



2011-12 North Carolina Avid Quail Hunter Survey
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Since 1984, an annual avid quail hunter survey has been conducted by the North Carolina Wildlife Resources Commission (NCWRC) to estimate long term quail hunting trends and to provide annual insight into avid quail hunting demographics. Volunteer quail hunters participate by recording and submitting their annual hunting trip activity throughout the fall/winter hunting season. Quail hunting activity is recorded by county and landownership type (e.g. Private or Game Lands) within 8 management regions within North Carolina (Fig. 1). Reported hunting trips generally consisted of a single day per hunting party.

Northern Bobwhite Quail Management Regions
and Estimated Relative Abundance

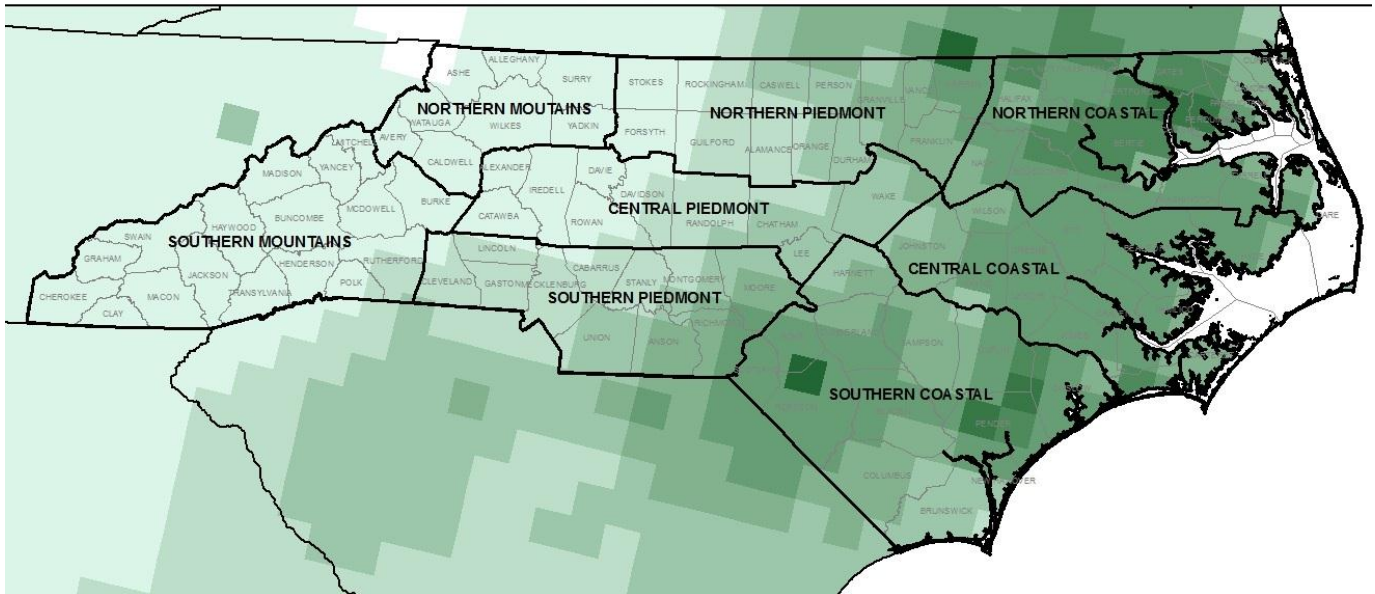


Figure 1. 6 North Carolina Quail Management Units and Estimated Relative Abundance. Estimated relative abundance of quail based on USGS Breeding Bird Survey Data using smoothed modeling procedures, 2006-2010. Darker shading represents higher relative abundance.

Seventy-two avid quail hunters responded during the 2011-12 survey season, providing quail hunting statistics for 985 hunting trips (Fig. 2 and 3). The total number of reported hunting trips has declined primarily due to the decrease in avid hunter survey respondents. Most reported quail hunting occurred in the coastal regions with the least in the mountains. Despite the long-term increase in avid quail hunter survey respondents' age, average age has appeared to stabilize at approximately 58 years old over the last 10 years (Fig. 4).

