Winter Wild Turkey Survey 2012

The goal of the Winter Wild Turkey Flock Survey is to use DEC staff and volunteers to conduct a harvest-independent survey to help determine long-term trends in turkey populations and to provide information to the public regarding the prospects for the spring hunting season. The survey period ran from January 1, 2012 through March 31, 2012 and was open to both DEC staff and the general public. Survey participants were instructed to record flock observations any time during the three-month survey period, but to report each flock observed only once.

Results from Winter 2012

We received 629 reports totaling about 9,800 birds (Table 1) from 50 of New York State's 62 counties (about 13 flocks reported/county, range 2-48/county). This is a decrease of 2% from winter 2011, and a 1% decrease in the average number of birds per flock (15.8 in winter 2011 vs. 15.6 in winter 2012). Six of the 12 counties with no reported observations were the counties that comprise New York City and western Long Island. Lack of observations from these 12 counties is not necessarily indicative of turkey population size in these areas. Flock observations and the number of birds observed peaked during the first week of January and again during the second and fourth weeks of February, and then declined as flocks broke up in mid-March (Figure 1).

The Wildlife Management Unit (WMU) aggregates with the highest turkey densities (birds/mi.^{2} of habitat, where "habitat" is defined as all wooded upland habitats, but does not include agriculture, developed areas, or open water) were the East Ontario Plain (2.5 birds/mi.^{2}) in northern New York and the East Appalachian Plateau (1.2 birds/mi.^{2}) in the southern tier (Table 3, Figure 2). When flock observations are grouped by fall season zone, the highest turkey density was observed in the St. Lawrence Valley and Appalachian Hills & Plateau (0.54 and 0.53 birds/mi.^{2}, respectively), followed by the Lake Plains (0.50 birds/mi.^{2}) and East-Central New York (0.46 birds/mi.^{2}; Table 4).

Turkeys spent a disproportionate amount of time in agricultural habitats (pasture, hay, row crops) relative to the abundance of this habitat type on the landscape (Table 5). Human-created habitats such as lawns, backyards, parks, and golf courses also played an important role for winter turkey flocks in areas such as the Adirondacks-Tug Hill. Some researchers feel these human-altered landscapes have allowed turkey populations to persist in areas such as the Adirondacks where historically they did not exist.

Overall, statewide temperatures were above long-term averages, and snowfall amounts were significantly below average in many parts of the state with season totals ranging from 33 inches below normal in Albany to almost 70 inches below normal in Syracuse. The average snow depth reported by survey participants from January through March was 4 inches, and the average temperature was 37°F. These mild conditions, combined with abundant hard and soft mast crops in many locations last fall, should have contributed to relatively high over-winter survival compared to 2011. This is good news for young-of-the-year birds who may struggle to cope with winters with extended periods of below freezing temperatures and deep snow.

DEC surveys and harvest data indicate a long-term decline in wild turkey populations in New York since about 2001, with a sharper short-term decline since 2007. There are several potential reasons for the long-term decline including a natural contraction after populations reached their peak around 2000-01, as well as changes in habitat and predator communities. The most significant reason for the short-term decline is poor production. Above-average rainfall in May and June negatively impacts nest and poult success. Four of the past six years

have seen production that is below the long-term average. In addition, winter 2011 was quite severe in many parts of the state, which had negative effects on turkey survival, particularly for juvenile birds.

The results of this survey indicate minimal changes in turkey populations from 2011 to 2012, but several other reliable indices of turkey abundance show a substantial change in turkey populations. This contradiction is likely due to the opportunistic nature of this survey and the variable effort expended on recording winter turkey observations across the state. For these reasons, we feel that road-based survey transects are a more rigorous and statistically reliable way to monitor turkey populations during the winter and we will be relying on that technique in the future.

