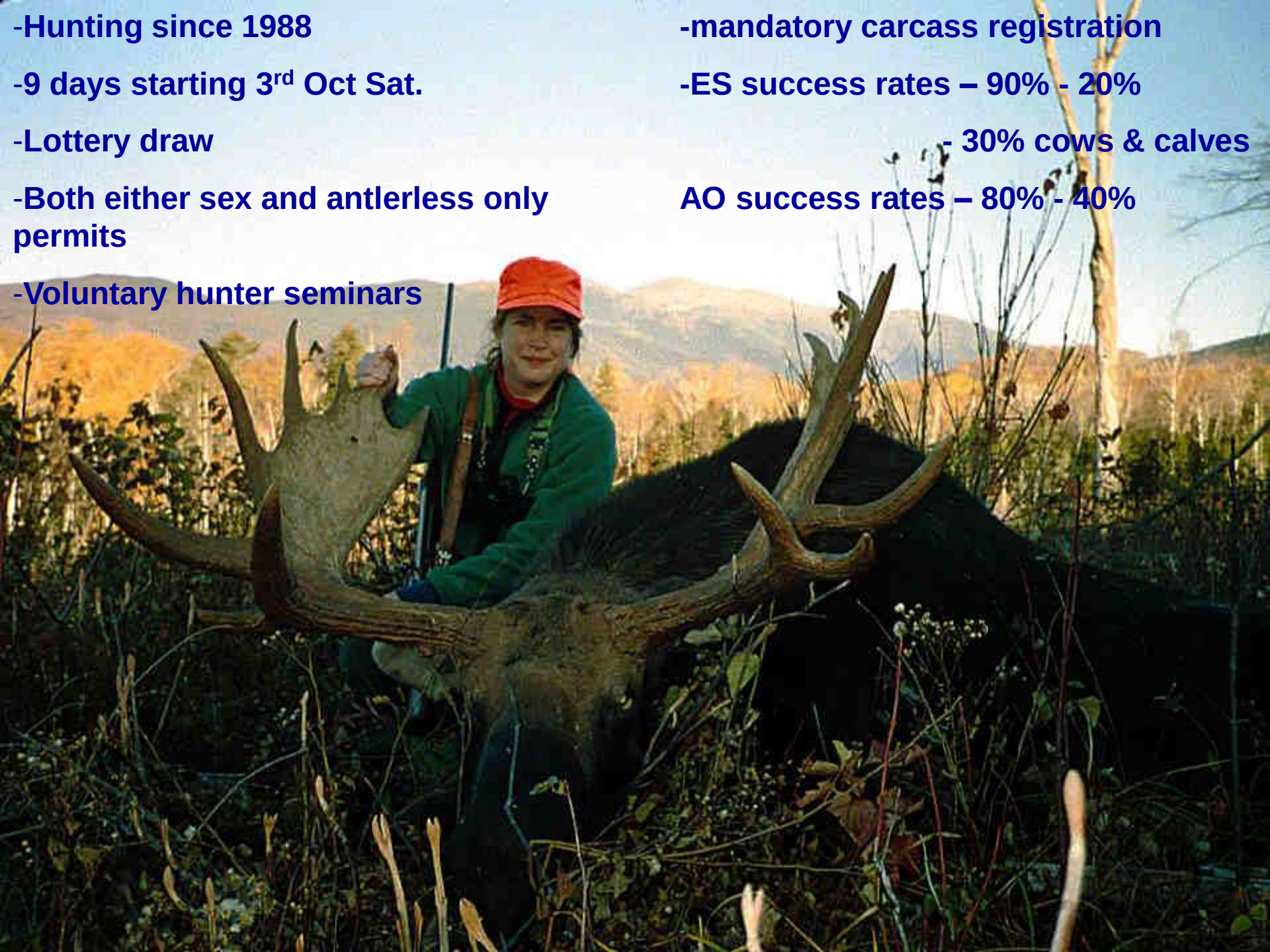
NEW HAMPSHIRE MOOSE UPDATE



-Hunting since 1988

-9 days starting 3rd Oct Sat.

-Lottery draw

-Both either sex and antlerless only permits

-Voluntary hunter seminars

-mandatory carcass registration

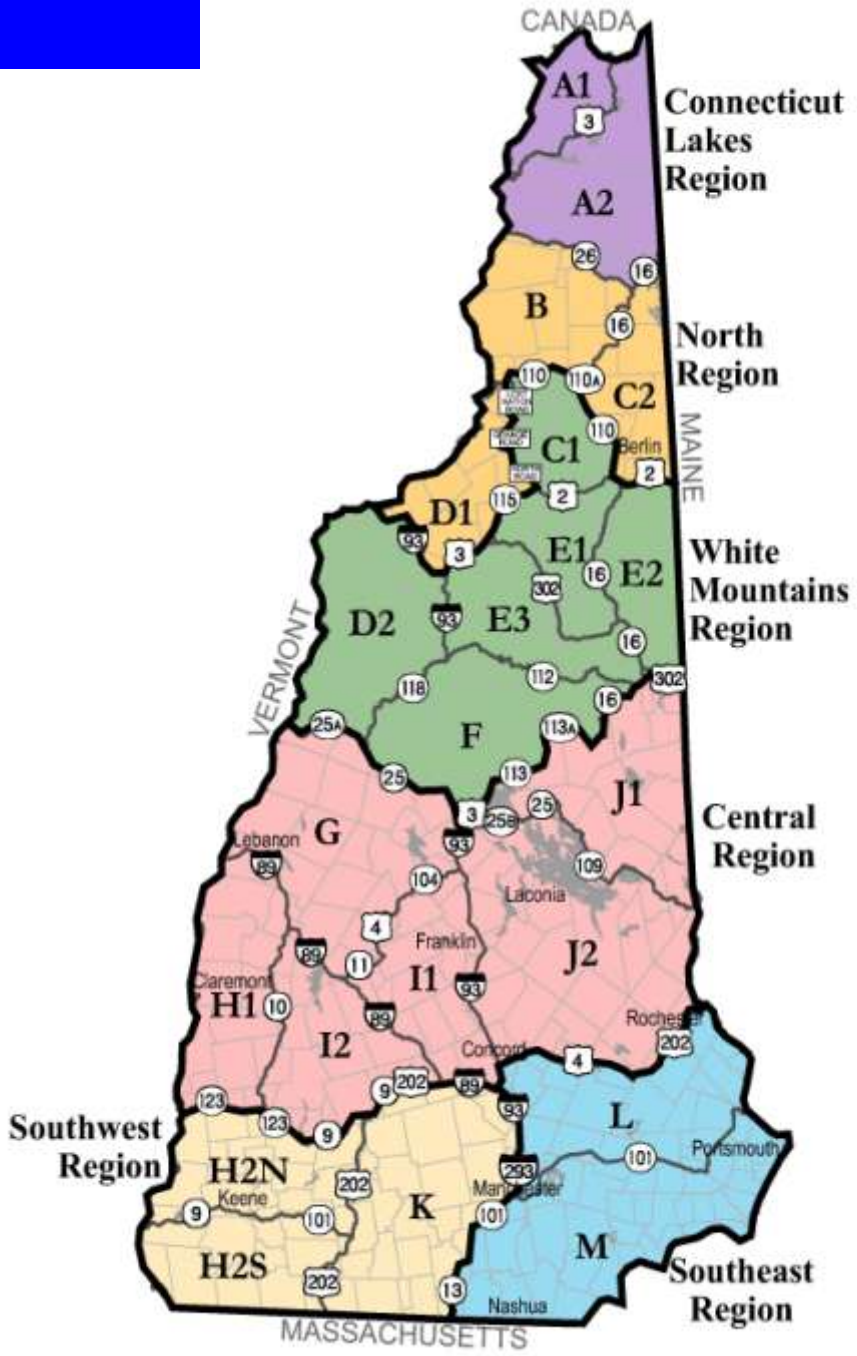
-ES success rates – 90% - 20%

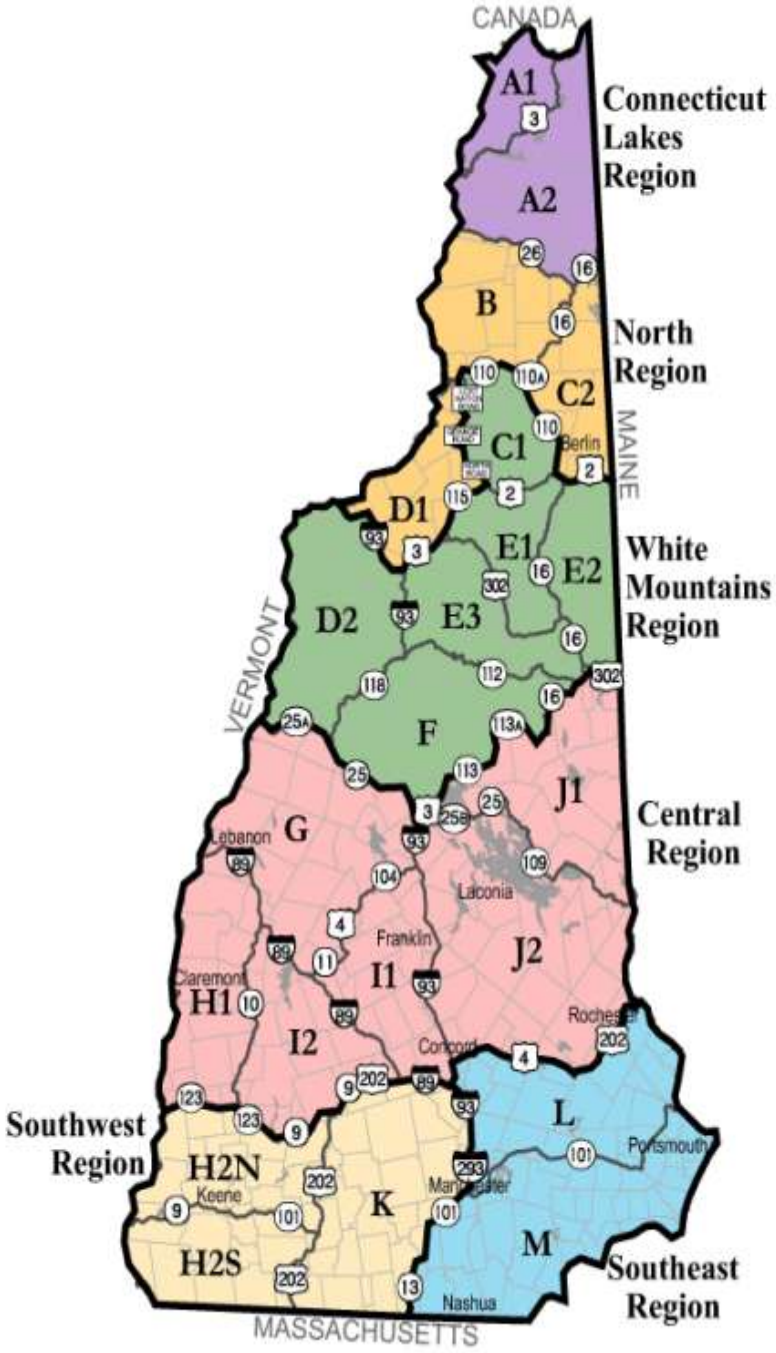
- 30% cows & calves

AO success rates – 80% - 40%

2012 EST DEER/MOOSE DENSITY

Regions	Deer/Mi^2	Moose/ Mi^2
Ct Lakes	8	2.23
North	7	1.45
W. Mt.s	6	0.52
Central	11	0.32
S. West	16	0.25
S. East	24	0.14

