
CHAPTER 26: BROWN BEAR MANAGEMENT REPORT

From: 1 July 2012

To: 30 June 2014

LOCATION

GAME MANAGEMENT UNIT: 26A (56,000 mi²)

GEOGRAPHIC DESCRIPTION: Western North Slope

BACKGROUND

Densities of brown bears (also referred to as grizzly bears) vary widely in Unit 26A, with densities highest in the foothills of the Brooks Range and lowest in the northern portion of the unit. Bear populations were reduced during the 1960s by hunting, but are currently stable or slowly increasing. Hunters, particularly those from outside the state, have continued to show an interest in hunting bears in Unit 26A. Subsistence hunting regulations allow residents to hunt brown bears primarily for food in Unit 26A.

Population abundance, density, and composition were studied by department staff during the 1980s through 2000s. A population estimate of 900–1,120 brown bears was reported by Reynolds (1989), with 400 bears in Unit 26A West and 500–720 bears in Unit 26A East. In 1992, the western foothills region of the Utukok and Kokolik drainages contained an estimated density of 29.5 bears/1,000 km² with a 95% confidence interval of 28.1–31.5 bears/1,000 km² (Reynolds et al. [n.d.]). Based on surveys flown during 2000, 2001, and 2003 in a 20,000 km² (8,000 mi²) area of eastern Unit 26A, Unit 26B, and western Unit 26C, a density of 18.3 brown bears/1,000 km² was calculated for areas within 1,500–4,000 feet elevation (Becker and Quang 2009; Reynolds et al. [n.d.]).

MANAGEMENT DIRECTION

MANAGEMENT GOAL

- Maintain the existing brown bear population.

MANAGEMENT OBJECTIVES

- Maintain a brown bear population of approximately 800 bears or greater.
- Monitor the harvest rate of brown bears.
- Minimize adverse interactions between brown bears and the public.

METHODS

We used brown bear sealing certificates and reported harvest from the Unit 26A subsistence registration brown bear hunt to determine seasonal harvests. For sealed bears we summarized the

date and location of taking, skull sizes, and sex/age composition of harvested animals. We summarized hunting activity by residency of hunters and their methods of transportation. For reporting population estimates and harvest summaries, we divided Unit 26A at 159°W longitude into Unit 26A East and Unit 26A West.

The sealing certificate system has not proven to be an effective method to determine local harvest, so over a decade ago we reviewed several community-based harvest assessment studies to get an insight into local harvest. The department uses those studies, and updates when available, to estimate unreported kill by local residents (see Harvest section below.)

Harvest data are summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g., RY12 = 1 July 2012–30 June 2013). Harvest during RY12 and RY13 was monitored through sealing and permit reporting process.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

No population estimate studies were attempted during the reporting period. Based on historical information, bear populations in the Brooks Range declined during the 1960s due to guided hunting (H. Reynolds, Wildlife Biologist, ADF&G, personal communication) but have recovered, partially due to permit hunt management initiated in RY77 (Reynolds 1989). The drawing permit hunt has since been eliminated, and bear densities appear to be at high levels relative to carrying capacity of the habitat.

Population Composition

No population composition studies were completed during the reporting period. Current sex ratios, composition, and productivity are believed to be similar to studies by Reynolds (1984) for the population within the western portion of the unit in the Utukok and Kokolik River drainages. Population composition in this study was equal male-female ratios for cubs and yearlings; ratios of 40% males and 60% females for bears older than 1 year; and age classifications of 10% cubs of the year, 10% yearlings, 14% 2-year-olds, 11% 3- and 4-year-olds, and 52% bears over 5 years of age. Reproductive measurements were 1) mean age at first reproduction, 8.0 years; 2) mean litter size, 2.0 cubs; 3) mean reproductive interval, 4.0 years; and 4) mean productivity, 0.5 cubs/year.