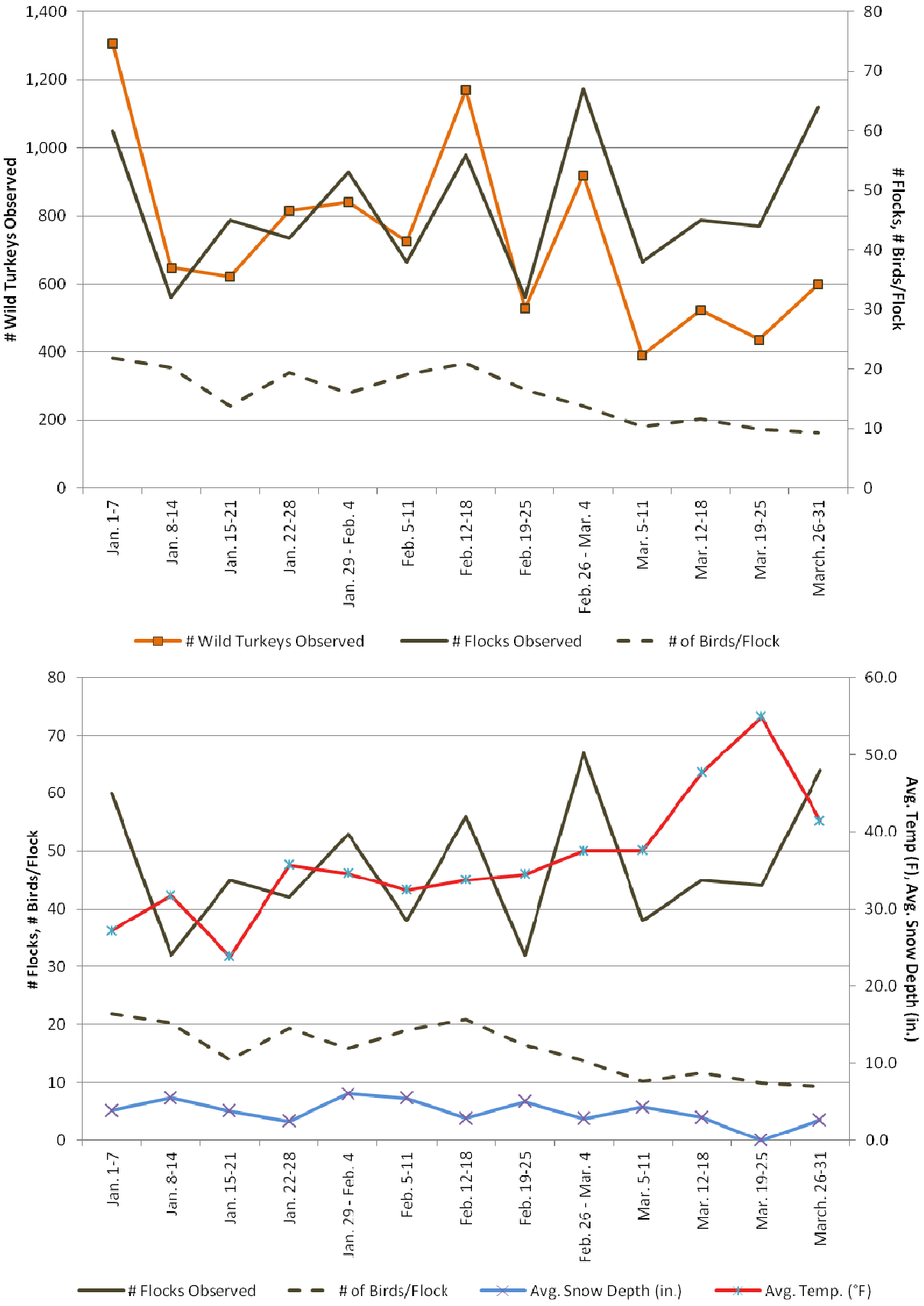

Figure 1. Reports of the number of turkeys, flocks, and birds/flock (top), and turkeys observed and weather (bottom) from January 1 - March 31 from the Winter Wild Turkey Flock Survey, 2012.

Table 1. Summary of Winter Wild Turkey Flock Survey results, 2005-06 through 2012.

	2005-06*	2006-07*	2007-08*	2009	2010	2011	2012	5-yr Average (06-07 - 2011)
# Observations*	481	1,074	640	681	785	642	629	764
Average # Observations/County	8	18	11	13	16	13	13	14
# Turkeys Observed	20,081	28,013	18,641	12,606	13,151	10,156	9,823	16,513
# Flocks Observed	588	1,145	733	681	785	642	629	797
Average # Turkeys/Flock	34	24	25	19	17	16	16	20

*During the three-year pilot study (2005-06 - 2007-08) we compiled observations from December through March, annually, and we compiled observations of all flocks without regard to multiple reports of the same flock. In 2009-11, the survey was conducted from January through March only and survey participants were instructed to report each flock observed only once.

Table 2. Wild turkeys observed by DEC Region from the Winter Wild Turkey Flock Survey, 2012.

DEC Region	# Flocks Observed	# Wild Turkeys Observed	# of Birds/Flock	Habitat Area ($mi.^2$)*	Flocks/$mi.^2$	Birds/$mi.^2$
Reg 1	3	21	7	272	0.011	0.08
Reg 3	46	499	11	3,155	0.015	0.16
Reg 4	70	1,087	16	3,668	0.019	0.30
Reg 5	25	528	21	6,445	0.004	0.08
Reg 6	84	1,604	19	5,401	0.016	0.30
Reg 7	178	2,979	17	2,763	0.064	1.08
Reg 8	111	1,646	15	2,423	0.046	0.68
Reg 9	112	1,459	13	3,022	0.037	0.48
Totals	629	9823	16	27,149	0.023	0.36

*Habitat area includes wooded habitats, but does not include agriculture, open water, or developed areas (based on 2001 MRLC Data).

