



**MASSWILDLIFE**



# Coyotes 101

**Presented by**

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# MassWildlife Mission Statement

**The Massachusetts Division of Fisheries and Wildlife is responsible for the conservation - including restoration, protection, and management - of the state's natural heritage of wildlife and habitat diversity for the benefit and enjoyment of the public now and into the future.**

# Eastern Coyote – *Canis latrans*

- The subspecies of coyote in the eastern U.S.
- Result of western coyotes interbreeding with gray wolves and domestic dogs
  - More on natural history later
- Eastern coyote DNA is **60-84% coyote** in northeastern states
  - Very little wolf DNA



# Physical Description

- Medium-sized dog
- Not very large animals
  - Females average 33-40lbs
  - Males average 34-47 lbs
    - Very large males may weigh up to 60lbs, exceptional
- Often look much larger due to thick fur
- Variety of coat colors



# Activity

- Typically shy and elusive
- Active day or night
  - Often most active dawn/dusk
- Active year round
  - Do not hibernate



# Coyote Life Cycle

## Time of Year

## Activity

February – March \*

Breeding

April – May

Young born

June – August \*

Teach young to hunt

September – November

Young disperse

\* Most visible & vocal during breeding and while raising young

# Coyote Young

- Average 6 pups per litter
  - Range from 1-9
- Weaned after 35 days
  - No longer depend on mother's milk
  - Leave den site, explore surroundings
- Disperse at 6-8 months old
  - Some pups may stay with family group



# Howling & Other Vocalizations

- A means of communication
  - Among family group members
  - To defend home range against transients
  - Attract a mate during breeding season
  - Pups practice during summer, learning to communicate
- Not malicious or used to announce predation





# Food

- Omnivorous
- Opportunistic



# Habitat

- Adapted to just about any habitat type



# Home Range Size

- Dependent on
  - Food abundance
  - Rural vs. suburban

## Family Group

- Rural home range
  - Average 20 mi<sup>2</sup>
- Suburban home range
  - Average 6 mi<sup>2</sup>



## Transient individuals

- Home range as large as 200 mi<sup>2</sup>

Travel 7 to 16 miles daily

# Adaptability

- Habitat
- Food
- Behavior





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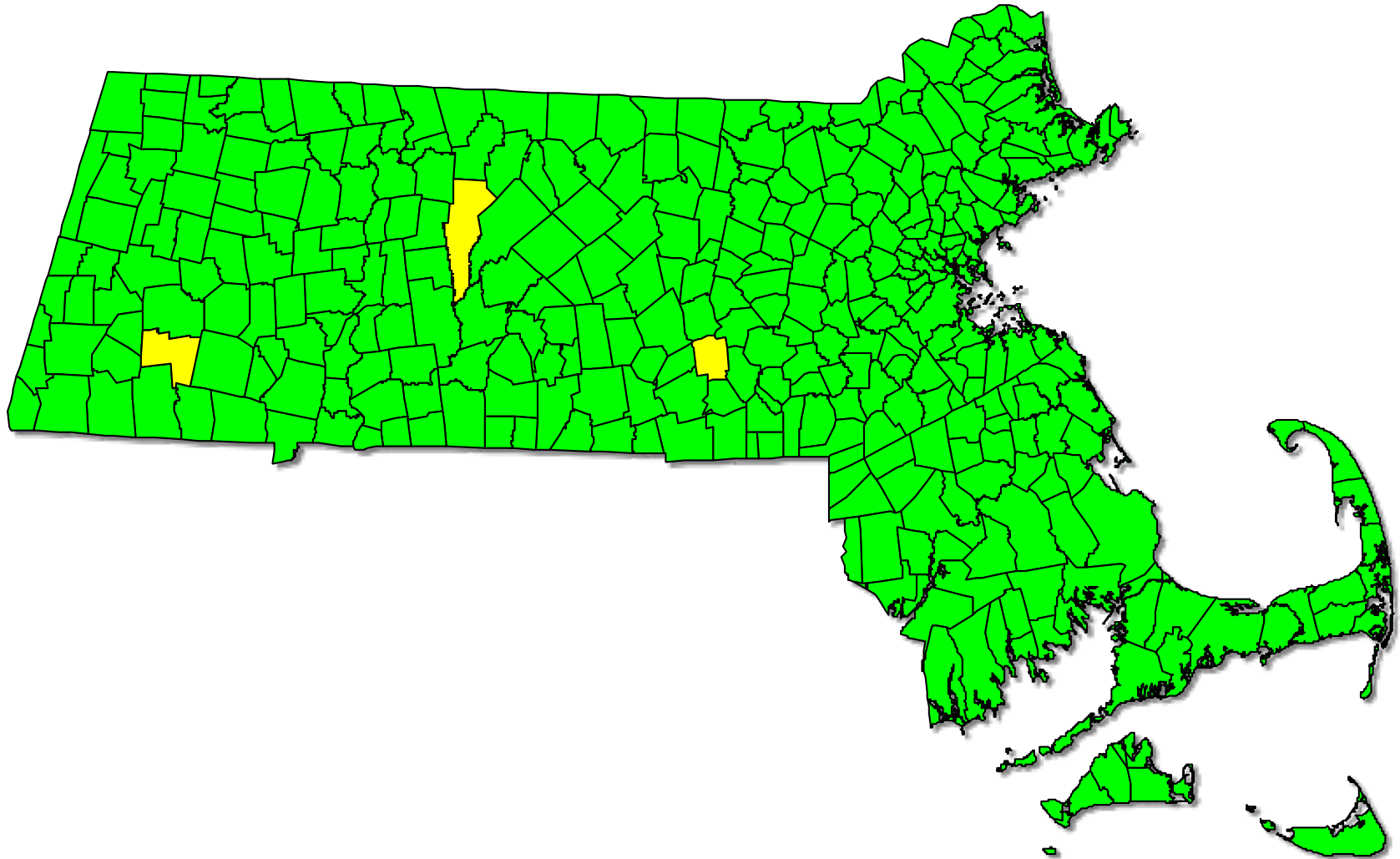
# Natural History of the Eastern Coyote

