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CHAPTER 3: DEER MANAGEMENT REPORT

From: 1 July 2012
To: 30 June 2014

LOCATION

GAME MANAGEMENT UNIT: 1C (7,600 mi^2)

GEOGRAPHIC DESCRIPTION: Southeast Alaska mainland and the islands of Lynn Canal and Stephens Passage lying between Cape Fanshaw and the latitude of Eldred Rock, including Sullivan Island and the drainages of Berners Bay

BACKGROUND

Deer have inhabited northern Southeast Alaska since their migration from southern refugia following the Pleistocene epoch (Klein 1965). Deep snow keeps the number of deer on the mainland lower than that on adjacent islands. A 1963 population estimate suggested about 200,000 deer inhabited Southeast Alaska (Merriam 1963). The regionwide 1962 harvest was about 10,500 deer. Severe winters in 1969 and 1971 resulted in high overwinter mortality and reduced deer numbers across the region (Olson 1979). Hunter surveys began in 1970 and continued annually through 2010. Those surveys evolved from telephone contacts of a few hunters to a mail-out survey of a random list of hunters beginning in 1980. In 2011 the department switched from a mail-out survey to a harvest ticket report that all hunters are required to turn in. Pellet-group counts (Kirchhoff and Pitcher 1988) began in Unit 1C in 1984 and have been conducted on Douglas, Lincoln, and Shelter islands on a nearly annual basis, but rarely in mainland locations.

Winter severity, primarily deep and persistent snow, appears to limit deer populations in Unit 1C. Deer densities were relatively high throughout the early to mid-1990s but declined substantially following the severe winter of 1998–1999. With very mild winters from 2000 through 2005, deer populations across the region rebounded again to high densities. However, winter 2006–2007 was severe with record snowfall recorded in Juneau (Fig. 1). Substantial snow accumulated during November 2006 driving deer to beaches where they were vulnerable to hunters; consequently a substantial increase in harvest was reported in 2006. In addition, during March the Southeast panhandle received snow day after day throughout the month, and by early April, snow was at extreme levels throughout this area. The snowpack restricted deer movements and led to a substantial deer die off across the region including Unit 1C. The severity of winter 2006–2007 and associated deer mortality spurred the department to implement a doe closure in both Units 1C and 4 during December 2007 to protect female deer from further harvest.

Larger islands including Douglas, Shelter, and Lincoln Islands support the highest number of deer in Unit 1C. Less snow accumulates on islands than on the mainland of Unit 1C, and of these islands only Douglas Island has been documented to support substantial numbers of black bears

and recently wolves. Since about 2000 there were sporadic reports of wolves on Douglas Island, but only in recent years have wolves been officially documented. Wolves are known to occur in mainland areas of Unit 1C but are rarely seen, and they likely contribute to maintaining low densities of deer in these areas.

MANAGEMENT DIRECTION

MANAGEMENT GOAL

As established by the Alaska Board of Game during its fall 2000 meeting, in response to the intensive management of game law [AS 16.05.255 (i) (4)], the Unit 1C management goal is to manage the deer population to achieve and maintain a population of 6,200 deer while supporting an annual harvest of 456 deer.

MANAGEMENT OBJECTIVES

- Maintain population densities on Douglas, Lincoln, and Shelter Islands at high levels as reflected by a mean pellet density of 2.0 pellet groups per plot.
- Monitor the deer harvest through general season harvest ticket reports.
- Participate in annual deer-pellet surveys.

METHODS

Historically, the department sent deer harvest surveys to a randomly selected group of hunters (approx. 33%) to collect deer harvest data. The survey was designed to collect information on hunter effort, hunt location, hunt timing, number of days hunted, transportation used, and the number of deer harvested. Survey results for hunter effort, success, and kill location were expanded to estimate results for all harvest ticket holders. This survey was implemented through regulatory year (RY) 2010 (a regulatory year begins 1 July and ends 30 June, e.g., RY10 = 1 July 2010–30 June 2011). However at the fall 2010 board meeting in Southeast Alaska the department submitted a proposal to change our harvest assessment methodology from the survey format to a harvest ticket report. The proposal passed, and the change was implemented in July 2011. The report is attached to harvest tickets, and all hunters are required to submit reports. Our harvest data for RY12 and RY13 is based on the harvest ticket report. One problem encountered since the implementation of the harvest ticket is that the department has encouraged hunters to report their hunting effort and harvest "online." The online system has caused confusion or did not work properly, and some hunters got frustrated with the reporting process and simply gave up. We do not know how this affected the data on hunting effort and harvest for RY12, however the department has spent a significant amount of time improving the online system leading up to RY13.