Table 3. Wild turkeys observed by WMU aggregate from the Winter Wild Turkey Flock Survey, 2012.

WMU Aggregates	# Flocks Observed	# Wild Turkeys Observed	# of Birds/Flock	Habitat Area (mi.^{2})*	Flocks/mi.^{2}	Birds/mi.^{2}
Catskills	17	201	12	2,225	0.0076	0.09
Central Adirondacks	15	245	16	4,849	0.0031	0.05
Central Appalachian Plateau	39	683	18	992	0.0393	0.69
Champlain Valley	6	108	18	1,491	0.0040	0.07
Coastal Lowlands	3	21	7	288	0.0104	0.07
East Appalachian Plateau	135	2,286	17	1,916	0.0705	1.19
East Ontario Plain	27	704	26	277	0.0975	2.54
Great Lakes Plain	61	726	12	918	0.0664	0.79
Hudson Valley	46	562	12	1,417	0.0325	0.40
Mohawk Valley	11	176	16	667	0.0165	0.26
Neversink - Mongaup Hills	0	0	n/a	761	n/a	n/a
New York City Transition	27	268	10	305	0.0885	0.88
North Appalachian Hills	32	442	14	1,299	0.0246	0.34
North Taconic Highlands	5	186	37	566	0.0088	0.33
Northern Adirondacks	9	134	15	1,892	0.0048	0.07
Oneida Lake Plains	28	411	15	688	0.0407	0.60
Oswego Lowlands	9	61	7	241	0.0373	0.25
Otsego - Delaware Hills	9	84	9	1,155	0.0078	0.07
South Taconic Highlands	11	379	34	531	0.0207	0.71
St. Lawrence Valley	14	160	11	1,335	0.0105	0.12
Tug Hill	13	193	15	338	0.0385	0.57
Tug Hill Transition	21	516	25	779	0.0270	0.66
West Appalachian Hills	91	1,277	14	2,236	0.0407	0.57

*Habitat area includes wooded habitats, but does not include agriculture, open water, or developed areas (based on 2001 MRLC Data).

Table 4. Wild turkeys observed by fall season zone from the Winter Wild Turkey Flock Survey, 2012.

Fall Season Zone	# Flocks Observed	# Wild Turkeys Observed	# of Birds/Flock	Habitat Area ($mi.^2$)*	Flocks/$mi.^2$	Birds/$mi.^2$
Eastern Long Island (1 wk-1 bird)	3	21	7	239	0.0126	0.09
Lake Plains (2 wks-1 bird)	70	787	11	1,571	0.0446	0.50
Adirondacks-Tug Hill (3 wks-1 bird)	64	1,196	19	9,348	0.0068	0.13
St. Lawrence Valley (3 wks-2 birds)	41	864	21	1,612	0.0254	0.54
Appalachian Hills & Plateau (4 wks-1 bird)	162	2,402	15	4,527	0.0358	0.53
East & Central New York (7 wks-2 birds)	289	4,553	16	9,820	0.0294	0.46

*Habitat area includes wooded habitats, but does not include agriculture, open water, or developed areas (based on 2001 MRLC Data).

Table 5. Percent of the flocks observed in each habitat type within fall season zones and the proportion of each habitat type within fall season zones from the Winter Wild Turkey Flock Survey, 2012.

Fall Season Zone	Woodland		Pasture/Hay/Row Crop		Park/Golf Course/Lawn		Other	
	% Flock Observations	% Habitat*	% Flock Observations	% Habitat*	% Flock Observations	% Habitat*	% Flock Observations	% Habitat*
Eastern Long Island (1 wk-1 bird)	67%	25%	33%	10%	0%	43%	0%	22%
Lake Plains (2 wks-1 bird)	16%	27%	57%	47%	24%	12%	3%	14%
Adirondacks-Tug Hill (3 wks-1 bird)	36%	75%	53%	6%	8%	2%	3%	17%
St. Lawrence Valley (3 wks-2 birds)	17%	43%	59%	31%	12%	4%	12%	22%
Appalachian Hills & Plateau (4 wks-1 bird)	22%	55%	65%	33%	9%	5%	4%	7%
East & Central New York (7 wks-2 birds)	15%	54%	55%	26%	27%	8%	3%	11%

* Habitat estimates based on 2001 MRLC data.

