Pheasant Stocking in NJ:

A New Approach to Bird Allocation

NJ Division of Fish and Wildlife

Development Process and Next Steps

- Jan2015 : Pheasant & Quail Stamp Buyer Survey
- Jan 2015 – Jan 2016: Internal meetings and draft model development
- Jan 2016 : Presentation to F&G Council's Game Committee
- March 2016: Presentation to Fish & Game Council
- June 2016: Presentations at State Federation
- June 2016: P&Q Stamp Buyers Stakeholder Meetings
- July/August 2016: Revise & Finalize
- September 2016: Presentation to F&G Council – Vote to Adopt
- Sept/October 2016: Division Reps present
- November 2016: Begin Stocking according to Pheasant Allocation Model

Stocking Summary

- ~ 55,000 pheasant/year
- 23 WMAs (plus DWGNR and Fort Dix)
- Birds divided by Region (North, Central, South)
- 15 days of stocking (Nov. – Dec.)

Current Allocation Method

- **Step 1:** Birds divided by Region
  - North 53%
  - Central 23.5%
  - South 23.5%

- **Step 2:** Birds divided within region to WMAs & stocking day

WMAs

7+

7+

9

53%

23.5%

23.5%

NJ Division of Fish and Wildlife

Days to Hunt Pheasants During the 2015 Stocking Season

Region: North Jersey

Area	Sat. 07-Nov	Tues. 10-Nov	Thurs. 12-Nov	Sat. 14-Nov	Tues. 17-Nov	Thurs. 19-Nov	Sat. 21-Nov	Tues. 24-Nov	Thurs. 26-Nov	Sat. 28-Nov	Sat. 05-Dec	Sat. 19-Dec	Tues. 22-Dec	Tues. 29-Dec	Thurs. 31-Dec	Total
Flatbrook	840	320	320	730	320	260	650	260	780	380	380	380	260	320	260	6,460
Whittingham	500	180	180	430	180	160	380	150	480	230	230	230	150	180	150	3,810
Walpack	60	30	30	40	30	30	50	30	60	40	40	40	30	40	30	580
Black River	560	220	220	520	220	190	460	190	540	270	270	260	180	180	180	4,460
Berkshire Valley	280	110	110	250	110	80	240	100	280	140	140	140	90	110	90	2,270
Clinton	560	220	220	510	220	200	460	200	560	290	290	300	180	240	180	4,630
Pequest	330	130	130	280	130	110	250	110	280	150	150	150	100	130	100	2,530
Delaware Water Gap N.R.A.	650	0	0	470	0	0	470	0	650	420	420	340	250	340	250	4,260
Northern Region Totals	3,780	1,210	1,210	3,230	1,210	1,030	2,960	1,040	3,630	1,920	1,920	1,840	1,240	1,540	1,240	29,000

Region: Central Jersey

Area	Sat. 07-Nov	Tues. 10-Nov	Thurs. 12-Nov	Sat. 14-Nov	Tues. 17-Nov	Thurs. 19-Nov	Sat. 21-Nov	Tues. 24-Nov	Thurs. 26-Nov	Sat. 28-Nov	Sat. 05-Dec	Sat. 19-Dec	Tues. 22-Dec	Tues. 29-Dec	Thurs. 31-Dec	Total
Colliers Mills	460	170	170	370	170	170	270	170	460	270	270	250	210	250	210	3,870
Fort Dix	0	0	0	50	50	0	60	60	70	60	0	0	0	0	0	350
Greenwood-Howardsville Section	50	0	0	50	0	0	50	0	50	50	50	50	50	50	50	500
Manahawkin	110	0	0	90	0	0	90	0	110	110	110	70	70	70	70	900
Medford	110	0	0	80	0	0	80	0	110	70	80	60	60	60	60	770
Stafford Forge	150	0	0	110	0	0	100	0	150	150	120	110	110	110	110	1,220
Assunpink	550	210	210	460	210	210	370	210	550	370	370	300	230	290	230	4,770
Manasquan	100	0	0	50	0	0	50	0	100	50	70	50	50	50	50	620
Central Region Totals	1,530	380	380	1,260	430	380	1,070	440	1,600	1,130	1,070	890	780	880	780	13,000

Region: South Jersey

Area	Sat. 07-Nov	Tues. 10-Nov	Thurs. 12-Nov	Sat. 14-Nov	Tues. 17-Nov	Thurs. 19-Nov	Sat. 21-Nov	Tues. 24-Nov	Thurs. 26-Nov	Sat. 28-Nov	Sat. 05-Dec	Sat. 19-Dec	Tues. 22-Dec	Tues. 29-Dec	Thurs. 31-Dec	Total
Glassboro	200	90	90	130	60	50	120	50	190	90	60	90	50	80	80	1,430
Dix	190	80	80	130	80	60	130	70	190	110	80	90	50	90	80	1,510
Mad Horse	80	60	0	60	0	0	60	0	80	60	50	60	50	60	60	680
Millville	460	220	230	400	230	250	400	220	400	250	200	220	200	200	200	4,080
Nantuxent	120	50	50	120	50	50	110	50	120	120	50	50	70	70	50	1,130
Port Republic	160	60	60	100	60	50	100	50	160	110	50	90	70	70	80	1,270
Tuckahoe	270	60	60	140	60	50	170	60	270	140	60	120	70	100	110	1,740
Winslow	90	0	0	70	0	0	80	0	80	70	50	50	50	50	50	640
Heislerville	60	0	0	50	0	0	50	0	60	50	50	50	50	50	50	520
Southern Region Totals	1,630	620	570	1,200	540	510	1,220	500	1,550	1,000	650	820	660	770	760	13,000

Statewide Totals	6,940	2,210	2,160	5,690	2,180	1,920	5,250	1,980	6,780	4,050	3,640	3,550	2,680	3,190	2,780	55,000

Thanksgiving Day is Nov. 26, 2015

revised: 5/12/2015

Current Allocation Approach

- Criticisms regarding **unequitable regional distribution**
- Concerns regarding bird/hunter **densities and safety**
- Criticisms about bird/hunter densities and **quality of hunt**
- Not designed to allocate birds based on **objective & measurable parameters**
- Makes allocating birds to “new WMAs” (or from “deleted WMAs”) or from varying pheasant production numbers a **subjective process**

New Allocation Model

Goal: Develop an ***objective approach*** for distributing pheasant that incorporates biological, physical, and/or social factors and results in an equitable allocation of birds among WMAs to ***maximize hunter safety & satisfaction***