Since 1984, Unit 1C pellet-group surveys have been conducted to gauge deer population trends. Pellet transects were conducted on Douglas and Shelter Islands in Unit 1C during the report period (Table 1). Data in this report were compiled by regulatory year, with the current report period pertaining to RY12 and RY13.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

No population estimates are available for Unit 1C deer, but we monitor general population trends using deer pellet data (McCoy, 2011) and harvest report data. North Douglas Island pellet-group densities increased in RY12, however decreased significantly in RY13 (Table 1). Inner Point is located on the southwest side of Douglas Island and RY12 resulted in the highest mean count of 2.41 pellet groups per plot since 1991. Mean pellet group counts also decreased at Inner Point in RY13.

Shelter Island pellet surveys were conducted in RY12 but not in RY13. The 2012 survey resulted in a mean count of 2.14 pellet groups per plot, which is the second highest count for the area (Table 1) and significantly higher than either RY08 or RY09. The Shelter Island transects have not been done annually like Douglas Island. Mean pellet density for the past 10 years when surveys have been conducted (RY96–RY10) is 1.55 pellet groups per plot.

We do not think the decline in pellet group densities from RY12 to RY13 reflect an actual decline in the population. The winter 2012–2013 had near normal snowfall and deep snow accumulated at higher elevations. As snow accumulates at higher elevations, deer move downhill resulting in an increase in the overwinter density of deer and pellet groups at lower elevations. Total snowfall for winter 2013–2014 was also near normal, but persistent warm periods resulted in lower than normal accumulations at higher elevations, and we believe deer were not forced to use lower elevation habitat. Deer pellet transects end at 1,500 feet elevation. It is possible that a significant number of deer wintered above that elevation, so their pellets were not captured by the survey and deer abundance based on pellet groups appeared to decline.

MORTALITY

Harvest

Seasons and Bag Limits.

Area	Season	Resident and nonresident hunters
Unit 1C		
Douglas, Lincoln, Shelter, and Sullivan Islands	1 August–31 December	4 deer; antlerless deer may be taken only from 15 September–31 December
Unit 1C Remainder	1 August–31 December	2 antlered deer

Alaska Board of Game Actions and Emergency Orders. A proposal submitted during the 2013 Board of Game meeting to increase the deer bag limit on the mainland failed due to the depressed number of deer currently available in those locations. No emergency orders were issued for deer in Unit 1C during the report period.

Harvest by Hunters. Based on data gathered from deer harvest ticket report cards, hunters in Unit 1C killed 368 deer in RY12 and 413 in RY11 (Table 2), with bucks composing 69% and

56% of the annual harvest respectively. The majority of the Unit 1C deer harvest came from Douglas Island during the report period; 270 deer in RY12, and 257 deer in RY13. Due to its proximity to Juneau, accessibility by road, and higher density of deer, Douglas Island historically has produced the highest deer harvest in Unit 1C.

The deer harvest on Shelter and adjacent Lincoln Island decreased slightly in RY12, however increased significantly in RY13. In RY12, 34 deer were harvested on Shelter-Lincoln Islands; and in RY13, 80 deer were taken. The RY13 harvest is higher than it has been in recent years and is approaching a harvest level similar to those prior to the severe winter of 2006–2007 (Fig. 1). The increased harvest combined with higher pellet group density suggest deer numbers continue to rebound on the islands. Shelter and Lincoln Islands receive less hunting pressure than Douglas Island.

The deer harvest on Sullivan Island decreased, with 21 deer reported taken in RY12, and 18 deer taken in RY13. Currently, the geographic unit used to monitor deer harvest in this area includes a portion of the Unit 1C mainland along the Sullivan River. Although it is possible that a few deer were taken from the mainland we are confident that the majority, if not all, deer harvested in this area were taken on Sullivan Island.

