



New Zealand
**GARDEN
BIRD
SURVEY**



Technical report

OTAGO REGION

2017 |

State of NZ Garden Birds

Te Āhua o ngā Manu o te Kāri i Aotearoa



Manaaki
Whenua
Landcare
Research

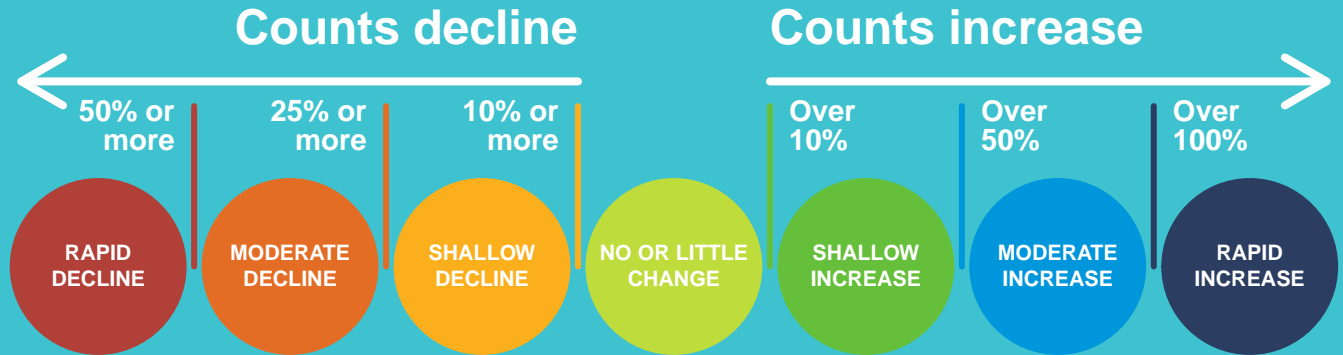


We have estimated how bird counts have changed since 2007 in different regions and towns across New Zealand for 14 common garden visitors – five native and nine introduced birds.

Thanks to all our volunteer bird counters, 31,679 garden surveys have been completed nationwide since 2007. We use specialised statistical tools to account for variation in sampling effort between regions, towns and suburbs over time. We also account for variation in bird counts depending on whether the surveyed gardens were in a rural or urban setting and if birds were fed or not. We also correct for the actual number of gardens in each area.

We then classify these changes according to their direction and size (see adjacent diagram) to help us identify changes of potential concern or interest.

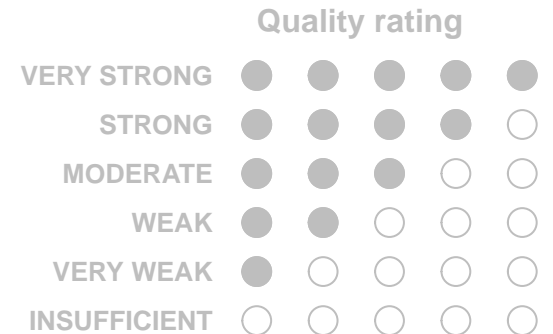
Drawing attention to changes in counts of potential concern or interest



Change class for each species, based on the 1001 bootstrap replicates, indicated by double circle. The degree of shading indicates where these replicates lie.



Quality rating category for each species shows the strength of evidence for the change class based on the 1001 replicates.



How have bird counts changed?

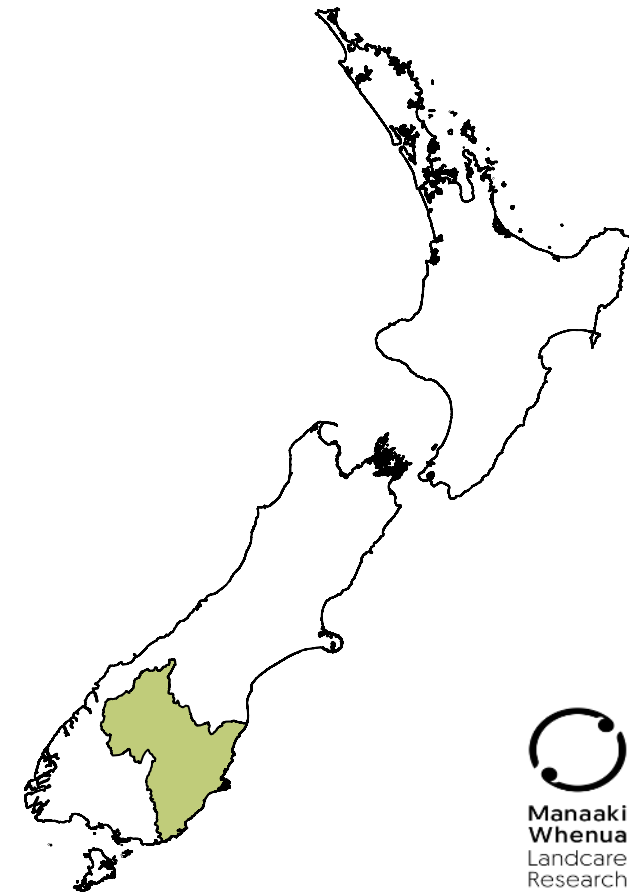
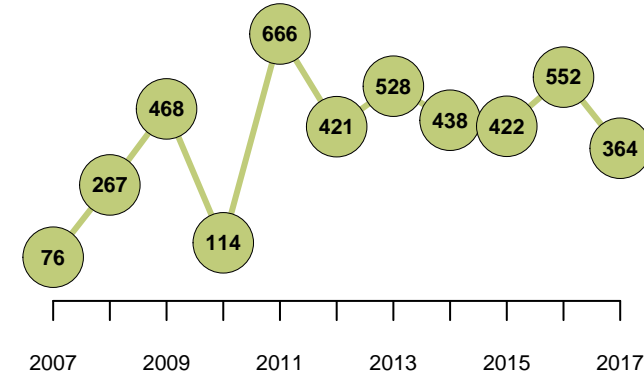
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New Zealand
GARDEN BIRD SURVEY