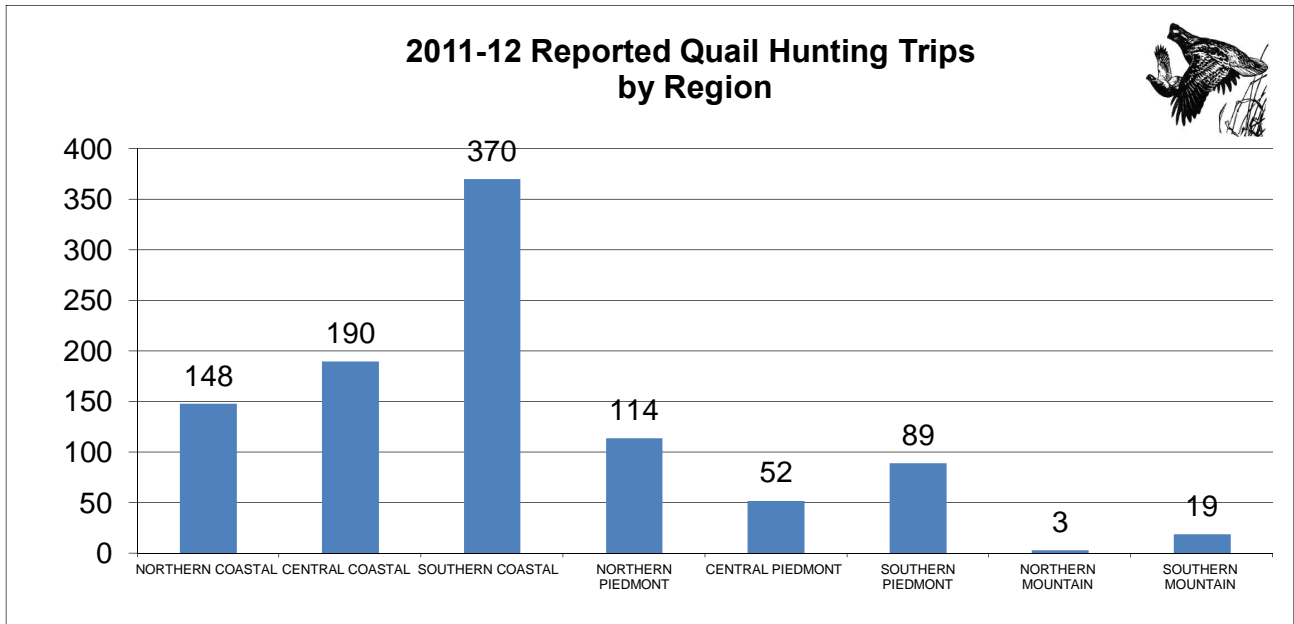


Figure 2. 6 Total Number of Reported Hunting Trips by Region by Avid Quail Hunter Survey Respondents during the 2011-12 Hunting Season.

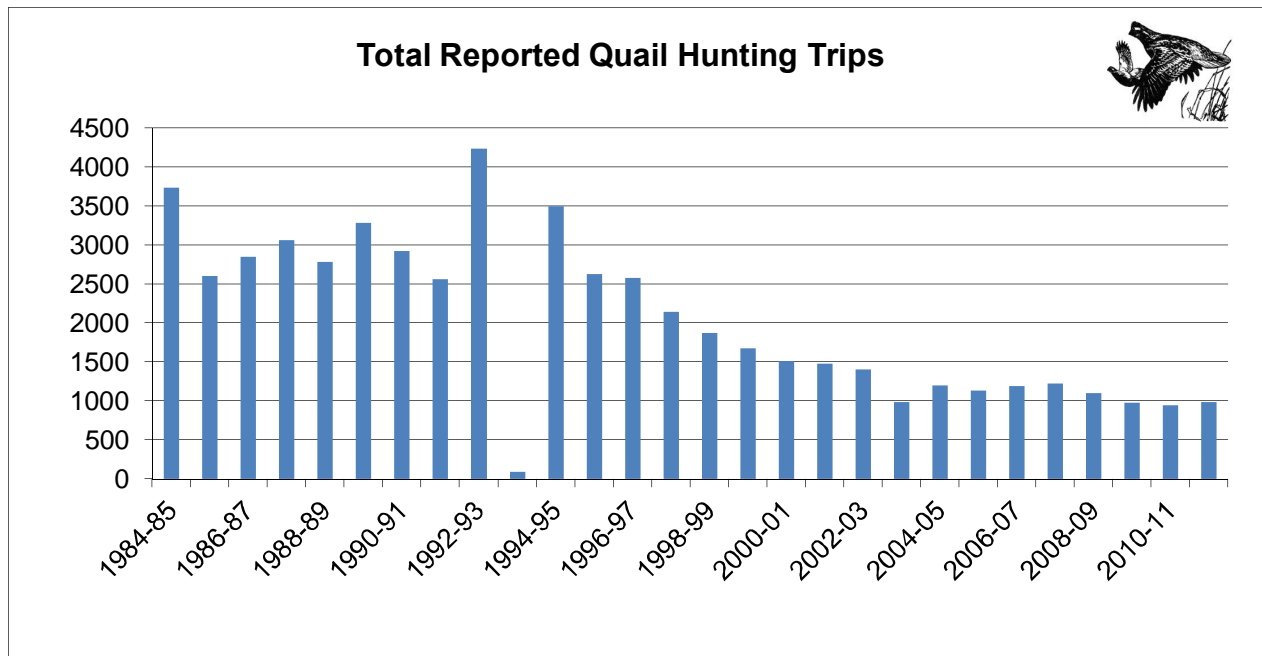


Figure 3. - Total Number of Reported Hunts by Volunteer Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