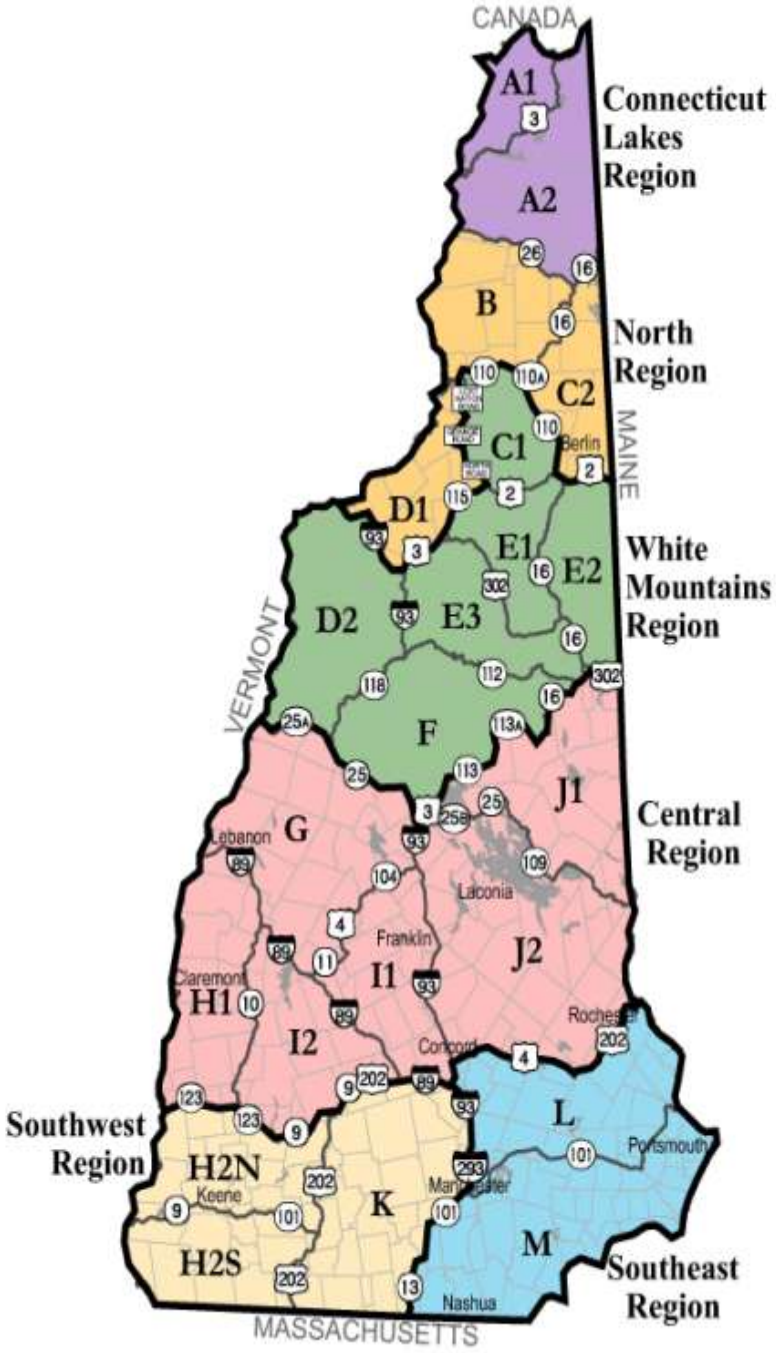




DEER HUNTER MAIL SURVEY

REGION	GOAL	CURRENT LEVEL*
CT. LAKE	7.40	7.22
NORTH	6.00	4.74
W MTN	3.00	1.36
CENTRAL	1.50	0.99
SW	1.30	0.83
SE	0.50	0.37

*** Moose seen per hundred hunter hrs, 2010 - 2012**



Deer Hunter Mail Survey Data

REGION	Adult Bulls/ Cow	% Calves
CT. LAKE	0.68	17
NORTH	0.92	15
W MTN	0.55	21
CENTRAL	0.67	20
SW	0.62	19
SE	0.64	26

MORTALITY STUDY

2001-2006

- 92 collared animals
- Adult cows and calves
-A annual survival – 0.87
-c annual survival – 0.45

WINTER TICK

41% - 49% all mortalities

75% occurs in April

88% composed of calves

Problems Associated with Winter Tick

Elevated spring mortality

Lower body weights = lower herd fecundity.

Influenced by moose density and weather

Need early snow and late springs to reduce ticks loads

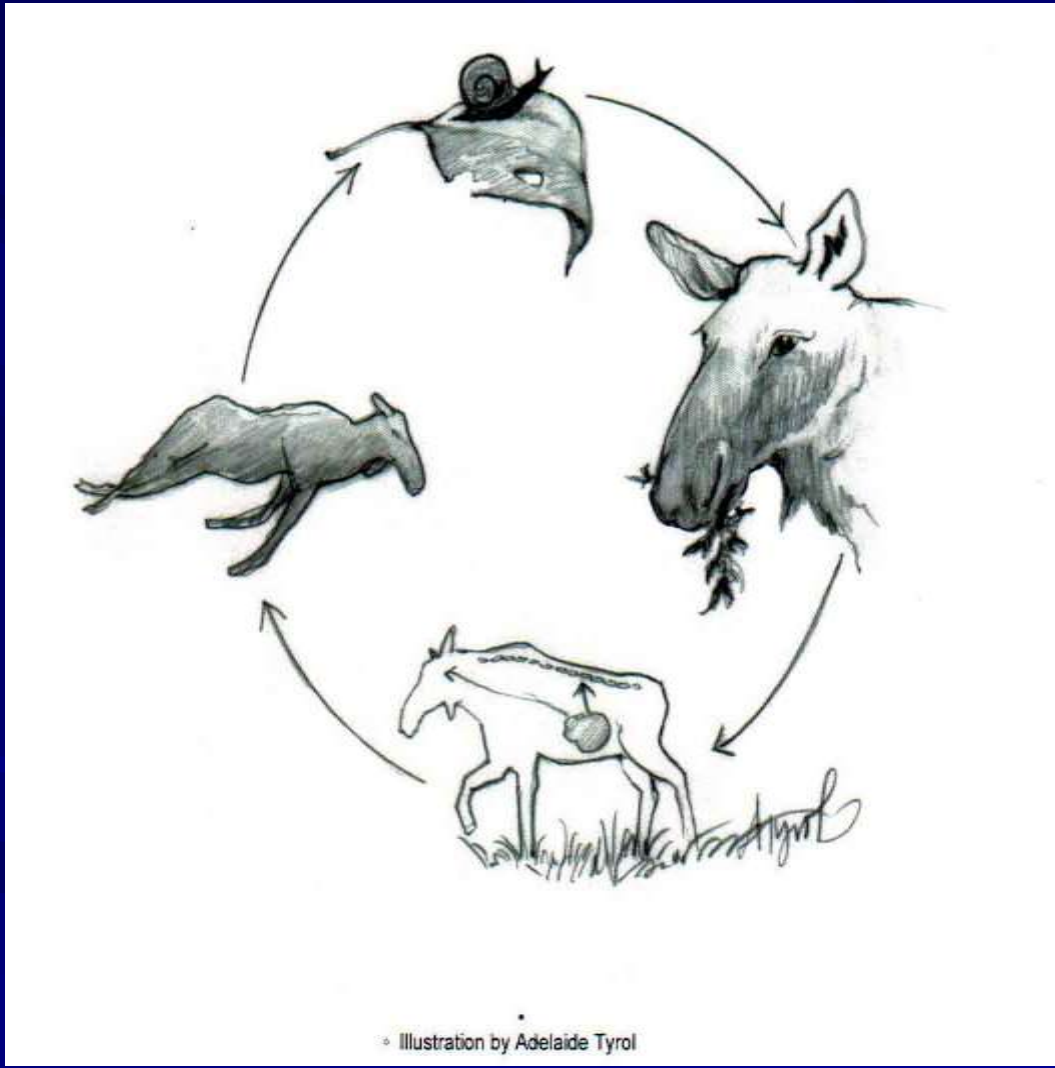
Brain Worm
?

