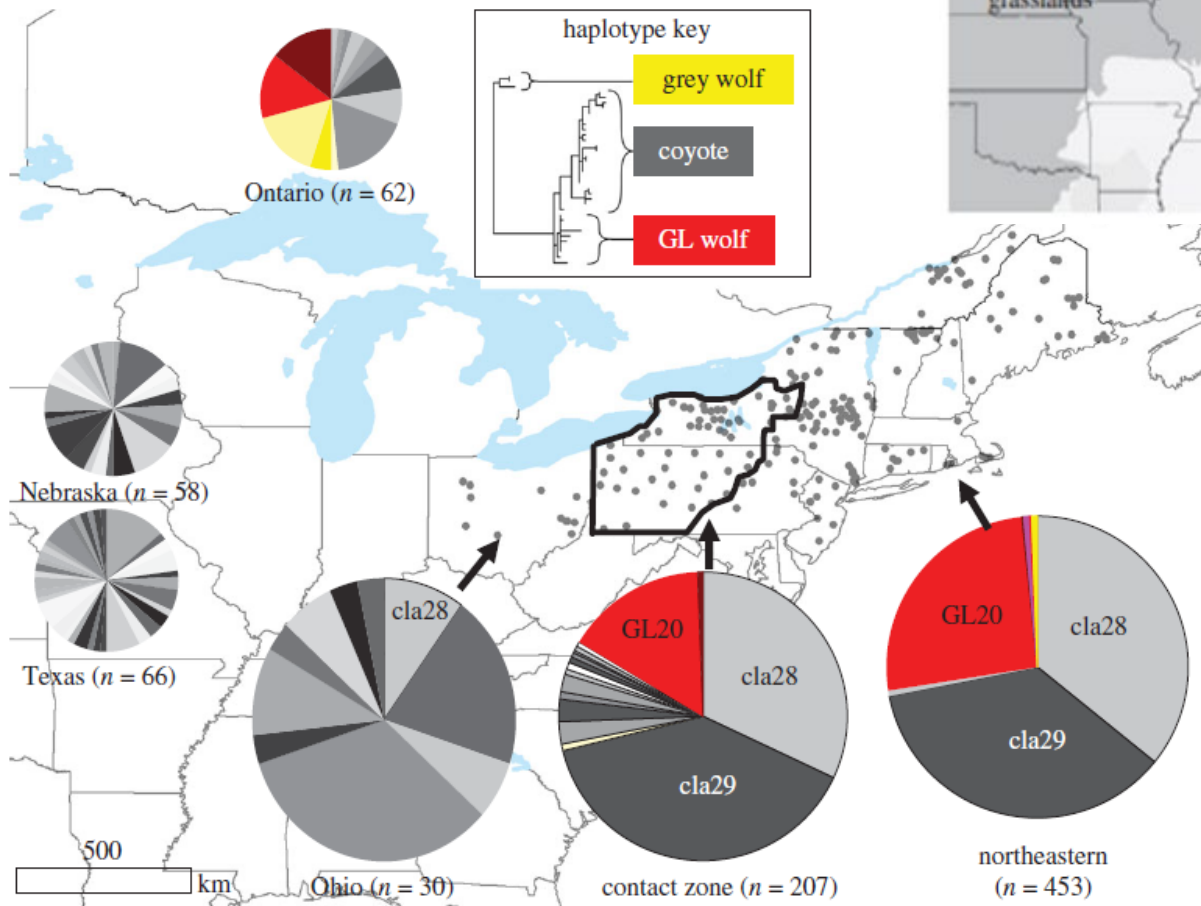
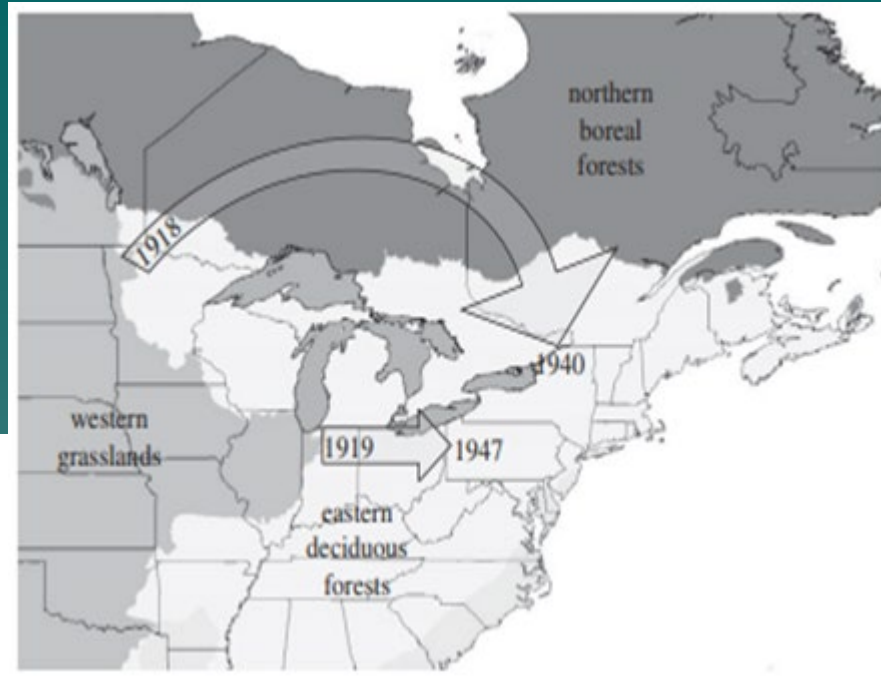


