Managing Maine's White-tailed Deer 2000-2015

By
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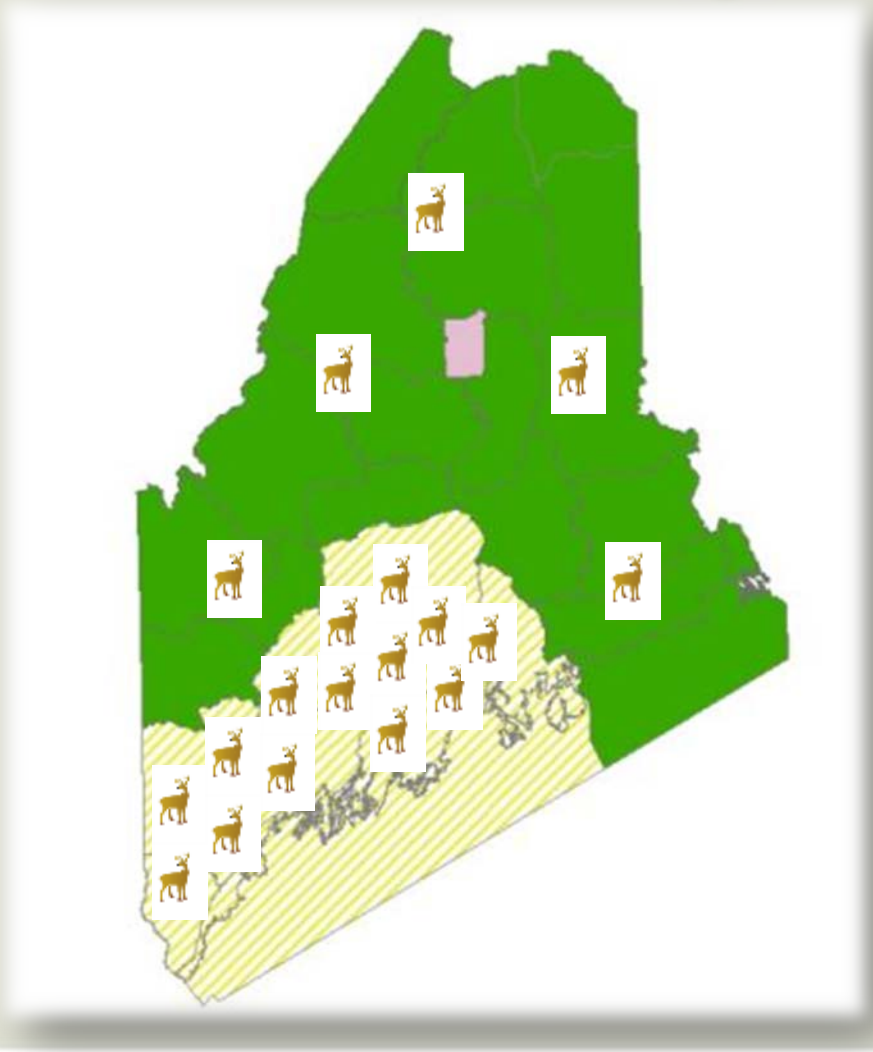
State Deer Specialist