-**Statewide**

-**See most often in Central region**

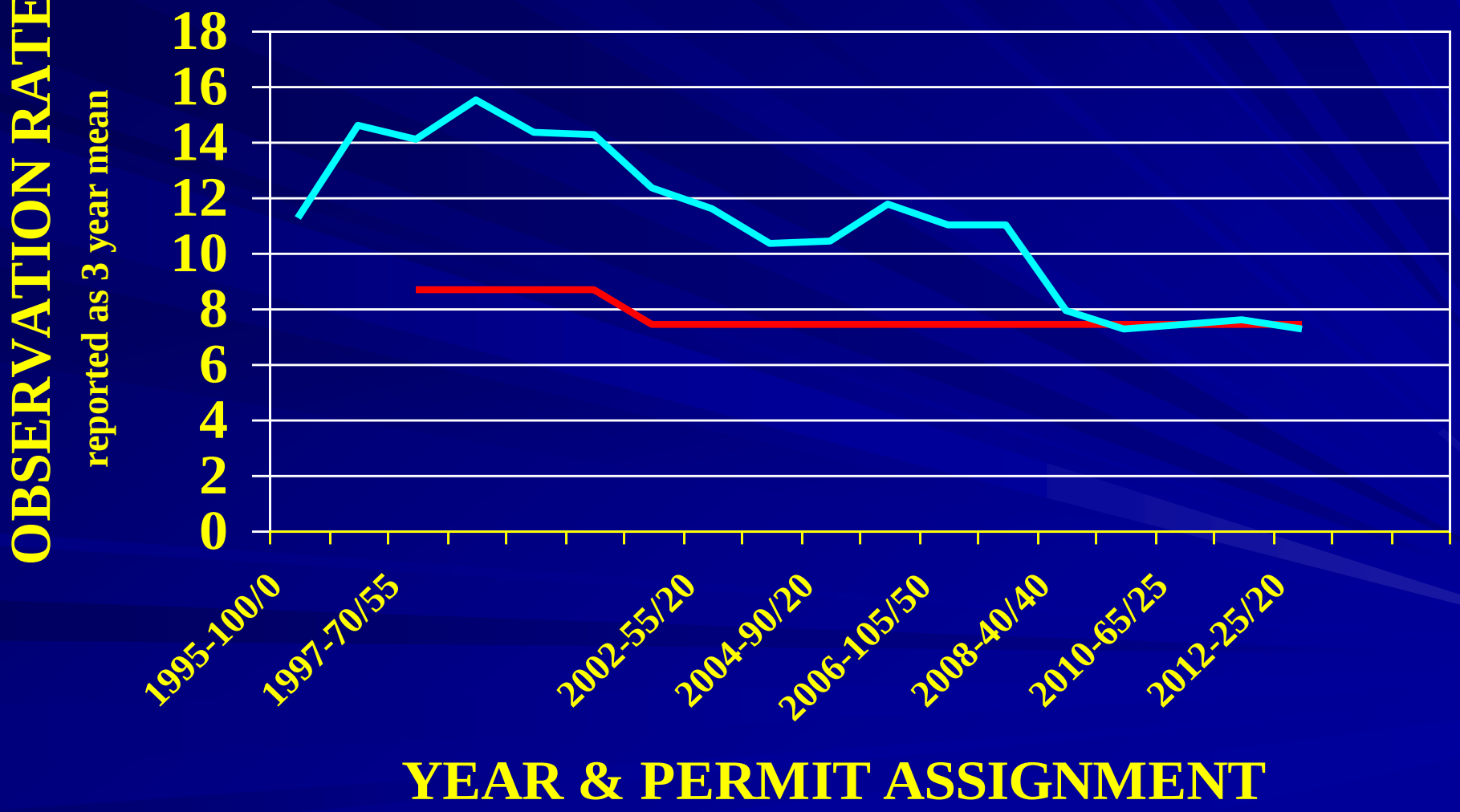
-**Seen least in SE region**

P. tenuis Life Cycle

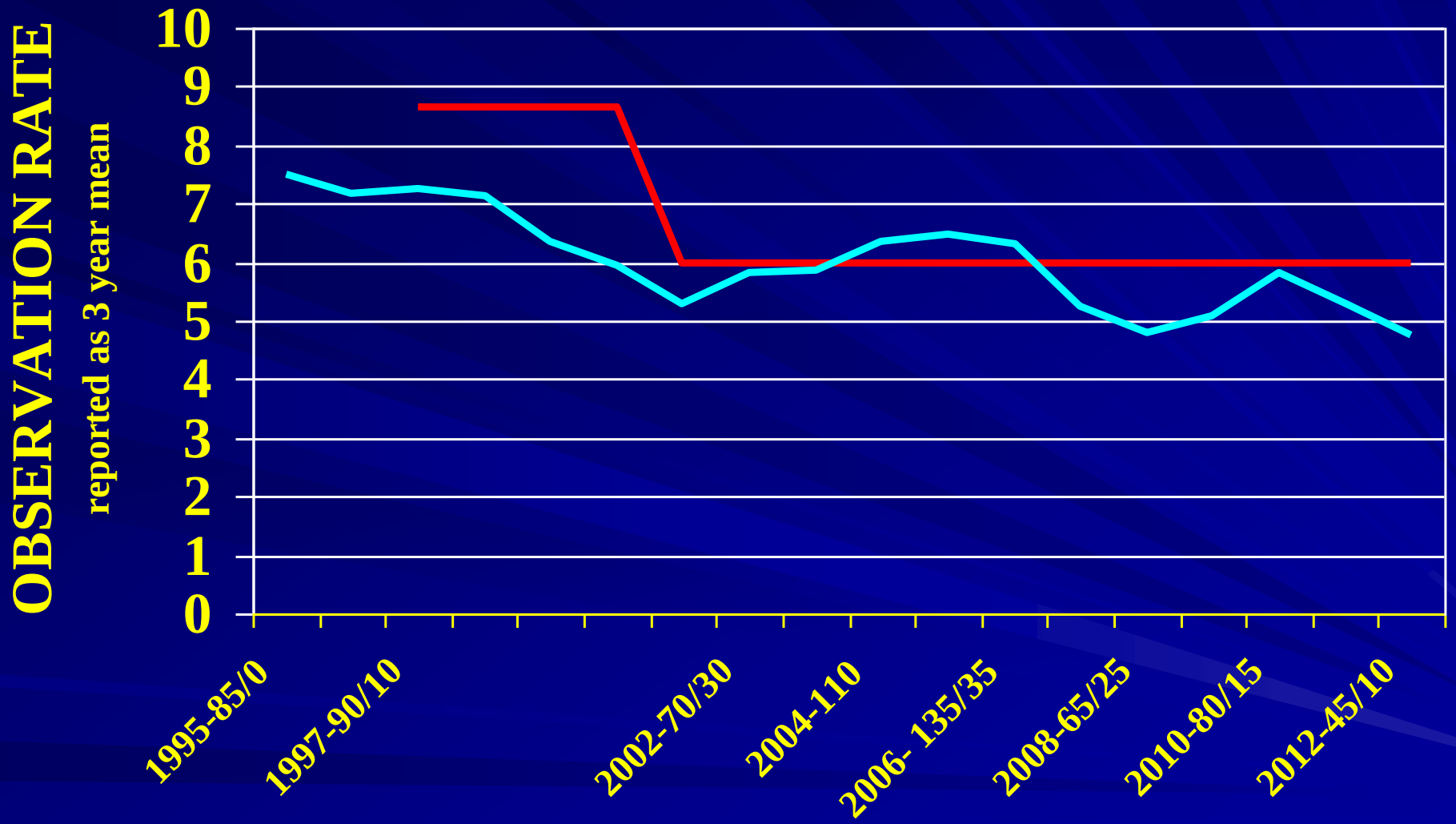


- Moose are an incompatible host.
- Present in areas with moderate to high deer densities.
- Wet conditions that favor snails and other gastropods increase spread of the disease.

Ct. Lake; A1, A2


OBSERVATION RATE
reported as 3 year mean
0
2
4
6
8
10
12
14
16
18
1995-100/0
1997-70/55
2002-55/20
2004-90/20
2006-105/50
2008-40/40
2010-65/25
2012-25/20
YEAR & PERMIT ASSIGNMENT

North; B, C2, D1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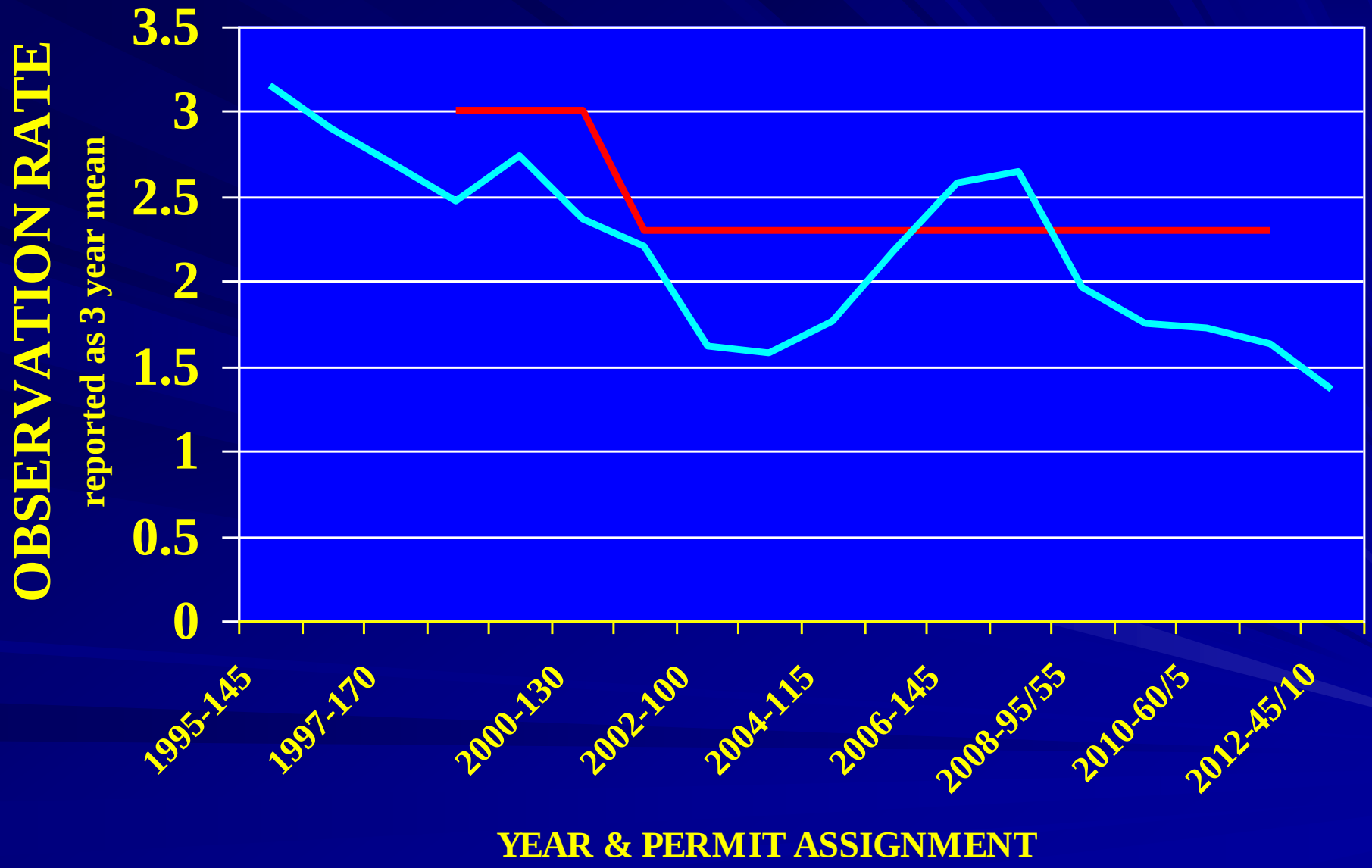
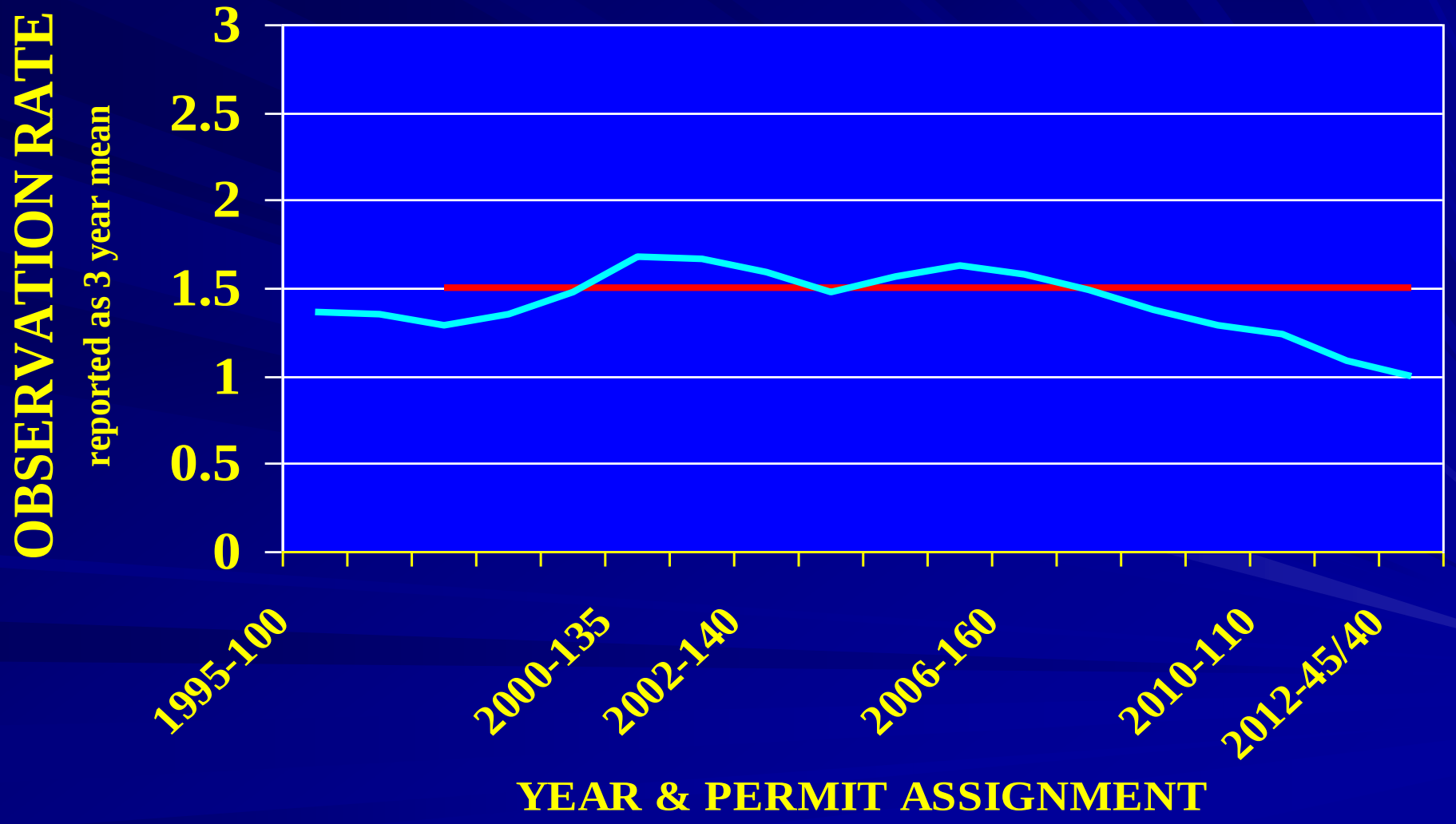
1997-90/10
2002-70/30
2004-110
2006- 135/35
2008-65/25
2010-80/15
2012-45/10
YEAR & PERMIT ASSIGNMENT