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	77%	55 to 93%	○	○	○	○	○	●	○	●●●●●	
HOUSE SPARROW	42%	37 to 46%	○	○	○	○	●	○	○	●●●●●	TIU
TUI	39%	30 to 47%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
DUNNOCK	13%	1 to 24%	○	○	○	○	●	○	○	●●○○○	
FANTAIL	9%	2 to 16%	○	○	○	○	○	○	○	●○○○○	PĪWAIWAKA
BELLBIRD	0%	-1 to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
NEW ZEALAND PIGEON	-10%	-20 to -2%	○	○	○	○	○	○	○	●○○○○	KERERŪ
BLACKBIRD	-11%	-14 to -8%	○	○	○	○	○	○	○	●●●○○	MANU PANGO
CHAFFINCH	-13%	-16 to -9%	○	○	○	○	○	○	○	●●●●○	PAHIRINI
STARLING	-24%	-29 to -20%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
GOLDFINCH	-24%	-30 to -18%	○	○	○	○	○	○	○	●●●●●	
SONG THRUSH	-41%	-44 to -39%	○	○	○	○	○	○	○	●●●●●	
SILVEREYE	-54%	-59 to -47%	○	○	○	○	○	○	○	●●●●○	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



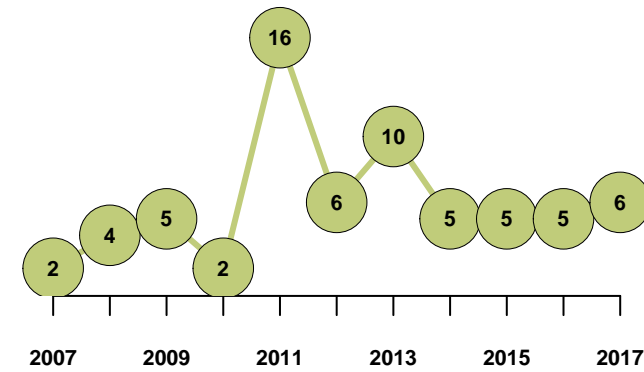
New Zealand
GARDEN BIRD SURVEY

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Alexandra

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	260%	239 to 276%	○	○	○	○	○	○	●	●●●●●	
TUI	145%	124 to 161%	○	○	○	○	○	○	●	●●●●●	KŌKŌ
NEW ZEALAND PIGEON	73%	28 to 105%	○	○	○	○	○	●	○	●●●○○	KERERŪ
DUNNOCK	24%	8 to 37%	○	○	○	○	●	○	○	●●●●○	
FANTAIL	9%	0 to 18%	○	○	○	○	○	○	○	○○○○○	PĪWAIWAKA
HOUSE SPARROW	1%	-4 to 8%	○	○	○	○	○	○	○	●●●●●	TIU
BELLBIRD	1%	-5 to 6%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-1%	-8 to 3%	○	○	○	○	○	○	○	●●●●●	PAHIRINI
BLACKBIRD	-11%	-15 to -8%	○	○	○	○	○	○	○	●●●○○	MANU PANGO
GOLDFINCH	-15%	-23 to -8%	○	○	○	○	○	○	○	●●●●○	
SONG THRUSH	-35%	-41 to -30%	○	○	○	○	○	○	○	●●●●●	
STARLING	-46%	-53 to -41%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
SILVEREYE	-61%	-67 to -54%	○	○	○	○	○	○	○	●●●●●	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



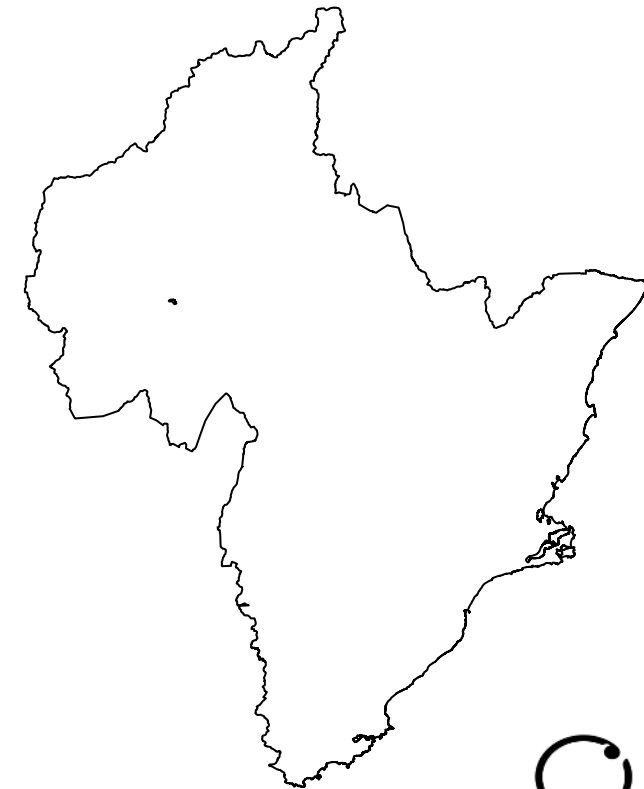
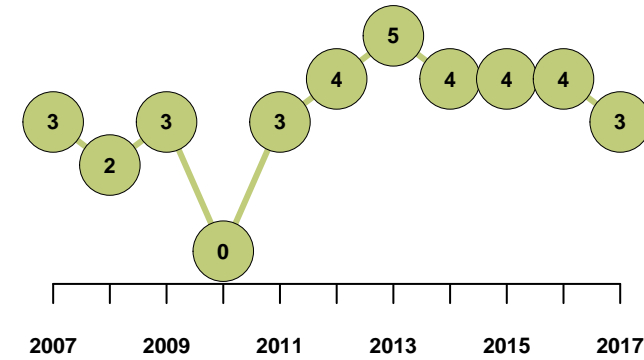
New Zealand
GARDEN BIRD SURVEY

