

Monitoring Macquarie perch in Hughes Creek

* During March 2015, fish surveys were conducted at 16 sites in Hughes Creek between Tarcombe and Avenel using fyke netting and backpack electrofishing techniques (see table 1). Nine standard monitoring sites in addition to seven new sites were surveyed to obtain current information on the population status of Macquarie perch and confirm the species distribution range.

* A total of 1125 fish, comprising seven native and five introduced species were captured, with native fish accounting for 73% of the total catch (see table 2).

* River blackfish (*Gadopsis marmoratus*) (n=488) was the most abundant species captured and was recorded at 12 of the 16 sites surveyed.

* Macquarie perch (*Macquaria australasica*) was the second most abundant native species collected (n=145) and were recorded at eight sites.

* The abundance of Macquarie perch and river blackfish has considerably increased since surveys were last conducted in autumn 2013 and are the highest since surveys commenced in 2006 (see Figures 1 and 2). This increase is largely driven by the successful recruitment of both species during the past two years.

* The highest number of Macquarie perch and river blackfish individuals were collected from site G18 (the gorge). Over 70% of Macquarie perch young of year collected during the surveys were found within the gorge which highlights that this site is a vital breeding and nursery area.

* The size range of Macquarie perch captured was between 60 and 406 mm total length (TL) (average = 183 mm TL). Over 51% of Macquarie perch collected were between 110 and 160 mm TL (one year of age), while young of year accounted for 16% of the total Macquarie perch catch (Figure 1).

* The assessment of new sites during the survey has also increased our knowledge on the current distribution of Macquarie perch in Hughes Creek by 6 km upstream and 2.5 km downstream (total distribution is approximately 24 km).

* The presence of southern pygmy perch (*Nannopeca australis*) within the two most upstream sites surveyed was encouraging given the widespread decline of this small-bodied native species across much of its former range over the past few years.

* Carp (*Cyprinus carpio*) remain the most dominant exotic species captured (n=233) and were collected from 12 of the 16 sites surveyed. The abundance of carp has also considerably increased since 2013.

Table 1. Hughes Creek site summary information (In order of upstream to downstream).

Site	Location	Latitude	Longitude	Sampling methods	Date/s sampled
G21	Bungle Boori Crossing where Hughes creek Road crosses the creek	-36.99215	145.35800	Backpack Electrofishing	25/3/15
G20	Rock shoot off Wicket Hill Road	-36.98390	145.35260	Backpack Electrofishing	26/3/15
G28*	Private Property – Jeffery’s Residence	-36.98303	145.33995	Fyke netting (x2)	25/3/15
G19	On farmland immediately upstream of gorge, off Hughes Creek Road	-36.00053	145.33131	Backpack electrofishing	25/3/15
G18	Gorge area. Access through Booroola Property off Tarcombe Road	-36.99187	145.28786	Backpack electrofishing	24/3/15
GB_HUG101*	Works site #1. Booroola property off Tarcombe Road	-36.98897	145.28778	Backpack electrofishing	17/3/15
GB_HUG102*	Works site #2. Booroola property off Tarcombe Road	-36.98069	145.28485	Backpack electrofishing	17/3/15
G23 and GB_HUG_103	Booroola Property off Tarcombe Road	-36.97596	145.28511	Backpack electrofishing	16/3/15
G24	Booroola Property off Tarcombe Road	-36.95128	145.29259	Fyke netting (x4) Backpack electrofishing	16/3/15 16/3/15
G15	Fishway off Tarcombe Road	-36.95200	145.28133	Backpack electrofishing	23/3/15
G29*	Old Groynes site – 60 Tarcombe Road.	-36.94780	145.27373	Fyke netting (x4)	25/3/15
G16	Scout hut and camp area off Tarcombe Road	-36.94715	145.26781	Backpack electrofishing	23/3/15
G30*	At Tehans Property – 440 Tarcombe Road	-36.94241	145.26175	Fyke netting (x6)	25/3/15
G17	Hume Highway Bridge, off Ash Road Avenel	-36.90714	145.233470	Backpack electrofishing	23/3/15
G26*	Goulburn Valley Highway – access off Doherty road	-36.88041	145.145220	Fyke netting (x4)	26/3/15
G25*	Limerick Lane Thoroughbreds – 115 Grenada road Mangalore	-36.88060 -36.88014	145.12646 145.13588	Fyke netting (x4) Backpack electrofishing	26/3/15 27/3/15

* Denotes a new site in 2015.