Some Context

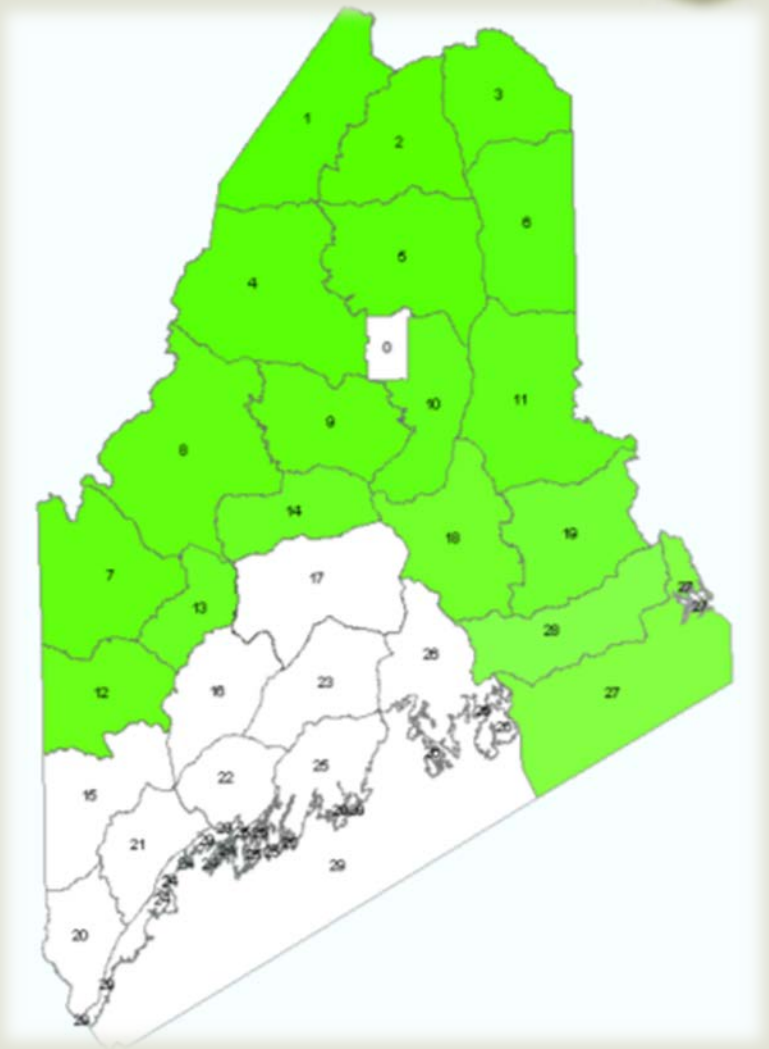
- Late-1980s → 1990s
  - Increase Deer Abundance
- Differences in productivity



Deer Management Goals & Objectives: Western, Northern, and Eastern

- Short-term
  - Provide hunting and viewing opportunity for white-tailed deer, wile preventing over-browsing of deer wintering habitat.
- Long-term
  - Increase "…"

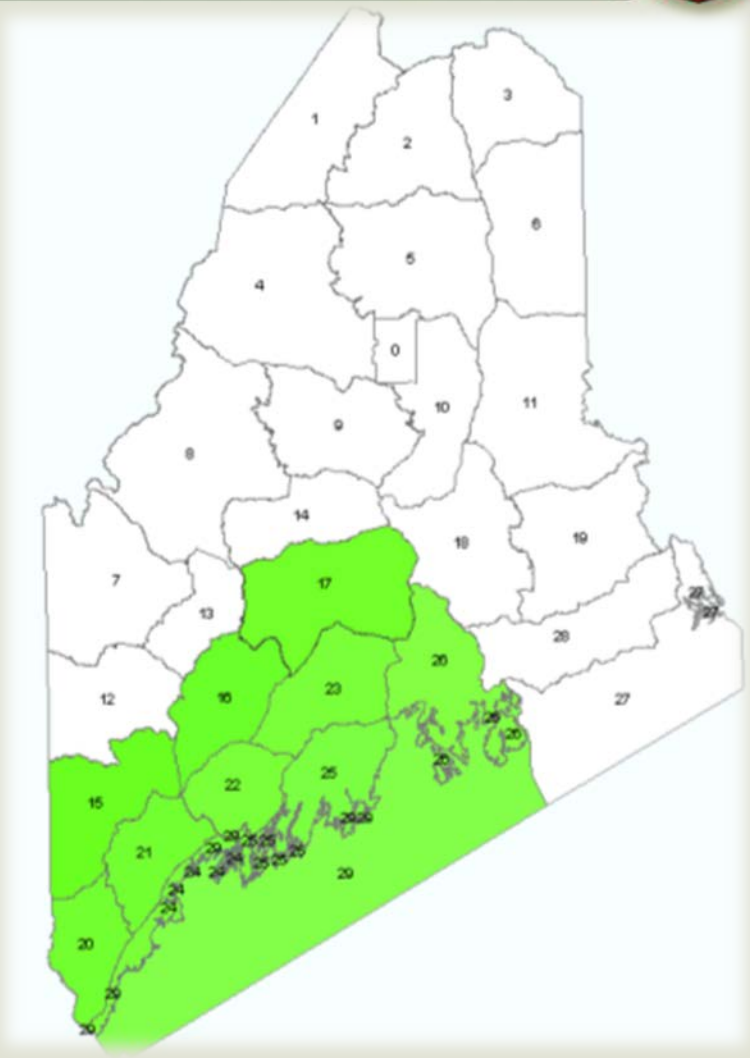
- Objectives:
  - Short-term → 50%-60% MSP
  - Long-term
    - 10 deer/mi2
    - 15 deer/mi2



Deer Management Goals & Objectives: Southern and South Central

- Balance the desire for deer hunting and viewing opportunity with the needs to reduce negative impacts of deer from browsing damage, collisions with motor vehicles, and potential risk of Lyme disease.