*How did they get here?*

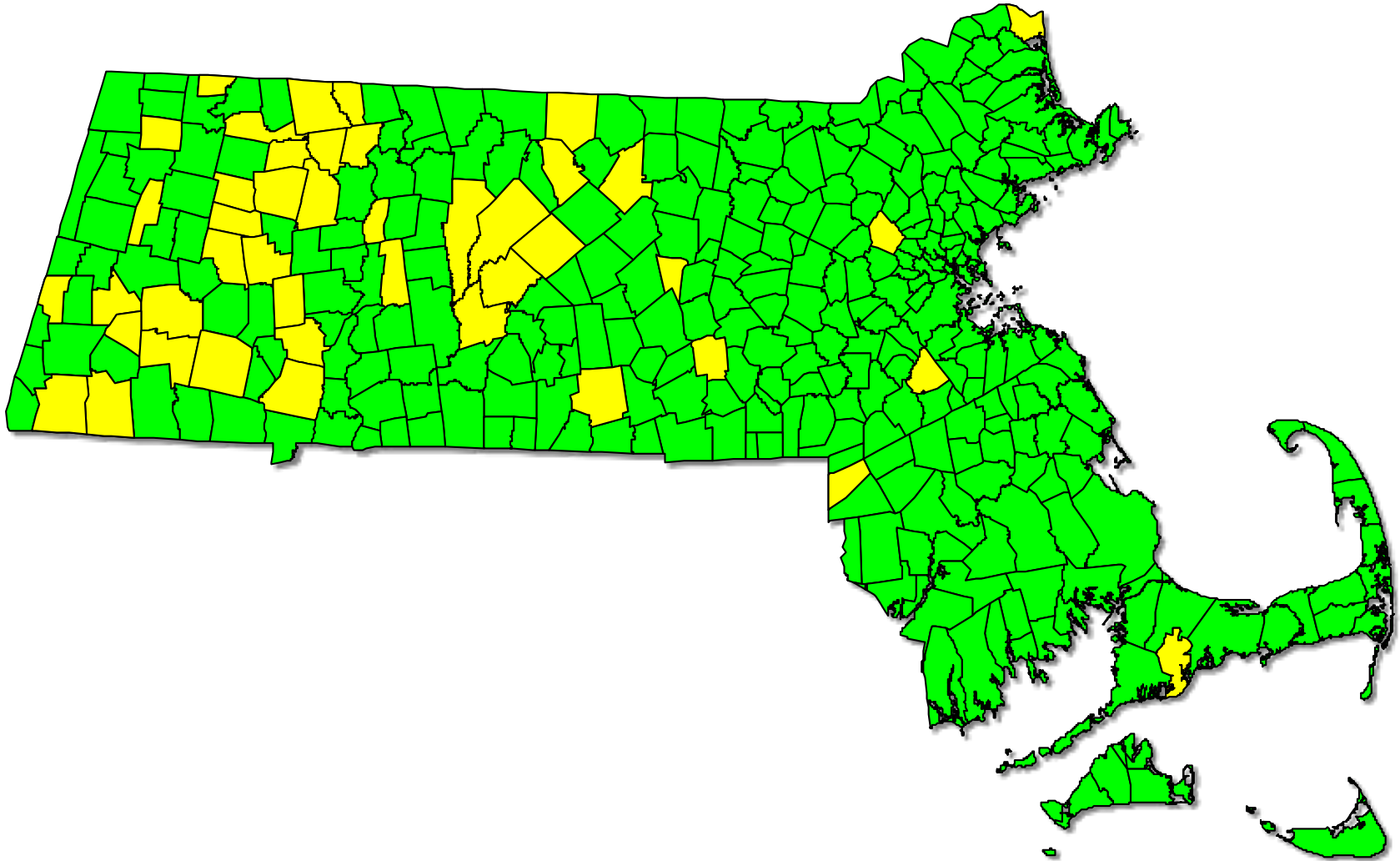
# Coyote Range in the U.S. Pre-Settlement