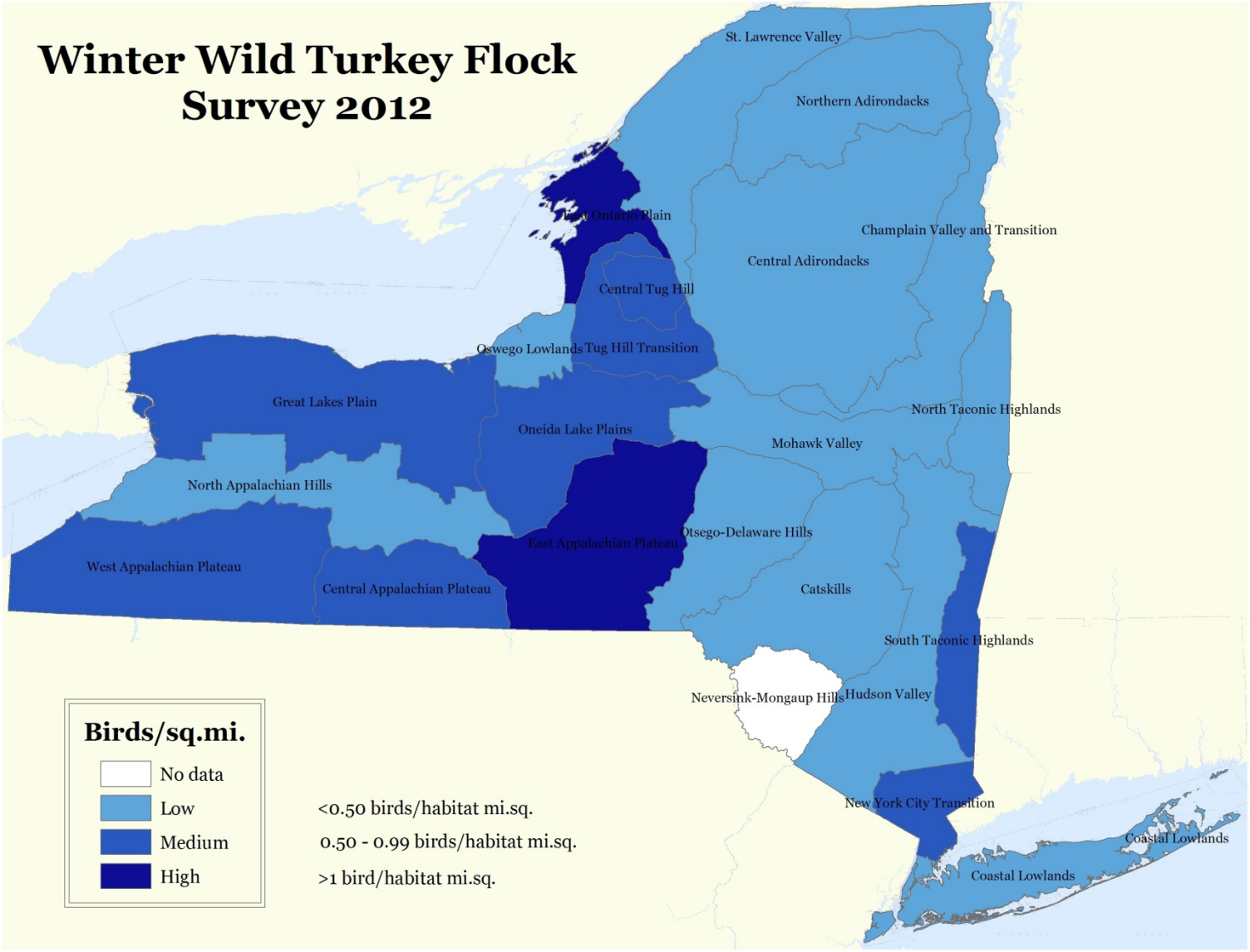

Figure 2. Estimated density of wild turkeys (birds/habitat mi.^{2}) by Wildlife Management Unit (WMU) Aggregate from the Winter Wild Turkey Flock Survey 2012. "High" (>1 bird/habitat mi.^{2}), "Medium" (0.50-0.99 birds/habitat mi.^{2}), and "Low" (<0.50 birds/habitat mi.^{2}) densities based on number of birds observed and estimates of habitat area within each WMU Aggregate. "Habitat" includes all wooded upland habitats, but does not include agricultural habitats, open water, or developed areas (based on 2001 MRLC data). Lack of observations in the Neversink-Mongaup Hills aggregate is not indicative of turkey population size in this area.