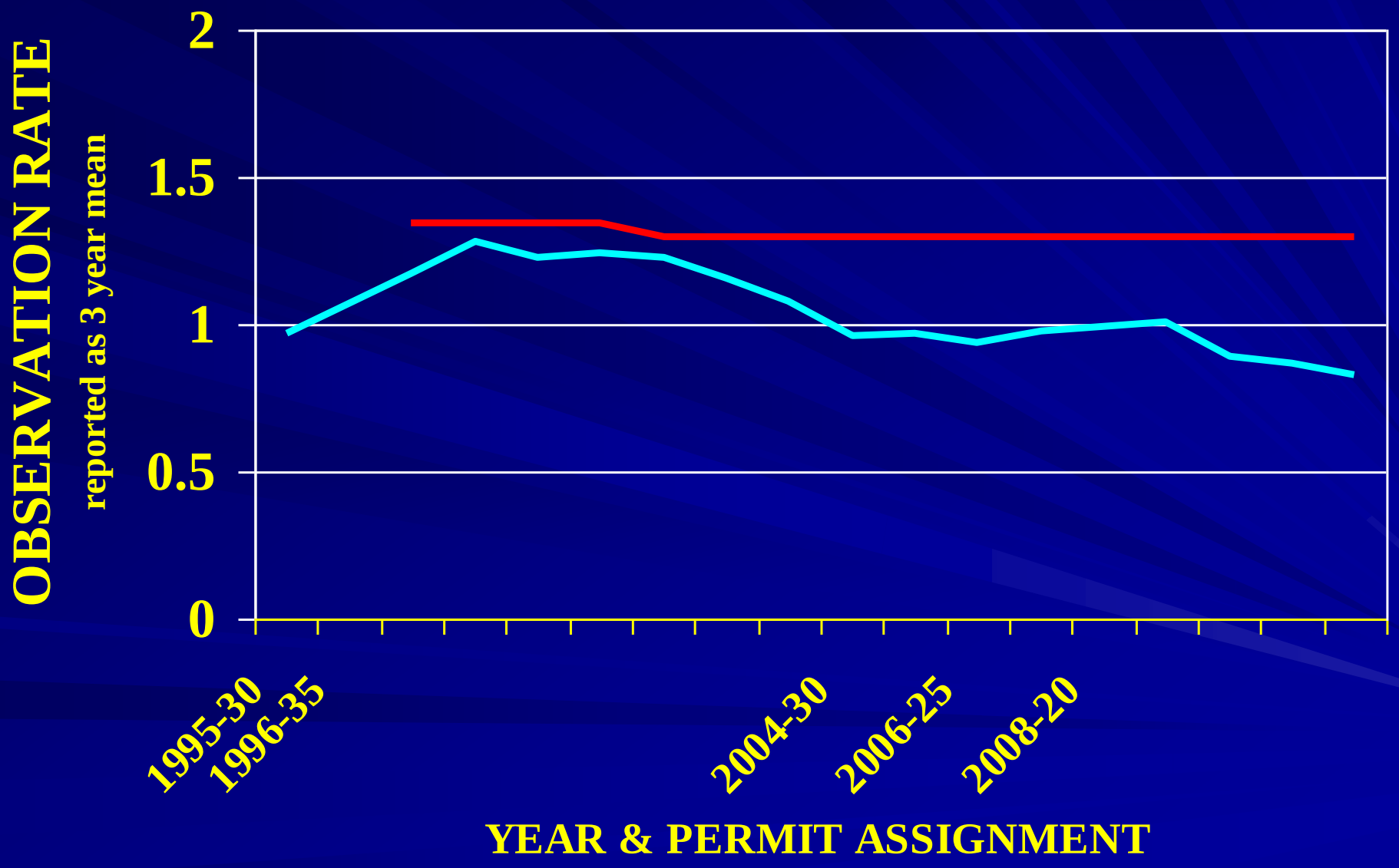
W. Mtn.; C1, D2, E1, E2, E3, F



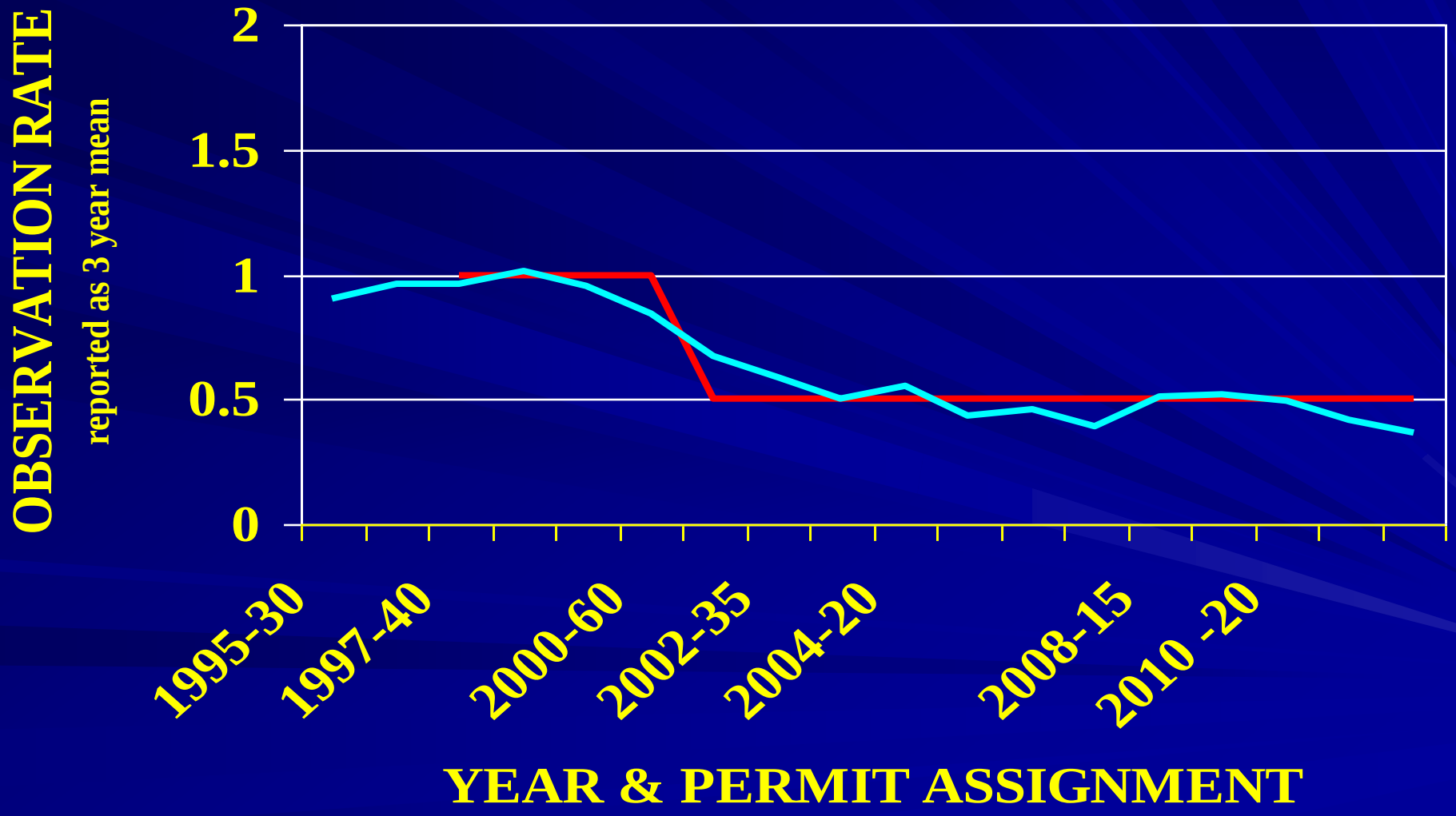
Central; G,H1,I1,I2,J1,J2



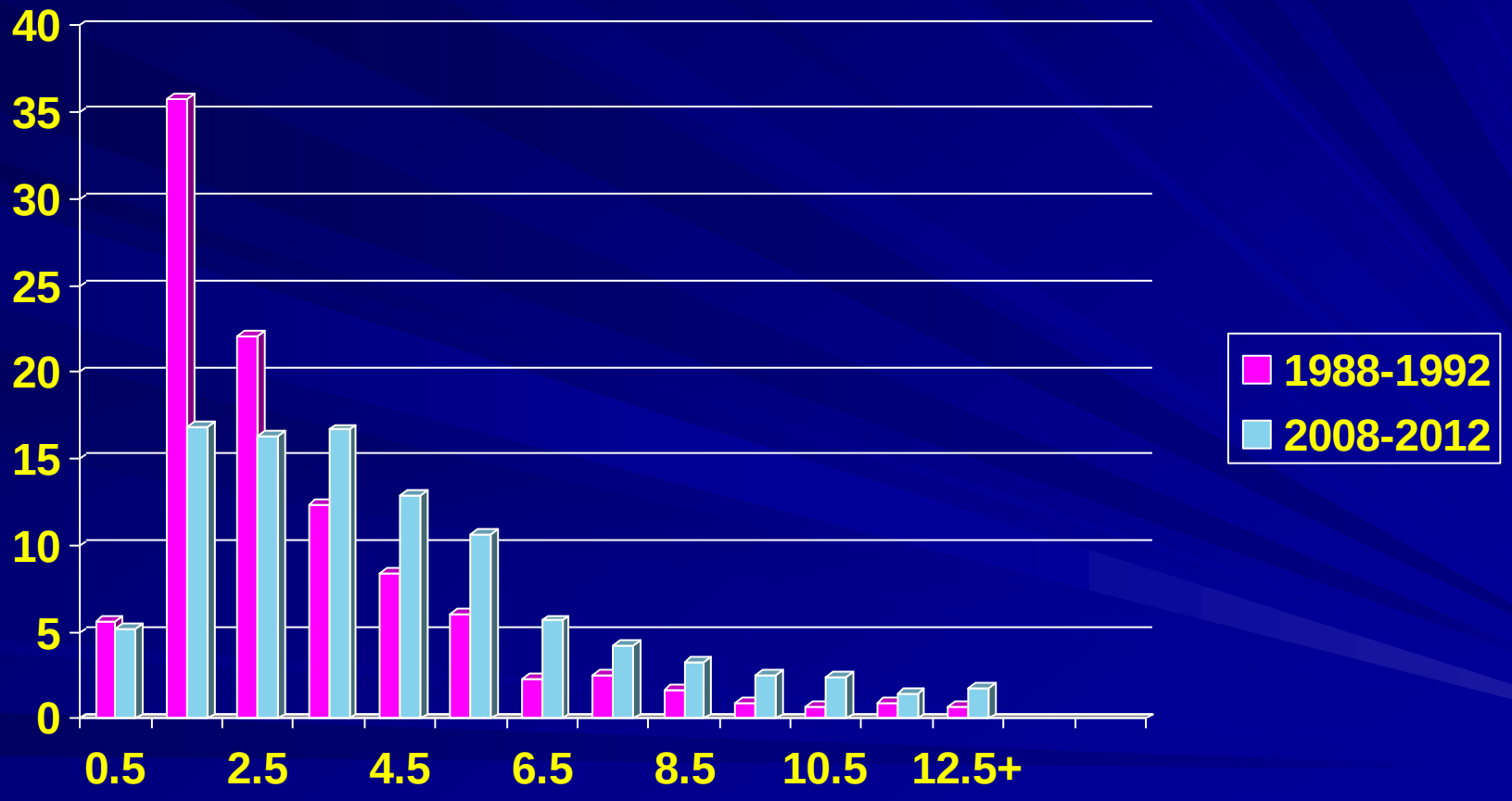
SouthWest; H2N, H2S, K



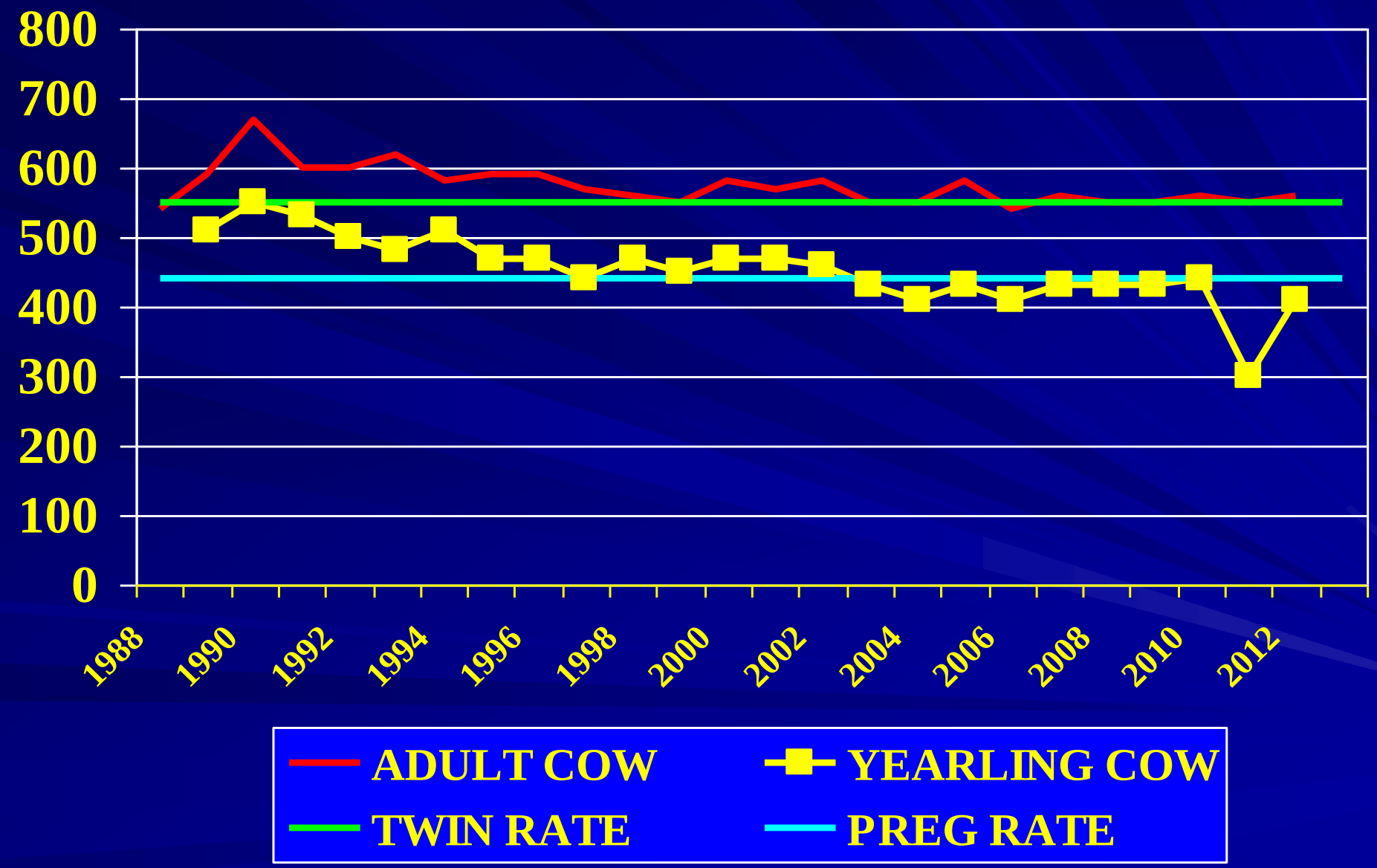
SouthEast; L, M



Age Structure as Percentage



COW WEIGHT; CT LAKES



	Yearling Preg rate	Yearling Twin rate	Adult Preg rate	Adult Twin rate
1988-1992	82	44	100	52
2008-2012	27	8	81	18

HABITAT