- Objectives:
  - 15 deer/mi2
  - 20 deer/mi2



Deer Management Decisions

Questions Related to Population Status

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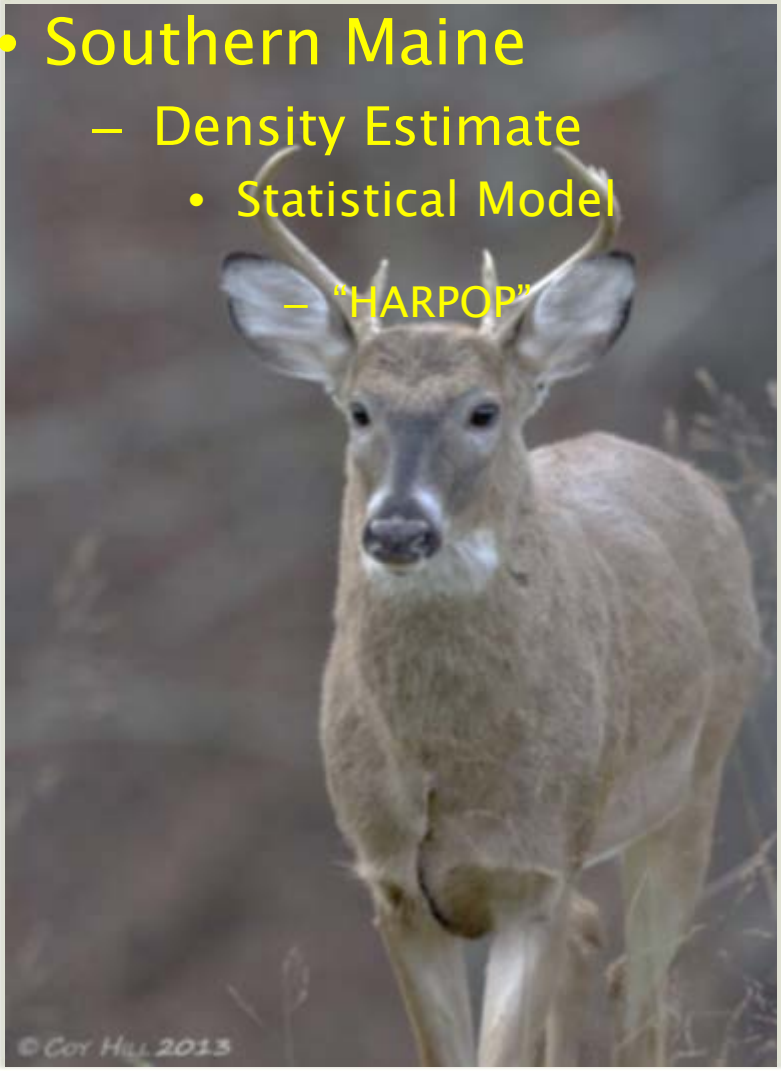
Rules of Thumb

→ Management Recommendations

Is Our Deer Population at Target?

- Southern Maine
  - Density Estimate
    - Statistical Model
      - "HARPOP"