Informed Decision Making

2014 Pheasant & Quail Stamp Buyers Survey

- Conducted Spring 2015
- Emailed to 6,643 stamp buyers from 2014
- 1,189 successfully completed survey (1,189/12,296) ~10%

Safety & Crowding

on stocked WMAs

Stocked WMAs sometimes or always too crowed = 89%

Sometimes apprehensive about personal safety = 62%

Usually feel unsafe when hunting stocked WMAs = 8%

Data from 2014 Pheasant & Quail Stamp Buyer Survey

Safety & Crowding

on stocked WMAs

Near Miss Event:

Witnessed = 31%

Involved in = 14%

Hit by spent pellets = 45%

Hunting Accident:

Witnessed = 5%

Involved in = 2%

Data from 2014 Pheasant & Quail Stamp Buyer Survey

Safety & Crowding

on stocked WMAs

Crowd Avoidance

24% of survey respondents sometimes avoided the stocked WMA closest to their home because it was too crowed

Data from 2014 Pheasant & Quail Stamp Buyer Survey

Quality of Hunt

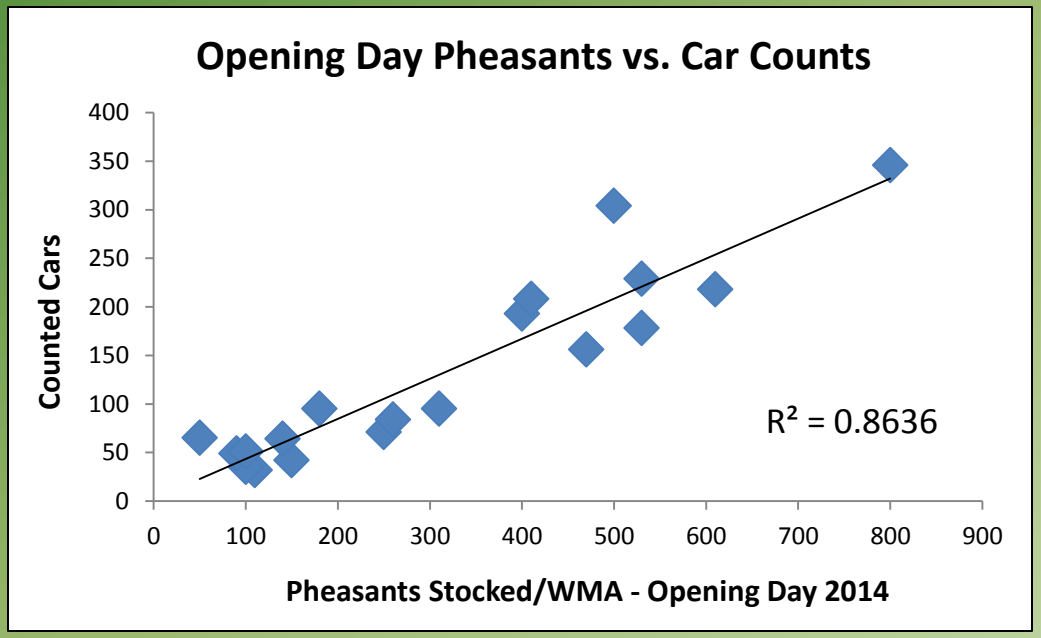
What Contributes Most to Hunter Enjoyment

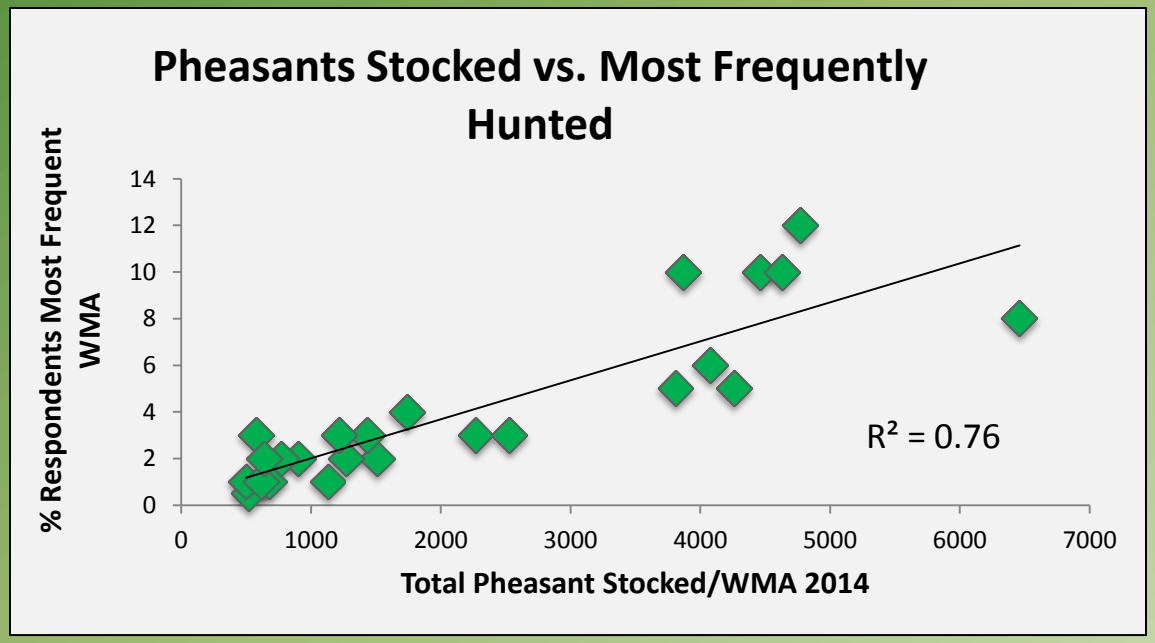
1. Number of birds stocked
2. Size of area stocked (or area to hunt)
3. Habitat quality
4. Proximity to home