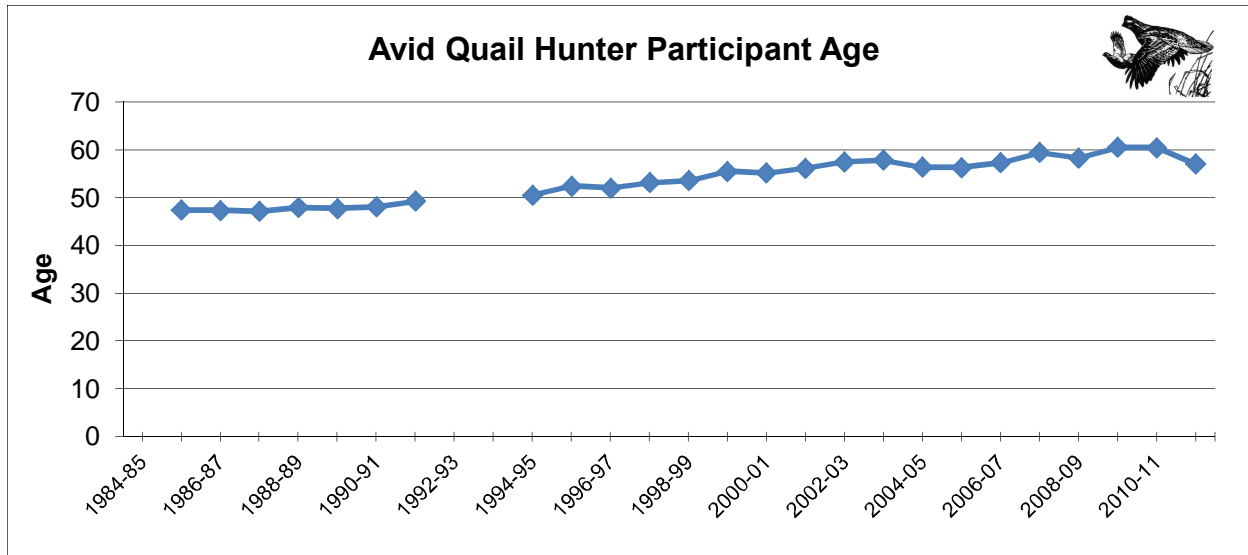


Figure 4. - Average Avid Quail Hunter Age based on Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

Since 1984, the long term trend for the number of trips spent hunting continued to decline while the number of hours hunting per trip has remained fairly consistent. Avid quail hunters went afield an average of 13.7 trips and hunted 3.9 hours per trip during the 2011-12 season (Fig. 5). Party size averaged 1.6 hunters per hunting trip.

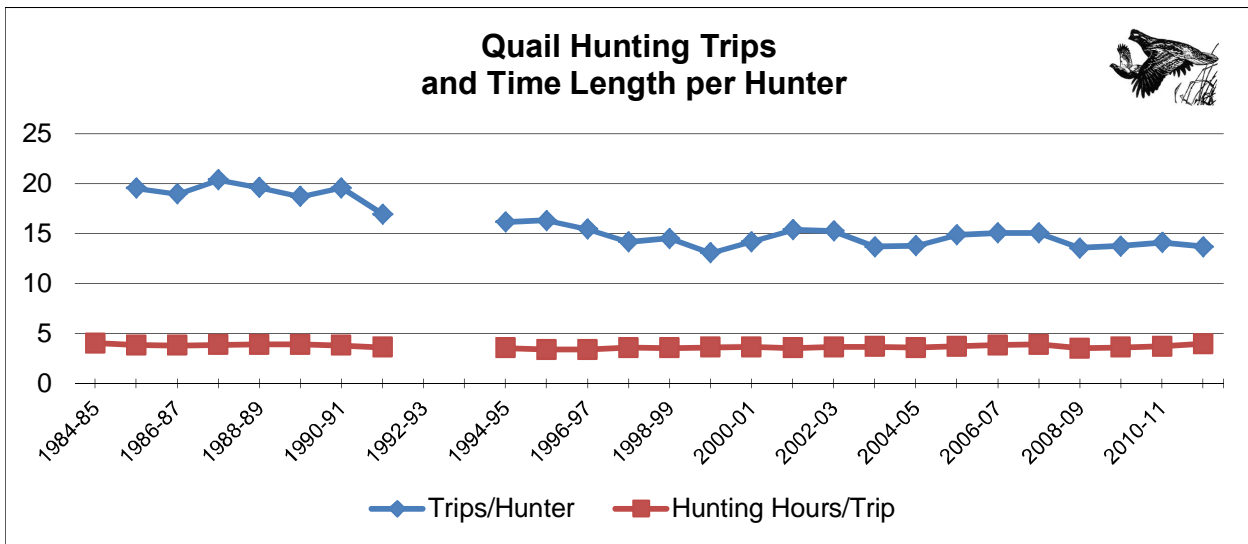


Figure 5. - Average Number of Hunting Trips per Hunter and Hunting Hours per Trip based on Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

Covey flush rate trends are presented throughout this document, both by hunting trip and by hour hunted. Flush rate per hour is probably the best indicator of quail abundance during the hunting season. However it is recognized that hunters will focus their hunting activity over time to areas with relatively more quail. This change in hunting behavior has a tendency to inflate annual estimates and skew trend estimates which may not represent actual annual changes in quail abundance across the full landscape.

Since the inception of the survey, long term quail covey flush rates have declined (Fig. 6). Historically, more coveys were found in the coastal regions than in the piedmont or mountains. In 2011-12, coastal flush rates continued to be higher (0.55 coveys/hunting hour), than either the piedmont (0.20) or the mountains (0.33). The high degree of variability seen in the mountain region estimate over the past 5 years was likely a function of a low number of reported hunts from the region, rather than actual changes in average rates. Flush rates continued to be higher on private land versus public game lands (Fig. 7).