- Stocking rate of commercial tree species acceptable in all regions –% trees w/ severe damage in single digits with one exception – growth rates were slower at higher moose densities
- Small mean annual home range (24.6 km^2), coupled with high overlap of seasonal HR and core areas, suggest habitat is not limiting.
- Lack of preferred habitat use and similar habitat use by barren and maternal cows suggest high habitat heterogeneity, quality & forage availability.
- HSI models suggest current estimated densities are below carrying capacity

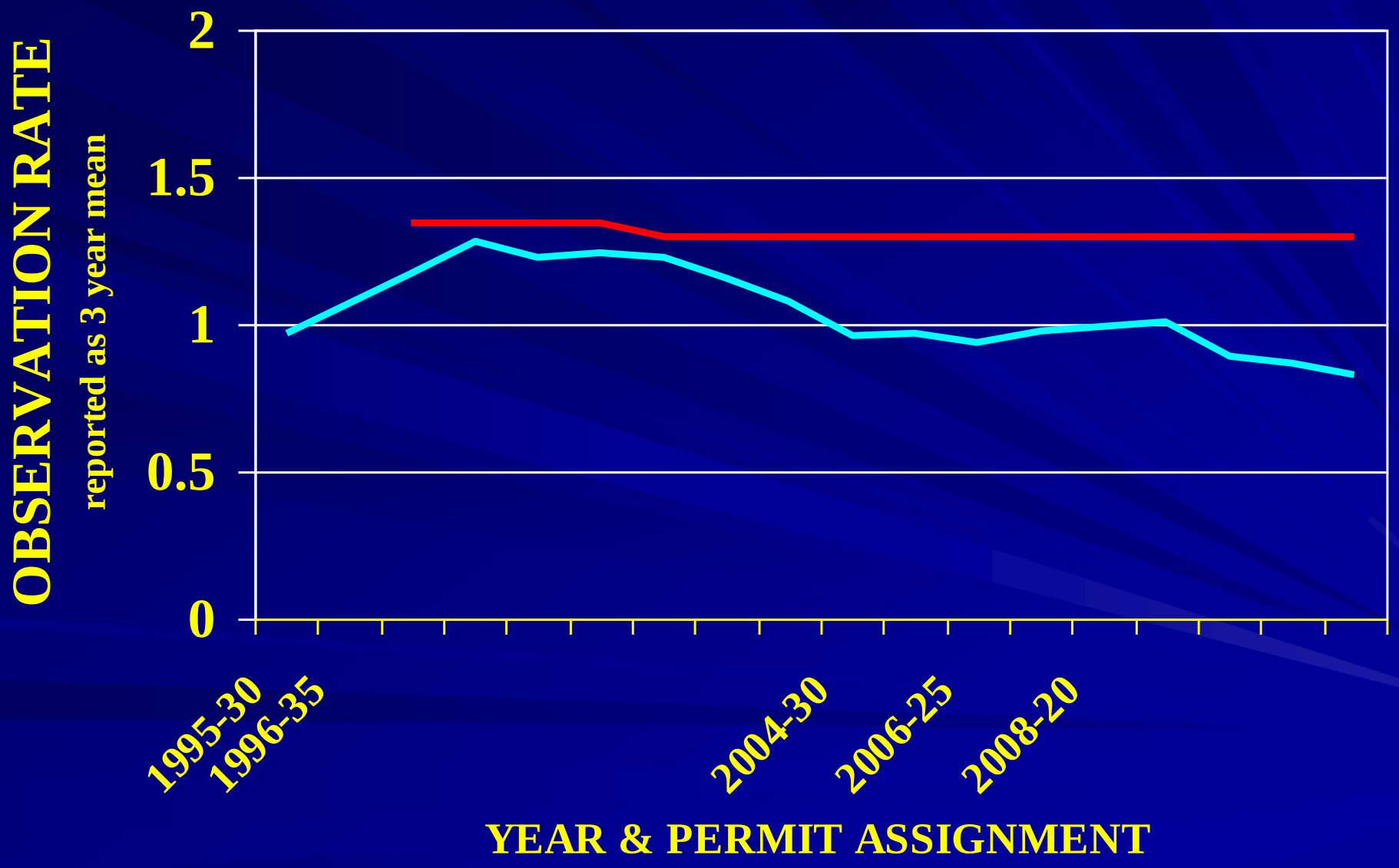

THANK YOU !