Data from 2014 Pheasant & Quail Stamp Buyer Survey

Quality of Hunt

- Number of Birds Stocked



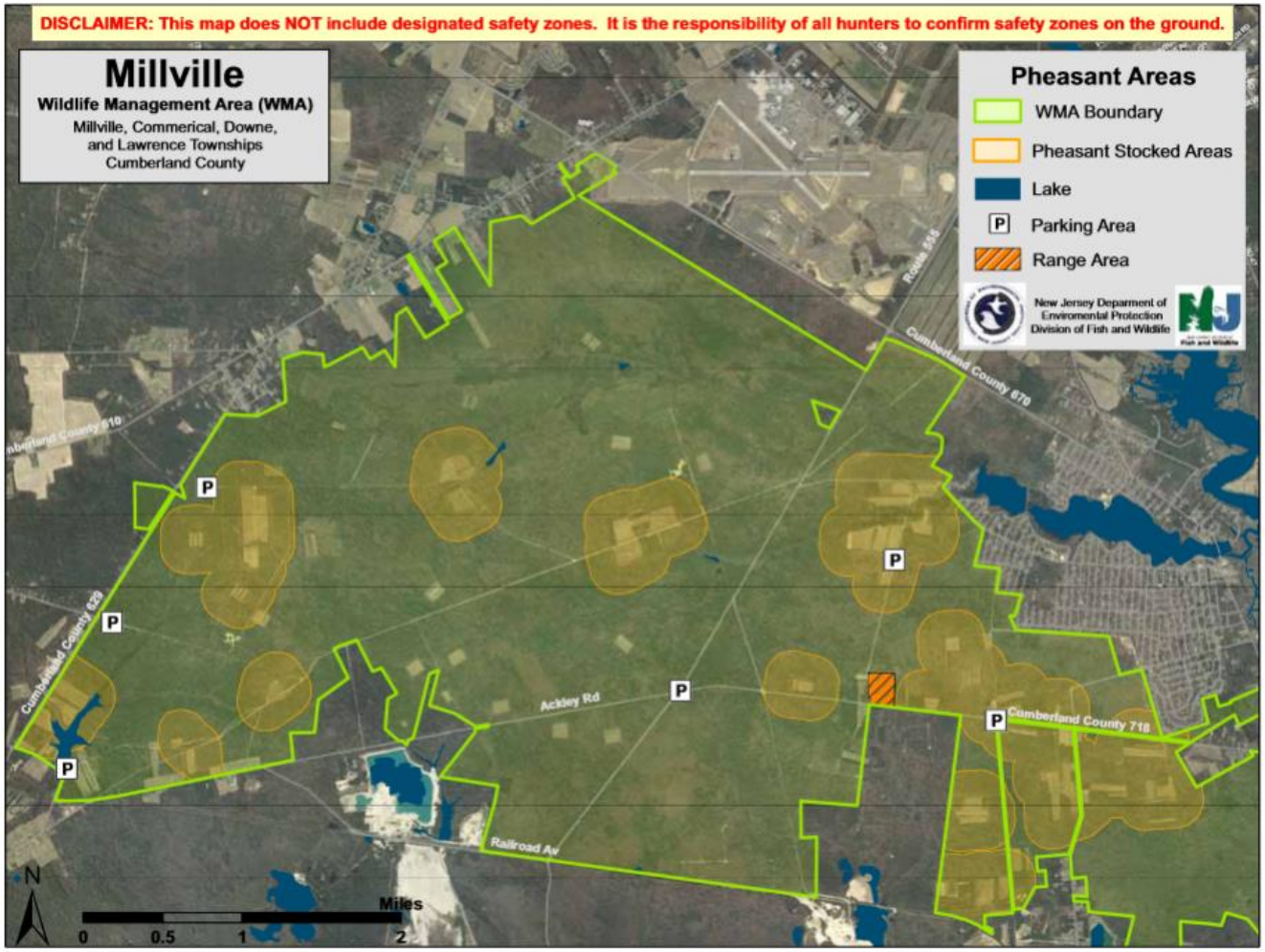


Hunters Follow the Birds

Quality of Hunt

- Size of Area Stocked

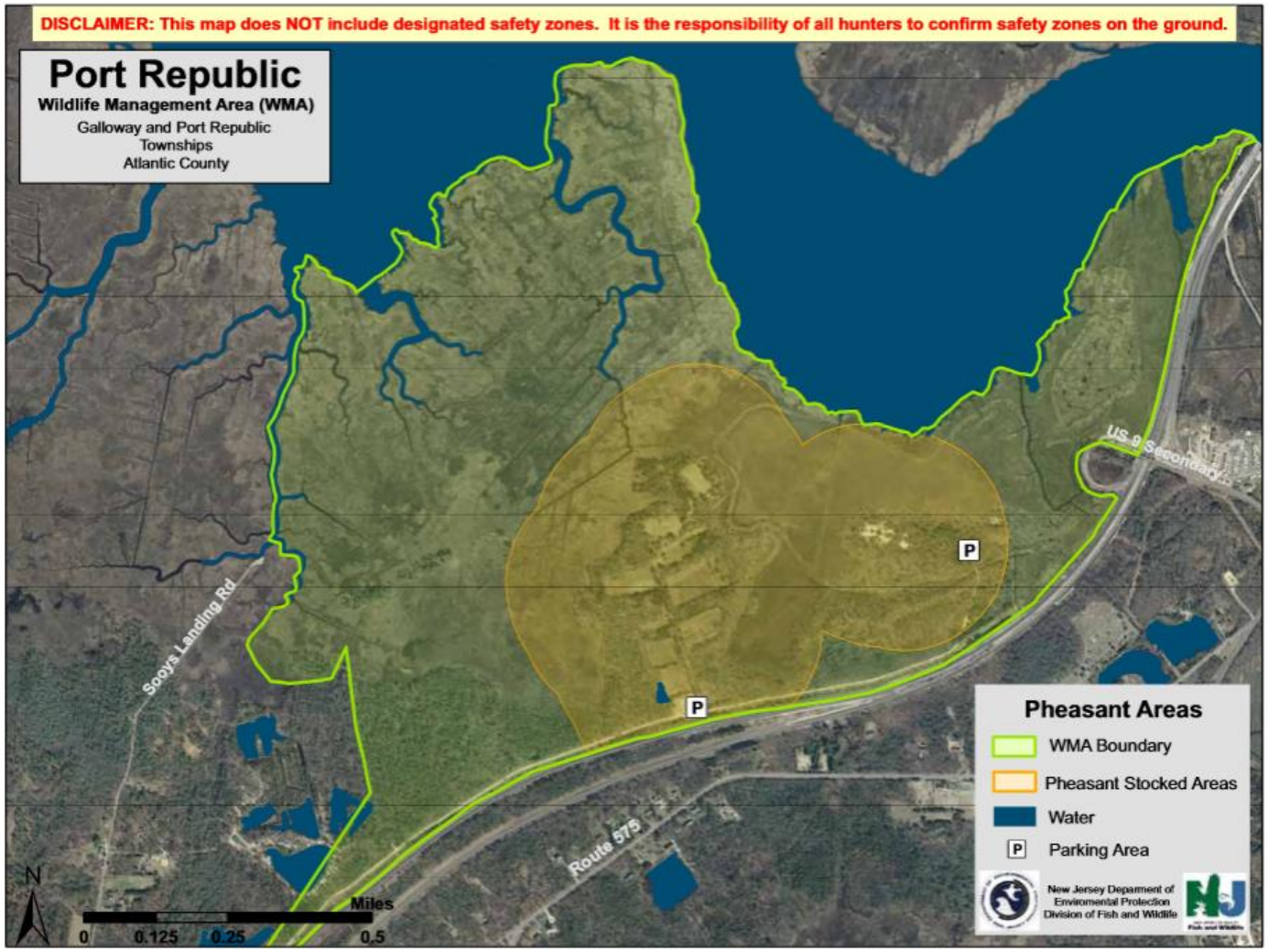
2,801 Acres Stocked



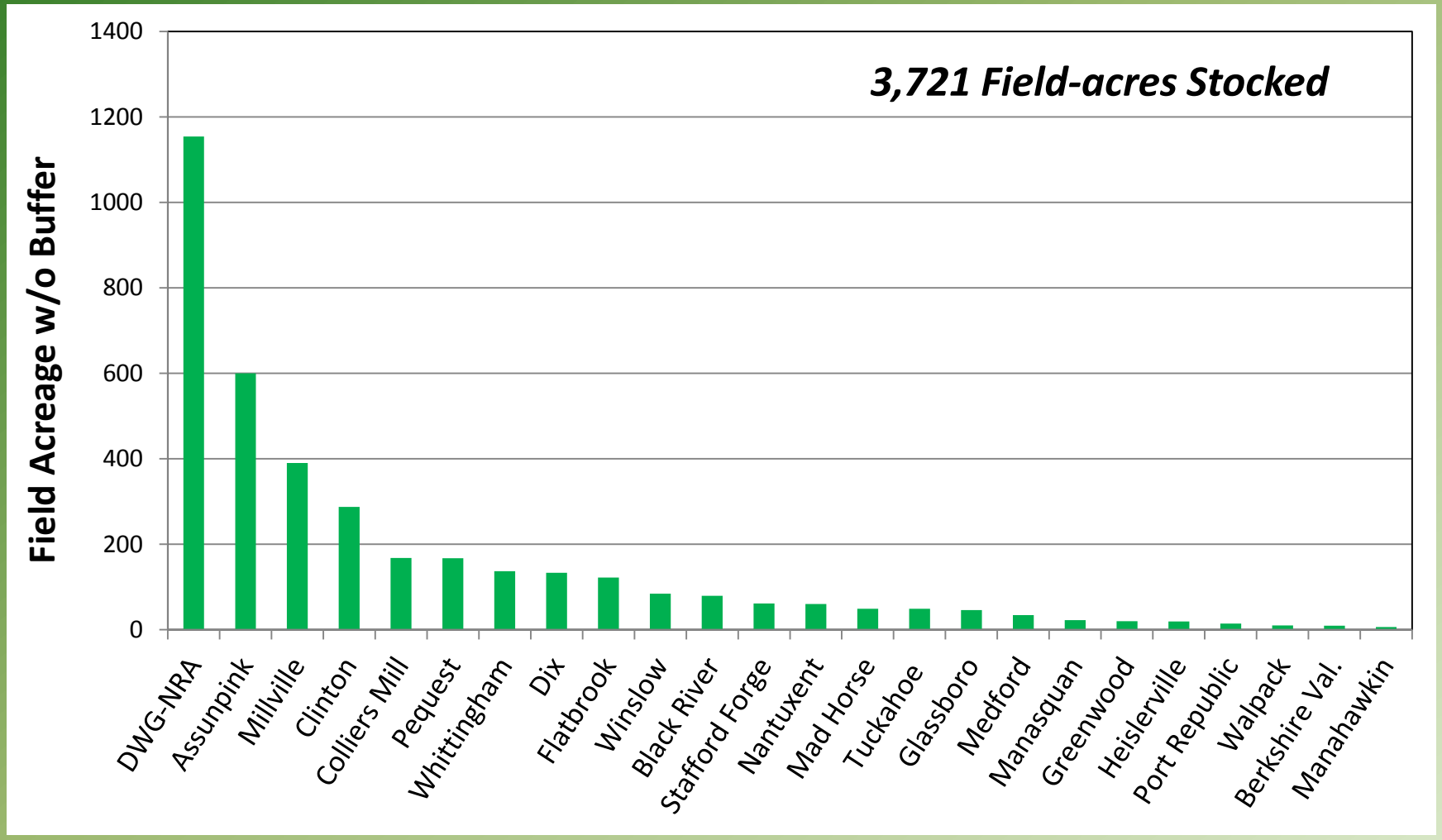
Quality of Hunt

- Size of Area Stocked

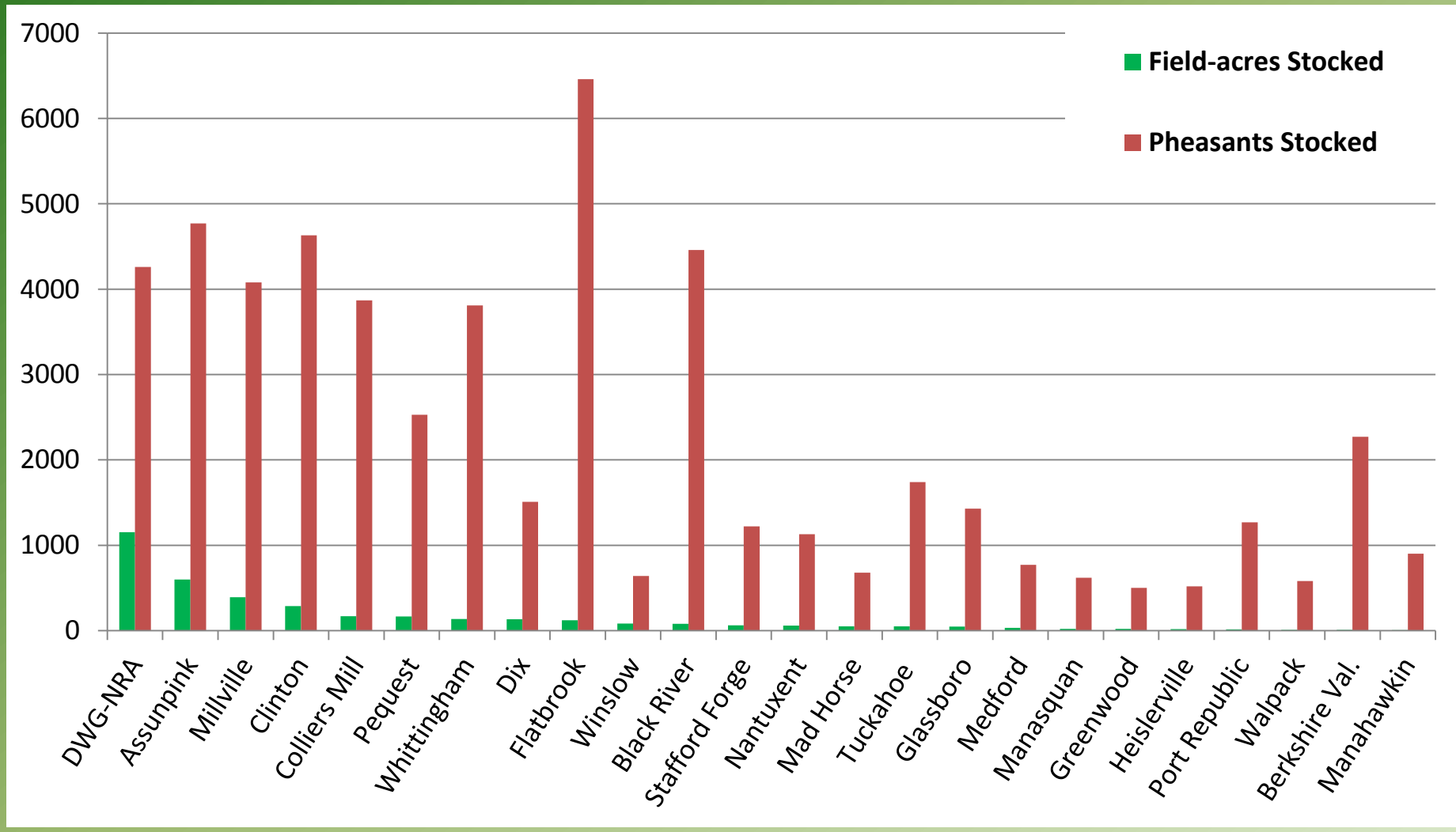
248 Acres Stocked



Quality of Hunt - Size of Area Stocked



Quality of Hunt - Size of Area Stocked



Quality of Hunt - Proximity to Home

Survey Question

How far would you be **willing** to drive (one-way) to hunt stocked pheasants and have a quality pheasant hunting experience in NJ?