Distribution and Movements

No distribution and movement studies were completed during the reporting period. Previously, Carroll (1995) reported densities for habitat zones in Unit 26A at 0.5–2 bears/1,000 km² on the coastal plain, 10–30 bears/1,000 km² in the foothills, and 10–20 bears/1,000 km² in the mountains. The midrange of these densities was used to estimate a total population of 1,007 bears, with 81 in the coastal plain, 666 in the foothills, and 260 in the mountains. Based on reports from the mountains and foothills by hunters and pilots, and the increased number of bear encounters on the coastal plain, bear numbers have probably increased in all these areas.

Bear movements vary widely among individuals with some bears exhibiting movements within a limited home range and others having extensive movements. Carroll (2013) reported a movement of over 200 miles from Prudhoe Bay in May to Atkasuk in September.

MORTALITY

Harvest

Seasons and Bag Limits (RY12 and RY13).

<u>Unit and Bag Limits</u>	<u>Resident Open Season (Subsistence and General Hunts)</u>	<u>Nonresident Open Season</u>
<i>Unit 26A General Hunt</i>		
RESIDENT AND NONRESIDENT HUNTERS:		
1 bear every regulatory year.	No closed season	No closed season
<i>Unit 26A Subsistence Hunt</i>		
RESIDENT HUNTERS:		
1 bear per regulatory year by registration permit.	No closed season (Subsistence hunt only)	

Alaska Board of Game Actions and Emergency Orders. During the November 2011 meeting, the Board of Game reauthorized the resident brown bear tag fee exemption for general season and subsistence hunts (registration permit RB697). This exemption was effective in RY12. During the March 2013 Board of Game meeting, the same exemption was authorized for RY13.

Based on previous population data and hunt histories, harvest quotas have been established at 31 bears per year in Unit 26A East and 20 bears in Unit 26A West. If quotas are exceeded during 1 year, the following year quota will be reduced by the amount of overharvest in the first year. If average harvest is exceeded after 2 years, more restrictive regulatory action through emergency orders would be implemented. Since quotas were not reached during the reporting period, no emergency orders were issued. The system depends on open lines of communication among the department, guides, and hunters.

Human-Induced Harvest. Twenty-six bears were reported harvested in general season hunts during RY12. None were reported taken in subsistence hunts (RB697) or through defense of life or property situations. All harvest was in the fall season in the eastern portion of the unit, Unit 26A East (Table 1). Twenty-two bears were males and 4 bears were females (Table 2).

Twenty-one bears were reported harvested in general season hunts during RY13. None were reported taken in subsistence hunts (RB697) or through defense of life or property situations. All 21 bears were killed in Unit 26A East and all were taken during the fall hunt (Table 1). Fifteen bears were males and 6 were females (Table 2).

The reported harvest for RY12 (26 bears) was higher than all reports since RY98 and approaches the 10-yr average harvest recorded during RY88–RY97 (Carroll 2007). The reported harvest in RY13 was slightly less than RY12 and similar to the previous reporting period (Carroll 2013). Overall, harvest patterns are similar in recent years and well below the 5% harvest rate of 45–56 bears (Table 1). Reported harvest did not exceed annual harvest quotas so no additional hunt management actions to modify general season hunts were needed.

Skull Size and Age. For bears harvested during RY12, the mean skull size for males was 21.1 inches and 19.8 inches for females; the mean age was 8.5 years for males and 6.5 years for females. During RY13 the mean skull size for males was 20.7 inches and 19.5 for females; the mean age for males was 6.9 years and 6.2 years for females (Table 3).

Permit Hunts. Drawing permit hunts were discontinued by board action as of RY96. In both years of the reporting period, no bears were reported taken in the subsistence registration permit hunt (RB697).

Hunter Residency and Success. The reported harvest of bears in Unit 26A during RY12 was 15 taken by nonresidents, 9 by nonlocal Alaska residents, and 2 by local North Slope residents. During RY13, 16 bears were reported harvested by nonresidents, 5 by nonlocal Alaska residents, and none by local residents (Table 4).

Harvest Chronology. During RY12, 1 bear was harvested during July, 20 in August, and 5 in September. During RY13, 16 bears were reported harvested in August and 5 in September (Table 5).