# Status, Impact and Ecology of Eastern Coyotes in NH



**Photo by John Green**

# Dispersal & Origin



Silver (1974), Kays (2009), Parker (1995)

# Deer Vulnerability to Predation

- ◆ Region
- ◆ Snow depth and condition
- ◆ Duration of winter
- ◆ Food availability
  - Browse
  - Alternative prey abundance
- ◆ Habitat quality (stand dynamics, DWA)
- ◆ Deer density
- ◆ Predator density



# Predation of Deer

- ◆ Most by coyotes, some by bobcats and bears
- ◆ Varies by deer age class during winter
- ◆ Fawn survival variable (0.14-0.76)
  - Coyote caused 68% of predation, 52% of all mortalities
  - 36.7 % (19) of 49 predation events
- ◆ Fawn survival lower in SE (SC, NC) and higher in MW and NE (ME, MA, PA, MI) - predation was higher in areas with very high deer density



# Predation of Deer (cont.)

- ◆ Fawn survival rates vary with or without predators
  - Compensatory
  - Additive

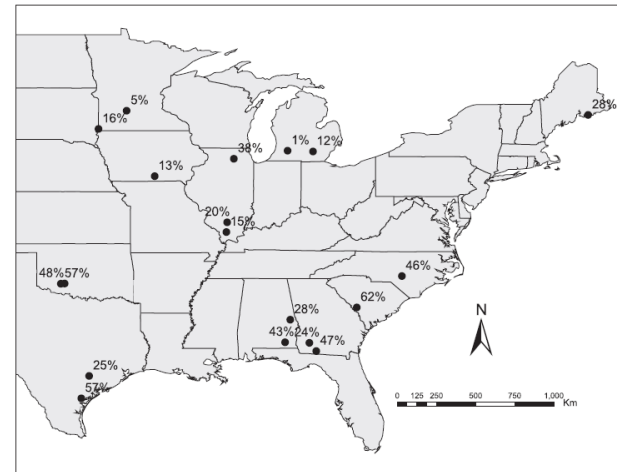
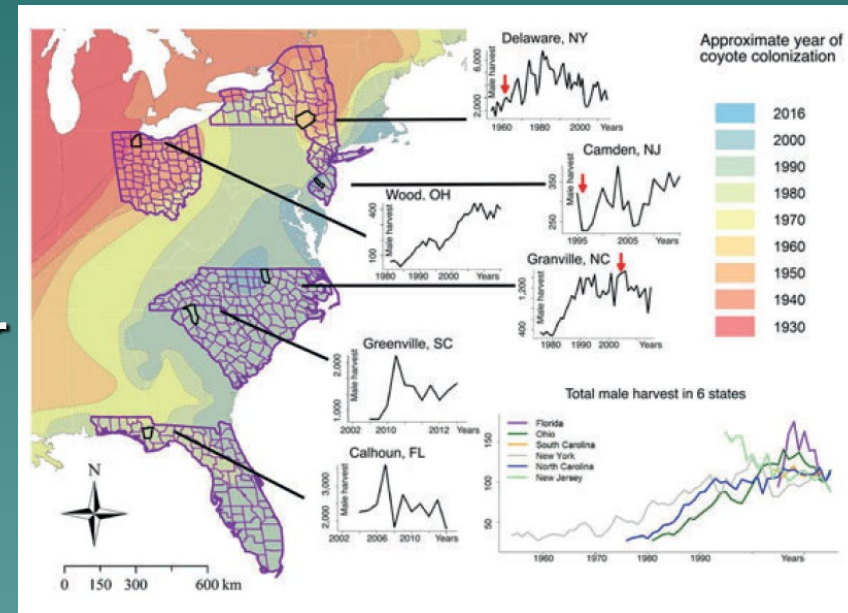


Figure 2. Coyote-specific predation rates (% of neonates in sample that were depredated by coyotes) among studies conducted in the core range of white-tailed deer on areas where coyotes and bobcats (*Lynx rufidus*) were the primary predators (i.e., black bears [*Ursus americanus*], wolves [*Canis lupus*], and cougars [*Puma concolor*] were not present; Cook et al. 1971, Carroll and Brown 1977, Garner et al. 1976, Bartush and Lewis 1981, Huegel et al. 1985, Nelson and Woolf 1987, Long et al. 1998, Brinkman et al. 2004, Burroughs et al. 2006, Rohm et al. 2007, Saalfeld and Ditchkoff 2007, Hiller et al. 2008, Piccolo et al. 2010, Grovenburg et al. 2011, Kilgo et al. 2012, Jackson and Ditchkoff 2013, Chitwood et al. 2015a, Nelson et al. 2015, Watine and Giuliano 2016).