Data from 2015 Pheasant & Quail Stamp Buyer Survey

Quality of Hunt - Proximity to Home

Survey Question

How far would you be **willing** to drive (one-way) to hunt stocked pheasants and have a quality pheasant hunting experience in NJ?

4%	No more than 10 miles
22%	Between 11 and 20 miles
38%	Between 21 and 40 miles
23%	Between 41 and 60 miles
13%	More than 61 miles

Data from 2015 Pheasant & Quail Stamp Buyer Survey

Quality of Hunt - Proximity to Home

Survey Question

How far would you be **willing** to drive (one-way) to hunt stocked pheasants and have a quality pheasant hunting experience in NJ?

4%	No more than 10 miles
22%	Between 11 and 20 miles
38%	Between 21 and 40 miles
23%	Between 41 and 60 miles
13%	More than 61 miles

74%

New Allocation Approach

Maximize hunter safety and satisfaction by distributing pheasants according to an objective formula that uses "**field-area stocked**" and "**proximity to stamp buyers**" for each WMA to determine pheasant allocation on an ***individual*** WMA basis.

New Allocation Model

$$WMA_1\ \%\ Pheasant = \frac{P_1}{P_{sum}} \times 100$$

$$P = A\,(D+1)\,O$$

P = pheasant factor; A = area variable; D = proximity to stamp buyer variable
O = ownership variable

New Allocation Model

$$WMA_1\ \%\ Pheasant = \frac{P_1}{P_{sum}} \times 100$$

A = (1st 60 ac * 1) + (ac > 60 * 0.1)