Transport Methods. Almost all bear hunters used aircraft as transportation in Unit 26A. During RY12, 24 hunters used aircraft and 2 used ORVs. During RY13, all 21 hunters used aircraft for transportation (Table 6).

As reported previously, the sealing certificate system has not proven to be an effective method to determine actual local harvest. For example, Fuller and George (1997) reported that in 1992 local residents harvested at least 9–10 bears whereas sealing certificates indicated a reported local harvest of 3 bears. We continue to accept the review of results of North Slope Borough, ADF&G, and other community-based harvest assessment studies which estimates an unreported harvest of 6–12 bears annually (Braund and Associates and Institute of Social and Economic Research 1991, 1993; Brower and Opie 1996, 1997; Fuller and George 1997; Hepa et al. 1997; Pedersen 1989, 1995, 2001). These numbers are reflected in the unreported estimated kill column on Table 2.

Other Mortality

No recent estimate of natural mortality for brown bears in Unit 26A is available. However, Reynolds and Hechtel (1983) reported mortality rates among offspring accompanied by marked adult females in the western Brooks Range to be 44% for cubs, 9% for yearlings, and 14% for 2-year-olds from 1977 to 1981.

HABITAT

Assessment

Most of the brown bear habitat in Unit 26A remains undisturbed and supports a fairly large population of bears. It would be difficult to evaluate habitat relationships and their available food sources, particularly the broad distribution of herbaceous forage and the widespread occurrence of ground squirrels. Caribou are present seasonally and represent a large available food resource to bears for parts of the year. Moose in the Colville River drainage have declined substantially and these reductions in prey species may affect bear numbers.

Potential impacts or hazards to brown bear habitat include oil, gas, and mineral exploration and development. Exploration continues to occur in Unit 26A, including areas of brown bear range within the foothills on the north side of the Brooks Range.

As noted previously (Carroll 2013), some east-west oriented ridges in Unit 26A are used much more heavily than the surrounding area by brown bears for at least part of the year. These areas should be given special consideration in resource development planning efforts.

Enhancement

No habitat enhancement activities were completed in Unit 26A during the reporting period.

NONREGULATORY MANAGEMENT PROBLEMS/NEEDS

We continue to promote several programs designed to minimize negative interactions between people and brown bears. These include providing educational materials to local people through radio talk shows, written public notices, and presentations at public meetings. We participated in planning sessions and commented on environmental impact statements, integrated activity plans, resource management plans, and other documents to help identify and minimize impacts to brown bears during exploration and development projects on the North Slope. We have worked closely with exploration and development companies to provide guidelines for bear safety and how to deal with bears in their work camps.

Brown bears breaking into and damaging cabins of local residents continues to be a serious issue and we have offered advice on using electrified bear fencing to protect remote cabins. Last reporting period, as a demonstration project, we provided fencing for a cabin where bears had broken in for 3 consecutive years. The cabin owner continues to report that no bears have broken into his cabin since installing electric fencing. This method of protecting camps may become more accepted as people learn of these results.

CONCLUSIONS AND RECOMMENDATIONS

During the last 4 years (RY10–RY13) hunters have reported 11, 22, 26, and 21 bears harvested, respectively. Three of these years have been slightly greater than the range 9–18 bears during the period RY98–RY08. All recent years have been below the 10-yr average number of 27.6 bears harvested from RY88–RY97 (Carroll 2007) and well below the 5% harvest rate of 45–56 bears. Even if unreported harvest is as high as 100% of the reported harvest, the total estimated yearly harvest would still be well within sustained yield harvest limits.

Historically, unreported harvest and noncompliance with bear hunting regulations has been related to bears causing damage at remote cabins or other human-bear conflicts. With hunting seasons increased to 12 months per year, tag fee waivers, and subsistence regulations coinciding with local hunting practices, we anticipate improved harvest reporting and compliance. Increased use of electric fencing to protect remote camps and cabins from nuisance bears should also reduce nonhunting kills and unreported harvest.