Table 2. Catch summaries for Hughes Creek during April 2015.

Scientific name	Common name	Site																	TOTAL
		G21 Bungle Boori	G20 Rock shoot	G28 Jeffery's property	G19 Farmland u/s gorge	G18 Gorge	GB_HUG101 Works site #1	GB_HUG102 Works site #2	G23 Booroola	G24 Booroola	G15 fishway	G29 Old groyne	G16 Scout hut	G30 Tehans property	G17 Hume highway	G26 Goulburn Valley highway	G25 Limerick Lane		
<i>Macquaria australasica</i>	Macquarie perch	1		4	8	92	13	8	16			3							145
<i>Macquaria ambigua</i>	Golden perch											2		6		1	5		14
<i>Gadopsis marmoratus</i>	River blackfish	9	6	9	9	267	33	30	65	5	31	1	23						488
<i>Philypnodon grandiceps</i>	Flat headed gudgeon		10			9	2	9		1	4		6		3			6	50
<i>Galaxias olidus</i>	Mountain galaxias	23	2		2	16	9	6	18	1	3		9		6			1	96
<i>Retropinna semoni</i>	Australian smelt																	2	2
<i>Nannoperca australis</i>	Southern pygmy perch	18	7																25
<i>Perca fluviatilis*</i>	Redfin																	1	1
<i>Cyprinus carpio*</i>	Carp	7	9		28	74	4	13	14	2	9		6		56			11	233
<i>Carassius auratus*</i>	Goldfish																1		8
<i>Gambusia holbrooki*</i>	Mosquitofish		3		1	2	1	4	11	10	10		4		9			2	57
<i>Tinca tinca*</i>	Tench	2			1	1				2									6
<i>Cherax destructor</i>	Yabby	12	22		5		13	7	22	10	1		15	1	15			6	129
<i>Chelodina longicollis</i>	Eastern long-necked turtle									3		1		3			1		8
TOTAL	TOTAL	72	59	13	54	461	75	77	147	40	58	7	63	10	89	3	34		1262