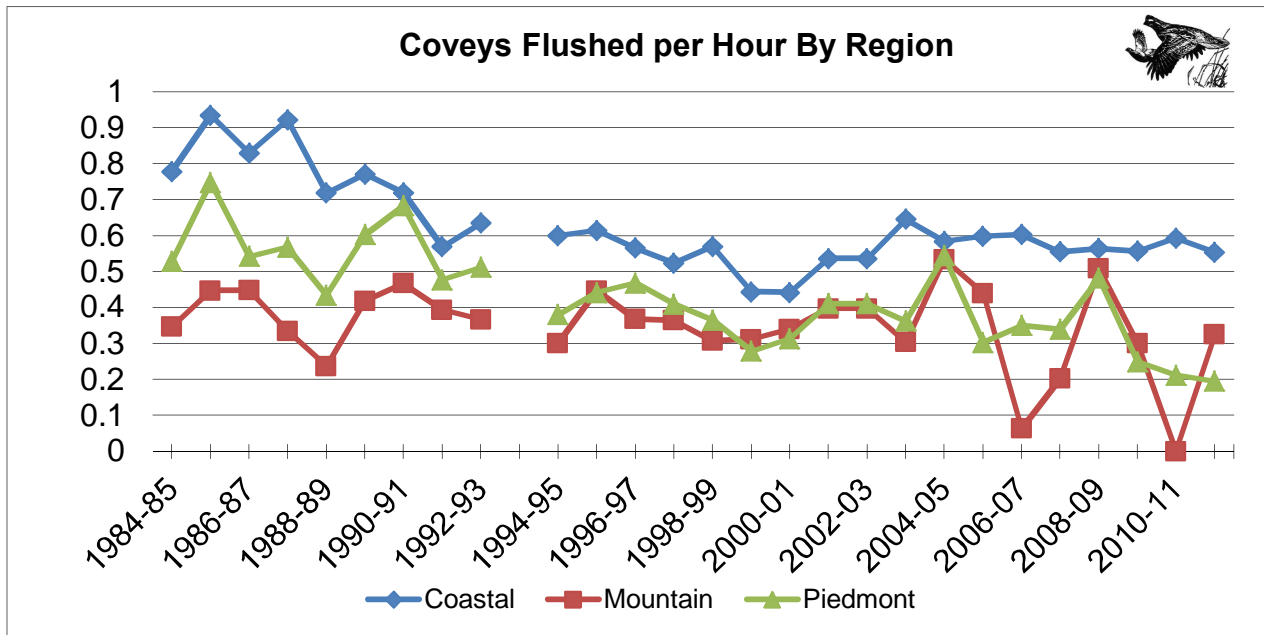


Figure 6. - Average Coveys Flushed per Hour by Region by Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

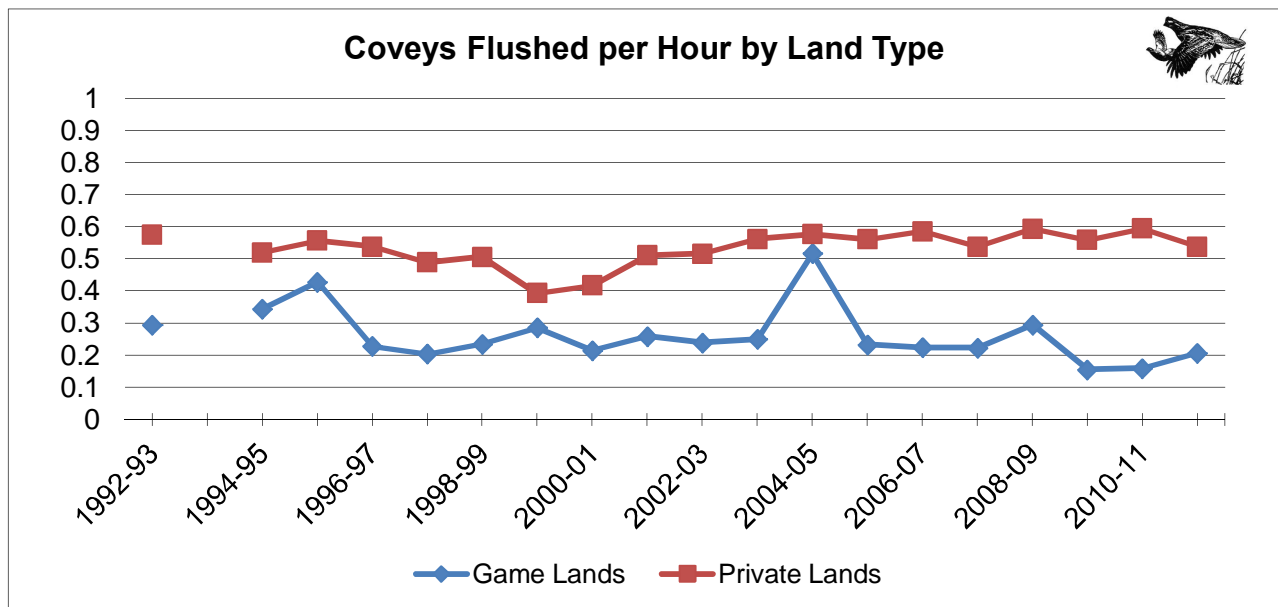


Figure 7. - Average Quail Coveys Flushed per Hour by Land Type by Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