Cook et al. (1971), Carroll and Brown (1977), Bartush and Lewis (1981), Huegel et al. (1985), Messier et al. (1986), Nelson and Woolf (1987), Decker et al. (1992), Bowman et al. (1998), Long et al. (1998), Whitlaw et al. (1998), Ballard et al. (1999), DePerno et al. (2003), Ballard et al. (2003), Patterson and Messier (2003), Vreeland et al. (2004), Howze et al. (2009), VanGilder et al. (2009), Kilgo et al. (2012), Chitwood et al. (2014), Chitwood et al. (2015), Cherry et al. (2016), Kilgo et al. (2016), Kilgo et al. (2019), Wright et al. (2019), Dion et al. (2020), Kautz et al. (2022), Muthersbaugh (2023), Warbington et al. (2017), Gingery et al. (2018), Bragina et al. (2019)

# Impact of Coyote Predation

- ◆ Mixed conclusions regarding predation affects on deer population growth
- ◆ Predator impacts minimized by reducing hunter antlerless harvest to increase deer recruitment



Cook et al, (1971), Carroll and Brown (1977), Bartush and Lewis (1981), Huegel et al. (1985), Messier et al. (1986), Nelson and Woolf (1987), Decker et al. (1992), Bowman et al. (1998), Long et al. (1998), Whitlaw et al. (1998), Ballard et al. (1999), DePerno et al. (2003), Ballard et al. (2003), Patterson and Messier (2003), Vreeland et al. (2004), Howze et al. (2009), VanGilder et al. (2009), Kilgo et al. (2012), Chitwood et al. (2014), Chitwood et al. (2015), Cherry et al. (2016), Kilgo et al. (2016), Kilgo et al. (2019), Wright et al. (2019), Dion et al. (2020), Kautz et al. (2022), Muthersbaugh (2023), Warbington et al. (2017), Gingery et al. (2018), Bragina et al. (2019)

# Predator Management

- Varied response in prey recruitment after removal
- Predator removal needs to be intense and prolonged to have impact
- ◆ Coyotes have a physiological response (not behavioral) after reduction

# Turkey Predation

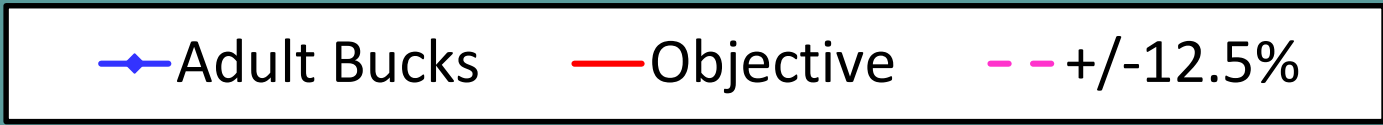
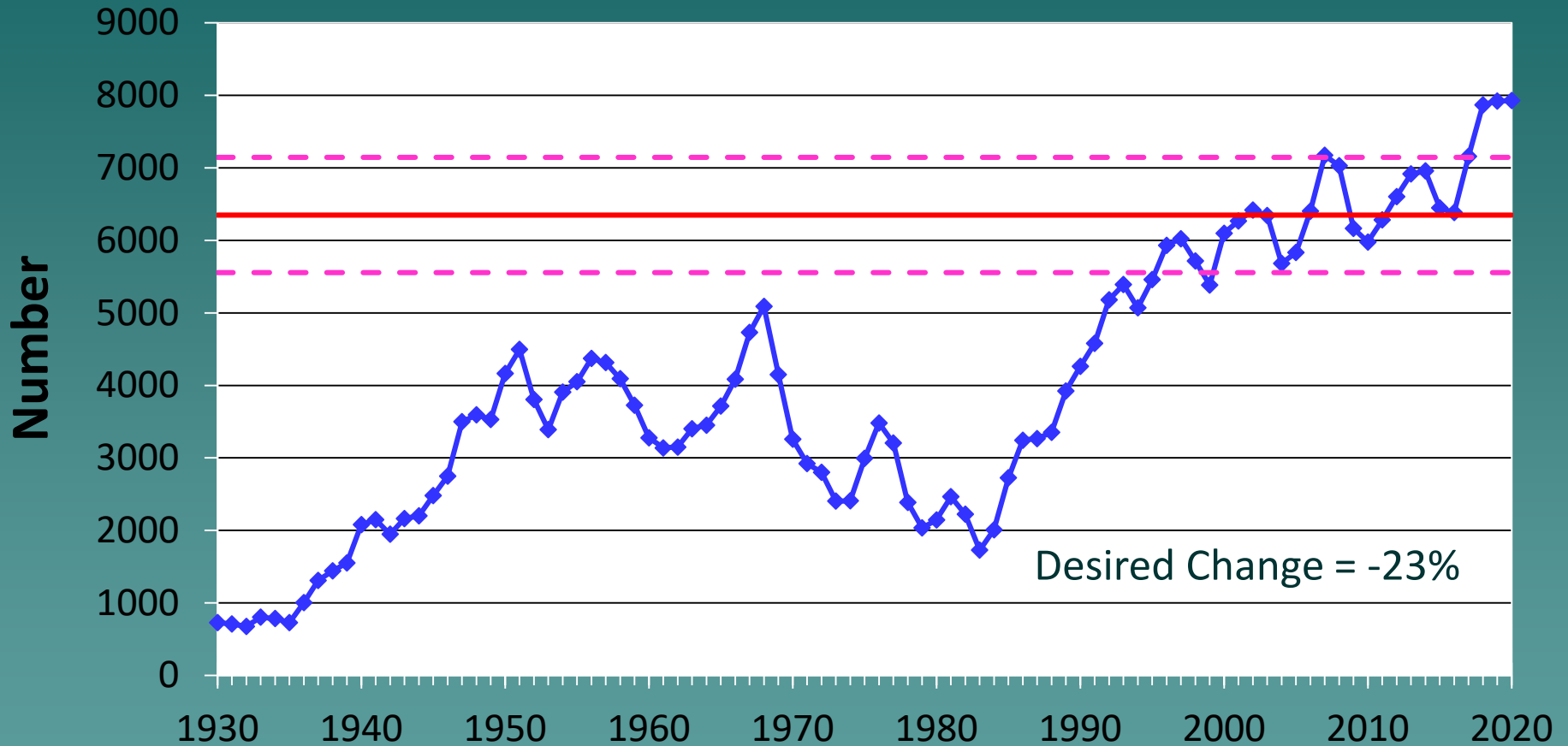
- ◆ Timmins (2003) New Hampshire 2001-2002
  - Monitored 45 radioed hens in the northern part NH and some adjacent towns across the Connecticut River in Vermont.
  - Nineteen known mortalities occurred during the study.
  - Twelve or 63% of hen mortality occurred during reproductive efforts (May-July). Most were from predation.
    - ◆ 3 hens during laying,
    - ◆ 6 hens during incubation on nests
    - ◆ 3 hens during brood rearing.
  - Predation events included
    - ◆ 5 by coyotes,
    - ◆ 2 by red fox,
    - ◆ 2 by bobcat and
    - ◆ 1 by great-horned owl.
    - ◆ Other causes of mortality included 2 from car kills, 1 from hay mowing, 1 from fence entanglement and 1 unknown