Since 1996, the Board of Game has liberalized bear regulations in Unit 26A several times by lengthening seasons, increasing bag limits, and removing drawing permit requirements. It has been surprising that since 1996 the bear harvest continues to be less than before the regulations were liberalized. This can be partially explained by a reduction in the number of guided moose hunters who would have secondarily harvested bears. Because the harvest remains well below the allowable sustained yield of approximately 51 bears, we recommended that the tag fee continue to be eliminated for the general season and subsistence hunts to provide more opportunity for hunters. We recommend no further regulation changes at this time.

REFERENCES CITED

- Becker, E. F., and P. X. Quang. 2009. A gamma-shaped detection function for line-transect surveys with mark-recapture and covariate data. *Journal of Agricultural, Biological, and Environmental Statistics* 14(2):207–223.
- Braund, S. R. and Associates, and Institute of Social and Economic Research. 1991. North Slope subsistence study – Barrow, 1987, 1988, and 1989. Technical Report No. 149. Prepared for the U.S. Department of Interior, Minerals Management Service.
- Braund, S. R. and Associates, and Institute of Social and Economic Research. 1993. North Slope subsistence study – Wainwright, 1988 and 1989. Technical Report No. 147. Prepared for the U.S. Department of Interior, Minerals Management Service.
- Brower, H. K., and R. T. Opie. 1996. North Slope Borough subsistence documentation project: Data for Anaktuvuk Pass, Alaska for the period July 1, 1994 to June 30, 1995. North Slope Borough Department of Wildlife Management Report. (Available from North Slope Borough Department of Wildlife Management, Box 69, Barrow, Alaska 99723 USA).
- Brower, H. K., and R. T. Opie. 1997. North Slope Borough subsistence documentation project: Data for Nuiqsut, Alaska for the period July 1, 1994–June 30, 1995. North Slope Borough Department of Wildlife Management Report. (Available from North Slope Borough Department of Wildlife Management, Box 69, Barrow, Alaska 99723 USA).
- Carroll, G. 1995. Unit 26A brown/grizzly bear. Pages 289–303 [In] M. V. Hicks, editor. Brown/grizzly bear management report of survey-inventory activities 1 July 1992–30 June 1994. Alaska Department Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Study 4.0, Juneau.
- Carroll, G. M. 2007. Unit 26A brown bear. Pages 324–339 [In] P. Harper, editor. Brown bear management report of survey and inventory activities 1 July 2004–30 June 2006. Alaska

Department of Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration 4.0, Juneau.

- Carroll, G. 2013. Unit 26A brown bear. Pages 323–335 [In] P. Harper and L. A. McCarthy, editors. Brown bear management report of survey and inventory activities 1 July 2010–30 June 2012. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2013-4, Juneau.
- Fuller, A. S., and J. C. George. 1997. Evaluation of subsistence harvest data from the North Slope Borough 1993 census for eight North Slope villages: For the calendar year 1992. North Slope Borough Department of Wildlife Management Report. Available from North Slope Borough Department of Wildlife Management, Box 69, Barrow, Alaska 99723 USA.
- Hepa, R. T., H. K. Brower, and D. Bates. 1997. North Slope Borough subsistence harvest documentation project: Data for Atqasuk, Alaska for the period July 1, 1994 to June 30, 1995. Department of Wildlife Management, North Slope Borough, Barrow, Alaska.
- Pedersen, S. 1989. Pt. Lay subsistence land and resource use. In Impact Assessment, Inc: Pt. Lay case study. Technical Report No. 139. U.S. Department of the Interior, Minerals Management Service, Alaska OCS Region, Anchorage.
- Pedersen, S. 1995. Nuiqsut. Chapter XXII, Volume 5. [In] J. Fall and C. Utermohle, editors. An investigation of the sociocultural consequences of outer continental shelf development in Alaska. Technical Report No. 160. U.S. Department of the Interior, Minerals Management Service, Alaska OCS Region, Anchorage.
- Pedersen, S. 2001. Subsistence harvest levels and spatial dimensions of caribou, moose, brown bear and muskox hunting in Nuiqsut during regulatory year 2000. Draft Report: Division of Subsistence, Arctic Region, Alaska Department of Fish and Game, Division of Wildlife Conservation, Fairbanks.
- Reynolds, H. V. 1984. Units 24–26 brown/grizzly bear. Pages 94–96 [In] J. A. Barnett, editor. Brown/grizzly bear annual report of survey-inventory activities 1 January 1982–31 December 1982. Alaska Department Fish and Game, Division of Game, Federal Aid in Wildlife Restoration Job 4.0, Juneau.
- Reynolds, H. V. 1989. Units 24, 25ABD, and 26ABC brown/grizzly bear. Pages 174–184 [In] S. O. Morgan, editor. Brown/grizzly bear annual report of survey-inventory activities, 1 January 1987–31 December 1987. Alaska Department Fish and Game, Division of Wildlife Conservation, Federal Aid in Wildlife Restoration Study 4.0, Juneau.
- Reynolds, H. V., and J. L. Hechtel. 1983. Structure, status, reproductive biology, movement, distribution, and habitat utilization of a grizzly bear population. Alaska Department Fish and Game, Division of Game, Research Progress Report 1 July 1981–30 June 1982, Federal Aid in Wildlife Restoration Job 4.14R, Juneau.

