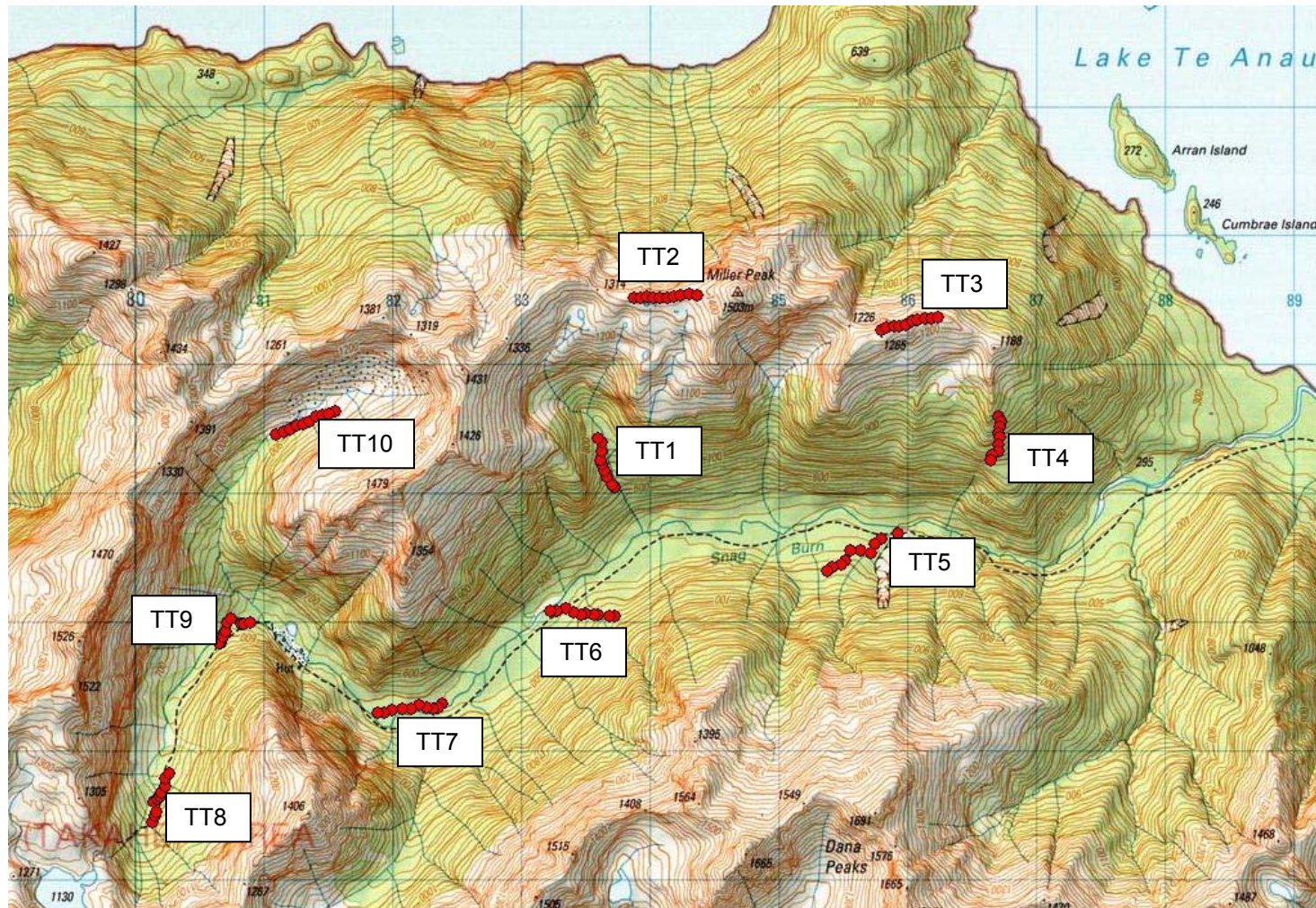


Figure E.2. – Murchison Mountains Tracking Tunnels, control area

APPENDIX F – Logistic regression models for mice and weta tracking rates in Murchison Mountains tracking tunnels

Table F.1 Logistic regression models for mice tracking rates in the Murchison Mountains tracking tunnels, December 2005 and January 2006.