CONCLUSIONS

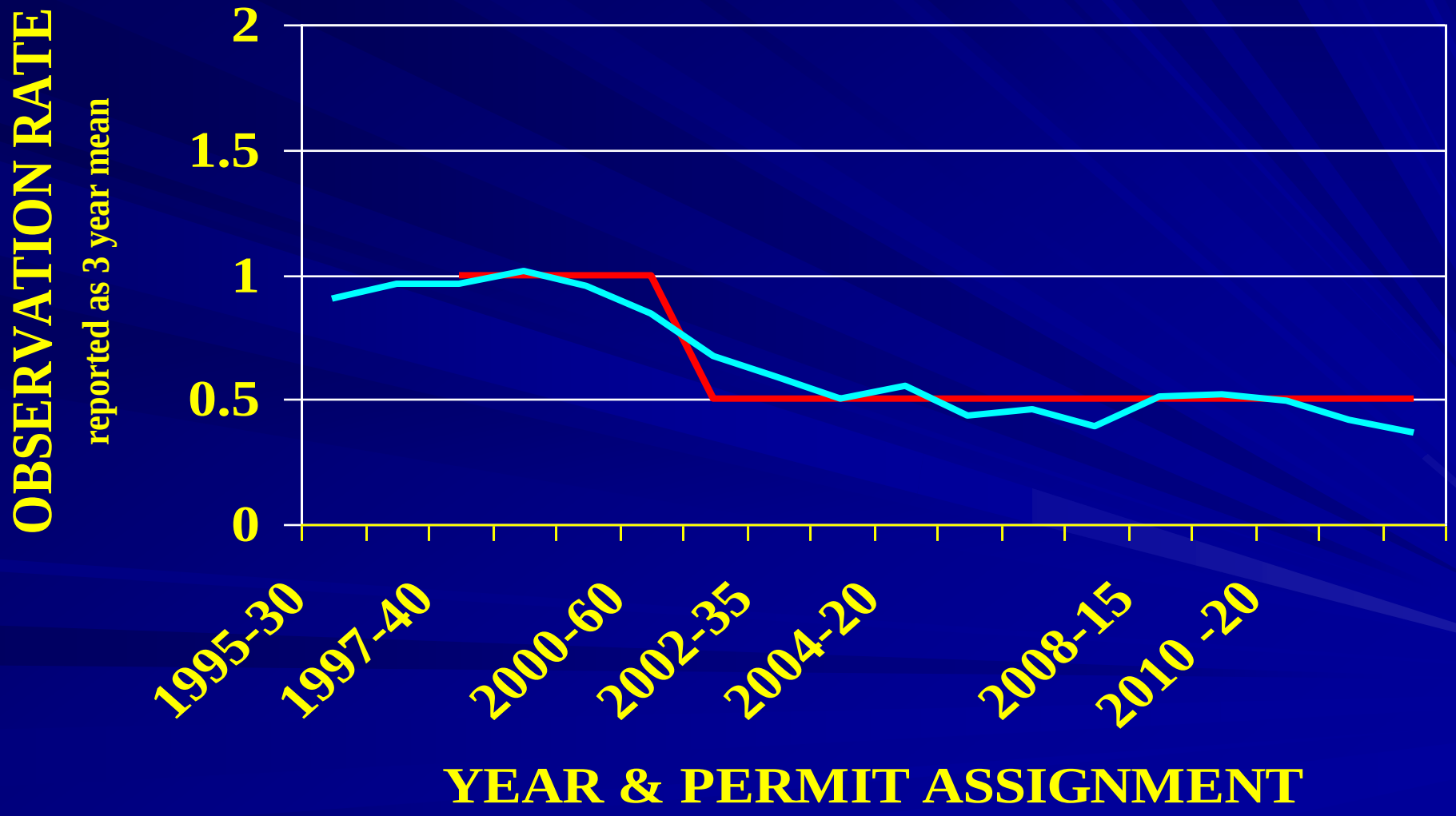
- Severe browsing was site-specific (only 2.6% of clear-cuts) and likely influenced by proximity to winter habitat.
- Severe browsing may shift local species composition in favor of softwood.
- ** Interestingly, CT Lakes Timber is no longer the landowner! On average, commercial forests in New England now turn over in <10 years. Cooperative management programs are inherently more difficult.**

Age Class	Stocking Of Dominant Commercial Trees	Commercial Trees W/ Severe Damage	Commercial Trees W/O Severe Damage	Height ≥10 ft
CT Lakes				
0-5	49%	2%	47%	N/A
6-10	77%	8%	69%	22%
11-15	78%	16%	61%	43%
16-20	87%	9%	78%	63%
North				
0-5	67%	3%	64%	N/A
6-10	71%	4%	67%	39%
11-15	86%	1%	85%	69%
16-20	87%	2%	85%	70%
White Mountain				
0-5	53%	1%	52%	N/A
6-10	73%	7%	67%	48%
11-15	79%	4%	75%	67%
16-20	85%	0%	84%	80%

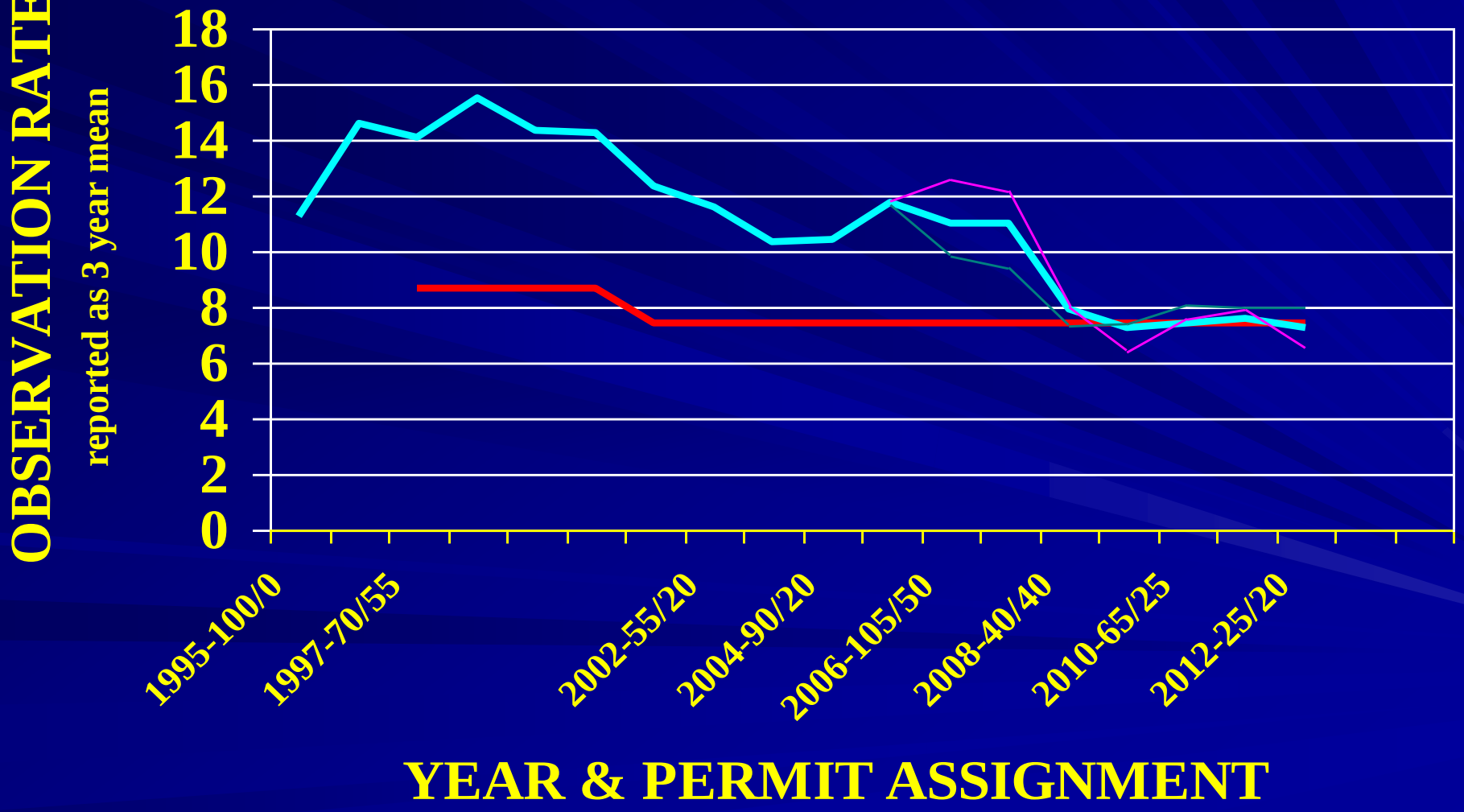
SouthWest; H2N, H2S, K



SouthEast; L, M



Ct. Lake; A1, A2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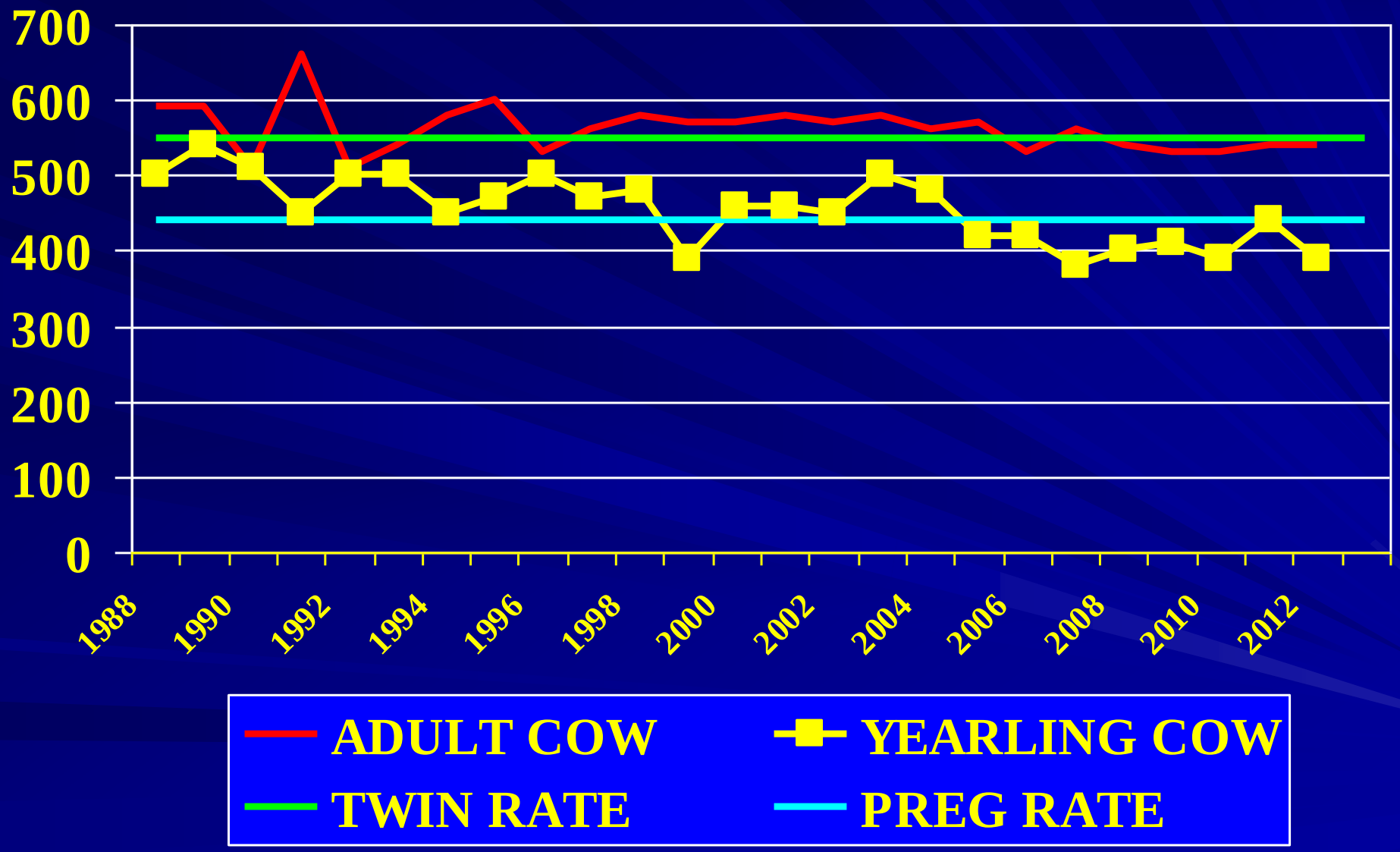
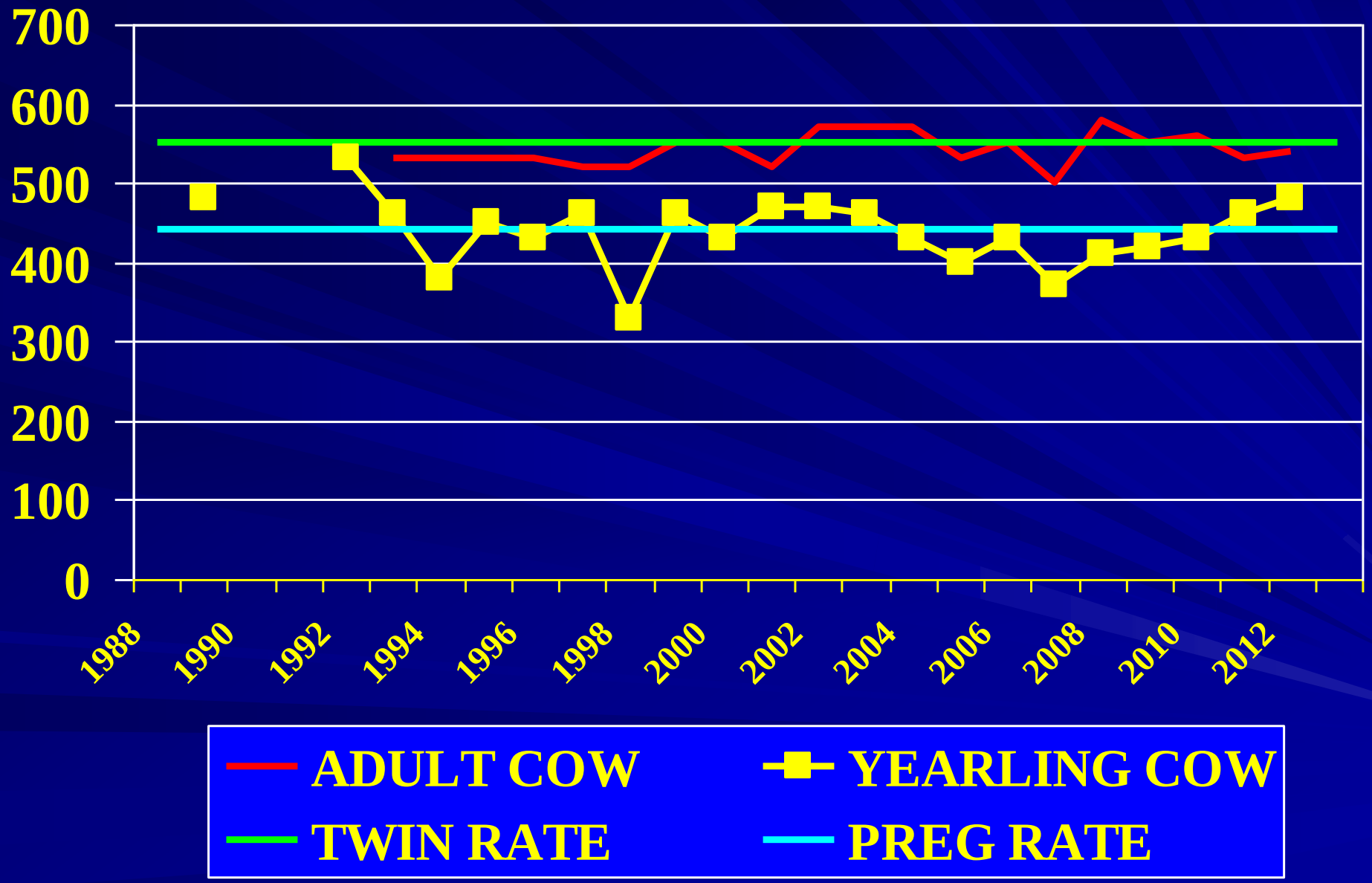
Central; G,H1,I1,I2,J1,J2