Sex-Age-Kill

Bucks

+

Does

+

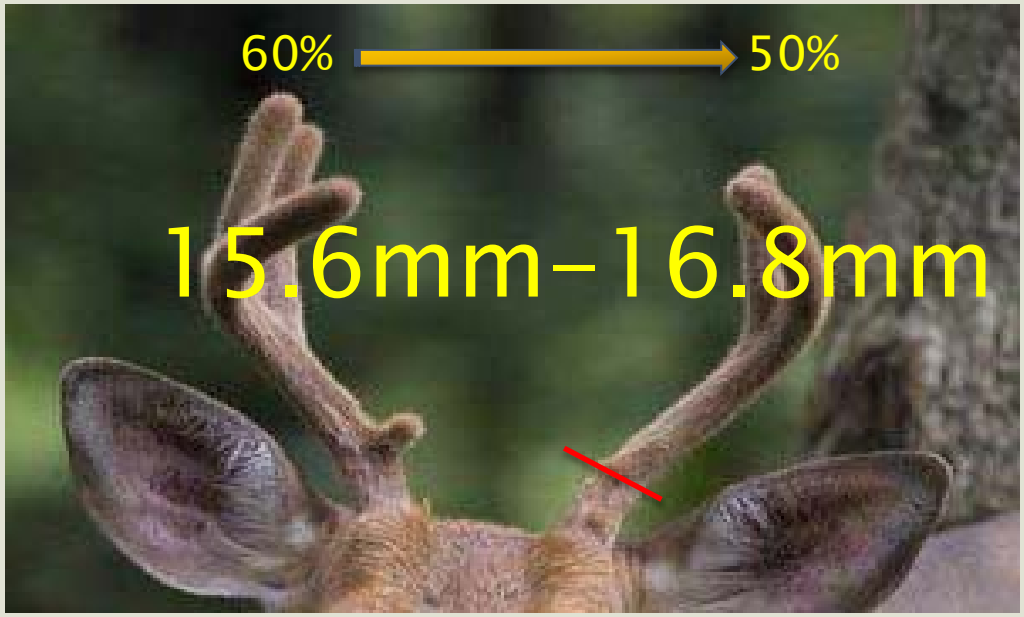
Fawns

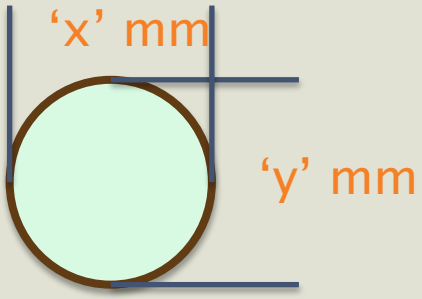
↓

Pre-hunt population

Is Our Deer Population at Target?

- Southern Maine
  - Density Estimate
    - Statistical Model
      - "HARPOP"
- Western, Northern, and Downeast Maine
  - 50%–60% of "K"