# Is There a Problem in NH?



# Statewide Adult Buck Harvest 2-Year Running Average



# Indices of Coyote Abundance and Population Trends in NH



# Coyote Data Collected Multiple Ways

- ◆ Trapper Harvest Data - 1995
- ◆ Bait Permit Data - 2014
- ◆ WCO Take - 2004
- ◆ Coyote Night Hunting Permits - 2009
- ◆ Turkey Hunter Survey - 2019
- ◆ Bow Hunter Survey - 2019
- ◆ Research (UNH) - 2022  
quantify furbearer density

New Hampshire  
Fish and Game Department  
11 Hazen Drive  
Concord, NH 03301

FSM4025 (rev)  
Fg 303.10  
Rev. 9/14

### ANNUAL TRAPPERS REPORT

Reports are DUE ON OR BEFORE APRIL 30 (RSA 210:23, FIC 303.10). Reports must be submitted WHETHER OR NOT ANY TRAPPING WAS DONE OR ANY FURS WERE TAKEN. This report is for animals taken during the legal trapping season ONLY.

Mail report to: NH Fish and Game Department, Trapper Report, 11 Hazen Drive, Concord, NH 03301. A receipt will be sent if you enclose a self-addressed, stamped envelope.

Name: \_\_\_\_\_ Trapping License Number: \_\_\_\_\_ Trapping Season: \_\_\_\_\_ to \_\_\_\_\_  
Street: \_\_\_\_\_ Did you trap: Yes No Did you take fur: Yes No  
Town and Zip: \_\_\_\_\_ Number of bobcat incidentally trapped: \_\_\_\_\_ Number released: \_\_\_\_\_ Number killed: \_\_\_\_\_ OFFICE USE  
Telephone Number: \_\_\_\_\_ Towns where trapped: \_\_\_\_\_ Date rec: \_\_\_\_\_

In table below, please indicate for each town you trapped:  
1) WMA: 2) the number of each species taken; 3) the number of traps actually set for the species you caught; 4) the number of nights the traps were set