# Coyote Distribution - 1959

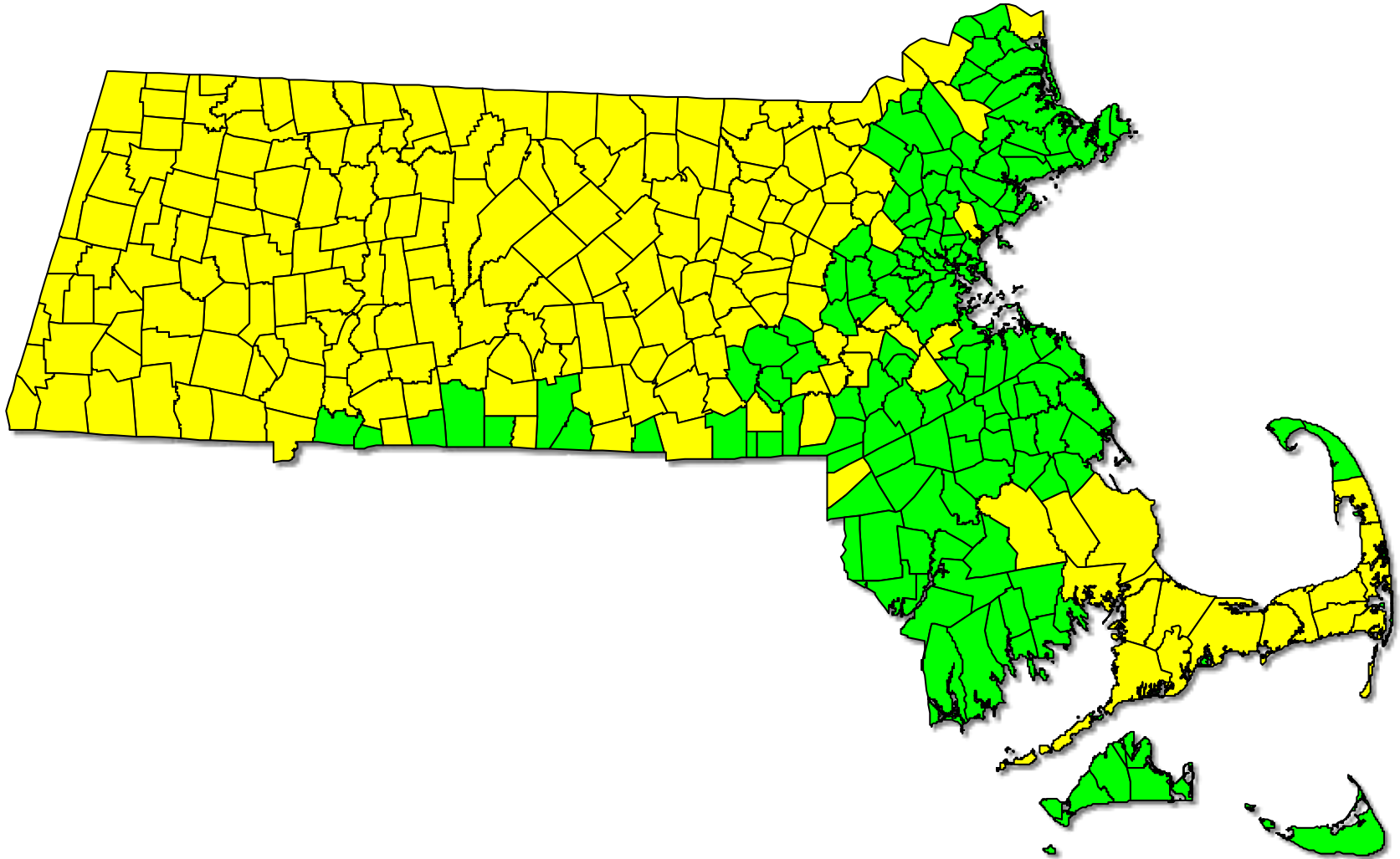


# Coyote Distribution - 1980

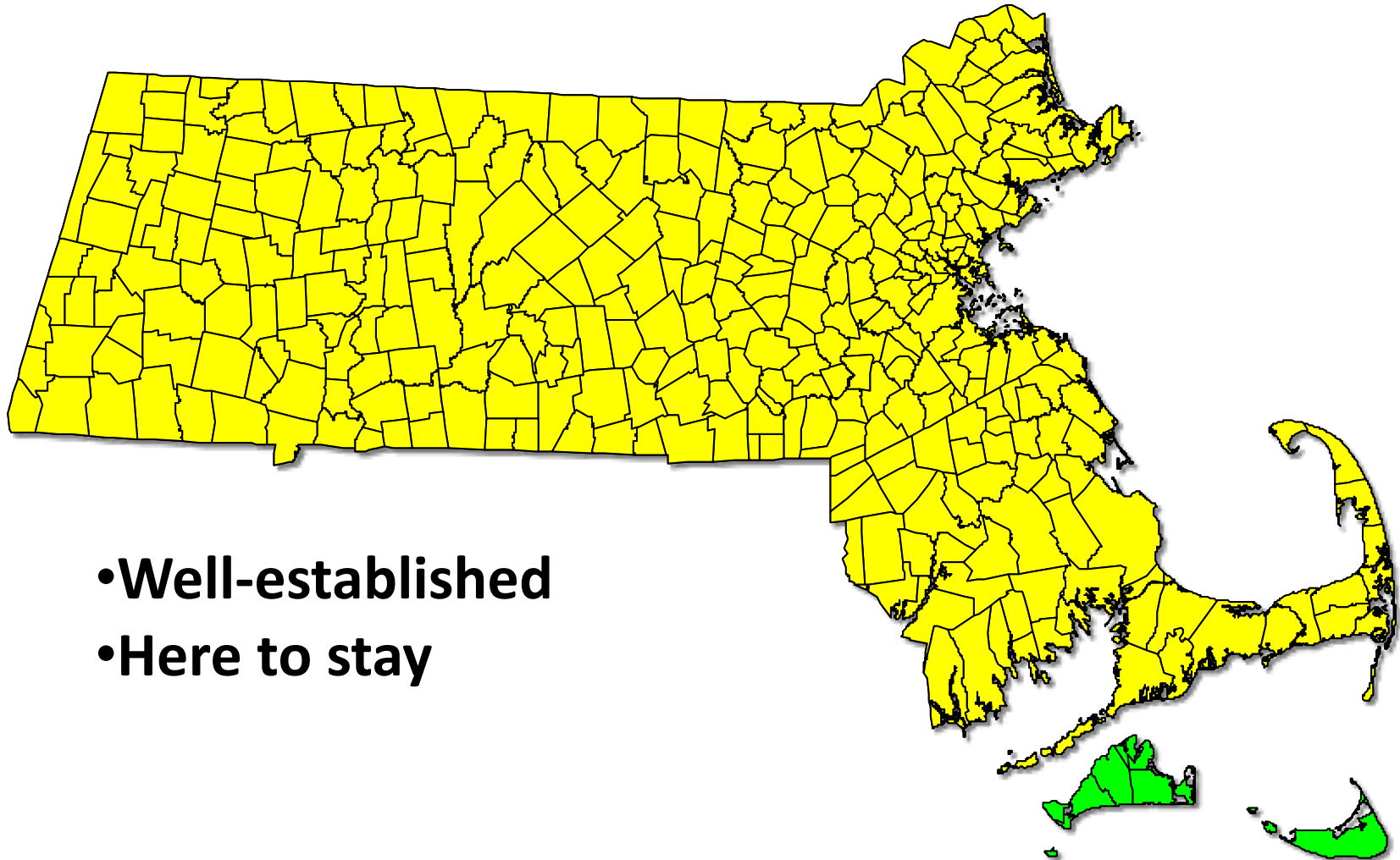




# Coyote Distribution - 1990



# Coyote Distribution - Present



- Well-established
- Here to stay

# Coyotes are a valuable species

- Ecologically
- Intrinsically
- Educationally
- Recreationally



# MassWildlife Coyote Management



- MassWildlife manages coyotes as an important natural resource
- Work to resolve conflicts and support values
  - Regulating hunting and trapping seasons
  - Regulating Problem Animal Control Agents
    - Currently 52 coyote certified agents
  - Public education





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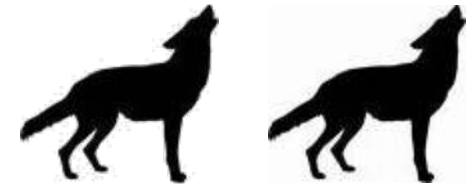
# Population Dynamics

# Social Organization

Population consists of:

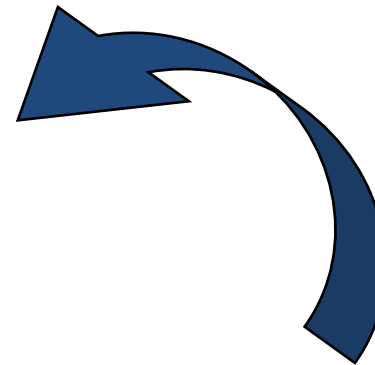


**Transients**



**Family group centers  
around adult alpha pair**

**Highly territorial**

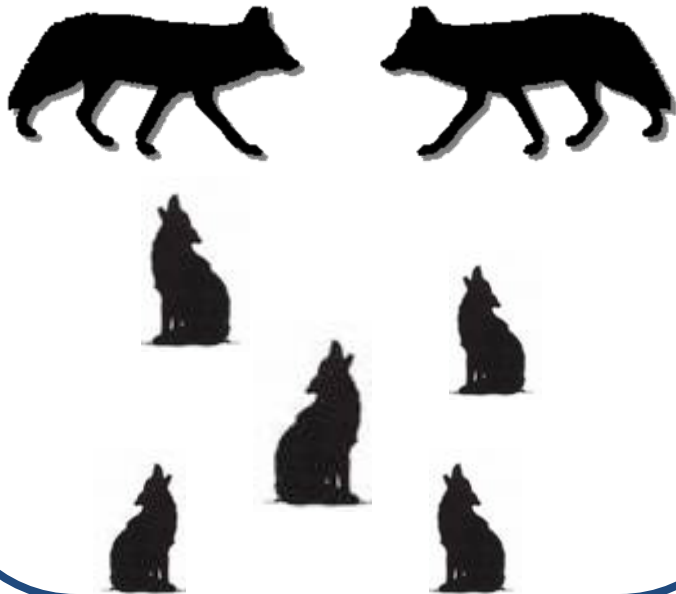


**Residents with stable  
home range**

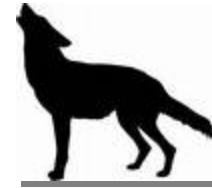


