2013 PUBLIC INTERNET WILD TURKEY SUMMER BROOD SURVEY SUMMARY REPORT

Many thanks to all the people from throughout New Hampshire who submitted sightings of broods of young wild turkeys. The results of the survey summarized here will help the Fish & Game Department keep track of the status and reproductive success of the wild turkey population around the state. The turkey project biologist in the southwestern section of the state, with some help from several biologists in other regions of the state, gathers a sample of brood observations throughout the summer in order to get an "index" of the yearly degree of hatching success. However, the number of sightings is not that large, and misses many towns and sections of the 9,000 square miles of the state. Participants in this survey help fill in those gaps, and provide many more brood sightings. This was the third year of our internet-based turkey brood survey, which covers May 15 – August 31, 2013. For the past five years there has been a similar internet-based wild turkey flock survey during the winter months.

Number of Broods Reported

The public reported 1,676 broods, compared to 1,085 in 2012. The state is divided into six regions, in order to detect any differences in habitat carrying capacity and turkey populations. As expected, the most brood sightings reported, 970, or 57.9%) of the state total, were from the Southeast Region, encompassed by towns in Hillsboro, Rockingham and Strafford Counties. A primary reason for this high number is because of the high density of human populations where many people see and report these broods. The next highest was the Southwest Region with 249 brood reports (14.9%).

Number of Poults per Hen

The six regions of the state were compared for the month of August. The month of August is a good index for the summer because poults are larger by then and more readily counted, and the several months of early summer have had attrition of young chicks occur from adverse weather and predation. September is not a good month for comparison because by then the large juveniles in many broods are difficult to distinguish from the adult hens. During August 2013 the North (2.66) and the White Mountains (2.27) regions had significantly lower poults per hen averages than the East Central (3.66) and Southwest (3.64) regions. The statewide average for August 2013 was 3.33, compared to 3.84 for August 2012.

Broods Reported Per Time Period

The summer hatching period was divided into nine 2-week hatching periods, starting on May 1st and ending on August 31st. Which time period to place the hatching date was done by back-calculating from the day of the sighting, by size of the poults. Number of days of age were assigned as follows: sparrow = 1 week, robin = 2 weeks, quail = 3 weeks, pigeon = 4 weeks, grouse = 6 weeks, and hen pheasant = 8+ weeks.

The time periods with the greatest number of broods reported were August 4 – August 17 (642 broods), and July 21 – August 3 (327 broods). Relatively few broods were seen during May and early June, primarily because the hens are more secretive then, and the chicks very small.

Estimated Hatching Periods

The estimated hatching dates were broken down into nine 2-week hatching periods. Only about 6.09% of the hatch occurred from May 1 to May 25th. During late May and the first week of June about 14.33% of hatching occurred. The two periods combined are about 21% of the total summer hatch. The largest segment of the summer hatch was 34.62% during June 23 – July 6th, and 19.69% during June 9 – June 22nd.

The mean hatching dates by region were: North (July 7), White Mountains (June 28), Upper Connecticut River (June 27), East Central (June 23), Southwest (June 30), and Southeast (June 24). The average statewide was June 25th. This average seems to sound rather late. However, this average date includes the northern half of the state, and many re-nesting hen turkeys factor into this.

Conclusions:

During summer 2013 the public reported 1,676 turkey broods, compared to 1,088 during summer 2012. During 2013 a total was 13,755 poults and 3,978 hens were reported for a total of 17,733 turkeys. There was an average of 3.32 poults per hen for the month of August. The average for the preceding summer of 2012 for August was 3.84 poults per hen. Therefore the average was somewhat less for this summer of 2013.

Statewide, 6.09% of the turkey hatching occurred from May 1 to May 25th. During late May and the first week of June about 14.33% occurred. The largest segment of the hatch was 34.62% during June 23 – July 6th.

The weather this spring/summer 2013 has been one of the "strangest". There were 11 straight sunny, dry days from April 27 – May 7 with temperatures 68º-80ºF. From late June into July there were 35 continuous days of "monsoon" conditions with temperatures typically around 90ºF. There were several extended rainy periods during May and June which no doubt adversely affected survival of turkey chicks to some degree. The period May 19-26th had numerous rainfalls, and it was particularly cold and wet on May 25th and 26th. The periods June 7-13th and June 26-30th also had significant rainfall. It appears quite a bit of re-nesting occurred during summer 2013. Numerous quail size poults or smaller were noted during July and early August.

For the first time in years relatively few turkeys seemed to have been seen during late May, June and into July. Probably the biggest factor why few broods were observed early in the summer was because so many hayfields were uncut, due to wet, rainy conditions. The majority of brood

reports are when people see them in fields “after” hay mowing, which makes them much more visible.

Because of the rainy periods in late May and June 2013, hatching success was not as good as during summer 2012. The number of poults seen per hen during summer 2013 was typically 3, 4 or 5 poults, rather than the 6,7 or 8 of summer 2012.