P = A (D+1) O

P = pheasant factor; A = area variable; D = proximity to stamp buyer variable

New Allocation Model

$$WMA_1\ \%\ Pheasant = \frac{P_1}{P_{sum}} \times 100$$

$A = (1^{st}\ 60\ ac * 1) + (ac > 60 * 0.1)$

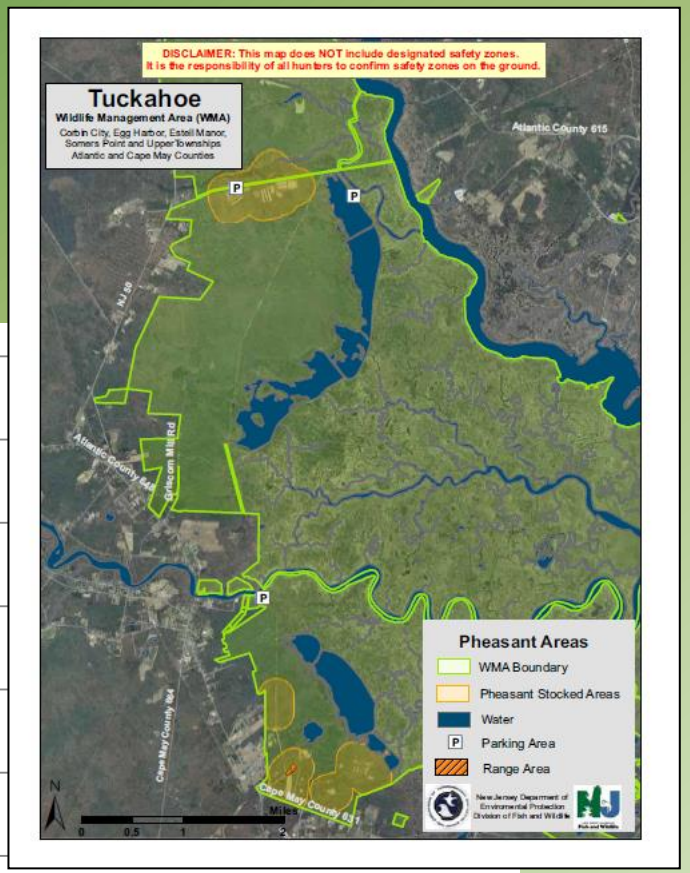
$P = A\ (D+1)\ O$

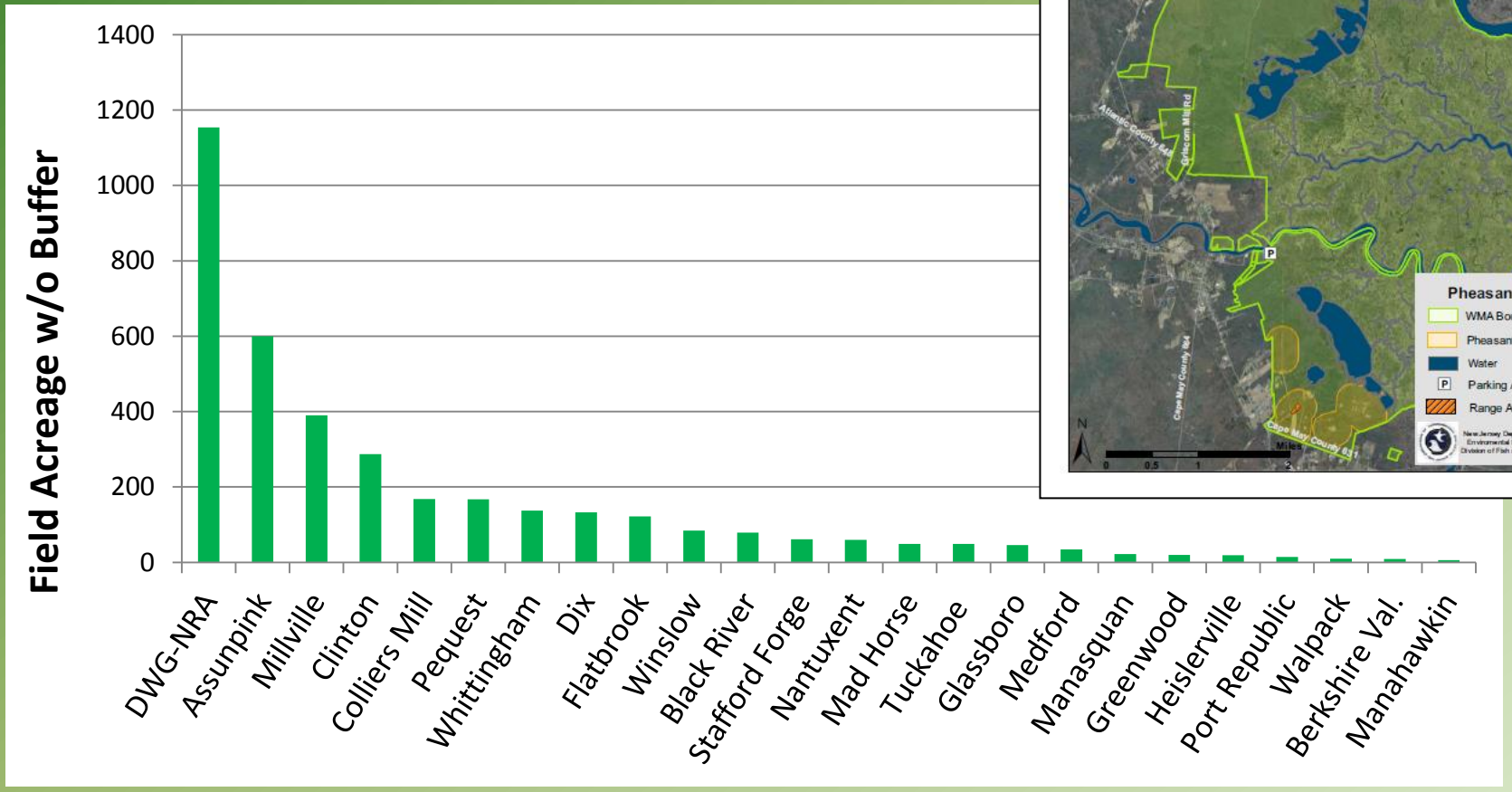
D = 0 if <30% w/in 40 miles
0.15 if 30-40% w/in 40 miles
0.3 if 40-50% w/in 40 miles
0.5 if >50% w/in 40 miles

