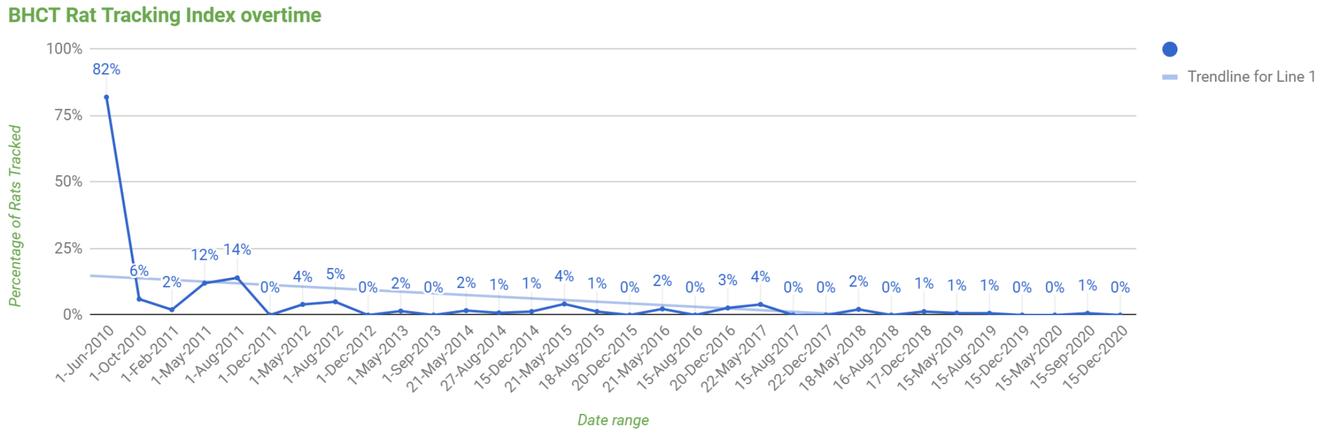
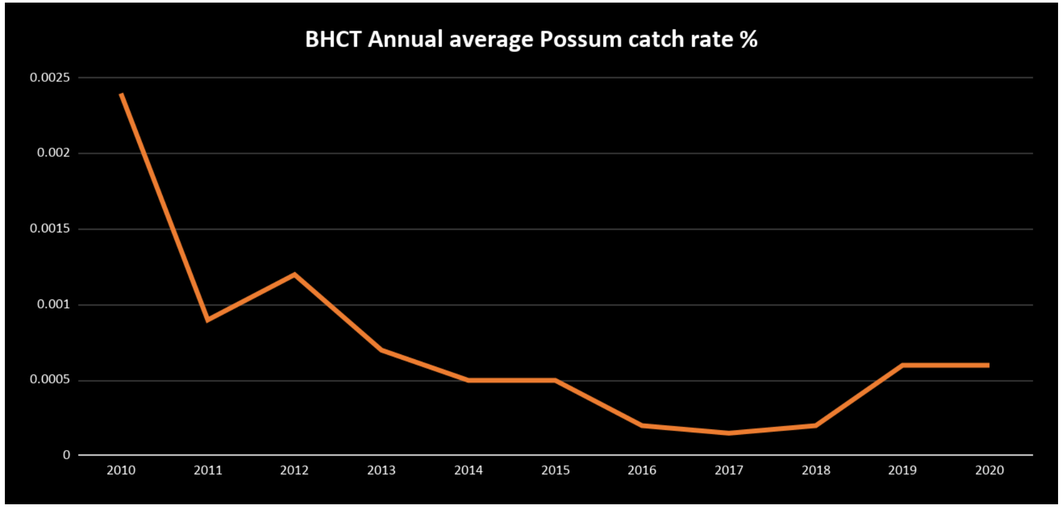
Bream Head CONSERVATION TRUST

FOUNDATION NORTH
Te Kaitiaki Pūtea ō Tāmaki ō Tai Tokerau

Summary of predator control and species outcome monitoring conducted by Bream Head Conservation Trust at Bream Head Scenic Reserve Since 2010.