Thank you again for your interest and participation in New Hampshire’s third internet-based turkey brood survey. We look forward to your continued participation in future years.

Ted Walski
Turkey Project Biologist
December 12, 2013

Table 1. Number of Broods Reported by Region (2013)

Region of New Hampshire	Number of Broods	% of the Total	WMU's Covered	Counties
White Mountains	40	2.4%	E,F	Carroll Grafton
North	37	2.2%	A,B,C1,C2	Coos
West Central (CT River)	97	5.8%	D1,D2,G	Grafton
East Central	283	16.9%	J1,J2	Carroll, Belknap, Merrimack
Southwest	249	14.9%	H1,H2,I1,I2	Sullivan, Cheshire
Southeast	970	57.9%	K,L,M	Hillsboro, Rockingham, Strafford
Statewide	1,676	100%	All	All

Table 2. Number of Broods and Poults per Hen per Time Period (2013)

Sample Period	Number of Poults Per hen	Number of Broods Per time period	Total Number of Poults	Total Number of Hens
May 1 – May 11	6.67	2	20	3
May 12 – May 25	0.88	20	56	64
May 26 – June 8	4.07	41	220	54
June 9 – June 22	5.83	83	606	104
June 23 – July 6	4.08	113	942	231
July 7 – July 20	4.14	147	1,326	320
July 21 – August 3	3.25	327	2,641	812
August 4 – August 17	3.46	642	5,529	1,599
August 18 – August 31	3.05	301	2,415	791
August 4 – August 31	3.32	943	7,944	2,390
Totals		1,676	13,755	3,978

Table 3. Regional Number of Poults per Hen During August (Past Three Years)

Region	August 2011	August 2012	August 2013
North	5.38	4.81	2.66
White Mountains	3.25	4.33	2.27
West Central (CT River)	5.43	5.20	4.21
East Central	4.40	4.04	3.66
Southwest	4.24	4.13	3.64
Southeast	4.04	3.34	3.13
Statewide	4.38	3.84	3.33

Table 4. Estimated Hatching Dates by 2-week Periods (Summer 2013)

Hatching period	Numbered poults	% of total poults
May 1 – May 11	106	1.16%
May 12 – May 25	449	4.93%
May 26 – June 8	1,306	14.33%
June 9 – June 22	1,795	19.69%
June 23 – July 6	3,156	34.62%
July 7 – July 20	1,645	18.05%
July 21 – August 3	501	5.50%
August 4 – August 17	146	1.60%
August 18 – August 31	12	0.13%
Total	9,116	100%

Table 5. Mean Hatching Date, by Regions and Statewide (Past 3 Years)

Year	North	White Mts.	Conn. River	East Central	Southwest	Southeast	Statewide
Summer 2011	June 13	June 17	June 15	June 10	June 7	June 7	June 8
Summer 2012	June 11	June 14	June 23	June 12	June 12	June 15	June 15
Summer 2013	July 7	June 28	June 27	June 23	June 30	June 24	June 25

Table 6. Estimated Hatching dates by 2-week Periods (Past 3 Years)

Hatching Period	Year 2011	Year 2012	Year 2013	3-Year Total	% of 3-Year Total
May 1 – May 11	N=116	N=214	N=106	N=435	2.1%
	1.96%	3.70%	1.16%		
May 12 – May 25	N=1,087	N=985	N=449	N=2,521	12.2%
	18.57%	17.03%	4.93%		
May 26 – June 8	N=2,173	N=960	N=1,306	N=4,439	21.4%
	37.13%	16.60%	14.33%		
June 9 – June 22	N=1,364	N=1,376	N=1,795	N=4,535	21.9%
	23.30%	23.79%	19.69%		
June 23 – July 6	N=692	N=1,378	N=3,156	N=5,226	25.2%
	11.82%	23.82%	34.62%		
July 7 – July 20	N=336	N=705	N=1,645	N=2,686	1.3%
	5.74%	12.19%	18.05%		
Julyl 21 – August 3	N=86	N=155	N=501	N=742	3.6%
	1.47%	2.68%	5.50%		
August 4 – August 17	N=0	N=11	N=146	N=157	1.0%
	0.00%	0.19%	1.60%		
August 18 – August 31	N=0	N=0	N=12	N=12	---
	0.00%	0.00%	0.13%		
Total				20,753	

Table 7. Towns with Most Observations Reported and Most Total Turkeys (Summer 2013)

Town	# Observations	Total turkeys	county
Alton	24	315	Belknap
Auburn	32	326	Rockingham
Bedford	44	402	Hillsboro
Belmont	32	459	Belknap
Concord	37	367	Merrimack
Derry	91	1,051	Rockingham
Hancock	30	382	Hillsboro
Merrimack	42	381	Hillsboro
Salem	51	390	Rockingham
Barrington	23	272	Strafford
Strafford	24	281	Strafford
Windham	29	275	Rockingham