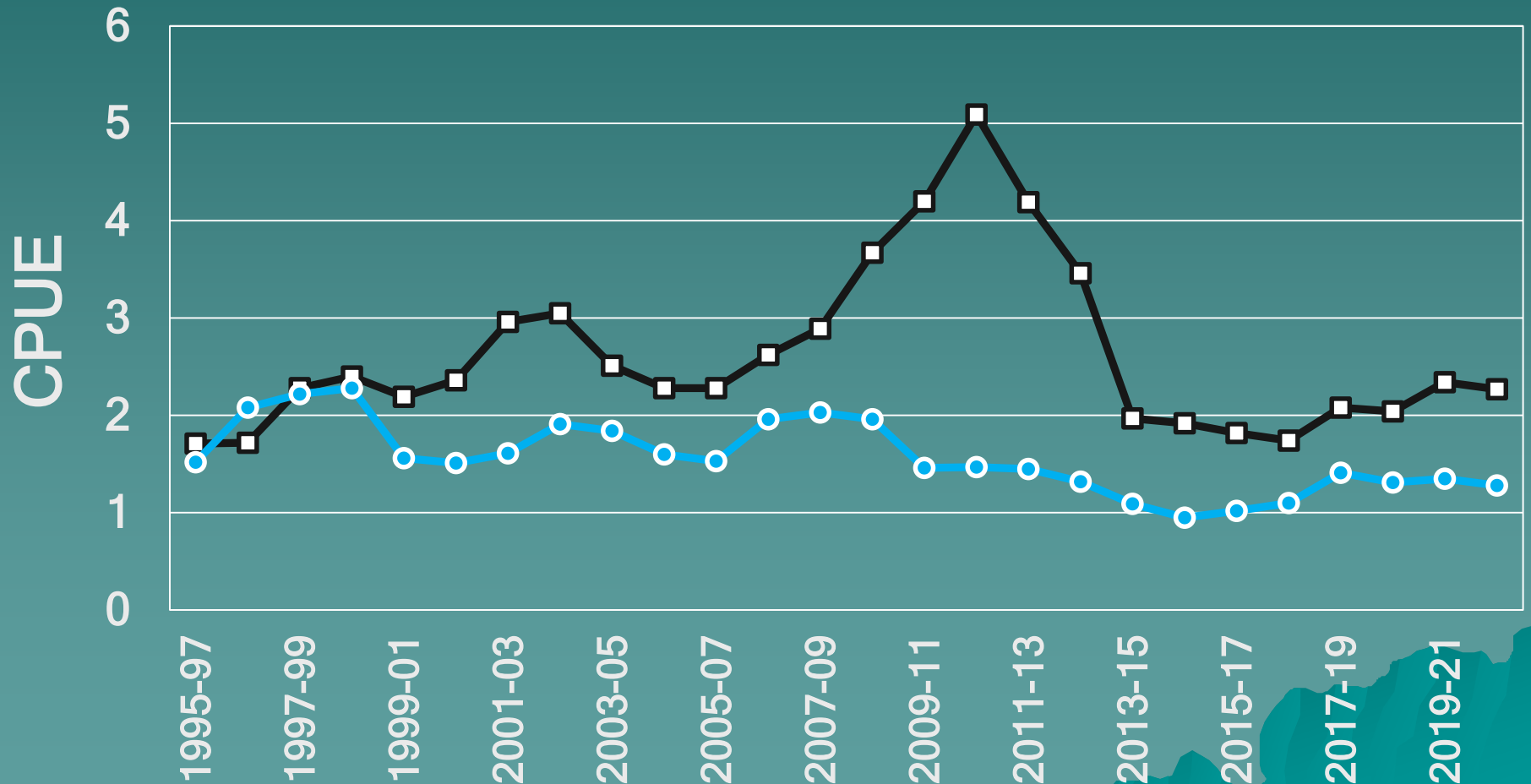
SPECIES	TOWN TRAPPED:			WMA:			TOWN TRAPPED:			WMA:			TOWN TRAPPED:			WMA:		
	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS	NUMBER TAKEN	TRAPS SET	HOW MANY NIGHTS
BEAVER																		
MUSKRAT																		
FISHER																		
RACCOON																		
MINK																		
OTTER																		
RED FOX																		
GRAY FOX																		
SLEEK																		
WEASSEL																		
COYOTE																		
OPPOSSUM																		