Other less hunted areas, such as the mainland near Juneau, the Chilkat Range, Holkum Bay, and Cape Fanshaw, represent a small percentage of the Unit 1C deer harvest. No data are available concerning the deer population in these mainland areas, but low harvest and a significant number of days afield required to harvest a mainland deer suggest low numbers.

Hunter Residency and Success. During both years of the report period most hunters (85%) were Unit 1C residents; nonlocal residents composed the majority of the remaining hunters. Thirteen nonresident hunters reported effort in Unit 1C during RY12; 3 were successful. In RY13, 35 nonresidents reported hunting in Unit 1C and 2 were successful (Table 3). Hunter success rates decreased from an average of 31% during RY02–11 to 27% in RY12 and 28% in RY13 (Table 3). Unitwide, hunters spent an average of 8.9 days hunting per deer taken in RY12 and 8.3 days per deer in RY13 (Table 4). The average deer per hunter was 0.4 in both RY12 and RY13 (Table 4). On Douglas Island hunters averaged 9.6 days to take a deer in both RY12 and RY13, taking 0.4 and 0.3 deer per hunter in RY12 and RY13, respectively. On Shelter Island, hunters spent 3.5 days on average to take a deer in RY12; and in RY13, spent an average of 4.1 days to take a deer. Shelter Island hunters averaged 0.5 deer per hunter in RY12 and 0.7 deer per hunter in RY13. On Sullivan Island, hunter success was relatively high with 0.8 deer per hunter in RY12, and 0.6 deer per hunter in RY11. Hunters spent 2.5 days hunting per deer in RY12, and 4.6 days per deer in RY13.

Transport Methods. As in the past, most hunters used highway vehicles or boats to access hunting areas, with foot access being the third most popular method. During this report period 47% of hunters used highway vehicles for access, 27% used boats, 21% accessed hunting areas by walking, and approximately 5% used an airplane, off-road vehicle, or other modes of transportation. Hunters most commonly used highway vehicle and foot access while hunting the east and north sides of Douglas Island; boats were used for hunting on west Douglas, Shelter, Lincoln, and Sullivan Islands. As previously noted, Douglas Island accounted for the majority of the Unit 1C deer harvest; many of the Douglas Island hunting areas are accessible by road.

Although the majority of hunters used highway vehicles to access hunting areas and enjoyed good success during the report period, the number of deer harvested by boat-based hunters was higher (0.6 deer per hunter) and the number of days per deer (4.2 days per deer) was lower than hunters using highway vehicles (0.4 and 10, respectively) to access hunting areas.

Other Mortality

During both years of the report period an estimated 7–10 deer annually were reported to have been struck by vehicles and killed on Juneau roads. This estimate is low because not all vehicle-deer collisions are reported to the department. During spring, deer congregate on highway shoulders to eat emerging grass. We issue public service announcements annually to remind motorists to be aware of deer and other wildlife along roads.

CONCLUSIONS AND RECOMMENDATIONS

Douglas and Shelter Islands were the only pellet group transects surveyed during this report period. Finding staff available to conduct the surveys was difficult, and we determined surveying Sullivan Island was a high priority for the next report period. Transects were not conducted on Lincoln Island, or in mainland areas of Unit 1C during the report period. Only one transect (Inner Point) met the management objective of 2.0 pellet groups per plot during the report period. Overall, pellet group densities increased in Unit 1C in 2012 and decreased in 2013. We speculate that the decrease in pellet group densities in 2013 is related to limited snowfall not concentrating deer in normal wintering areas (Fig. 1). Harvest by hunters suggests that deer numbers have remained stable during the report period.

The harvest management objective of 456 deer was not met in either RY12 or RY13. During those years, relatively mild winters and below average snowfall likely allowed deer to remain at higher elevations where they were less accessible to hunters. In years when deep snow accumulates at higher elevations during hunting season deer concentrate at lower elevations, which can result in higher harvest. Still, the current harvest objective has only been met during 7 of the past 24 years, indicating it may be unrealistically high. Deer populations in Unit 1C are largely driven by winter severity. There are no workable options for improving habitat, predator numbers in areas where most people hunt are low, and under the current harvest strategy populations recover in a few years following a severe winter. Considering that hunter effort and success remain within historical ranges and that we have no workable options for increasing deer abundance in this unit, we should consider reducing the harvest objective to a level that can be met during more years. Based on historical data, an annual harvest objective for Unit 1C in the range of 350–375 deer would be achieved in 55–65% of years.