* Denotes exotic species

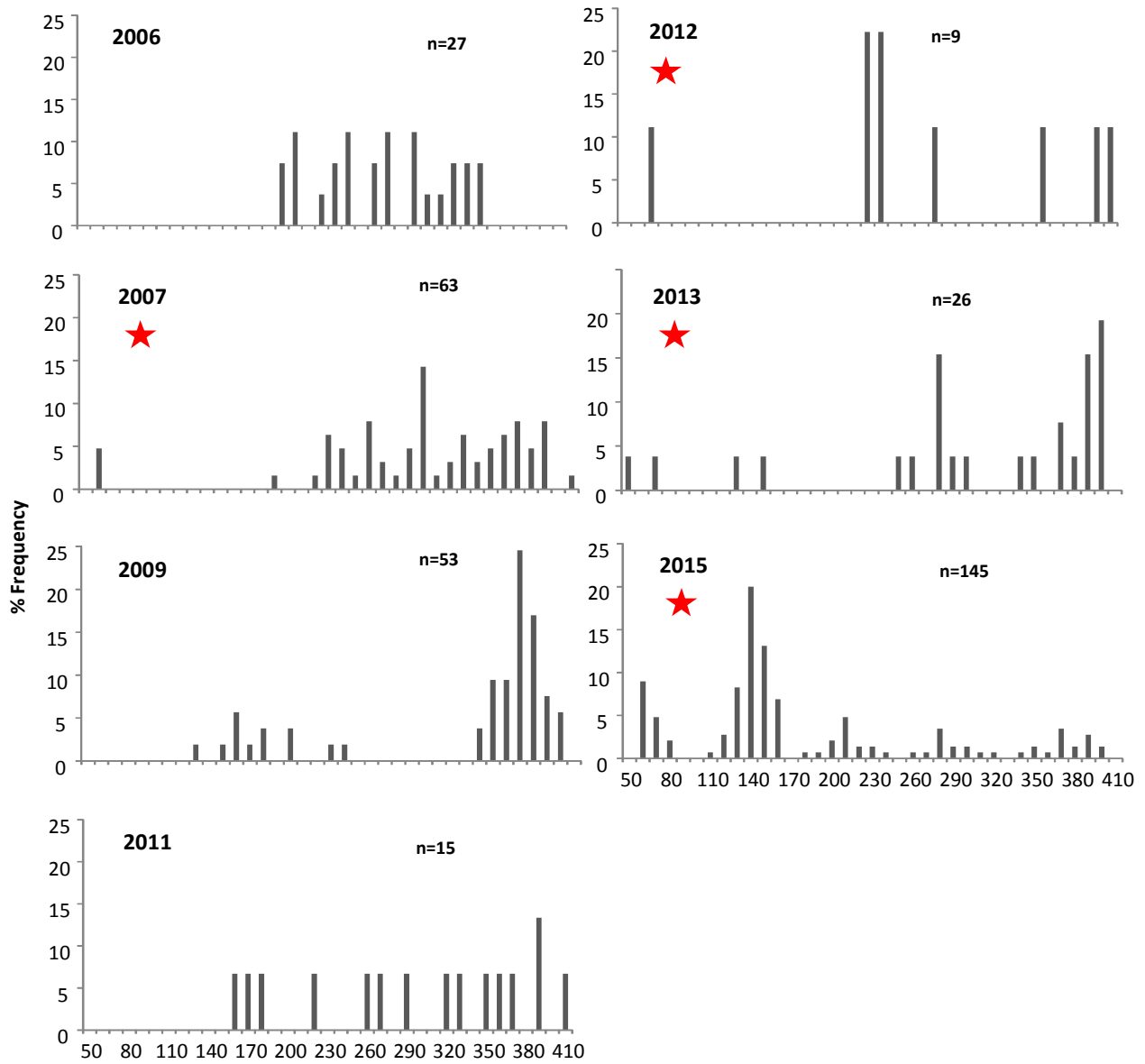


Figure 1. Total length (TL) frequency of Macquarie perch captured in Hughes Creek between 2006 and 2015. Note: red stars indicate observations of natural recruitment.