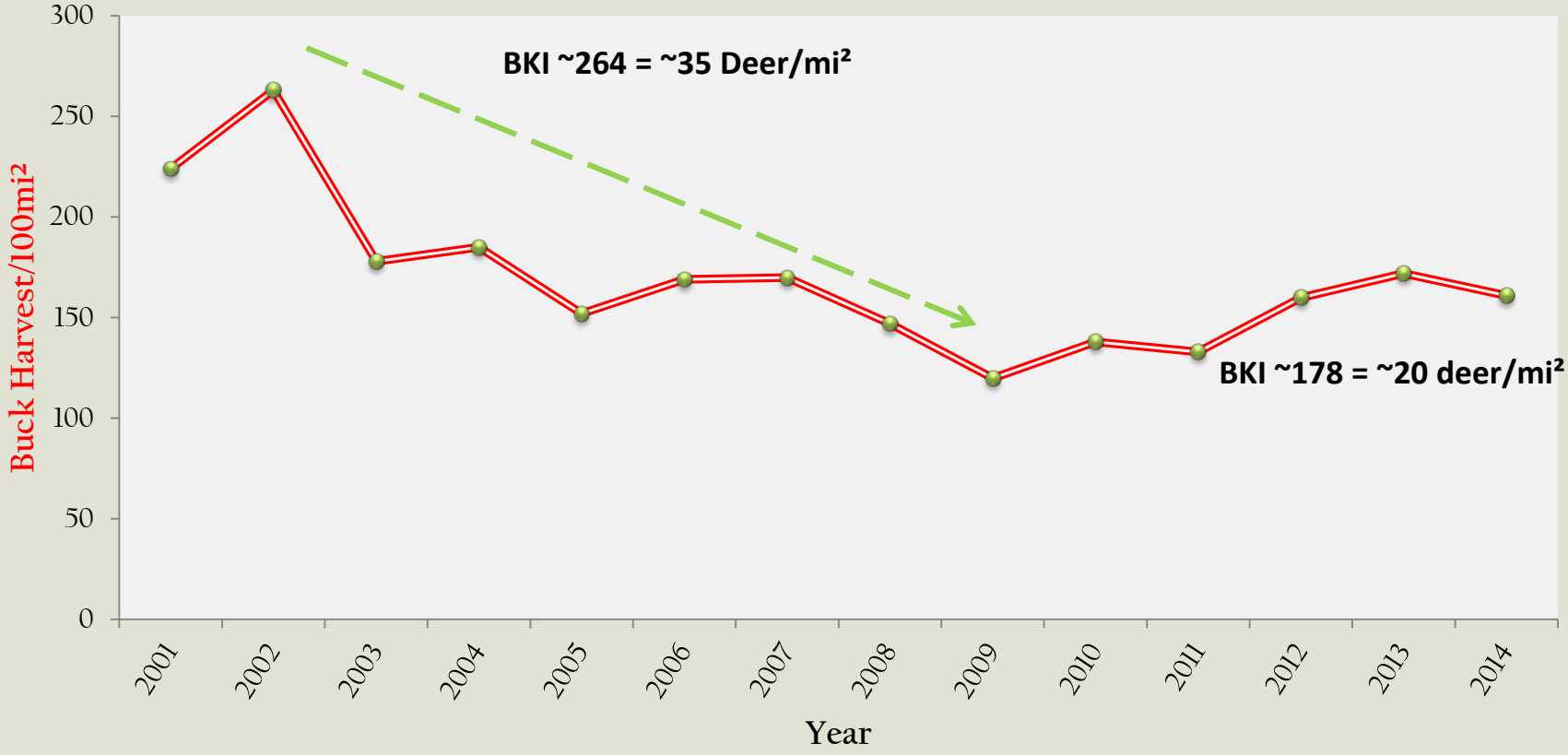




$$YABD = \frac{x + y}{2}$$

2001–2014 Population Trend

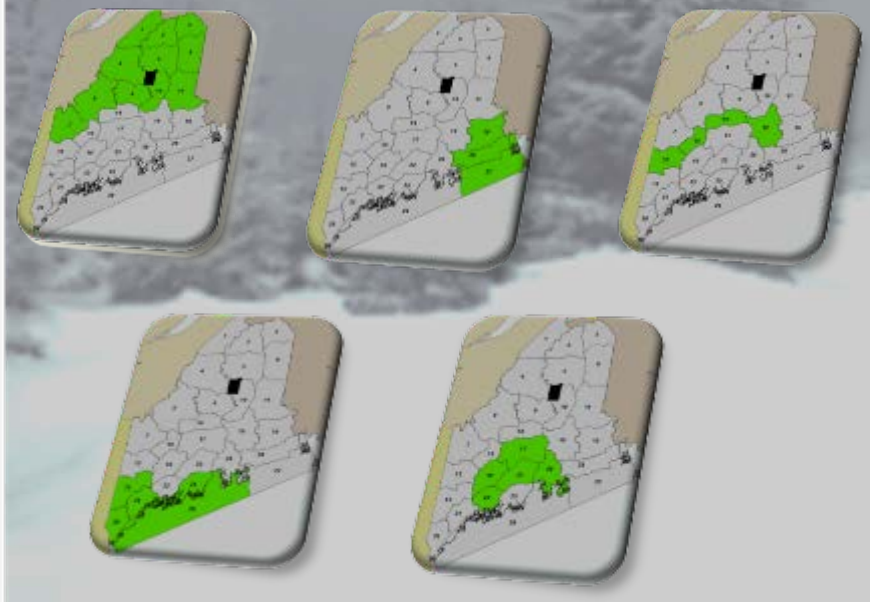
e.g., Wildlife Management District 23



Bucks Harvested per 100mi² → BKI

Impact of Maine Winters

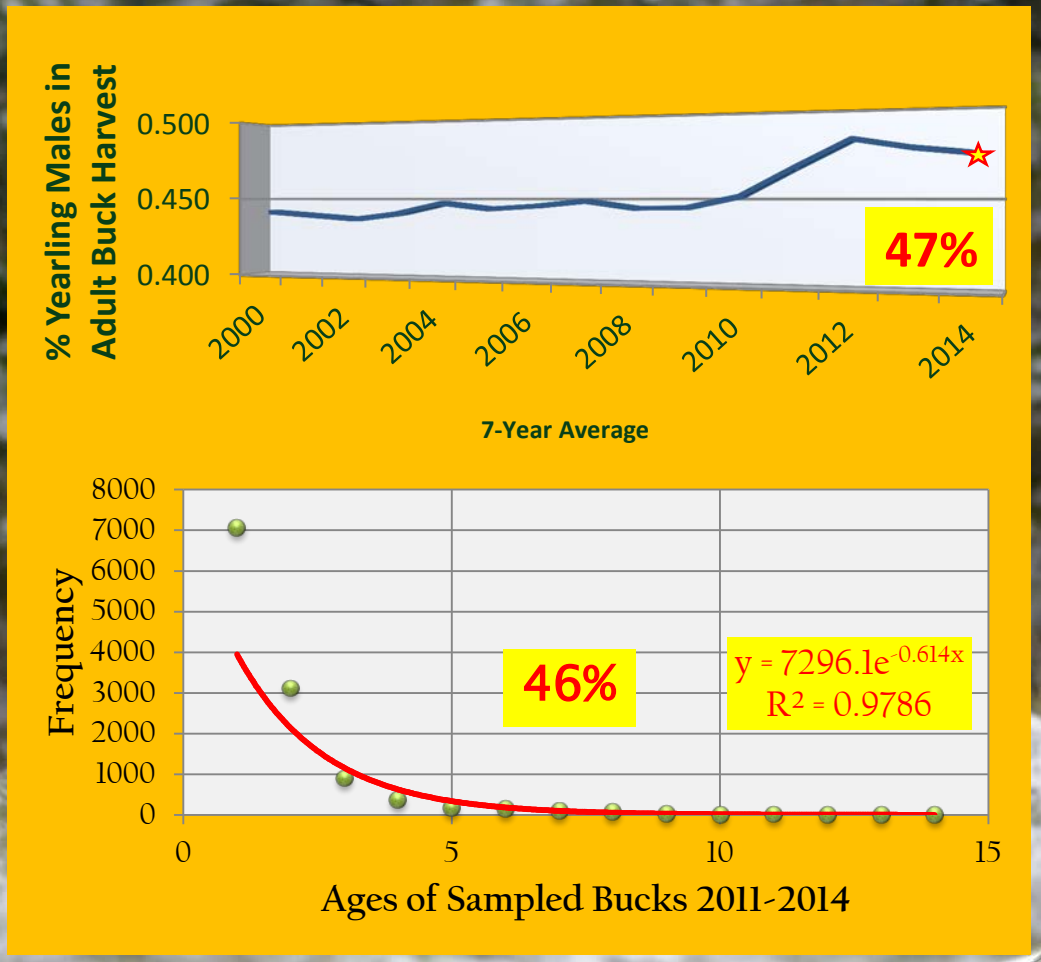