Data	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Comment
Annual Average Rat RTI	82% pre-treatment 6% post treatment	7% (area 1 & busby)	2.6% (areas 1-2)	1.35% (areas 1-3)	1.43% (areas 1-3)	1.83% Entire reserve	1.66% Entire reserve	1.33% Entire reserve	1.33% Entire Reserve	0.47% (+/- 1%). Entire reserve	0.22%(+/-0.33%)	• 2020 - lowest RTI ever of only 0.22% -Entire reserve 1080 ground delivery to bait stations as in 2017 - no wonder there were virtually no rat vectors for 1080 delivery. • 2019 – Under 1% RTI!!!!!!!! • 150 tracking tunnels over 805ha • Pindone used predominantly - 125gm/bait station • Pindone/diphacinone switch out to half reserve stations 2016 • Entire reserve 1080 ground delivery to bait stations – winter 2017 Busby had two rats tracked in Dec 2018 at Home Bay beach. New toxin line to go in here to cover the new planting habitat.
Annual Average mouse RTI	n/a	n/a	n/a	n/a	n/a	13.16%	22.6%	28.88%	32.66% Entire reserve	23.38 (+/-4.3%)	22.74(+/-5%)	150 tracking tunnels over 805ha Pindone used predominantly - 125gm/bait station Pindone/diphacinone switch out to half reserve stations 2016 Entire reserve 1080 ground delivery to bait stations – winter 2017
BH skink/Placo RTI											May 2020 Rat 0% Mice 2% (+/-1%) Insect 35%(+/-3%)	
TCR possum	0.24%	0.09%	0.12%	0.07%	0.05%	0.05%	0.02%	0.015%	0.02%	0.06%	0.06%	Increased number of Possum catches in 2019, however 75% of the 41 possums caught were caught on the boundary. 6,380 trap nights to catch one possum in 2017!!
TCR mouse	n/a	n/a	n/a	n/a	n/a	0.17%	0.10%	0.11%	0.32%	0.37%	0.124%	59 snap traps 2010 – 2017. 182 snap traps from 2018. 2018 figure higher than previous years due to dramatic increase in traps set in 2018. .Figure of 0.124% in 2020 reflects balance of trap night availability to catches again
Mustelid Survey									K9 survey Nov 2018. No positive sign.	K9 survey Nov 2019. 1 positive sign.	K9 Survey Nov 2020. 2 positive signs, stoats caught shortly afterwards in the same areas.	Two day full reserve survey by K9 mustelid survey contractor.
BMI	n/a	n/a	4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Standard trigger for possum control is 20% BMI (or 5% RTI).
Pest plant Control										Mar-Jun 2019 - ??ha July - Oct 2019 - 30ha Nov 2019 - Feb 2020 - 50ha	Feb 20 - Jun 20:	Follows the thirdly reporting format to DOC. Mainly mature and high ranking known weed species controlled 2019/2020 year. Includes pest plant work by DOC staff, BHCT rangers and BHCT Volunteer. Weed action Whangarei Heads looking to increase volunteer pest plant control at BHSR from 2020.
Pest Plant Survey										Goodwood survey of ~100ha central northside of BHSR	n/a.	Goodwood survey - 5 person grid survey at 10m spacing.Contractor. DOC funded 2020 - BHCT weed ranger and FORT team completed survey and control method, see area covered in DOC thirdly above..
Kiwi call counts	3.5 calls/hr	4.5 calls/hr	6.5 calls per/hr	8.2 calls per/hr	10 calls/hr	10 calls/hr	10 calls/hr	10 calls/hr	n/a	n/a - AW unable to get to PC listening sites due to work overload.	9 calls per hour	Adam to conduct kiwi call counts at Peach Cove site(s) from 2019 listening season.
grey faced petrel (oi)	n/a	n/a	n/a	n/a	GFP ground breeding calls captured	3 eggs laid but all predated by rats.	10 chicks hatch but all are predated by stoat(s)	10 monitored chicks survived fledging!!	All five monitored chicks in the study area successfully	All known chicks at study sites predated by stoat(s).	All 16 monitored chicks predated on by stoat(s).	2017/18 Data checked with DOC senior biodiversity ranger and Chris Gaskin (private seabird expert). Cooks petrel and fluttering shearwater calls confirmed by Cathy Mitchell. BHCT to lodge application in 2019 for funds to survey for these species within BHSR. 1080 operation in spring 2020 to reduce stoat threat

					by acoustic devices				hatched. Two 100% breeding seasons. Cooks petrel and fluttering shearwater calls heard during prospecting season in 2018 via acoustic recorders.			2020- 1080 operation ineffective due to nil rodent delivery vector Intensified GFp protection operation to begin JUne 2021..