COW WEIGHT: W MTNS



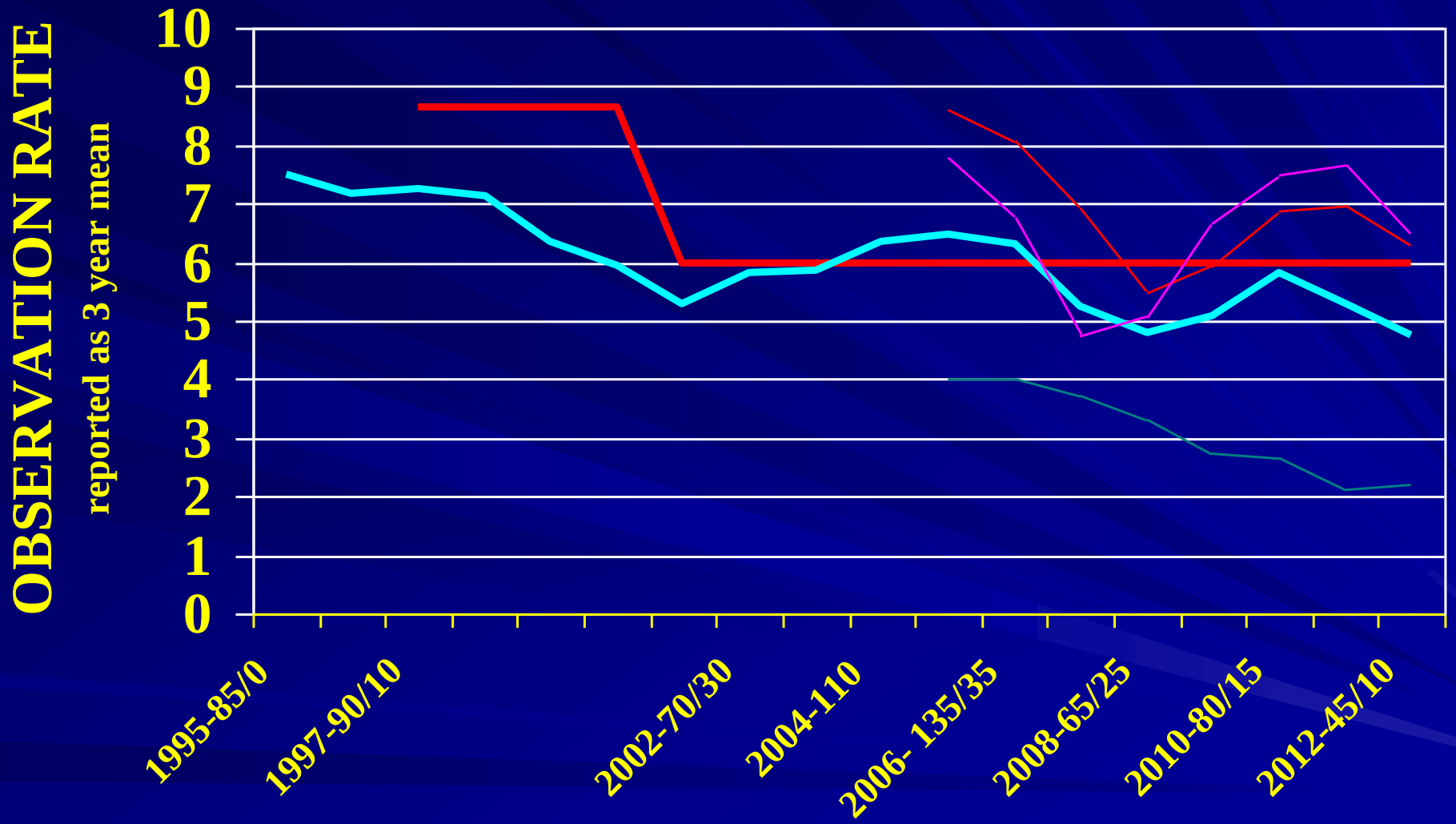
COW WEIGHT: CENTRAL



Some Negative Factors Effecting New Hampshire's Moose Herd

- Parasites
  - Winter Tick: Dermacentor albipictus
  - Brain worm: Parelaphostrongylus tenuis
- Environmental stresses
  - Heat Stress
    - Begins in winter above 23 degrees F.
    - Begins in summer above 57 degrees F.
    - Active panting occurs at 68 degrees.
    - Remain bedded, stop eating at 79 degrees
    - Shorter winters

North; B, C2, D1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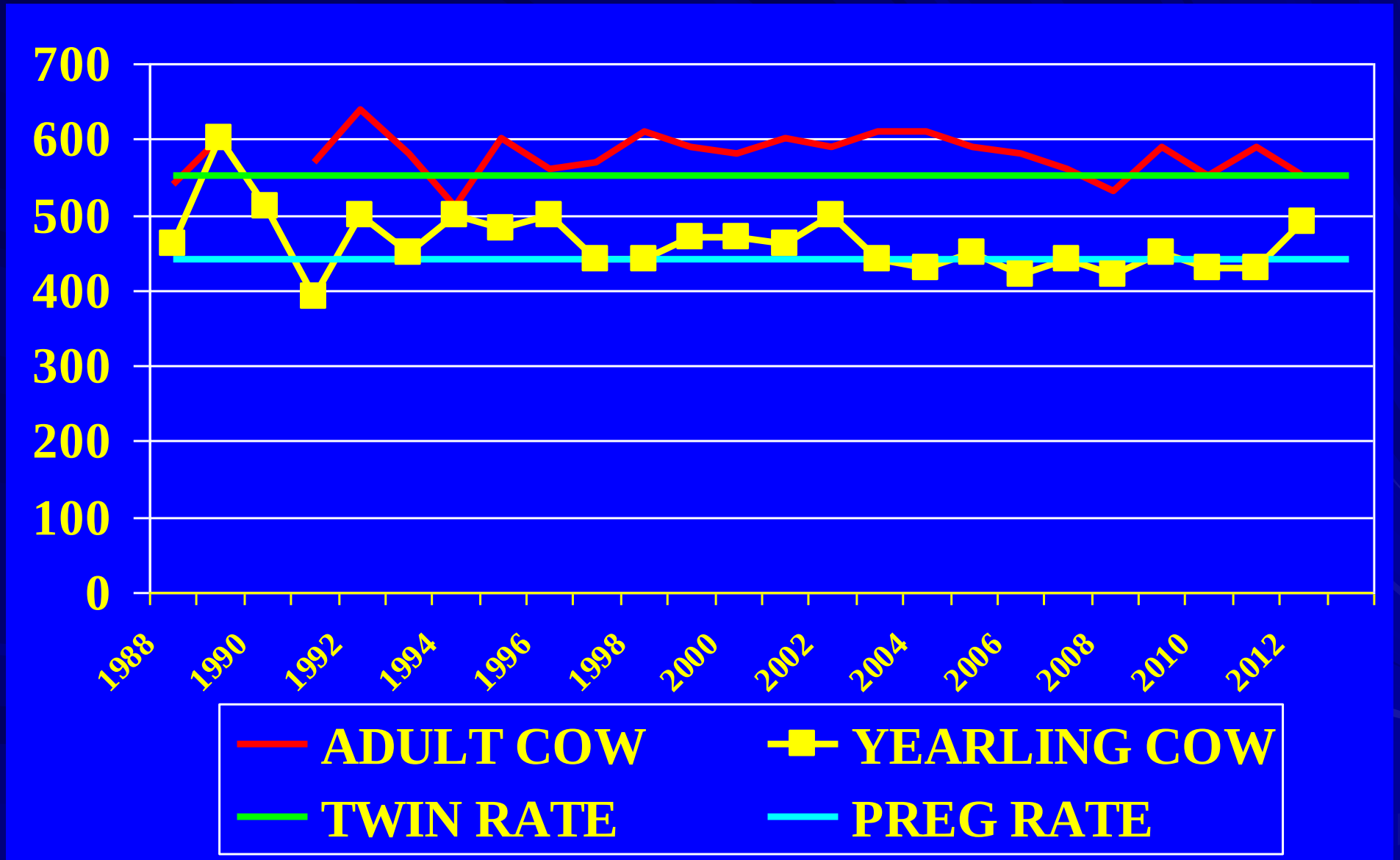
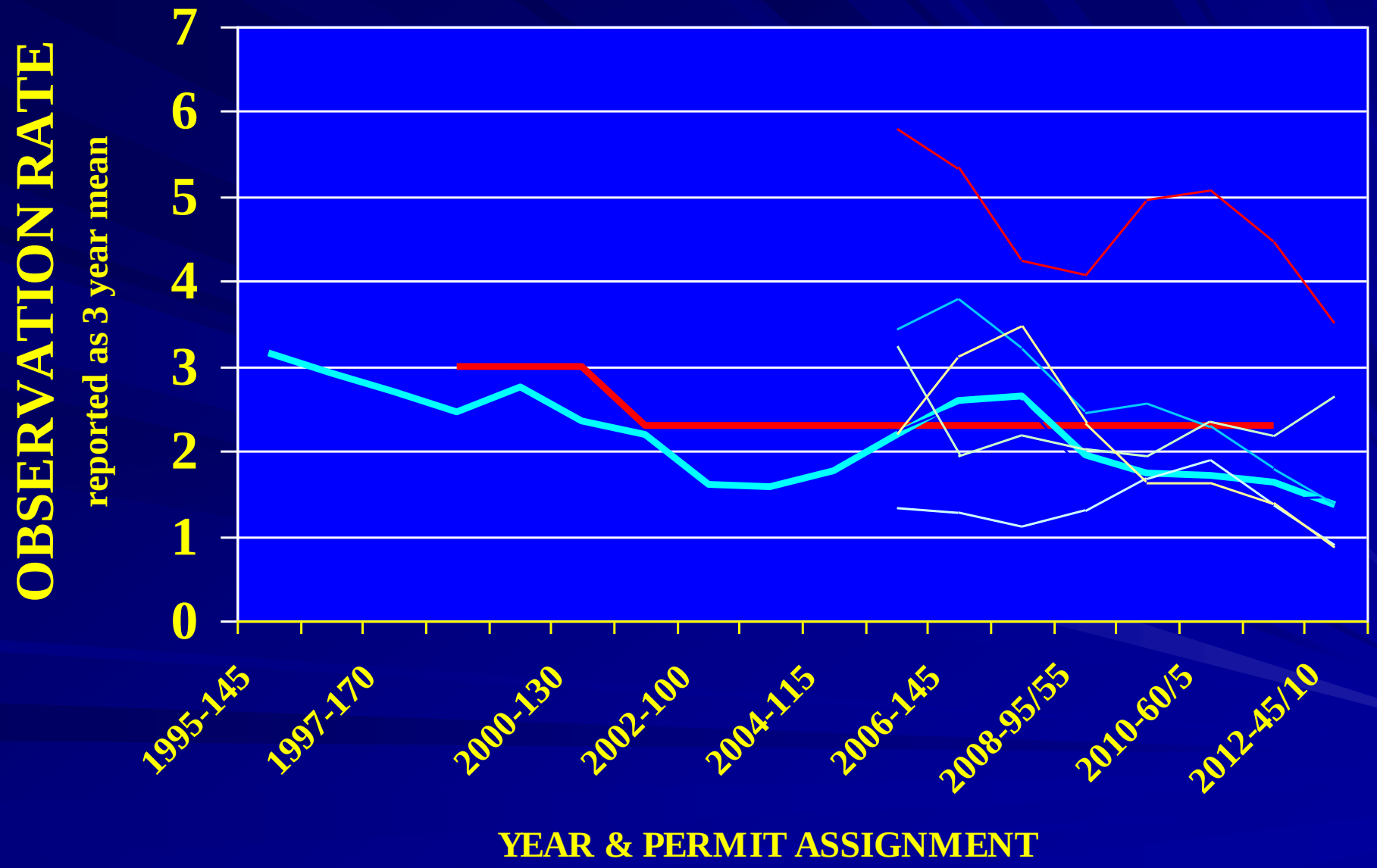
2006- 135/35
2008-65/25
2010-80/15
2012-45/10
YEAR & PERMIT ASSIGNMENT