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Arrowtown

	Median	80% Confidence Interval		Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
NEW ZEALAND PIGEON	64%	23	to 90%	○	○	○	○	○	●	○	●●●○○	KERERŪ
TUI	48%	36	to 59%	○	○	○	○	●	●	○	●●●●●	KŌKŌ
GREENFINCH	39%	16	to 54%	○	○	○	○	●	○	○	●●●●●	TIU
HOUSE SPARROW	34%	28	to 39%	○	○	○	○	●	○	○	●●●●●	TIU
DUNNOCK	20%	5	to 33%	○	○	○	○	●	○	○	●●●●○	PĪWAIWAKA
FANTAIL	7%	-2	to 17%	○	○	○	○	○	○	○	●●○○○	PĪWAIWAKA
BELLBIRD	0%	-2	to 3%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-4%	-10	to 0%	○	○	○	○	○	○	○	●●●●○	PAHIRINI
BLACKBIRD	-6%	-10	to -3%	○	○	○	○	○	○	○	●●●●○	MANU PANGO
GOLDFINCH	-19%	-26	to -12%	○	○	○	○	○	○	○	●●●●●	
SONG THRUSH	-29%	-35	to -24%	○	○	○	○	○	○	○	●●●●○	
STARLING	-29%	-35	to -24%	○	○	○	○	○	○	○	●●●●○	TĀRINGI
SILVEREYE	-57%	-62	to -49%	○	○	○	○	○	○	○	●●●●○	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



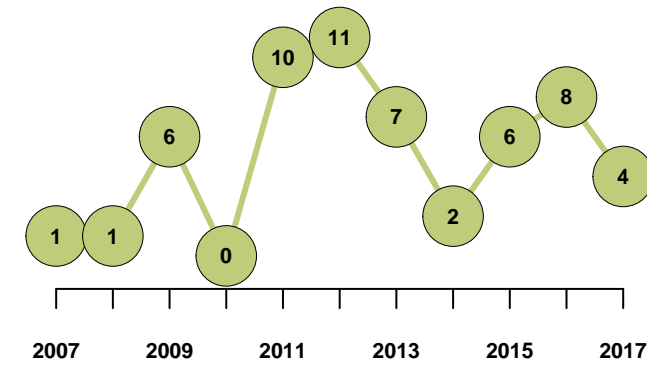
New Zealand
GARDEN BIRD SURVEY

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Balclutha

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	86%	65 to 102%	○	○	○	○	○	●	○	●●●●●	
HOUSE SPARROW	45%	39 to 50%	○	○	○	○	●	○	○	●●●●●	TIU
TUI	39%	26 to 50%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
NEW ZEALAND PIGEON	32%	2 to 51%	○	○	○	○	●	○	○	●●●●○	KERERŪ
DUNNOCK	14%	0 to 28%	○	○	○	○	●	○	○	●●○○○	
FANTAIL	10%	1 to 18%	○	○	○	○	○	○	○	○○○○○	PĪWAIWAKA
BELLBIRD	0%	-1 to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
BLACKBIRD	-10%	-13 to -7%	○	○	○	○	○	○	○	●○○○○	MANU PANGO
CHAFFINCH	-15%	-21 to -10%	○	○	○	○	○	○	○	●●●●●	PAHIRINI
GOLDFINCH	-32%	-39 to -26%	○	○	○	○	○	○	○	●●●●●	
STARLING	-33%	-40 to -29%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
SILVEREYE	-42%	-47 to -35%	○	○	○	○	○	○	○	●●●●●	TAUHOU
SONG THRUSH	-45%	-50 to -39%	○	○	○	○	○	○	○	●●●●●	

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



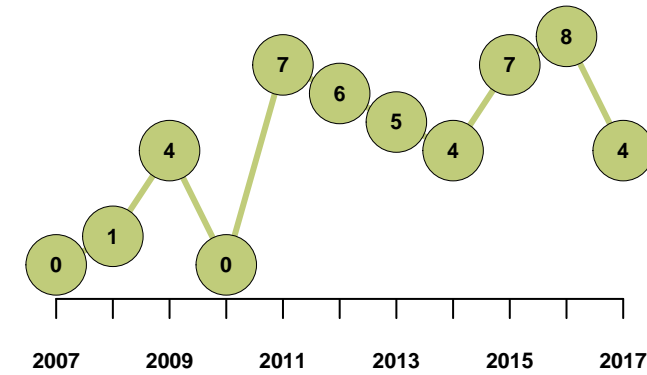
New Zealand
GARDEN BIRD SURVEY

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Cromwell

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	272%	249 to 287%	○	○	○	○	○	○	●	●●●●●	
TUI	101%	77 to 117%	○	○	○	○	○	●	●	●○○○○	KŌKŌ
NEW ZEALAND PIGEON	66%	24 to 93%	○	○	○	○	○	●	○	●●●○○	KERERŪ
HOUSE SPARROW	32%	26 to 37%	○	○	○	○	●	○	○	●●●●●	TIU
DUNNOCK	27%	13 to 39%	○	○	○	○	●	○	○	●●●●●	
FANTAIL	7%	-3 to 18%	○	○	○	●	○	○	○	●○○○○	PĪWAIWAKA
BELLBIRD	1%	-4 to 5%	○	○	○	●	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-8%	-13 to -2%	○	○	○	●	○	○	○	●●○○○	PAHIRINI
BLACKBIRD	-8%	-11 to -5%	○	○	○	●	○	○	○	●●●○○	MANU PANGO
STARLING	-21%	-27 to -16%	○	○	●	○	○	○	○	●●●●●	TĀRINGI
GOLDFINCH	-24%	-31 to -17%	○	○	●	○	○	○	○	●●●●●	
SONG THRUSH	-41%	-47 to -36%	○	●	○	○	○	○	○	●●●●●	
SILVEREYE	-60%	-66 to -53%	●	○	○	○	○	○	○	●●●●●	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