# What happens at the town level?

Residents with stable home range



< 1 year



Transients



# Coyotes and Resources

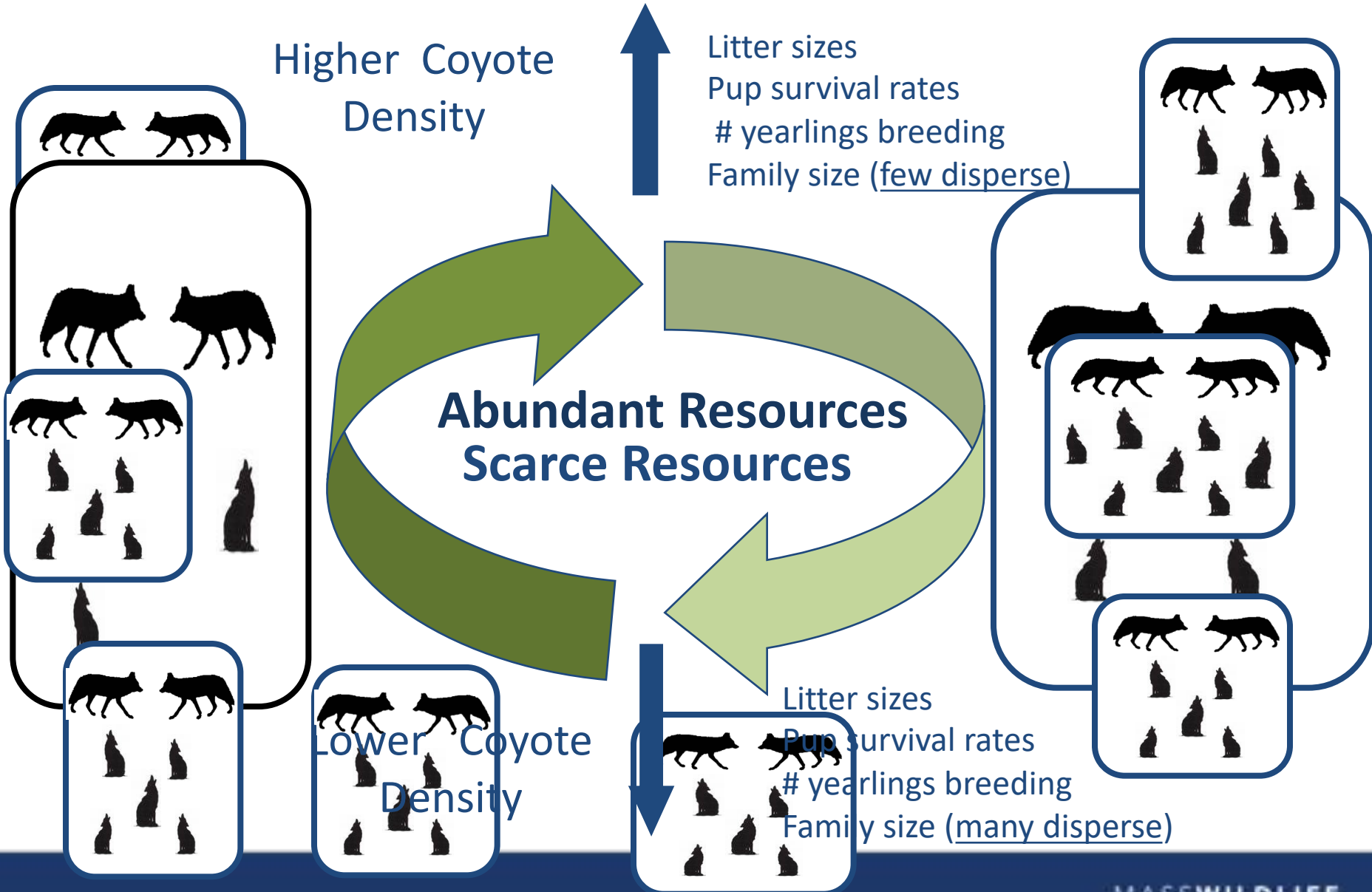
Higher Coyote  
Density

Litter sizes  
Pup survival rates  
# yearlings breeding  
Family size (few disperse)