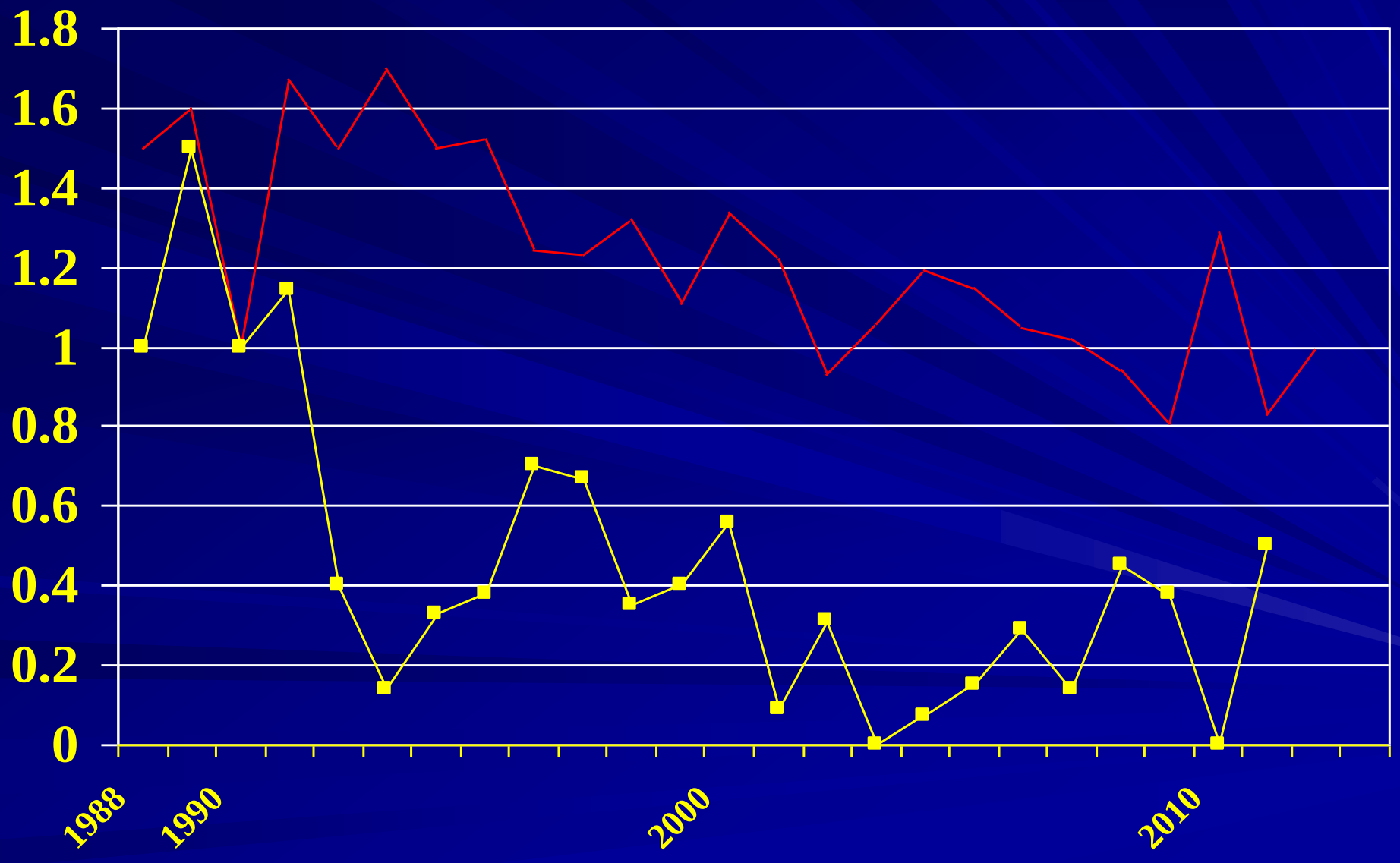
COW WEIGHT: NORTH



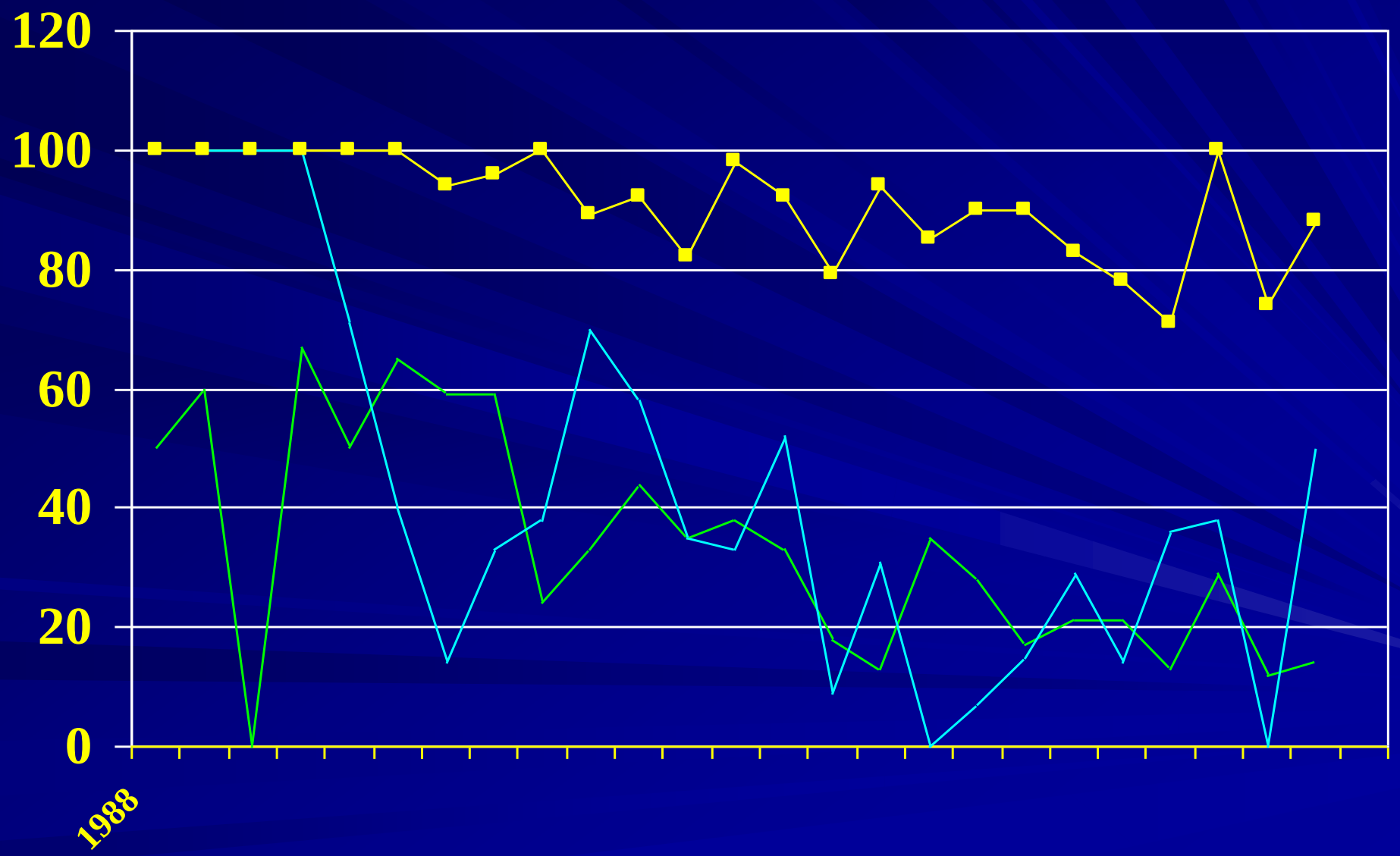
W. Mtn.; C1, D2, E1, E2, E3, F



COW CL CT LAKES



A & Y preg & A tr: CT LAKES



2012/2013 MOOSE SEASON PROPOSAL

	2012/2013 SEASON ES-AO	2013 PROPOSAL ES-AO
Ct. Lakes	25-20	25
North	40-10	40
W. Mtns.	45-10	45
Central	45-40	45
S. West	20	20
S. East	20	20
Statewide Total	195-80	195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