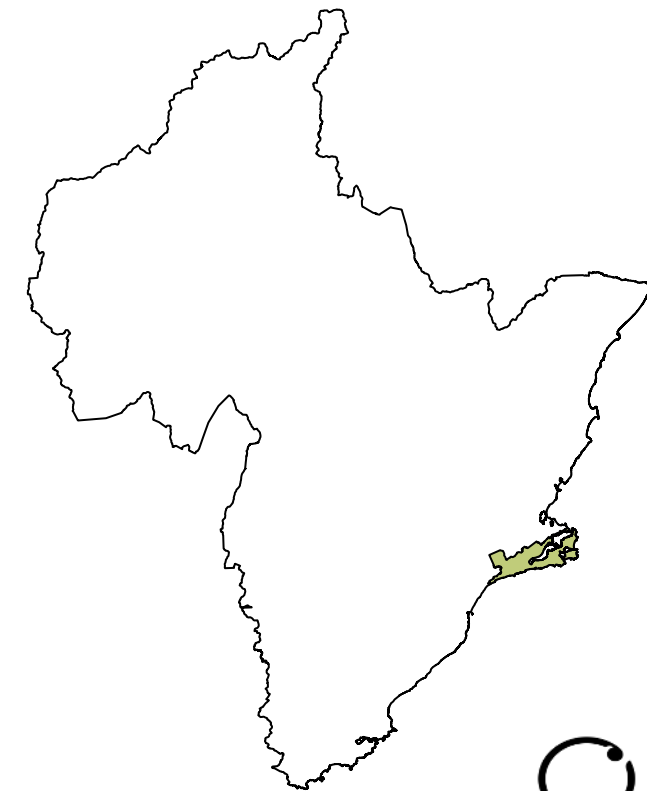
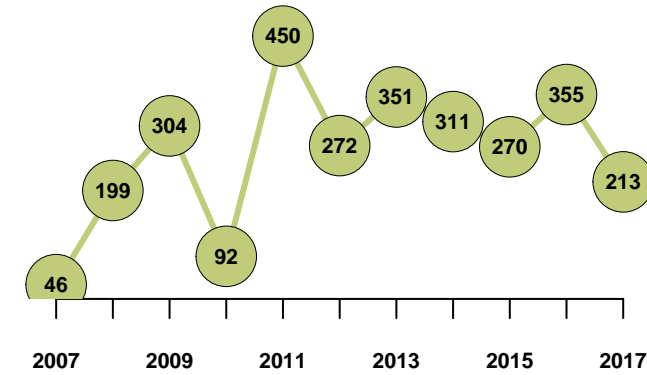
New Zealand
GARDEN BIRD SURVEY

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Dunedin

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
HOUSE SPARROW	77%	70 to 81%	○	○	○	○	○	●	○	●●●●●	TIU
GREENFINCH	46%	24 to 64%	○	○	○	○	●	●	○	●●●●●	
TUI	39%	29 to 48%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
DUNNOCK	15%	1 to 27%	○	○	○	○	●	○	○	●●●○○	
FANTAIL	12%	3 to 20%	○	○	○	○	●	○	○	●●○○○	PĪWAIWAKA
BELLBIRD	0%	-1 to 2%	○	○	○	●	○	○	○	●●●●●	KORIMAKO
BLACKBIRD	-8%	-11 to -5%	○	○	○	●	○	○	○	●●●○○	MANU PANGO
NEW ZEALAND PIGEON	-19%	-29 to -10%	○	○	●	○	○	○	○	●●●●●	KERERŪ
CHAFFINCH	-19%	-24 to -14%	○	○	●	○	○	○	○	●●●●●	PAHIRINI
STARLING	-21%	-28 to -17%	○	○	●	○	○	○	○	●●●●●	TĀRINGI
GOLDFINCH	-28%	-35 to -22%	○	●	○	○	○	○	○	●●●○○	
SILVEREYE	-51%	-57 to -44%	●	○	○	○	○	○	○	●●○○○	TAUHOU
SONG THRUSH	-54%	-58 to -50%	●	○	○	○	○	○	○	●●●●●	