NI robins (toutouwai)	n/a	n/a	n/a	n/a	n/a	n/a	40 NI Robins translocated to BH. 9 monitored pairs produce 19 successful fledglings.	Many new fledglings seen in new areas throughout the reserve. 9 monitored pairs still alive and breeding.	Robins not surveyed in 2018. Many observations of new fledglings in late spring in many new areas of the reserve.	39 NI Robins	no survey. Observational data of Robin sightings is that population abundance is very good, many new juveniles in pairs in new areas.	Translocation post release breeding success!
whiteheads/ popokatea	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100 Whiteheads translocated to BH. 5 Nests successful with fledglings. Other adults found but difficult to locate nests.	57 Whiteheads seen/heard in the 2018 Spring Whitehead survey!!	41 Whiteheads.	no survey. AW to ask Northtec to survey in spring 2021.	BHCT will monitor whiteheads again in 2018/19 breeding season to determine success. 2019 survey – birds were clearly less gregarious at the time of the survey compared to 2018 – may have impacted results. Birds recorded for the first time in several new southern sites in2019.
Placostylus	2010 37 ad 6 juv	2011 29 ad 5 juv	n/a	n/a	2014 6 ad 3 juv	n/a	n/a	40 search plots. (Old site) ● 8 live Snails. 99 dead snail shells. ● 3 Juvenille ● 5 Adults Density of snails/m2 = 0.005	40 search plot (new site): ● 53 live snails!! ● 33 live Juv ● 19 live adult ● 50 dead Juv ● 24 dead Density of snails/m2= 0.27. Est popn (2500sqm) = 675adult	40 search plots (old site) 3 Alive adults only. Different site to 2018 survey.	40 search pots Alive: ● 40 Adults ● 10 Juvenille Dead: ● 34 Adult ● 33 Juvenille ● Unknown 9 Density of snails/m2= 0.25 Est popn (2500sqm) = 625	● 2008 30 ad 33 juv ● Northtec students (led by Dai Morgan) will conduct annual surveys of the BH Placostylus population. ● Adam keen to intensify bait station grid at Placo site to 25x25m in 2018, as this is current best practice for Mice control. Also switch out every 6 months between Diphacinone and Pindone. ● 2018 Survey conducted by Northtec (led by Dr Dai Morgan) in new search site East of original site. 2019 – Notes from DR Dai Morgan: The new data are for the original site closest to the Peach Cove hut. As you can see, we found very few snails – only 3 live adults and no live juveniles. The density is similar to 2018. We estimate that there are probably only 37-38 snails in this original site (compared to an estimated 675 in the new site which is 200-300m further east). Like last year, the lack of juveniles is a worry.
Lizards	n/a		Annual Total = 7 Lizards 1 ornate skink. 5 x unidentified skinks. 1x Auckland	Annual Total = 7 Lizards 3x Auckland green gecko. 1x copper skink. 1x ornate skink.	Annual Total = 7 Lizards 2x copper skink. 4 x Bream Head skink. 1x moco skink.	Annual Total = 15 Lizards.. 11x Bream Head skink. 2x pacific gecko. 2x ornate skink.	Annual Total = 17 Lizards. 10x ornate skink. 6x Bream Head skink. 1x unknown.	Annual Total = 16 lizards. 3x Ornate, 2x moco, 1x copper, 9x BH skink, 1x rainbow (plague) skink.	Survey not run in 2018 – survey to be conducted every two years from 2017 onwards.	Annual total=33 lizards. 11 skinks caught. 21 skinks observed. 1 gecko observed. See 2019 Lizard survey report	Survey not conducted in 2020.	● 2020/21 Survey not conducted due to cooler and wetter weather conditions, and contractor capacity issues. Survey to be conducted in 2021/22 season. ● Survey not implemented in 2018. BH lizard survey to be implemented biennially (supported by B Barr). Next survey in Jan/Feb 2019 ● 2019 survey returned reasonably consistent results to previous years. Perhaps of greatest interest was the recording of lizards at one of the sites for the first time since BHCT started conducting Lizard Surveys. Also, observations of the BH skink were more than twice that of the previous highest recording in 2018.