Model	-2*LL	# Parameters	AIC
Alt	396.26	2	400.26
Time	432.70	2	436.70
Treat	436.14	2	440.14
Hab	416.72	2	420.72
Alt + Time	378.63	3	384.63
Alt + Treat	395.34	3	401.34
Alt + Hab	396.20	3	402.20
Time + Treat	421.96	3	427.96
Time + Hab	400.44	3	406.44
Treat + Hab	408.96	3	414.96
Alt + Time + Treat	377.90	4	385.90
Alt + Time + Hab	378.58	4	386.58
Alt + Treat + Hab	395.16	4	403.16
Time + Treat + Hab	392.98	4	400.98
Alt + Time + Treat + Hab	377.74	5	387.74
Alt + Time + Treat + Time*Treat	377.90	5	387.90

Table F.2 Logistic regression models for weta tracking rates in the Murchison Mountains tracking tunnels, December 2005 and January 2006.

Model	-2*LL	# Parameters	AIC
Alt	319.68	2	323.68
Time	435.48	2	439.48
Treat	437.24	2	441.24
Hab	300.54	2	304.54
Alt + Time	308.58	3	314.58
Alt + Treat	292.78	3	298.78
Alt + Hab	293.54	3	299.54
Time + Treat	425.64	3	431.64
Time + Hab	288.86	3	294.86
Treat + Hab	270.74	3	276.74
Alt + Time + Treat	279.86	4	287.86
Alt + Time + Hab	281.98	4	289.98
Alt + Treat + Hab	263.32	4	271.32
Time + Treat + Hab	255.98	4	263.98
Alt + Time + Treat + Hab	248.82	5	258.82
Alt + Time + Treat + Time*Treat	279.84	5	289.84
Alt + Time + Hab + Time*Hab	281.92	5	291.92
Time + Treat + Hab + Time*Treat	255.92	5	265.92
Time + Treat + Hab + Time*Hab	255.30	5	265.30
Alt + Time + Treat + Hab + Time*Hab	248.04	6	260.04
Alt + Time + Treat + Hab + Time*Treat	248.82	6	260.82

Alt = Altitude [m]; Time = December 2005 or January 2006; Treat = Treatment (Stoat trapping or control); Hab = Habitat (Forest or alpine grassland)

APPENDIX G – Adult survival models (CJS) for takahe in the Murchison Mountains, 1995 to 2004, Program MARK

Model	QAICc	Delta QAICc	QAICc Weights	Model Likelihood	Num. Par	QDeviance
{ $\phi(a+b*Trapping+y(t)) p(.)$ }	950.98	0.00	0.1799	1.000	11	459.71
{ $\phi(t) p(.)$ }	951.04	0.06	0.1744	0.969	10	461.84
{ $\phi(a+b*Area+c*trapping+y(t)) p(.)$ }	952.31	1.33	0.0924	0.514	12	458.97
{ $\phi(a+(c,d)*Trapping+y(t)) p(.)$ }	952.95	1.97	0.0672	0.374	12	459.61
{ $\phi(2g+t) p(.)$ }	953.09	2.11	0.0626	0.348	11	461.82
{ $\phi(a+b*Area+(c,d)*Trapping+y(t)) p(.)$ }	954.23	3.25	0.0355	0.197	13	458.80
{ $\phi(2g*t) p(.)$ }	956.05	5.07	0.0142	0.079	19	448.00
{ $\phi(.) p(.)$ }	957.80	6.82	0.0059	0.033	2	484.93
{ $\phi(2g*t) p(2g)$ }	958.18	7.20	0.0049	0.027	20	448.00
{ $\phi(2g) p(.)$ }	959.81	8.83	0.0022	0.012	3	484.92
{ $\phi(2g*t) p(t)$ }	961.12	10.14	0.0011	0.006	26	438.02
{ $\phi(g) p(.)$ }	963.43	12.45	0.0004	0.002	5	484.48
{ $\phi(2g*t) p(2g*t)$ }	977.04	26.06	0.0000	0.000	34	436.33
{ $\phi(g*t) p(.)$ }	977.22	26.24	0.0000	0.000	37	429.79
{ $\phi(g*t) p(g)$ }	983.01	32.03	0.0000	0.000	40	428.80
{ $\phi(g*t) p(g*t)$ }	1033.49	82.51	0.0000	0.000	68	412.57