The number of coveys flushed and quail bagged has remained relatively stable over the past 10 years for avid quail hunters (Fig. 8). Some respondents commented that they were likely to abandon quail hunting when quail were scarce. The stabilization of flush and harvest rates may indicate the minimum acceptable threshold for avid quail hunting to occur. The long term change quail bagged per covey flushed may also indicate a decrease in covey size, since rates has declined from 1.7 to 0.9 quail bagged/covey flushed (Fig. 9). However, this change may also be related to more hunters choosing not to shoot flushed quail because of their concern over their observed decline of quail abundance and/or their desire to hunt primarily to train bird dogs. During the 2011-12 season, avid hunters flushed on average 1.8 coveys and harvested 2.0 quail per hunting trip. No quail were flushed on 39% of the reported hunting trips.

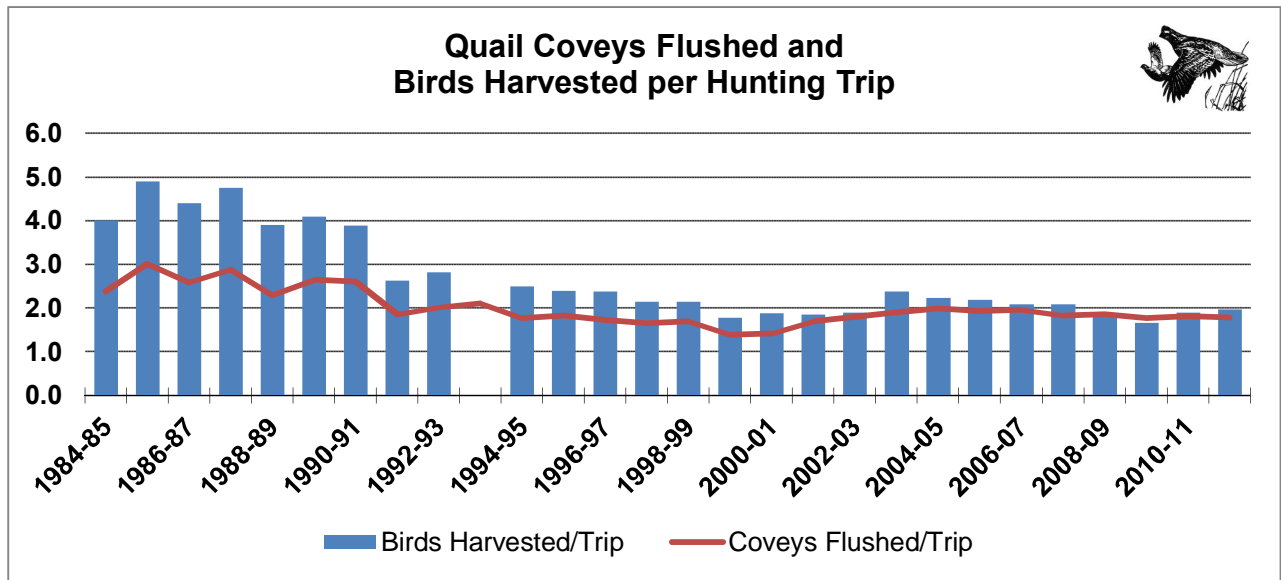


Figure 8. - Average Number of Quail Coveys Flushed and Birds Harvested per Hunting Trip by Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