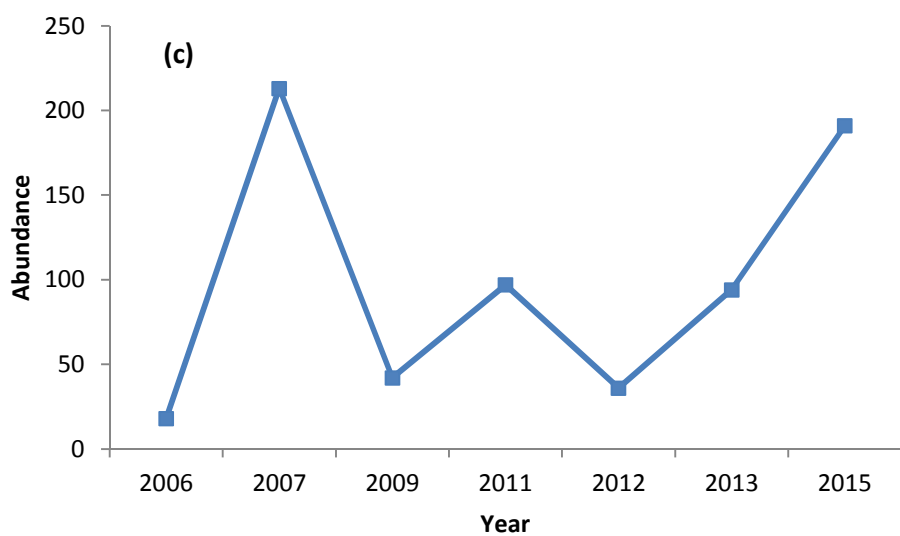
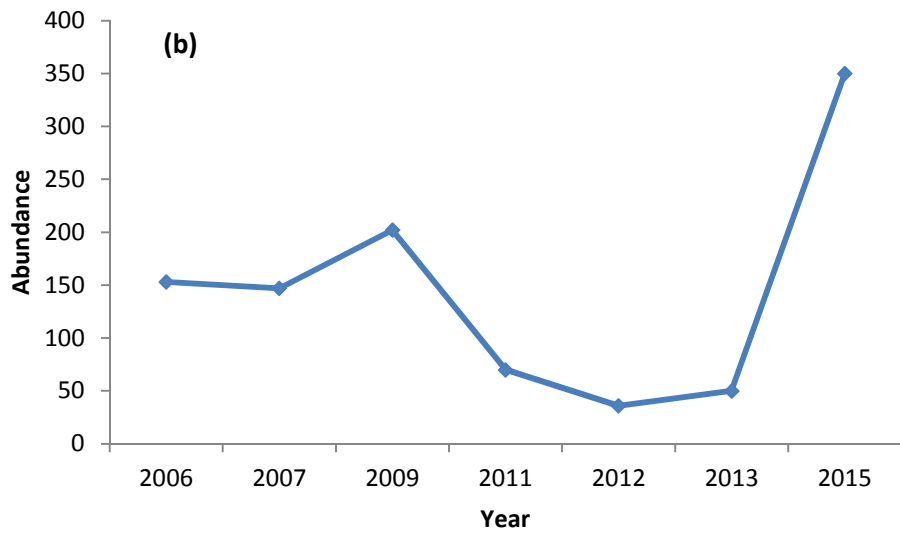
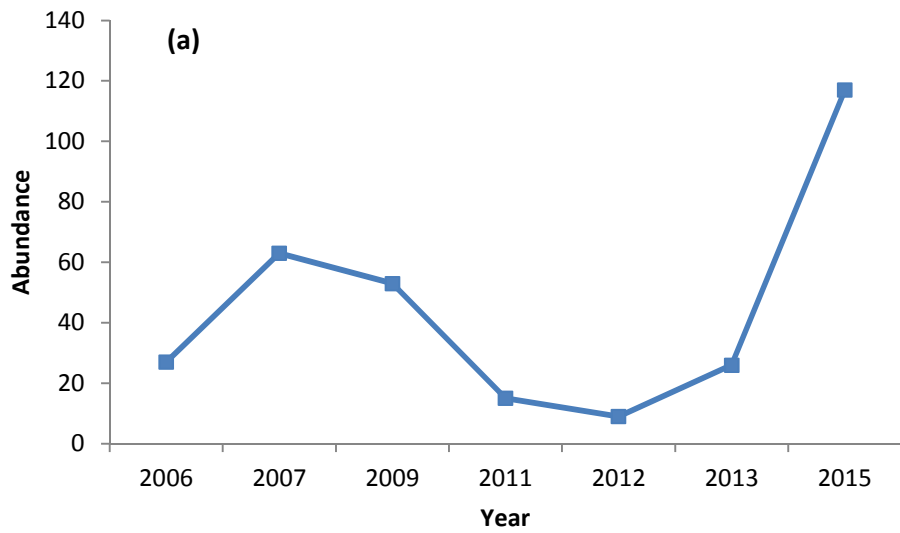


Figure 2. Abundance of (a) Macquarie perch; (b) River blackfish and (c) carp in Hughes Creek between 2006 and 2015. Note: the total abundance for these species during 2015 only includes data from the regular monitoring sites.