Reynolds III, H. V., E. F. Becker, R. A. Strauch, and J. W. Burch. [n.d.]. Application of a double-count line transect method to estimate density of brown bears in arctic Alaska. Alaska Department of Fish and Game, Division of Wildlife Conservation, Unpublished Report, Fairbanks.

PREPARED BY:

Geoff M. Carroll
Wildlife Biologist III

APPROVED BY:

Peter J. Bente
Management Coordinator

Please cite any information taken from this section, and reference as:

Carroll, G. M. 2015. Unit 26A brown bear. Chapter 26, Pages 26-1 through 26-12 [In] P. Harper and L. A. McCarthy, editors. Brown bear management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-1, Juneau.

The State of Alaska is an Affirmative Action/Equal Opportunity Employer. Contact the Division of Wildlife Conservation at (907) 465-4190 for alternative formats of this publication.

Product names used in this publication are included for completeness but do not constitute product endorsement.

Table 1. Unit 26A reported harvest and estimated population size of brown bears by area and season, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Number of brown bears per area			Harvest by hunters	
	Unit 26A West ^c	Unit 26A East	Total	Fall	Spring
2000	6	12	18	16	2
2001	0	13	13	13	0
2002	4	10	14	12	2
2003	4	12	16	14	2
2004	0	15	15	15	0
2005	0	2	2	2	0
2006	3	10	13	11	2
2007	3	6	9	8	1
2008	3	17	20	17	3
2009	3	16	19	15	4
2010	2	9	11	10	1
2011	0	22	22	22	0
2012	0	26	26	26	0
2013	0	21	21	21	0
Estimated population	400	500–720	900–1,120		
5% Harvest rate	20	25–36	45–56		

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Figures for regulatory years 1988–1999 are available in Carroll (2007).

^c West of 159° West longitude.

Table 2. Unit 26A brown bear harvest by sex, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Harvest by hunters						Nonhunting kill ^b	Unreported estimated kill	Total estimated kill	
	M	(%)	F	(%)	Unk	Total				
2000	14	(78)	4	(22)		18	0	18	6–12	24–30
2001	10	(77)	3	(23)		13	0	13	6–12	19–25
2002	10	(71)	4	(29)		14	0	14	6–12	20–26
2003	12	(75)	4	(25)		16	0	16	6–12	22–28
2004	11	(73)	4	(27)		15	0	15	6–12	21–27
2005	2	(100)	0	(0)		2	0	2	6–12	8–14
2006	9	(69)	4	(31)		13	0	13	6–12	18–25
2007	6	(67)	3	(33)		9	0	9	6–12	15–21
2008	14	(70)	6	(30)		20	0	20	6–12	26–32
2009	13	(68)	6	(32)		19	0	19	6–12	24–31
2010	9	(90)	1	(10)	1	11	0	11	6–12	17–23
2011	19	(82)	3	(18)		22	0	22	6–12	28–34
2012	22	(85)	4	(15)		26	0	26	6–12	32–38
2013	15	(71)	6	(29)		21	0	21	6–12	27–33

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Figures for regulatory years 1985–1999 are available in Carroll (2007).