			green gecko.	2 x pacific gecko								
Five minute bird counts (5mbc).	DOC historic records prior to this date need analysing	n/a	n/a	n/a	n/a	n/a	n/a	• 53 count stations. • Highest # of species per count = 40. • Total # of individual species counted = 3475. • Australasian Harrier 2/ 0.06%. • Pied Shag 17/0.49%. • Kereru/Kukupa 62/1.78%. • Tui 227/6.53%. • Bellbird 34/0.98%. • Grey Warbler 334/9.61%. • Whitehead 12/0.35%. • Fantail 228/6.56%. • NI Tomtit 93/2.68%. • NI robin 46/1.32%. • Silver eye 560/16.12%	• 54 count stations. • 48 Known bird spp. at BHSR. • Highest # of species per count = 37 (Jan/March). Lowest = 23 (April/Sept). • Total # of individual species counted = 4067. • Australasian Harrier 4/0.035%. • Pied Shag 31/0.45%. • Kereru/Kukupa 92/2%. • Kaka 85/1.38% • Tui 380/8.0%. • Bellbird 59/1.25%. • Grey Warbler 492/7.75%. • Whitehead 28/0.31%. • Fantail 453/7.58%. • NI Tomtit 146/2.18%. • NI robin 28/0.42%. • Silver eye 837/21.63%	• 54 count stations. • 49 Known bird spp. at BHSR. • Highest # of species per count = 56 (July/Aug). Lowest = 53 (Oct/Nov). • Total # of individual species counted = 3581. • Australasian Harrier 0.05%. • Pied Shag 0.15%. • Kereru/Kukupa 1.96%. • Kaka 5.88% • Tui 13.07%. • Bellbird 2.24%. • Grey Warbler 9.97%. • Whitehead 1.36%. • Fantail 10.53%. • NI Tomtit 3.72%. • NI robin 1%. • Silver eye 30.84%	•54 count stations. •49 Known bird spp. at BHSR. (45 detected 2020) •Highest # of species per count = 42 (Oct/Nov) [lowest count Jan/Feb and Jun/July with 34 each] •Total # of individual species counted = 2227 •Australasian Harrier 0.045% (0.05%) •Pied Shag 1.17% (0.15%) – big increase, spp not impacted by drought •Kereru/Kukupa 1.71 (1.96%) – about the same, trees fruiting strongly in drought survival mode •Kaka 1.39% (5.88%) - decrease •Tui 7.32% (13.07%) - decrease •Bellbird 0.54% (2.24%) - decrease •Grey Warbler 13.11% (9.97%) – big increase, •Whitehead 0.85% (1.36%) - decrease •Fantail 4.71% (10.53%) - decrease •NI Tomtit 2.87% (3.72%) – about the same •NI robin 0.67% (1%) - decrease •Silver eye 14.27%	• 2020 • Covid lockdown prevented the April assessment so the data is only based on three 5mbc periods not 4 SInce 201 7the mean number of total call counts is 3707. The 2227 counts from 2002 are 60% of this (cf the optimum 75%) so there is a decrease in detected calls/species across all species. This is probably due to the droughts and birds heading to moister areas away from the set monitoring stations (ie down in gullies and away from tracks). • Figures in Red brackets are the % increase or decrease from 2019 year. Interestingly whilst most species decreased Pied shag numbers increased (not impacted by drought) and Kereru/kukupa stayed about the same.(potentially trees fruiting strongly in drought survival mode) • 2019 • Dry weather since early 2019 having a profound effect on bird call counts, particularly toward the later part of 2019. • Total # of individual species counted in 2019 down on 2018, but still higher than 2017. • Despite this, all species total relative abundance up on 2017 and 2018 (except for Pied Shag and Kereru – although Kereru very similar to 2018 figure). • One more bird species picked up through the 5mbc monitoring in 2019 • 2018: • 14.55% increase in individuals counted in 2018 compared to 2017. • All species relative abundance increased except NI robin in 2018 • Key indicator species are listed, see ebird results online for other BHCT 5mbc species data. Each individual key indicator species data is: • # individuals counted/total relative abundance % amongst other species counted.

Weta RTI (annual average)	8%	20.25%	16%	20%	13.33%	30%	20.33%	17.25%.	30.44%	38.1% (+/-5.6%)	34.16% (+/-5%)	2019 – Highest weta index!! Weta are an Invertebrate indicator species