# Coyote Trapper CPUE by Region

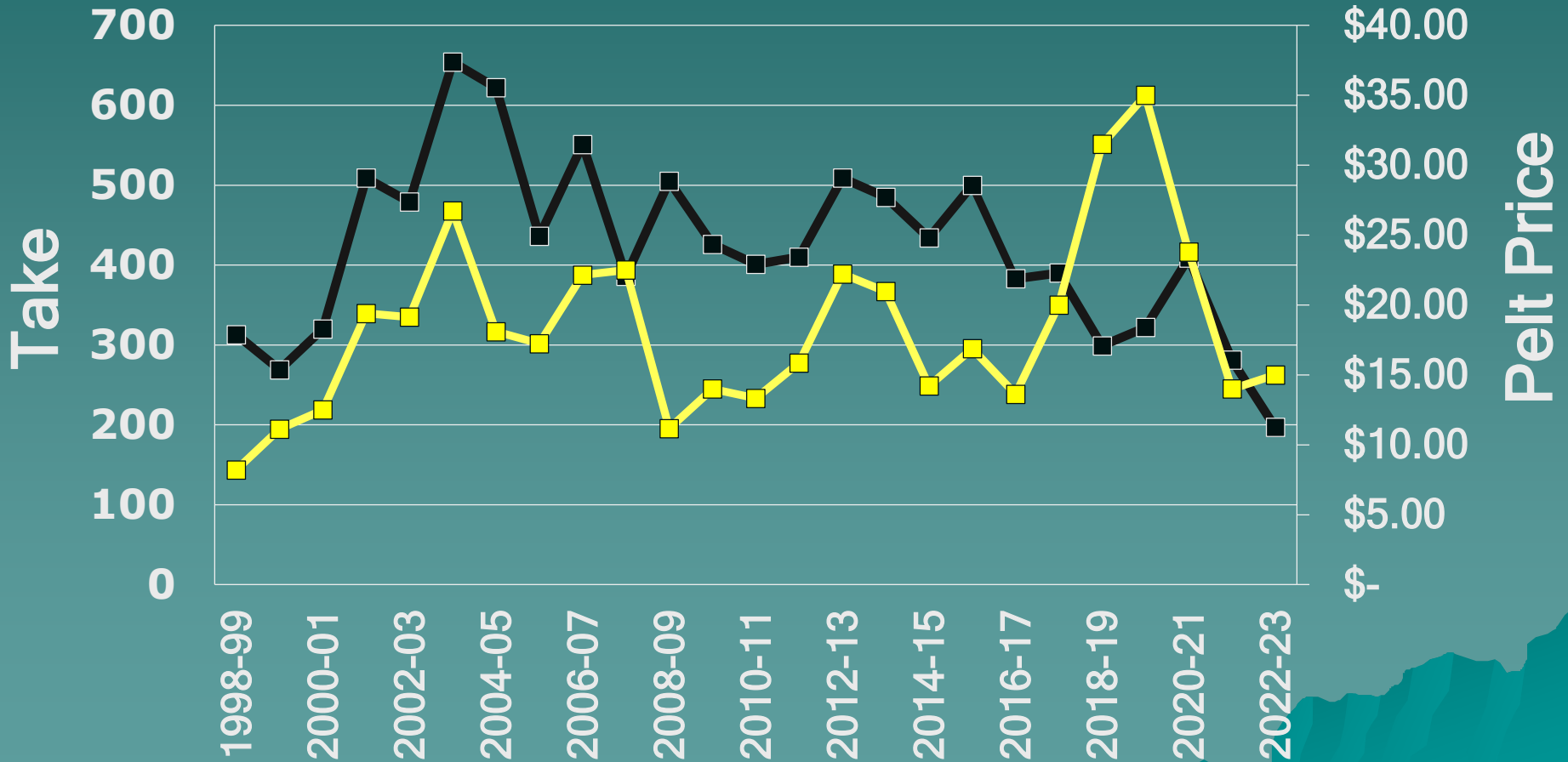
■ NORTH (WMU:A-F)

○ SOUTH (WMU:G-M)