We should also consider conducting more frequent pellet group transects in mainland areas because we believe an increasing number of hunters are interested in hunting there. Based on observations and anecdotal information, mainland deer numbers near Juneau appear to be stable, but will likely remain at low densities due to snowfall and the presence of predators such as wolves and coyotes. The natural ability of deer to rebound quickly in areas without significant predator populations, such as islands in Unit 1C, should aid the growth of the deer population. Opportunities to harvest Sitka black-tailed deer will likely improve in the coming years if winters remain mild.

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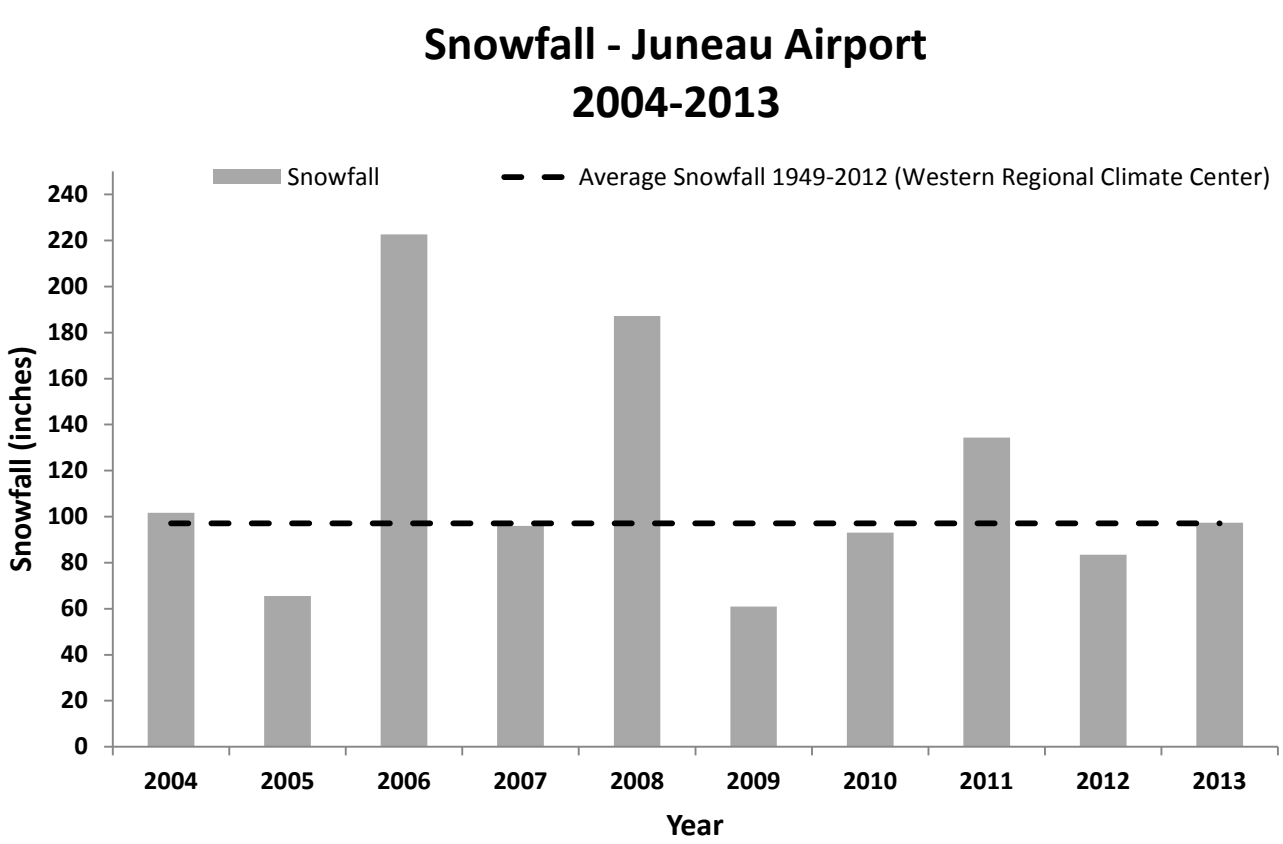

Figure 1. Annual winter snowfall measured at the Juneau airport, Southeast Alaska, 2004–2013. The average snowfall is depicted as a dashed line. (Data: Weather Forecast Office, Juneau).