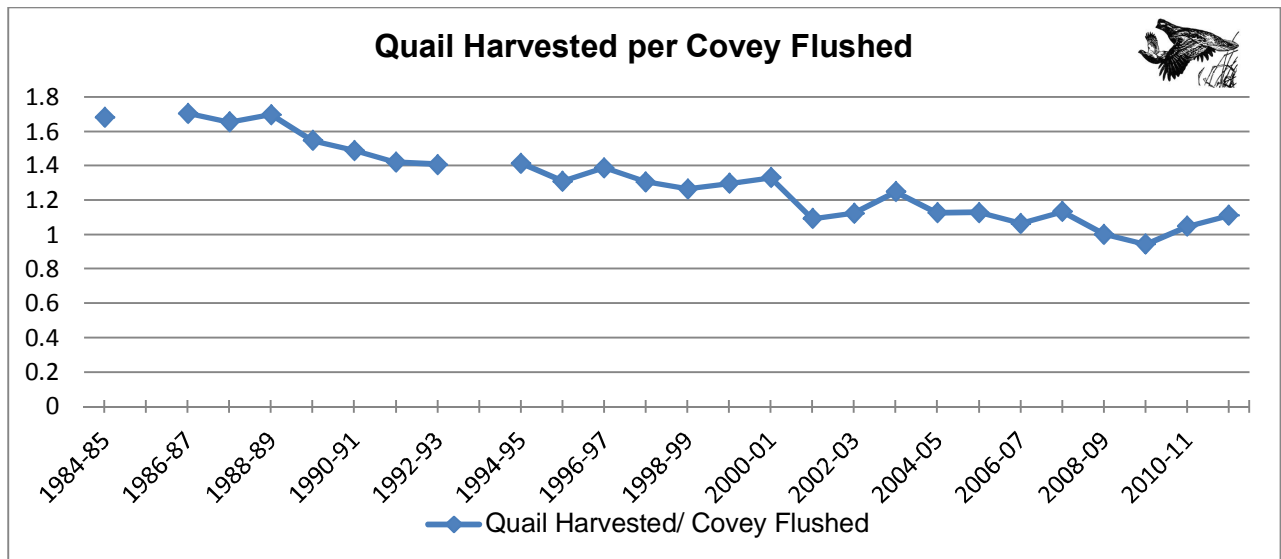


Figure 9. - Average Number of Quail Harvested per Covey Flushed by Avid Quail Hunters Survey Respondents, 1984-85 through 2011-12 hunting seasons.

For the 2011-12 hunting season, avid hunters reported the highest flush and harvest rates in the central coastal region (Fig. 10). Many avid hunters commented that coveys are now commonly found in thick wooded areas and dense cutovers compared to field edges in the past. Reported quail hunting effort appeared to be consistent throughout the season which was open November 19th to February 29th (Fig. 11). Both flush and harvest rates slightly improved throughout the hunting season (Fig. 12).

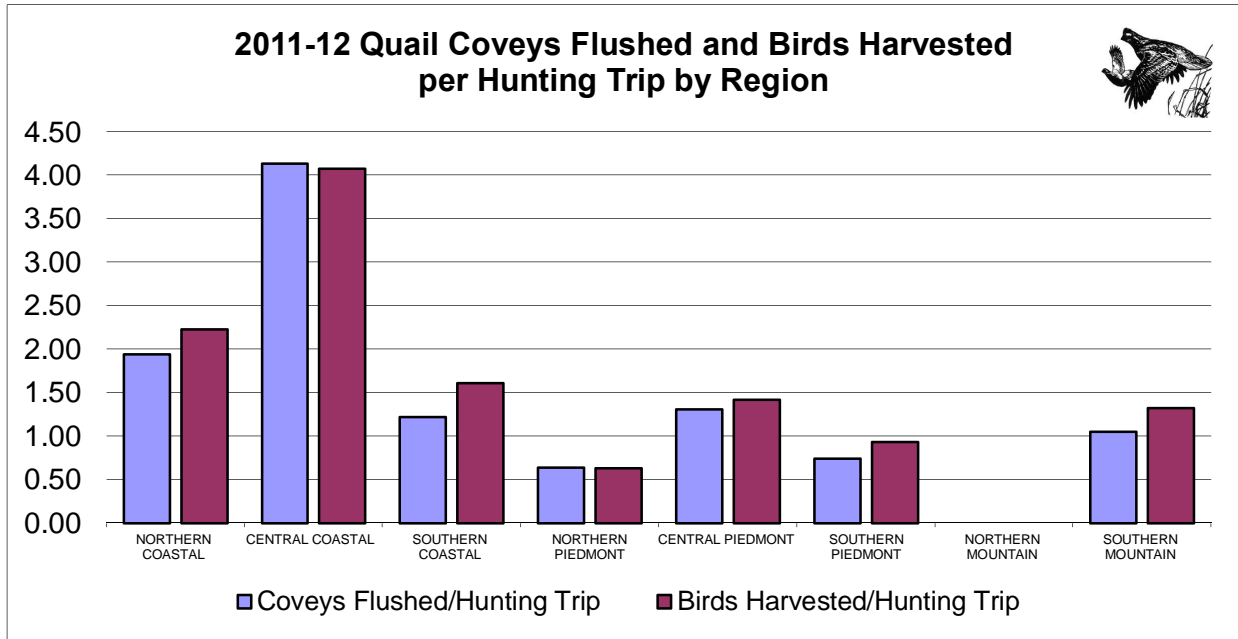


Figure 10. - Average Number of Quail Coveys Flushed and Birds Harvested per Hunting Trip by Region based on Avid Quail Hunter Survey Respondents during the 2011-12 hunting season.