- Winter Severity Index
  - 2014-15 Status: Above Average
    - WSI – Range: 63 → 94; Mean: 81
    - WMR – Range: 9.3% → 18.5%; Mean: 13.9%



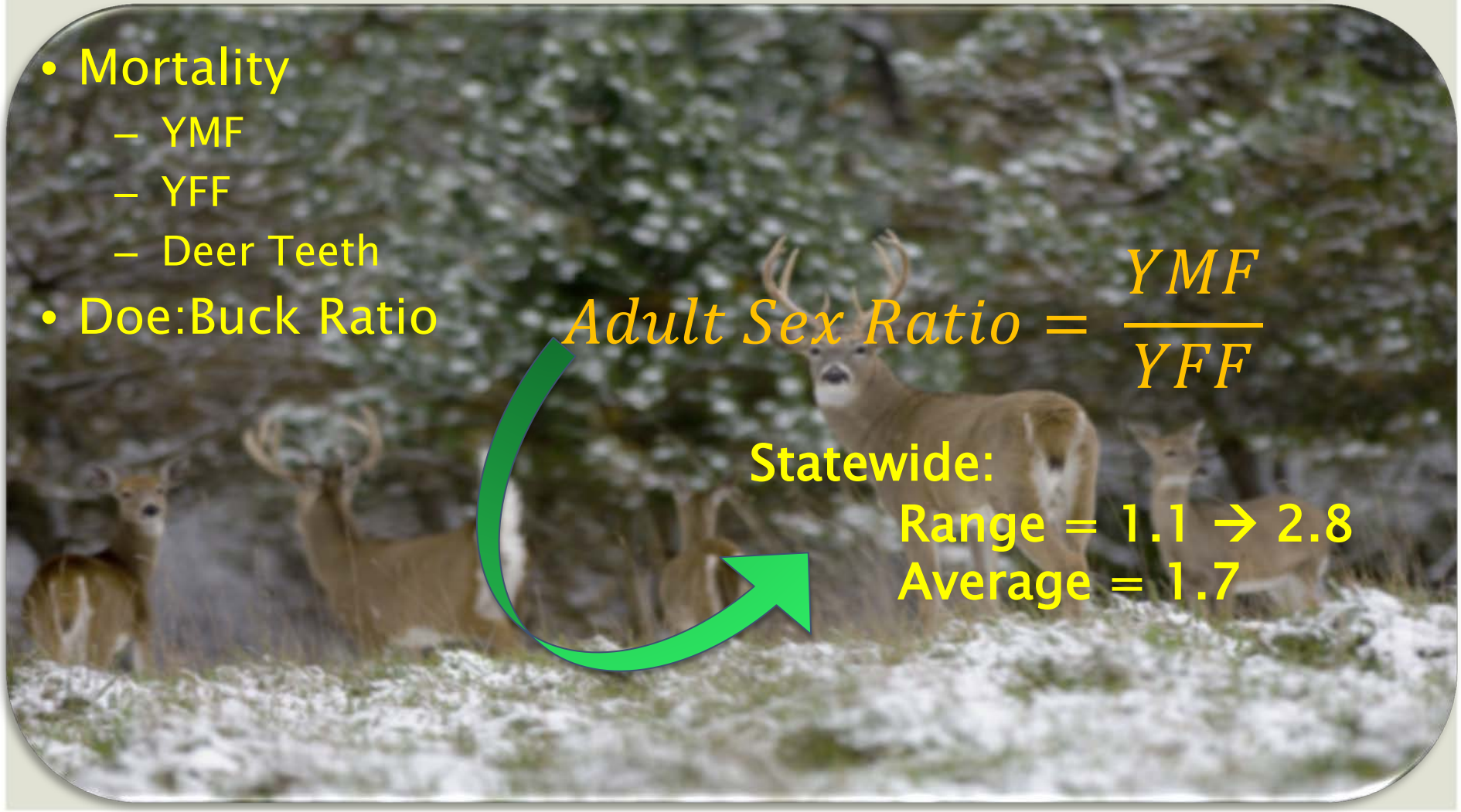
LTM – 15 Year Average (2000-2014)
WSI – Range: 50 → 89
Mean: 65
WMR – Range: 6.9% → 16.5%
Mean: 9.7%