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



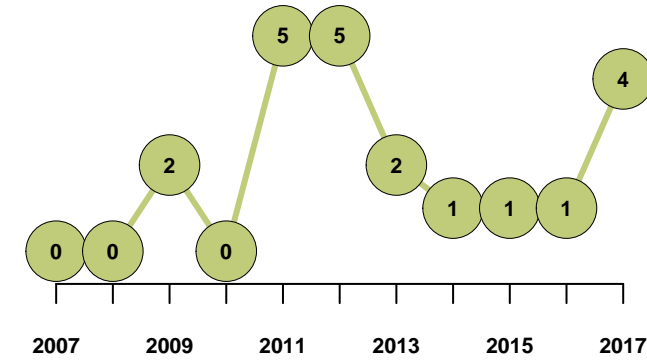
New Zealand
GARDEN BIRD SURVEY

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Milton

	Median	80% Confidence Interval		Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	62%	40	to 77%	○	○	○	○	○	●	○	●●●○○	
NEW ZEALAND PIGEON	56%	18	to 81%	○	○	○	○	○	●	○	●●○○○	KERERŪ
HOUSE SPARROW	26%	21	to 31%	○	○	○	○	●	○	○	●●●●●	TIU
TUI	19%	6	to 30%	○	○	○	○	●	○	○	●●●●○	KŌKŌ
FANTAIL	10%	0	to 18%	○	○	○	○	○	○	○	○○○○○	PĪWAIWAKA
DUNNOCK	3%	-10	to 16%	○	○	○	○	○	○	○	●●○○○	
BELLBIRD	0%	-1	to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
BLACKBIRD	-9%	-12	to -6%	○	○	○	○	○	○	○	●○○○○	MANU PANGO
CHAFFINCH	-23%	-28	to -18%	○	○	○	○	○	○	○	●●●●●	PAHIRINI
STARLING	-26%	-32	to -22%	○	○	○	○	○	○	○	●●○○○	TĀRINGI
GOLDFINCH	-30%	-36	to -24%	○	○	○	○	○	○	○	●●●●○	
SONG THRUSH	-40%	-45	to -35%	○	○	○	○	○	○	○	●●●●●	
SILVEREYE	-63%	-69	to -56%	○	○	○	○	○	○	○	●●●●●	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



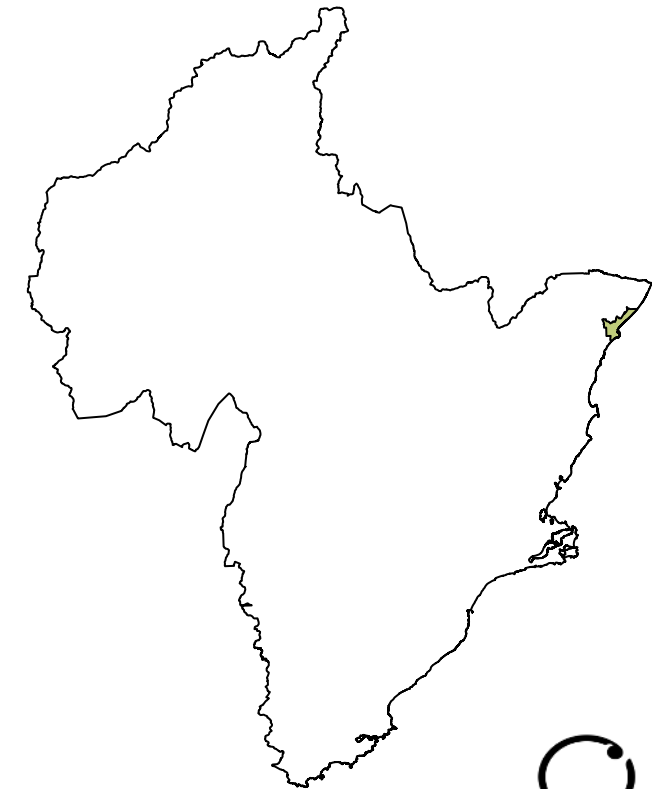
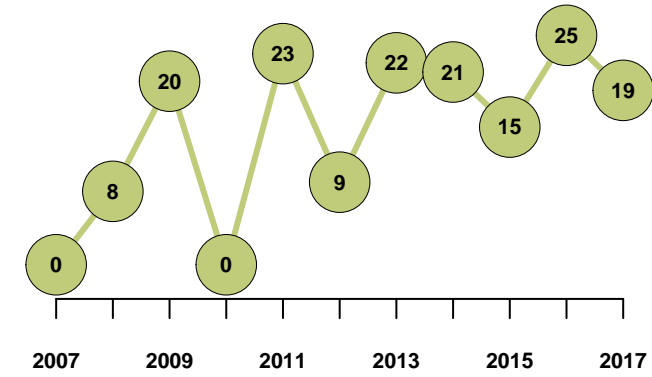
New Zealand
GARDEN BIRD SURVEY

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Oamaru

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	162%	141 to 177%	○	○	○	○	○	○	●	●●●●●	
NEW ZEALAND PIGEON	57%	13 to 83%	○	○	○	○	○	●	○	●●○○○	KERERŪ
HOUSE SPARROW	44%	39 to 49%	○	○	○	○	●	○	○	●●●●●	TIU
TUI	37%	24 to 46%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
FANTAIL	14%	5 to 22%	○	○	○	○	●	○	○	●●●○○	PĪWAIWAKA
DUNNOCK	14%	0 to 26%	○	○	○	○	●	○	○	●●○○○	
BELLBIRD	0%	-3 to 4%	○	○	○	●	○	○	○	●●●●●	KORIMAKO
GOLDFINCH	-2%	-11 to 3%	○	○	○	●	○	○	○	●●●●○	
BLACKBIRD	-14%	-17 to -11%	○	○	●	○	○	○	○	●●●●●	MANU PANGO
CHAFFINCH	-18%	-23 to -13%	○	○	●	○	○	○	○	●●●●●	PAHIRINI
STARLING	-26%	-33 to -22%	○	●	○	○	○	○	○	●●●○○	TĀRINGI
SONG THRUSH	-33%	-38 to -28%	○	●	○	○	○	○	○	●●●●●	
SILVEREYE	-54%	-59 to -46%	●	○	○	○	○	○	○	●●●○○	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