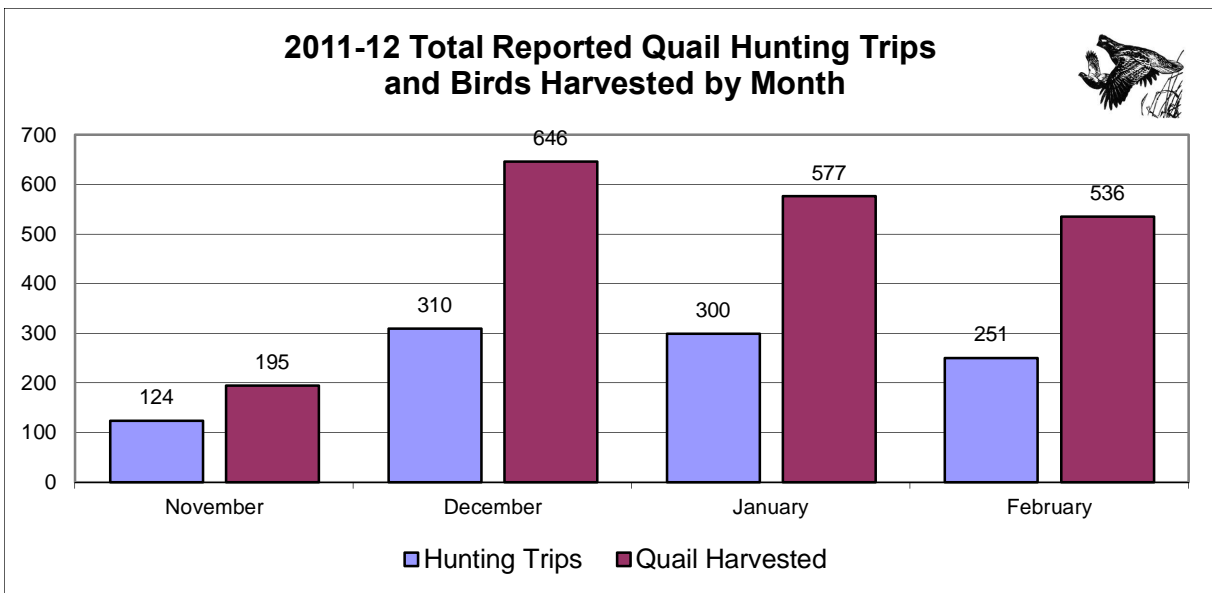


Figure 11. - Total Reported Quail Hunting Trips and Harvests by Avid Quail Hunter Survey Respondents during the 2011-12 Hunting Season (November 19, 2011 through February 29, 2012).

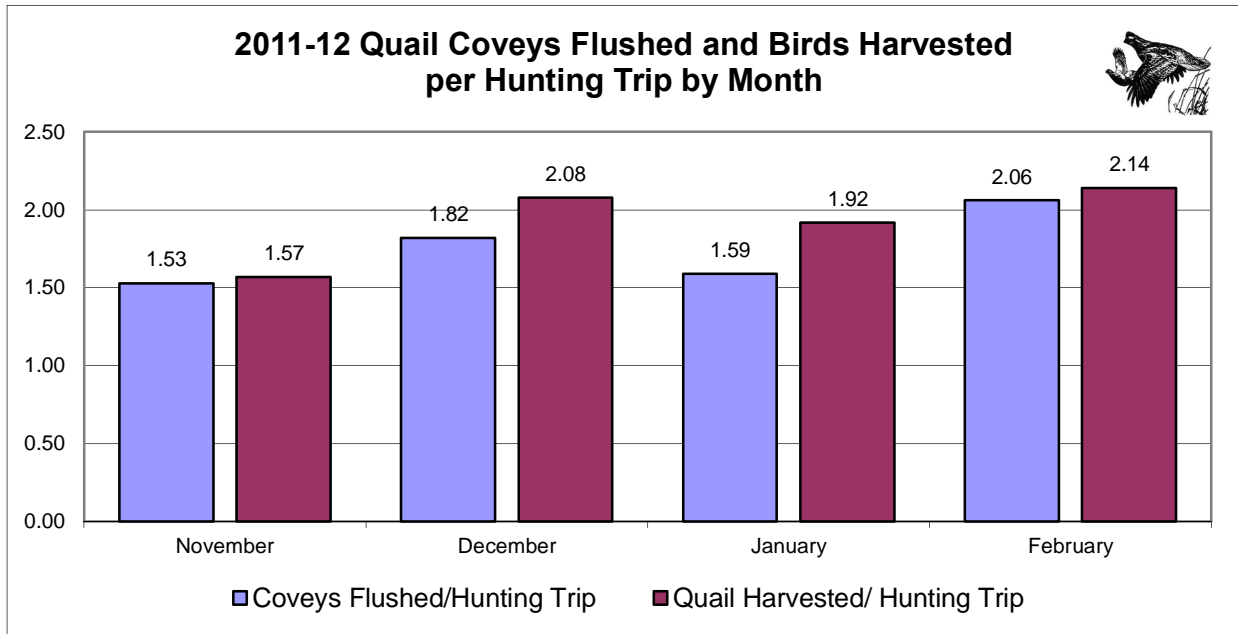


Figure 12.- Average Number of Quail Flushed and Harvested per Hunting Trip by Month by Avid Quail Hunter Survey Respondents during the 2011-12 Hunting Season.

Funding for the avid quail hunter survey report was partially provided through a Pittman-Robertson Wildlife Restoration Multi-state Grant. The Federal Aid in Wildlife Restoration Act, popularly known as the Pittman-Robertson Act, was approved by Congress on September 2, 1937, and began functioning July 1, 1938. The purpose of this Act was to provide funding for the selection, restoration, rehabilitation and improvement of wildlife habitat, wildlife management research, and the distribution of information produced by the projects. The Act was amended October 23, 1970, to include funding for hunter training programs and the development, operation and maintenance of public target ranges.

Funds are derived from an 11 percent Federal excise tax on sporting arms, ammunition, and archery equipment, and a 10 percent tax on handguns. These funds are collected from the manufacturers by the Department of the Treasury and are apportioned each year to the States and Territorial areas (except Puerto Rico) by the Department of the Interior on the basis of formulas set forth in the Act. Funds for hunter education and target ranges are derived from one-half of the tax on handguns and archery equipment.