Table 3. Unit 26A brown bear skull size and age, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Mean skull size (inches)				Mean age (years)			
	Male	<i>N</i>	Female	<i>N</i>	Male	<i>N</i>	Female	<i>N</i>
2000	21.9	14	20.8	4	11.0	14	9.0	4
2001	21.0	10	18.7	3	9.4	10	5.3	3
2002	20.8	10	18.5	4	6.8	10	10	4
2003	21.6	12	19.3	4	10.4	12	7.8	4
2004	21.1	10	19.2	4	9.9	10	7.5	4
2005	23.5	2		0	19	2		0
2006	20.3	9	20.4	4	8.7	9	8	4
2007	22.1	6	19.5	3	13.3	5	9.7	3
2008	22.7	12	20.1	6	13.5	12	11.2	6
2009	20.3	10	19.5	5	6.7	10	6.4	5
2010	22.0	8	19.6	1	9.6	8		0
2011	20.6	14	17.1	3	8.6	14	6.0	3
2012	21.1	22	19.8	4	8.5	18	6.5	4
2013	20.7	15	19.5	6	6.9	15	6.2	6

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Figures for regulatory years 1985–1999 are available in Carroll (2007).

Table 4. Unit 26A brown bear successful hunter residency, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Local resident ^c	Nonlocal resident	Nonresident	Unknown	Total hunters
2000	3	3	12	0	18
2001	0	4	9	0	13
2002	0	6	8	0	14
2003	1	6	9	0	16
2004	0	6	9	0	15
2005	0	1	1	0	2
2006	0	3	10	0	13
2007	1	5	3	0	9
2008	6	6	8	0	20
2009	4	8	7	0	19
2010	2	4	5	0	11
2011	6	7	9	0	22
2012	2	9	15	0	26
2013	0	5	16	0	21

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Figures for regulatory years 1985–1999 are available in Carroll (2007).

^c Local means North Slope residents.

Table 5. Unit 26A brown bear harvest chronology by time period, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Month								<i>N</i>
	Jul	Aug	Sep	Oct	Nov	Apr	May	Jun	
2000		10	6	0	0	0	2	0	18
2001		7	6	0	0	0	0	0	13
2002		6	6	0	0	1	1	0	14
2003		7	6	0	0	0	3	0	16
2004		8	7	0	0	0	0	0	15
2005		1	1	0	0	0	0	0	2
2006		8	3	0	0	0	2	0	13
2007		5	3	0	0	0	1	0	9
2008		8	8	1	0	2	1	0	20
2009	2	11	3	0	0	1	2	0	19
2010		7	3	0	0	0	0	1	11
2011		14	5	3	0	0	0	0	22
2012	1	20	5	0	0	0	0	0	26
2013	0	16	5	0	0	0	0	0	21

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Data for regulatory years 1985–1999 are available in Carroll (2007).

Table 6. Unit 26A brown bear harvest by transport method, Alaska, regulatory years^a 2000–2013^b.

Regulatory year	Harvest by transport method												Total <i>n</i>		
	Airplane		Horse		Boat		Snowmachine		ORV		Walk			Unknown	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	
2000	15	(83)			1	(6)	1	(6)			1	(5)			18
2001	13	(100)													13
2002	12	(86)					1	(7)			1	(7)			14
2003	12	(75)							1	(6)	2	(13)	1	(6)	16
2004	12	(80)			3	(20)									15
2005	2	(100)													2
2006	13	(100)													13
2007	6	(67)							2	(22)	1	(11)			9
2008	14	(70)			5	(25)	1	(5)							20
2009	14	(74)			3	(16)	1	(5)			1	(5)			19
2010	7	(64)			3	(27)					1	(9)			11
2011	15	(68)			1	(4.5)	2	(9)	3	(14)			1	(4.5)	22
2012	24	(92)							2	(8)					26
2013	21	(100)													21

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2000 = 1 July 2000–30 June 2001.

^b Data for regulatory years 1985–1999 are available in Carroll (2007).