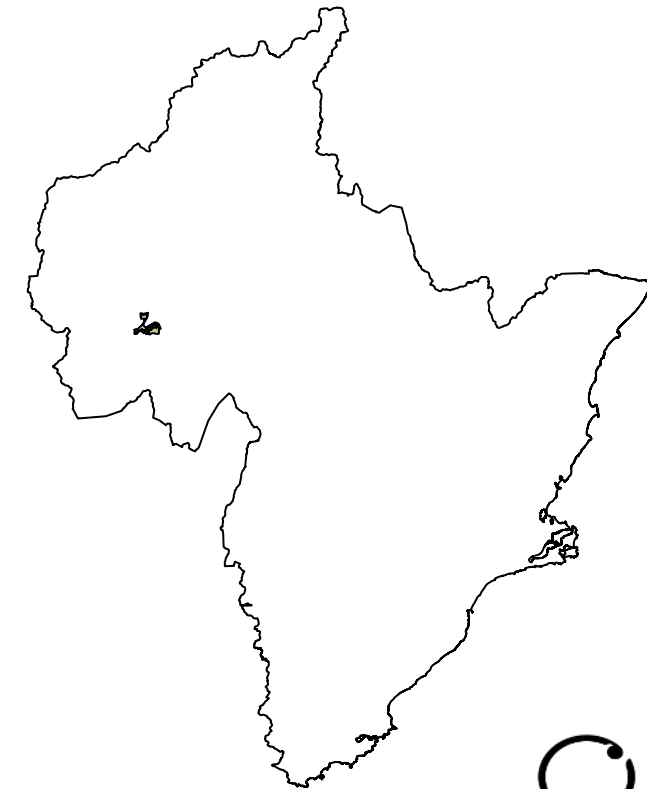
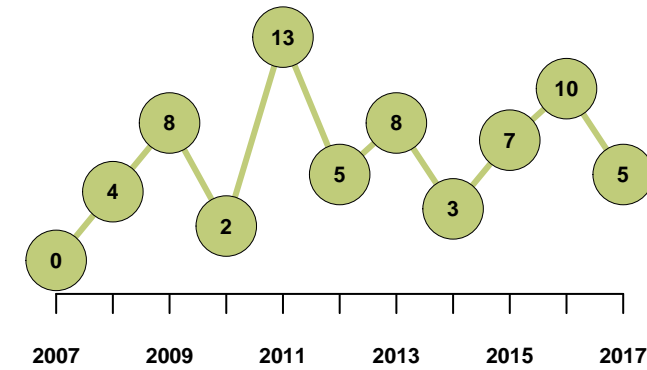
New Zealand
GARDEN BIRD SURVEY

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Queenstown

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	161%	140 to 175%	○	○	○	○	○	○	●	●●●●●	
NEW ZEALAND PIGEON	45%	14 to 65%	○	○	○	○	●	○	○	●●●●●	KERERŪ
TUI	21%	11 to 30%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
DUNNOCK	15%	1 to 28%	○	○	○	○	●	○	○	●●●○○	
FANTAIL	6%	-1 to 14%	○	○	○	○	○	○	○	●●●○○	PĪWAIWAKA
HOUSE SPARROW	3%	-1 to 8%	○	○	○	○	○	○	○	●●●●●	TIU
BELLBIRD	0%	-1 to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-3%	-8 to 1%	○	○	○	○	○	○	○	●●●●●	PAHIRINI
BLACKBIRD	-6%	-9 to -4%	○	○	○	○	○	○	○	●●●●●	MANU PANGO
GOLDFINCH	-23%	-29 to -18%	○	○	○	○	○	○	○	●●●●●	
STARLING	-34%	-39 to -30%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
SONG THRUSH	-50%	-54 to -46%	○	○	○	○	○	○	○	●○○○○	
SILVEREYE	-59%	-64 to -52%	○	○	○	○	○	○	○	●●●●●	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



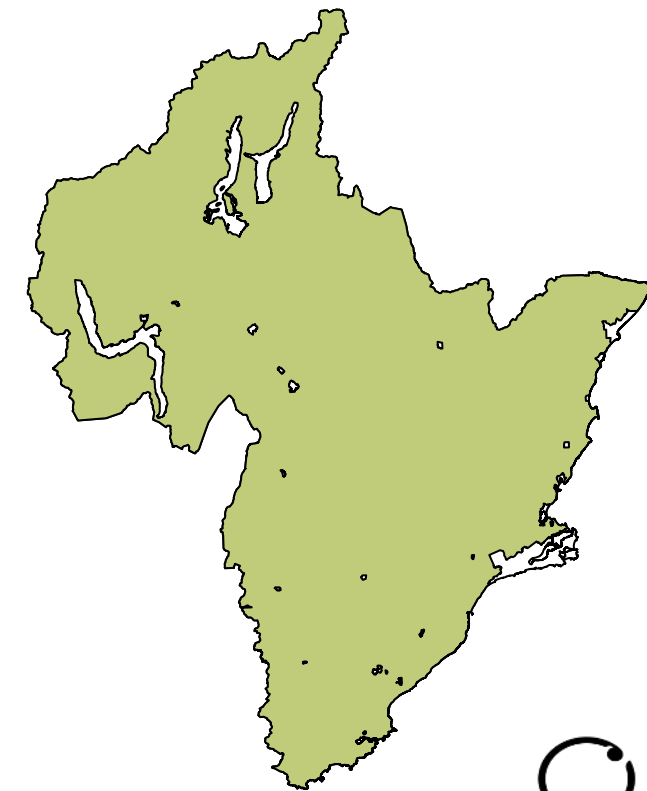
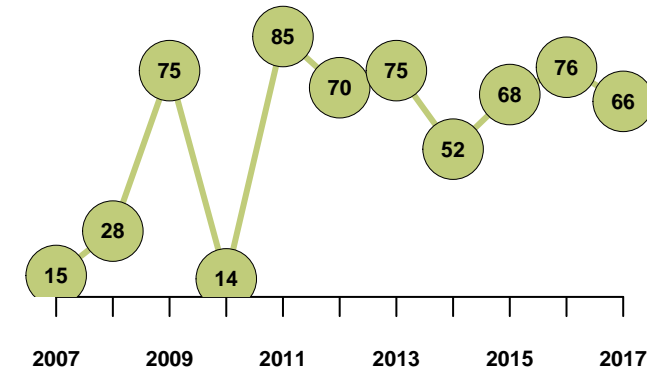
New Zealand
GARDEN BIRD SURVEY