Each state's apportionment is determined by a formula which considers the total area of the state and the number of licensed hunters in the state. The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source.



Appendix I. 6 Reported Hunting Activity from Avid Quail Hunter Survey Respondents, 1984-85 through 2011-12 hunting seasons.

Year	# Avid Hunter Respondents	# Hunting Trips	Hours Hunted	Respondent Age	Trips / Hunter	Hours / Trip	# Coveys Flushed	Coveys Flushed / Trip	Coveys Flushed / Hour	Coveys Flushed / Hour - Private Land	Coveys Flushed / Hour - Game Lands	# Quail Harvested	Quail Harvested / Trip	Quail Harvested / Hour	Quail Harvested / Covey Flush	# Hunts w/No Coveys Flushed	% Hunts w/No Coveys Flushed
1984-85		3,736	14,905			3.99	8,929	2.39	0.60			15,004	4.02	1.01	1.68	590	15.80%
1985-86	133	2,605	9,963	47	19.59	3.82	7,867	3.02	0.79			12,785	4.91	1.28	1.63	237	9.10%
1986-87	150	2,849	10,785	47	18.99	3.79	7,379	2.59	0.68			12,565	4.41	1.17	1.70	403	14.15%
1987-88	150	3,062	11,802	47	20.41	3.85	8,819	2.88	0.75			14,574	4.76	1.23	1.65	373	12.18%
1988-89	142	2,789	10,817	48	19.64	3.88	6,415	2.30	0.59			10,881	3.90	1.01	1.70	475	17.03%
1989-90	175	3,282	12,677	48	18.75	3.86	8,697	2.65	0.69			13,455	4.10	1.06	1.55	369	11.24%
1990-91	149	2,924	11,068	48	19.62	3.79	7,632	2.61	0.69			11,367	3.89	1.03	1.49	335	11.46%
1991-92	151	2,566	9,213	49	16.99	3.59	4,747	1.85	0.52			6,750	2.63	0.73	1.42	559	21.78%
1992-93		4,241					8,524	2.01		0.29	0.58	11,977	2.82		1.41	765	18.04%
1993-94		3,184					6,718	2.11									
1994-95	216	3,498	12,271	51	16.19	3.51	6,191	1.77	0.50	0.34	0.52	8,767	2.51	0.71	1.42	802	22.94%
1995-96	161	2,628	8,832	52	16.32	3.36	4,809	1.83	0.54	0.43	0.56	6,308	2.40	0.71	1.31	584	22.22%
1996-97	167	2,581	8,677	52	15.46	3.36	4,439	1.72	0.51	0.23	0.54	6,157	2.39	0.71	1.39	608	23.56%
1997-98	151	2,140	7,618	53	14.17	3.56	3,531	1.65	0.46	0.20	0.49	4,611	2.15	0.61	1.31	548	25.63%
1998-99	129	1,874	6,602	54	14.53	3.52	3,167	1.69	0.48	0.24	0.51	4,038	2.15	0.61	1.27	488	26.04%
1999-00	128	1,560	6,036	55	12.19	3.87	2,168	1.39	0.36	0.29	0.39	2,772	1.78	0.46	1.28	538	34.51%
2000-01	106	1,509	5,474	55	14.24	3.63	2,128	1.41	0.39	0.21	0.42	2,841	1.88	0.52	1.34	471	31.23%
2001-02	96	1,478	5,212	56	15.40	3.53	2,498	1.69	0.48	0.26	0.51	2,738	1.85	0.53	1.10	390	26.39%
2002-03	92	1,405	5,098	57	15.27	3.63	2,529	1.80	0.50	0.24	0.52	2,675	1.90	0.52	1.06	384	27.33%
2003-04	72	1,103	3,614	58	15.32	3.28	2,096	1.90	0.58	0.25	0.56	2,625	2.38	0.73	1.25	333	30.19%
2004-05	87	1,201	4,255	56	13.80	3.54	2,390	1.99	0.56	0.52	0.58	2,691	2.24	0.63	1.13	344	28.64%
2005-06	76	1,132	4,150	56	14.89	3.67	2,185	1.93	0.53	0.23	0.56	2,475	2.19	0.60	1.13	362	32.01%
2006-07	79	1,192	4,543	57	15.09	3.81	2,336	1.96	0.51	0.22	0.59	2,495	2.09	0.55	1.07	363	30.45%
2007-08	81	1,236	4,729	59	15.26	3.83	2,262	1.83	0.48	0.22	0.54	2,589	2.09	0.55	1.14	384	31.07%
2008-09	81	1,120	3,841	58	13.83	3.43	2,083	1.86	0.54	0.29	0.59	2,105	1.88	0.55	1.01	339	30.27%
2009-10	71	978	3,521	61	13.77	3.60	1,731	1.77	0.49	0.15	0.56	1,633	1.67	0.46	0.94	332	33.95%
2010-11	67	948	3,493	60	14.15	3.68	1,716	1.81	0.49	0.16	0.60	1,802	1.90	0.52	1.05	324	34.20%
2011-12	72	985	3,872	57	13.68	3.93	1,753	1.78	0.45	0.21	0.54	1,950	1.98	0.50	1.11	384	38.98%