Sex Ratios, Mortality, and Health

- Mortality
  - YMF
  - YFF
  - Deer Teeth



Sex Ratios, Mortality, and Health



- Mortality
  - YMF
  - YFF
  - Deer Teeth
- Doe:Buck Ratio

$$Adult\ Sex\ Ratio = \frac{YMF}{YFF}$$

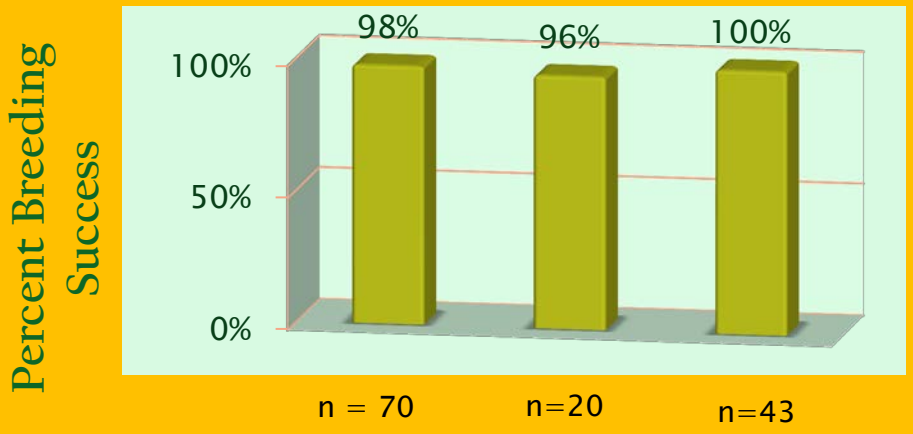
Statewide:

Range = 1.1 → 2.8

Average = 1.7

Sex Ratios, Mortality, and Health

- Mortality
  - YMF
  - YFF
  - Deer Teeth
- Doe:Buck Ratio
- Health
  - YABD
  - Yearling Weights
  - Breeding Success
  - Productivity



Sex Ratios, Mortality, and Health

- Mortality
  - YMF
  - YFF
  - Deer Teeth
- Doe:Buck Ratio
- Health
  - YABD
  - Yearling Weights
  - Breeding Success
  - Productivity
- Anecdotal

Maine's Public

Bringing It Together

WMD 23	Deer Hab-Mi ^{2} 781	LTM-WSI 53

POPULATION ATTRIBUTES

					WMR
All Cause Annual Mortality	Bucks 49%	Does 18%	Allowable 25%	2013 -1.2%	
Pre-Hunt Sex Ratio (Does:100 Bucks)	Current 229	When Stabilized 198		2012 1.0%	