OTAGO REGION | 2007-2017

Rural (Incl. some Off Shore Islands)

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	95%	73 to 111%	○	○	○	○	○	●	○	●●●●●	
TUI	42%	32 to 52%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
NEW ZEALAND PIGEON	33%	19 to 44%	○	○	○	○	●	○	○	●●●●●	KERERŪ
HOUSE SPARROW	15%	9 to 20%	○	○	○	○	●	○	○	●●●●○	TIU
DUNNOCK	8%	-2 to 18%	○	○	○	○	○	○	○	●○○○○	
FANTAIL	6%	0 to 11%	○	○	○	○	○	○	○	●●●●○	PĪWAIWAKA
BELLBIRD	0%	-2 to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-10%	-14 to -7%	○	○	○	○	○	○	○	●●○○○	PAHIRINI
BLACKBIRD	-17%	-20 to -14%	○	○	○	○	○	○	○	●●●●●	MANU PANGO
STARLING	-22%	-28 to -17%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
SONG THRUSH	-25%	-29 to -22%	○	○	○	○	○	○	○	●●○○○	
GOLDFINCH	-30%	-36 to -24%	○	○	○	○	○	○	○	●●●●○	
SILVEREYE	-62%	-68 to -56%	●	○	○	○	○	○	○	●●●●●	TAUHOU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



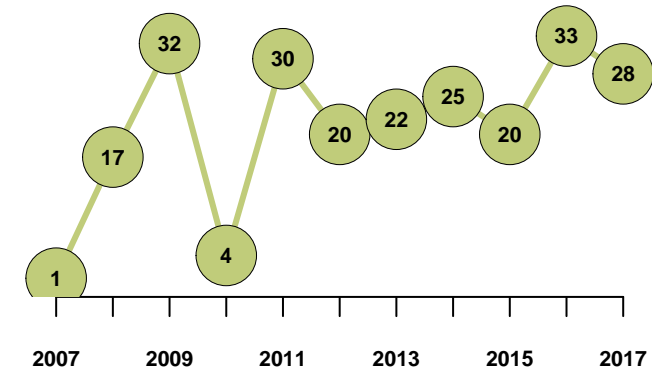
New Zealand
GARDEN BIRD SURVEY

OTAGO REGION | 2007-2017

Rural Centre

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	166%	144 to 181%	○	○	○	○	○	○	●	●●●●●	
HOUSE SPARROW	28%	23 to 33%	○	○	○	○	●	○	○	●●●●●	TIU
TUI	24%	13 to 31%	○	○	○	○	●	○	○	●●●●●	KŌKŌ
DUNNOCK	11%	-1 to 23%	○	○	○	○	●	○	○	●○○○○	
FANTAIL	5%	0 to 10%	○	○	○	○	●	○	○	●●●●○	PĪWAIWAKA
NEW ZEALAND PIGEON	0%	-9 to 8%	○	○	○	○	●	○	○	●●●●○	KERERŪ
BELLBIRD	0%	-1 to 1%	○	○	○	○	●	○	○	●●●●●	KORIMAKO
CHAFFINCH	-5%	-9 to -1%	○	○	○	○	●	○	○	●●●●●	PAHIRINI
BLACKBIRD	-13%	-16 to -11%	○	○	○	○	○	○	○	●●●●●	MANU PANGO
GOLDFINCH	-17%	-23 to -12%	○	○	○	○	○	○	○	●●●●●	
STARLING	-18%	-24 to -14%	○	○	○	○	○	○	○	●●●●●	TĀRINGI
SONG THRUSH	-30%	-34 to -26%	○	○	○	○	○	○	○	●●●●●	
SILVEREYE	-58%	-64 to -51%	●	○	○	○	○	○	○	●●●●●	TAUHOHU