Table 1. Unit 1C deer population trends as indicated by pellet-group surveys, Southeast Alaska, regulatory years[a] 1986–2013.

Area	Regulatory year	Groups/Plot	Mean pellet of plots	Number 95% CI
Kensington (VCU[b] 20)	1993	0.00	180	
Portland Island (VCU 27)	1986	0.99	381	0.87–1.12
North Douglas (VCU 35)	1993	0.91	315	0.74–1.09
	1994	0.86	306	0.70–1.02
	1995	0.97	323	0.81–1.12
	1996	1.43	323	1.24–1.62
	1997	1.55	321	1.32–1.77
	1998	1.03	273	0.86–1.19
	1999	0.88	282	0.71–1.04
	2000	1.01	335	0.85–1.17
	2001	0.68	200	0.50–0.85
	2002	0.93	267	0.77–1.09
	2003	1.52	288	1.28–1.76
	2004	2.08	151	1.61–2.54
	2005	2.02	263	1.74–2.29
	2006	2.28	165	1.83–2.73
	2007	2.84	316	2.49–3.19
	2008	1.85	220	1.57–2.14
	2009	1.07	312	0.89–1.24
	2010	1.53	328	1.30–1.75
	2011	1.21	253	1.02–2.70
	2012	1.56	306	1.38–1.75
	2013	0.83	242	0.69–0.97
Inner Point (VCU 36)	1991	2.05	204	1.75–2.36
	1994	1.41	254	1.21–1.60
	1995	1.68	240	1.45–1.91
	1996	2.36	252	2.08–2.64
	1997	0.84	280	0.69–0.98
	1998	1.06	239	0.87–1.25
	1999	1.09	280	0.90–1.28
	2001	0.82	198	0.64–1.00
	2002	0.76	272	0.60–0.92
	2003	0.88	242	0.68–1.08
	2005	2.33	147	1.93–2.72
	2006	2.10	182	1.70–2.50
	2007	1.59	232	1.32–1.85
	2008	1.44	268	1.20–1.68
	2009	1.52	263	1.30–1.74
	2010	2.12	267	1.29–1.74

Area	Regulatory year	Groups/Plot	Mean pellet of plots	Number 95% CI
	2012	2.41	250	2.12–2.70
	2013	1.55	267	1.37–1.73
Rhine Creek (VCU 38)	1996	0.31	108	0.14–0.47
Harbor Island (VCU 65)	1986	1.28	200	1.00–1.56
Couverden (VCU 117)	1992	0.35	350	0.27–0.44
Shelter Island (VCU 124)	1988	1.42	300	1.23–1.62
	1989	1.60	300	1.37–1.82
	1992	2.00	250	1.73–2.26
	1994	1.38	297	1.20–1.56
	1996	2.51	312	2.23–2.78
	1998	1.63	290	1.42–1.85
	2000	2.07	231	1.79–2.36
	2002	1.41	300	1.19–1.63
	2004	1.86	200	1.59–2.13
	2006	1.10	321	0.97–1.41
	2007	1.05	321	0.90–1.21
	2008	0.71	250	0.57–0.84
	2009	1.27	325	1.10–1.44
	2010	1.86	333	1.66–2.07
	2012	2.14	294	1.89–2.39
Lincoln Island (VCU 124)	1997	1.57	207	1.27–1.77
	2006	0.84	213	0.62–1.06
Sullivan Island (VCU 94)	1989	1.40	250	1.17–1.62
	1998	0.64	66	0.35–0.93
	2011	1.47	206	1.24–3.13

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1986 = 1 July 1986–30 June 1987.
[b] VCU = Value comparison units.

Table 2. Unit 1C annual deer harvest[a], Southeast Alaska, regulatory years[b] 1997–2013.

Regulatory year	Males	Females	Estimated total
1997	342	96	438
1998	272	116	388
1999	196	139	335
2000	172	69	241
2001	274	71	345
2002	217	141	358
2003	322	137	459
2004	240	68	308
2005	281	122	403
2006	393	284	677
2007	148	30	178
2008	209	127	336
2009	217	96	313
2010	345	163	508
2011	271	116	387
2012	255	113	368
2013	230	183	413

[a] Data from expanded results of hunter surveys.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1997 = 1 July 1997–30 June 1998.