Deer Mgt. History

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Yabd (15.5-16.5)	18.5	17.3	17.7	18.4	18.9	18.0	18.2	18.2		
	BKI	169	170	147	120	138	133	160	172		
	WSI #	33	54	66	69	46	66	31	46	60	
	WSI Rating	BA	AA	AA	AA	A	AA	BA	BA	AA	
	Harpop (Post Hunt/mi ^{2})	20.4	23.8 (23.2)	20.6 (21.7)	18.1	NA	NA	NA	NA		
	Mgt Strategy	A,7	B,4,7	C,1,7	B,1,2,6,7	A,2,6,7	A,1,7	A,2,5	A,6,3		
	Stabtar (stabcur)	65(80)	65(85)	65(85)	65(80)	65(85)	65(80)	65(80)	35(45)		
To Stabilize:	Doe Harvest	1,056	1,131	979	751	906	838	989	1,074		
	Permits	11,940	11,800	16,670	10,347	11,586	7,137	9,888	12,919		
Harvest Prescription:	Desired	75	80	75	75	80	35	35	36		
	Achieved	75	73	51	61	57	37	28	33		
Adult Buck Harvest:	Projected	1,500	1,150	1,260	900	975	950	1,095	1330	1,250	
	Achieved[1]	1,320	1,330	1,152	939	1,066	1,048	1,236	1343		
	Expanded Archery	NA	NA	NA	1	14	15	10			
Adult Doe Harvest:	Quota	1,125	920	945	720	780	333	383	599	375	
	Achieved [1]	995	970	583	575	610	390	345	448		
	Expanded Archery	NA	NA	43	37	46	49	36	38		
	Effort (Hunter Days/mi^2)	NA	NA	NA	NA	NA					
	Success (Deer/Hunter Day/mi^2)	NA	NA	NA	NA	NA					
Expansion Factor:	Applied	10.0	11.0	10.5	11.0	10.0	10.0	9.0	9	10	
	Achieved	11.3	10.4	17.0	13.8	12.8	8.5	10.0	12.0	#DIV/0!	
Permits Issued:	Per 100 mi ^{2}	1440	1296	1271	1014	999	425	442	690	480	
	Number	11,250	10,125	9,925	7,920	7,800	3,320	3,450	5387	3,750	

2014 Any-Deer Permit Recommendations

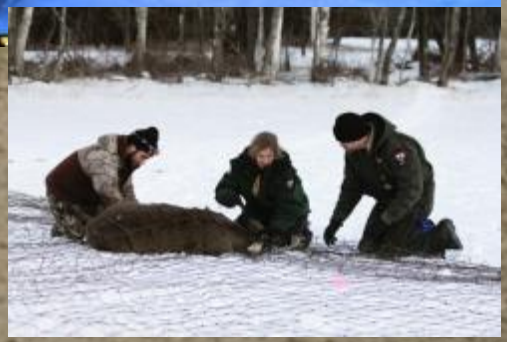
Pop. Objective (Deer/mi ^{2})	Short-term 18-22	Long-term 20	Target-BKI 168	Mgt. Strategy	B,1
	Current		Curr BKI 172		
	Projected		Proj.-BKI 160		

Applied Doe Removal Rate (Look up Table) and Associated HSR

Stabilization Ratio Change	Adjust for Skewed Sex Ratio		% DRR	Diff. Doe DRR	Prev. WSI DRR	Curr WSI DRR	Adj. for Strat.	Cumulat. DRR	Final Harv. Prescrip.
35	Stabcur-35		7			-1		6	30
Projected Buck Harvest	1,193	1250							
Adult Doe Quota	375								
Expansion Factor	9	10							
# of ADP Recommended	3,750	Permits per 100 sq. mi.	480						

So Now What???

- Update WSI System



So Now What???

- Update WSI System
- New Planning Horizon
  - Public Surveys
  - New Goals & Objectives
  - Updated Management System

Pennsylvania Game Commission

"Deer management recommendations are based on deer impacts on themselves, the forest, and the people, not a single number. If the forest is healthy, the deer are healthy, and the people tolerant of the level of deer-human conflicts, then it doesn't matter if there are 20 or 30 deer per square mile. The goals of the deer management plan have been met."

Thank You!