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



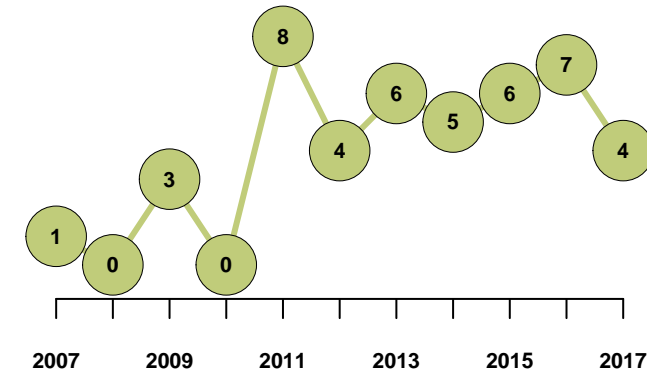
New Zealand
GARDEN BIRD SURVEY

OTAGO REGION | 2007-2017

Waikouaiti

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	103%	81 to 118%	○	○	○	○	○	○	●	●○○○○	
TUI	82%	66 to 94%	○	○	○	○	○	●	○	●●●●●	KŌKŌ
NEW ZEALAND PIGEON	27%	6 to 40%	○	○	○	○	●	○	○	●●●●○	KERERŪ
DUNNOCK	22%	7 to 36%	○	○	○	○	●	○	○	●●●●○	
FANTAIL	10%	1 to 18%	○	○	○	○	○	○	○	○○○○○	PĪWAIWAKA
HOUSE SPARROW	4%	0 to 10%	○	○	○	○	○	○	○	●●●●○	TIU
BELLBIRD	0%	-1 to 2%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
CHAFFINCH	-6%	-12 to -1%	○	○	○	○	○	○	○	●●●○○	PAHIRINI
BLACKBIRD	-12%	-15 to -9%	○	○	○	○	○	○	○	●●●●○	MANU PANGO
GOLDFINCH	-17%	-24 to -10%	○	○	○	○	○	○	○	●●●●●	
STARLING	-29%	-36 to -24%	○	○	○	○	○	○	○	●●●●○	TĀRINGI
SILVEREYE	-34%	-40 to -27%	○	○	○	○	○	○	○	●●●●●	TAUHOU
SONG THRUSH	-36%	-41 to -30%	○	○	○	○	○	○	○	●●●●●	

NUMBER OF GARDEN SURVEYS



How have bird counts changed?



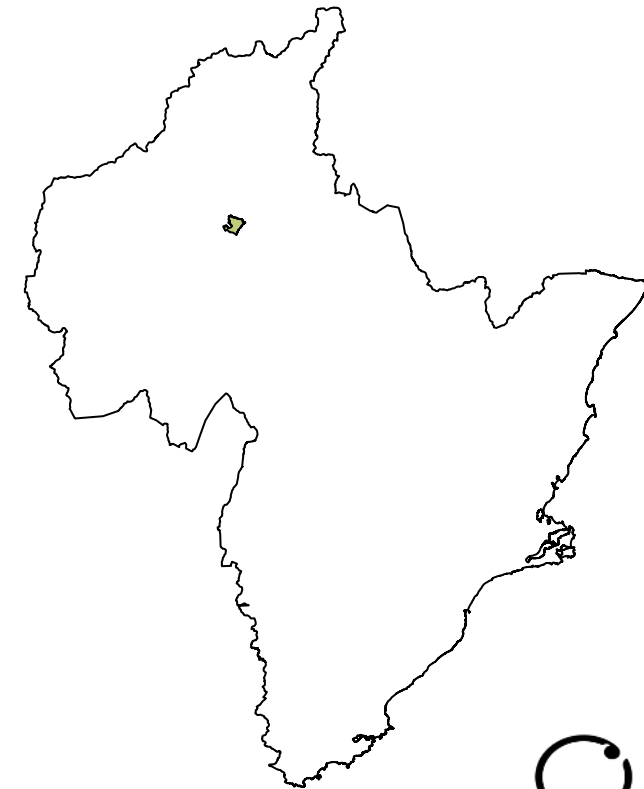
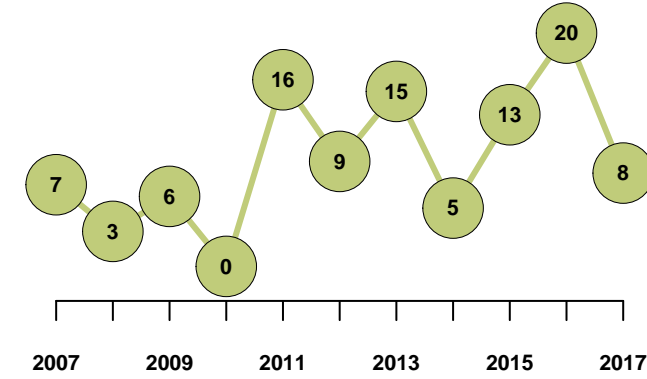
New Zealand
GARDEN BIRD SURVEY

OTAGO REGION | 2007-2017

Wanaka

	Median	80% Confidence Interval	Rapid decline	Moderate decline	Shallow decline	No or little change	Shallow increase	Moderate increase	Rapid increase	Quality rating	
GREENFINCH	119%	97 to 135%	○	○	○	○	○	○	●	●●●●○	
TUI	89%	68 to 105%	○	○	○	○	○	●	○	●●●●●	KŌKŌ
NEW ZEALAND PIGEON	36%	-18 to 68%	○	○	○	○	●	○	○	●●●○○	KERERŪ
HOUSE SPARROW	14%	7 to 21%	○	○	○	○	●	○	○	●●●●○	TIU
FANTAIL	8%	0 to 17%	○	○	○	○	○	○	○	●○○○○	PĪWAIWAKA
DUNNOCK	2%	-13 to 15%	○	○	○	○	○	○	○	●○○○○	
CHAFFINCH	0%	-7 to 5%	○	○	○	○	○	○	○	●●●●●	PAHIRINI
BELLBIRD	0%	-2 to 3%	○	○	○	○	○	○	○	●●●●●	KORIMAKO
BLACKBIRD	-19%	-23 to -15%	○	○	○	○	○	○	○	●●●●●	MANU PANGO
GOLDFINCH	-22%	-30 to -15%	○	○	○	○	○	○	○	●●●●●	
STARLING	-28%	-36 to -23%	○	○	○	○	○	○	○	●●●●○	TĀRINGI
SONG THRUSH	-34%	-39 to -28%	○	○	○	○	○	○	○	●●●●●	
SILVEREYE	-50%	-56 to -44%	○	○	○	○	○	○	○	●○○○○	TAUHOU

NUMBER OF GARDEN SURVEYS





New Zealand
**GARDEN
BIRD
SURVEY**

2018
30 June to 8 July

Visit our webpage to learn more:
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