P = pheasant factor; A = area variable; D = proximity to stamp buyer variable

New Allocation Model

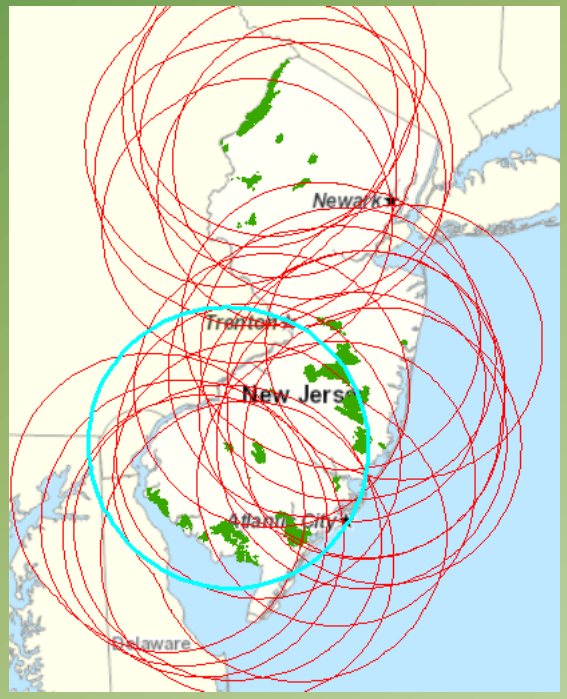
AREA STOCKED



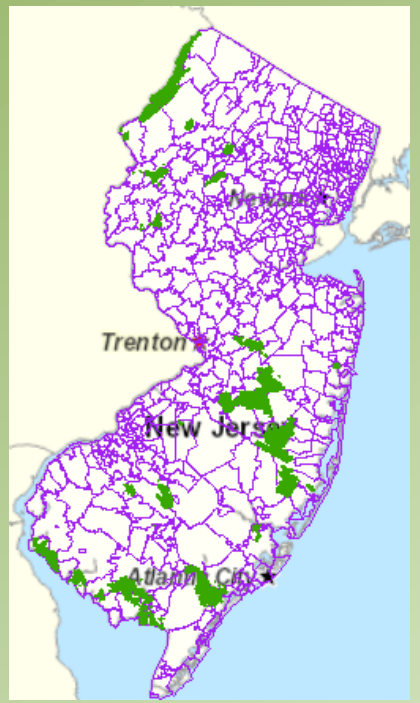


New Allocation Model

Proximity to Stamp Buyers



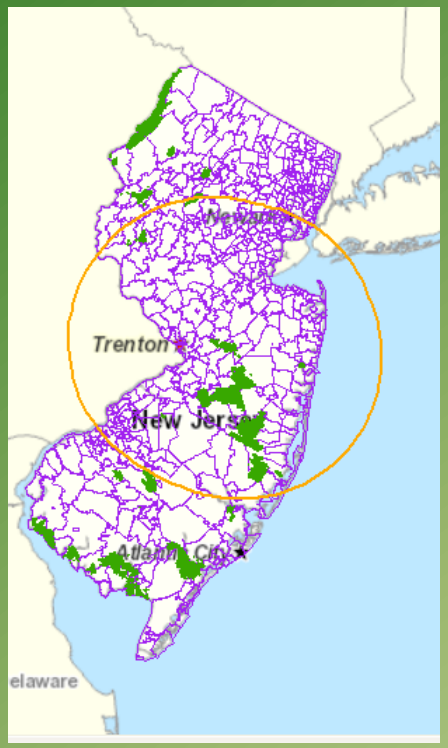
40 Mile Radius

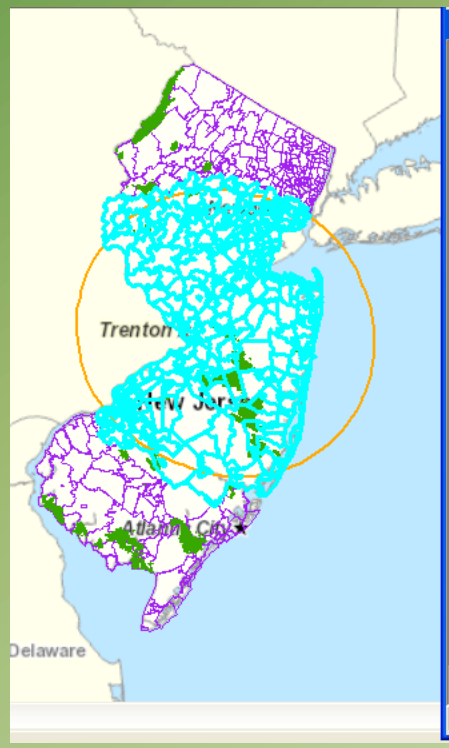


Zip Codes

New Allocation Model

Proximity to Stamp Buyers





Zip Codes

	INTPTLON10	PARTFLG10	Zip Code	Sum
	-074.4491264	N	07435	6
	-074.7503124	N	07828	46
	-074.3425114	N	07082	14
	-074.6839453	N	07930	19
	-074.4273581	N	07940	16
	-074.4793438	N	07976	2
	-074.4403289	N	07046	7
	-074.3156482	N	07457	1
	-074.1604286	N	08753	132
	-074.2630272	N	08731	97
	-074.2981735	N	08008	25
	-074.1669306	N	08741	10
	-074.3208087	N	08733	21
	-074.2233491	N	08758	41
	-074.2510718	N	08757	60
	-074.2450769	N	07470	75
	-074.2058344	N	07424	43
	-074.1354244	N	07014	4
	-074.1716352	N	<Null>	<Null>
	-075.4962739	N	08023	2
	-074.6007655	N	07439	18
	-074.2667060	N	07204	11
	-074.2893410	N	07033	18

595 (331 out of 595 Selected)

Zip Codes | 40mile_full

New Allocation Model

Does the model “work” for you?

New Allocation Model

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- Is our goal hunter safety and hunter satisfaction?

New Allocation Model

Does the model "work" for you?

- Is our goal hunter safety and hunter satisfaction?
- Is an objective approach to pheasant allocation (*using measurable parameters*) appropriate?

New Allocation Model

Does the model "work" for you?

- Is our goal hunter safety and hunter satisfaction?
- Is an objective approach to pheasant allocation (*using measurable parameters*) appropriate?
- Does setting stocking levels according to area stocked & proximity to stamp buyers increase overall hunter safety & satisfaction?

New Allocation Model

Does the model "work" for you?

- Is our goal hunter safety and hunter satisfaction?
- Is an objective approach to pheasant allocation (*using measurable parameters*) appropriate?
- Does setting stocking levels according to area stocked & proximity to stamp buyers increase overall hunter safety & satisfaction?
- Should other parameters be included in the model?