Table 3. Unit 1C deer hunter residency and success, Southeast Alaska, regulatory years[a] 1990–2013.

	Successful						Unsuccessful						
Regulatory year	Local[b] resident	Nonlocal resident	Nonresident	Unk	Total	(%)	Local[b] resident	Nonlocal resident	Nonresident	Unk	Total	(%)	Total hunters
1990	291	32	2	0	325	(34)	564	56	3	0	623	(66)	948
1991	209	21	0	0	230	(28)	551	42	4	0	597	(72)	827
1992	321	15	6	0	342	(36)	550	63	5	0	618	(64)	960
1993	295	8	0	0	303	(34)	549	50	2	0	601	(66)	904
1994	359	4	2	0	365	(36)	574	67	11	0	652	(64)	1,017
1995	210	0	0	0	210	(21)	670	92	18	0	780	(79)	990
1996	247	10	0	0	257	n/a	–[c]	–[c]	–[c]	–[c]	–[c]	–[c]	–[c]
1997	241	4	0	0	245	(28)	573	33	9	0	615	(72)	860
1998	217	6	0	0	223	(23)	672	46	8	0	726	(77)	949
1999	201	26	0	0	227	(27)	576	49	0	0	625	(73)	852
2000	176	4	5	0	185	(23)	593	20	6	0	619	(77)	804
2001	240	15	0	0	255	(29)	555	61	10	0	626	(71)	881
2002	218	9	0	0	227	(29)	526	41	0	0	567	(71)	794
2003	293	14	0	0	307	(34)	541	49	0	0	590	(66)	897
2004	224	23	0	0	247	(30)	544	44	0	0	588	(70)	835
2005	237	24	5	0	266	(28)	626	48	14	0	688	(72)	954
2006	387	37	10	6	440	(47)	437	48	11	0	496	(53)	936
2007	116	13	5	0	134	(19)	520	42	10	0	572	(81)	706
2008	203	21	0	0	224	(26)	572	55	0	0	627	(74)	851
2009	197	15	0	0	212	(27)	520	52	13	0	585	(73)	797
2010	281	32	0	0	313	(35)	520	46	13	8	587	(65)	900
2011	247	27	2	5	281	(34)	455	42	27	14	538	(66)	819
2012	217	33	3	4	257	(27)	608	68	10	9	695	(73)	952
2013	235	37	2	4	278	(28)	597	80	33	11	721	(72)	999

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1990 = 1 July 1990–30 June 1991.
[b] Local means the hunter is a resident of Unit 1C.
[c] Data for unsuccessful hunters not available due to changes in survey.

Table 4. Unit 1C hunter effort and success (by number), Southeast Alaska, regulatory years[a] 1990–2013.

Regulatory year	Hunters	Days hunted	Deer killed	Deer/hunter	Days/deer
1990	948	3,262	499	0.5	6.5
1991	827	2,993	417	0.5	7.2
1992	959	3,202	511	0.5	6.3
1993	904	2,950	579	0.6	5.1
1994	1,017	4,151	659	0.6	6.3
1995	990	3,968	311	0.3	12.8
1996	257	_[b]	_[b]	_[b]	_[b]
1997	861	3,819	438	0.5	8.7
1998	950	3,396	388	0.4	8.7
1999	851	2,327	335	0.4	7.0
2000	803	2,312	241	0.3	9.6
2001	881	2,764	345	0.4	8.0
2002	795	2,563	358	0.5	7.2
2003	897	2,925	459	0.5	6.4
2004	835	3,115	307	0.4	10.1
2005	954	3,577	404	0.4	8.9
2006	937	3,188	676	0.7	4.7
2007	706	2,778	178	0.3	15.6
2008	853	3,580	336	0.4	10.7
2009	797	2,704	313	0.4	8.6
2010	901	3,341	508	0.6	6.6
2011	820	2,284	388	0.5	5.9
2012	952	3,282	368	0.4	8.9
2013	998	3,436	413	0.4	8.3

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1990 = 1 July 1990–30 June 1991.
[b] Data not available due to changes in survey.