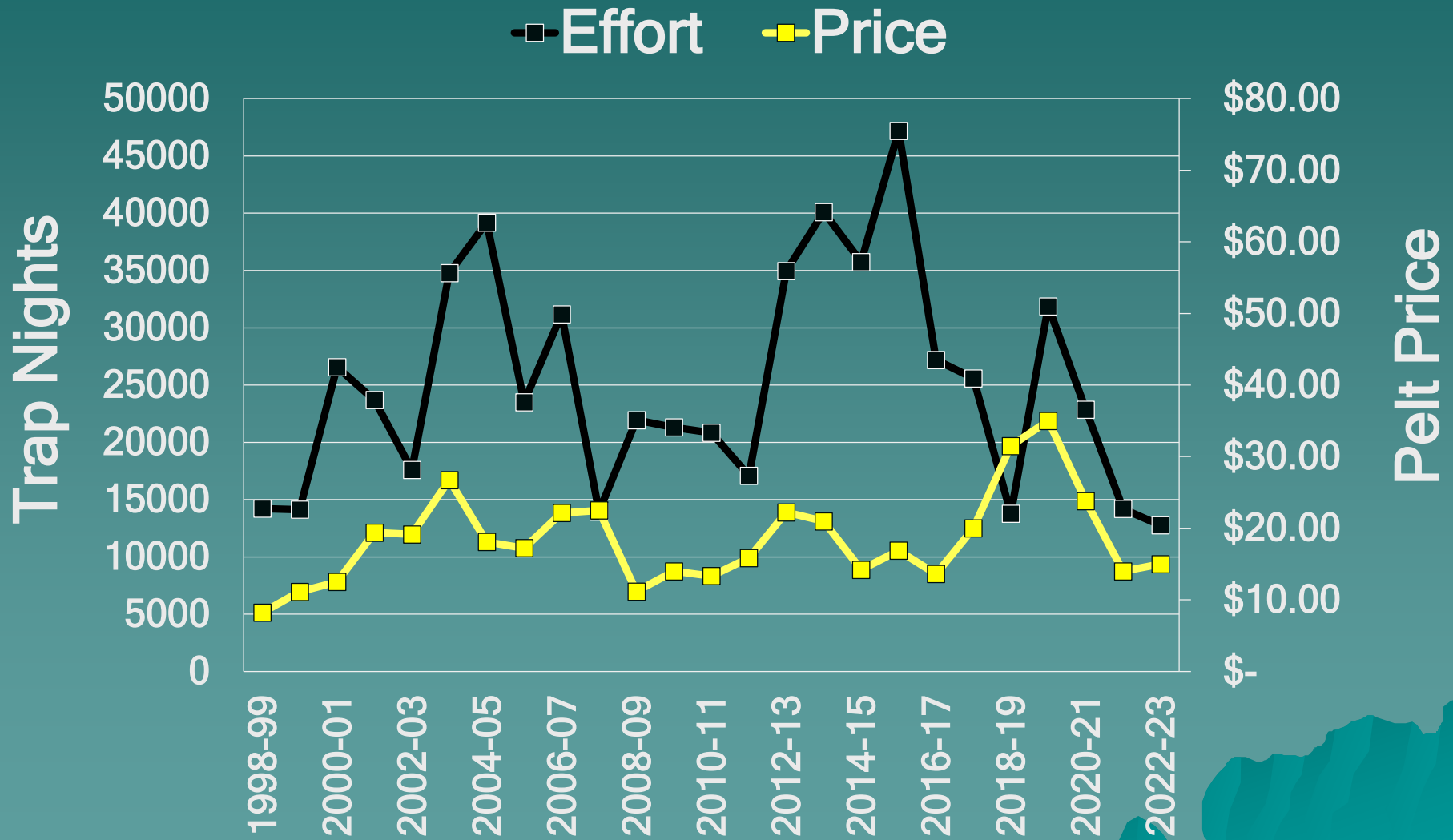


# Coyote Take and Pelt Price

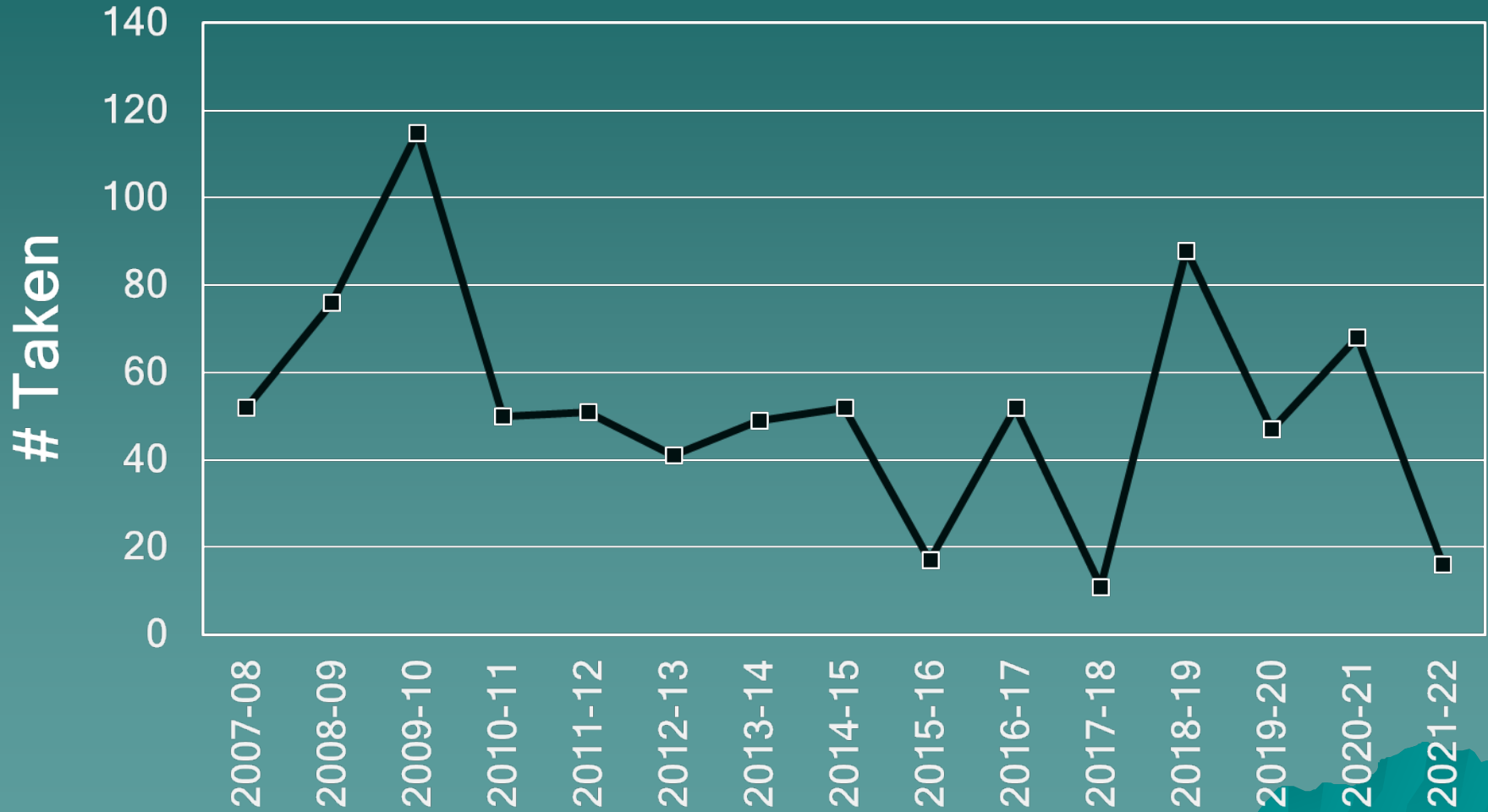
■ Take    ■ Price



# Coyote Effort and Pelt Price



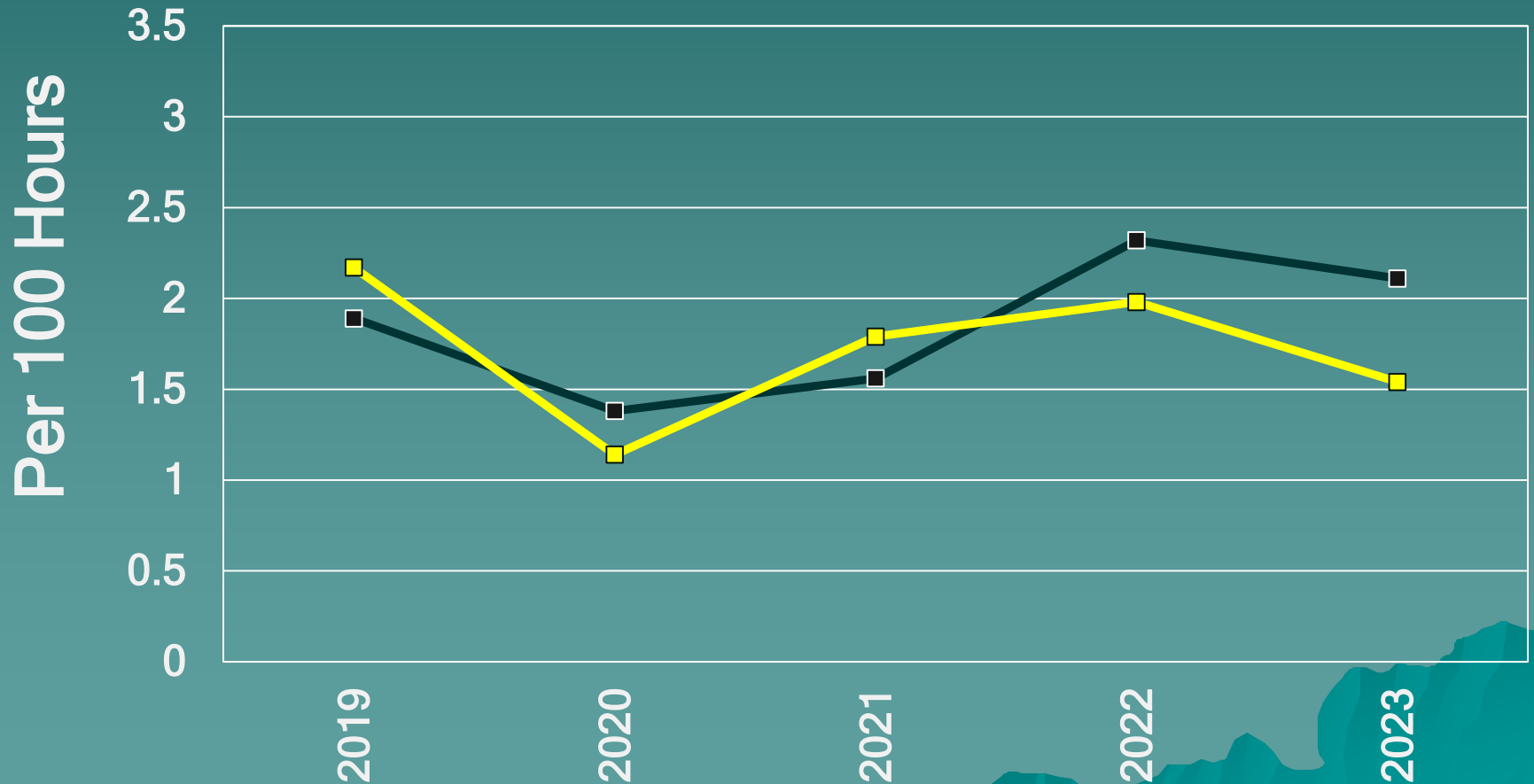
# Coyote Take by WCO





# Coyote Observation Rate by Turkey Hunters and Coyote Trapper CPUE

■ Obs Coyote      ■ Trap CPUE



# Human-Coyote Conflicts in NH



# Coyote Hunting Seasons and Reporting Requirements in the NE

State/Province	Season Dates	Mandatory Reporting
New Hampshire	NCS	No
Maine	NCS	No
Vermont	NCS	No
Massachusetts	Oct 14-Mar 8	Yes
New York	Oct 1-Mar 31	No
Connecticut	NCS	No
Nova Scotia	NCS	No
New Brunswick	Oct 2-Feb 29	No
Quebec	Oct 18-Mar 31	No

# Suggestions Identified by GMT

- ◆ Mandatory online reporting of all furbearers taken by hunting
  - Harvest tally
  - Hunter effort
  - Sex
  - Date
  - Location
  - Method
- ◆ Hound training permit for coyote