ϕ and p are the parameters of the model (see page 31)

g = group (Stoat Control, Buffer, un-trapped and minimum disturbance)

$2g$ indicates that the birds were pooled into 2 groups (Stoat control versus all other areas)

t = time (years)

$.$ = constant

APPENDIX G – Adult survival models (Barker) for takahe in the Murchison Mountains, 1995 to 2004, Program MARK

Model	AICc	Delta AICc	AICc Weights	Model Likelihood	Num. Par	Deviance
{S(a+b*Trapping(last 2 years)+y(t)) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1579.2	0.00	0.6064	1.000	12	885.2
{S(2gBuffer=Untrapped*t) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1584.0	4.78	0.0556	0.092	20	872.9
{S(2gBuffer=Untrapped*t) p(2gBuffer=Untrapped*t) r(.) R(.) R'(.) F(.) F'(.)}	1584.0	4.78	0.0556	0.092	20	872.9
{S(2gBuffer=Untrapped*t) p(t) r(.) R(.) R'(.) F(.) F'(.)}	1584.0	4.78	0.0556	0.092	20	872.9
{S(a+b*Trapping(last 3 years)+y(t)) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1588.2	8.96	0.0069	0.011	13	892.1
{S(t) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1588.6	9.34	0.0057	0.009	12	894.6
{S(2g Buffer=StoatControl*t) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1595.8	16.54	0.0002	0.000	24	875.8
{S(3g*t) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1595.9	16.69	0.0001	0.000	34	853.4
{S(t) p(t) r(t) R(t) R'(t) F(t) F'(t)}	1600.1	20.85	0.0000	0.000	50	819.3
{S(.) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1609.0	29.74	0.0000	0.000	3	933.5
{S(g*t) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1611.4	32.17	0.0000	0.000	44	845.3
{S(g) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1614.7	35.45	0.0000	0.000	6	933.1
{S(.) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1615.1	35.86	0.0000	0.000	6	933.5
{S(2g Buffer=Untrapped*BA) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1615.1	35.89	0.0000	0.000	8	929.4
{S(2g Buffer=Stoat Control*BA) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1617.5	38.31	0.0000	0.000	8	931.9
{S(3g*BA) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1620.4	41.21	0.0000	0.000	11	928.5
{S(g*BA) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1621.3	42.12	0.0000	0.000	12	927.3
{S(g*t) p(.) r(.) R=R'(.) F(.) F'(.)}	1623.6	44.36	0.0000	0.000	43	859.9
{S(g*Period) p(.) r(.) R(.) R'(.) F(.) F'(.)}	1625.2	45.93	0.0000	0.000	16	922.7
{S(g*t) p(t) r(t) R(t) R'(t) F(t) F'(t)}	1626.8	47.56	0.0000	0.000	77	774.7
{S(g*t) p(g) r(g) R(g) R'(g) F(g) F'(g)}	1637.1	57.86	0.0000	0.000	56	841.2
{S(g) p(g) r(g) R(g) R'(g) F(.) F'(.)}	1640.0	60.82	0.0000	0.000	20	928.9
{S(g*Period) p(g) r(g) R(g) R'(g) F(.) F'(.)}	1642.3	63.04	0.0000	0.000	26	917.9
S(g*t) p(g*t) r(g*t) R(g*t) R'(g*t) F(g*t) F'(g*t)	1983.1	403.90	0.0000	0.000	185	722.5

S, p, r, R, R', F and F' are the parameters of the model (see page 31)

g = group (Stoat Control, Buffer, un-trapped and minimum disturbance)

2g indicates that the birds were pooled into 2 groups (as specified in model name)

t = time (years)

. = constant