New Allocation Method

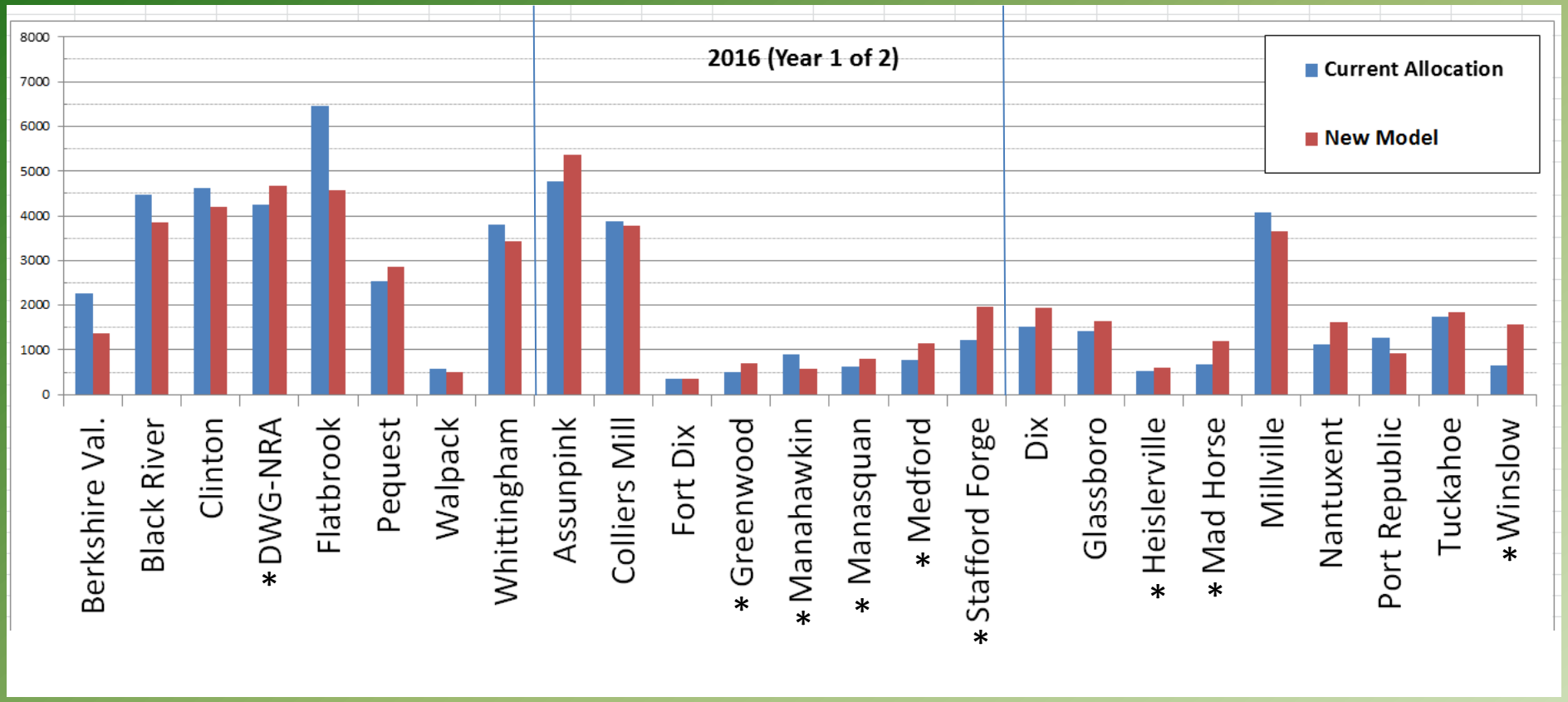
New Method

- **Step 1:** Birds allocated to individual WMAs based on results of the Pheasant Allocation Model to obtain season totals for each WMA.
- **Step 2:** Birds numbers spread across season (15 stocking days) by Regional Superintendent for each Region.

Assisting Stamp Buyers w/Change

- Stakeholder Involvement
- Adequate Advanced Notice
- Pheasant-Stocked Area Maps
- Phased in Change

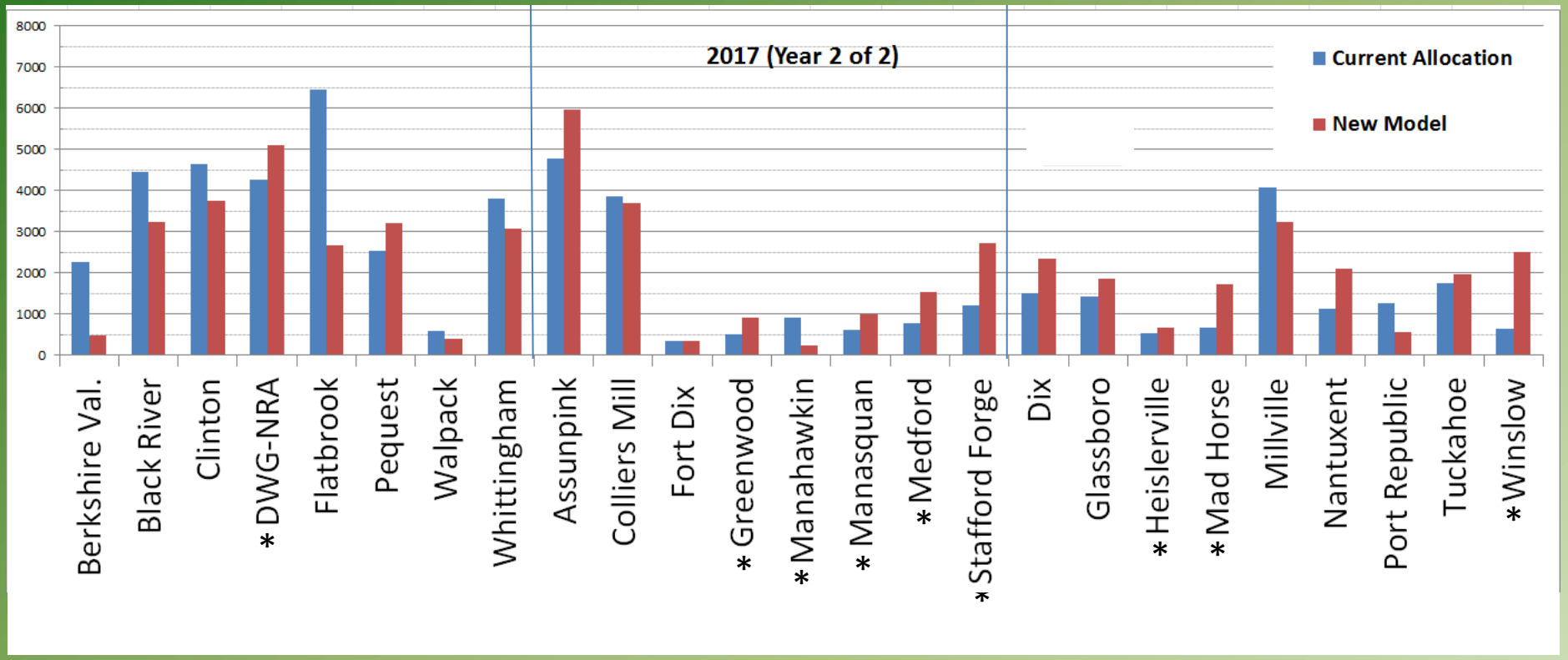
New Allocation Results



Year 1 Regional Totals

	2015	Revised	Change
North	29000	25453	-3547
Central	13000	14722	1722
South	13000	14973	1973

New Allocation Results



Year 2 Regional Totals

	2015	Revised	Change
North	29000	21907	**-7093**
Central	13000	16445	**3445**
South	13000	16946	**3946**

	2015	New	Change	% change
Birds/acre/day	3.20	2.52	-0.69	-21
MAX	16.81	4.54		
Min	0.37	0.44		

Questions?

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