Abundant Resources  
Scarce Resources

Lower Coyote  
Density

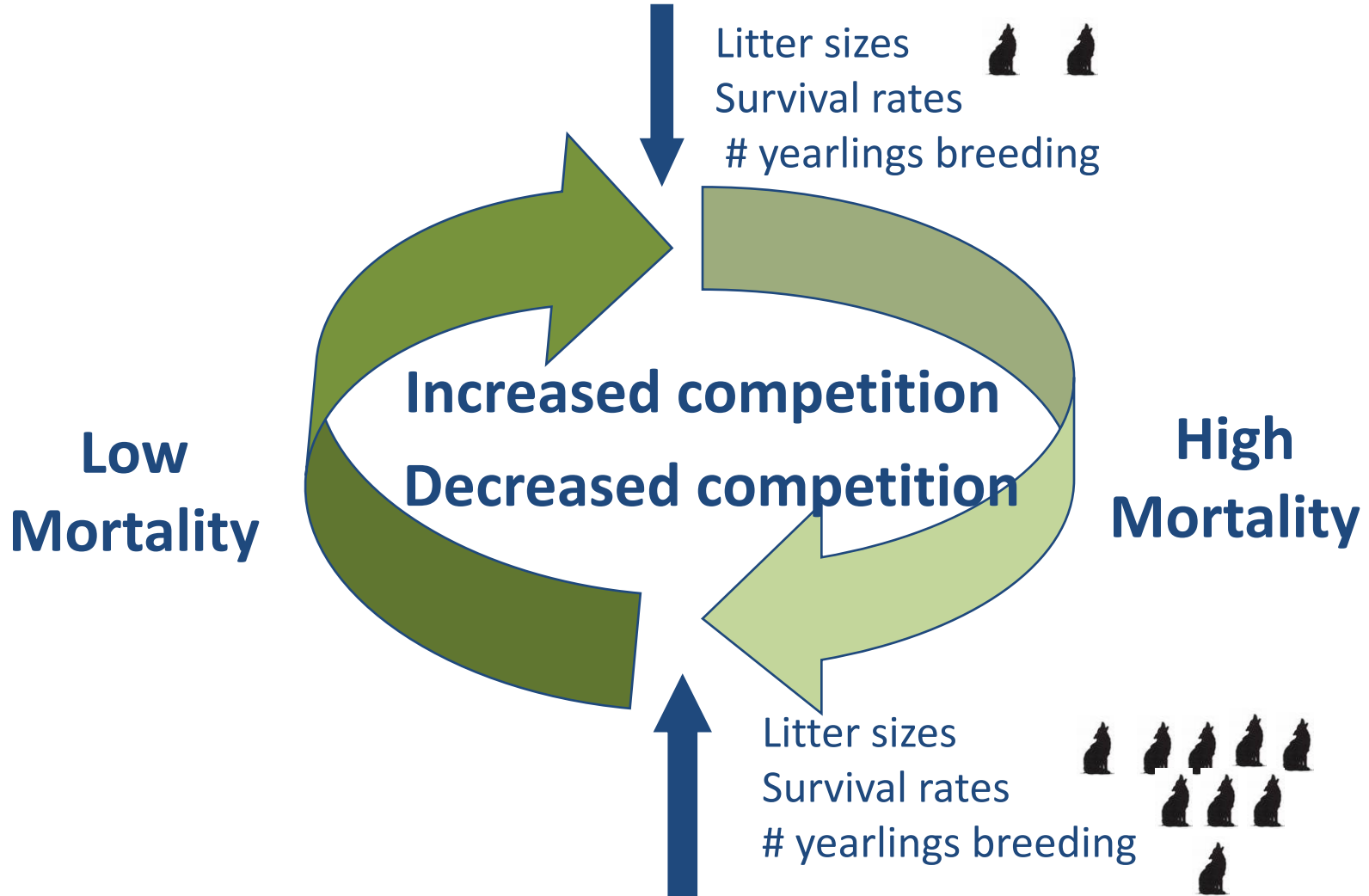
Litter sizes  
Pup survival rates  
# yearlings breeding  
Family size (many disperse)





# Coyotes and Mortality

1. Vehicle 2. Disease 3. Hunting





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# Human – Coyote Conflicts

# What are people concerned about?



# Why do these conflicts occur?

- Human behavior and tendencies
  - Intentional feeding
  - Unintentional feeding
  - Lack of harassment



# Attacks on People

- Are very RARE
- Only 7 confirmed incidences since 1950's
  - 2 confirmed rabid, 3 suspected rabid
  - 2 highly habituated
- Put in perspective: there are ~4.5 million dog bites every year in the U.S.

## Northborough man turns tables on attacking coyote

'Grampy' not badly injured after assault

M Fish  
By Lisa Gentes

and were standing there in an open grassy area talking and then the female coyote attacked me from behind and bit me in one of my legs," Cole recalled yesterday. "The attack was un-

ote, which was still biting Cole. Police then killed the coyote. "We basically choked the animal to death," Northborough Police Sgt. James Bruce said.

## Suspected coyote attacks prompt warnings in Sudbury

M Fish  
By Kristen Green  
GLOBE CORRESPONDENT

Fisheries and Wildlife, said there is no conclusive proof that either

more aggressive approach has to be taken

life in the suburbs, where their

that two coyotes were stalking

# Rabies and Coyotes in MA

- Coyotes are not a major rabies vector species
- Since 1992, there have only been **13** coyotes that tested positive for rabies
- **0.034%** of all rabid animals
- 138 coyotes submitted
- ~9% of all coyotes submitted tested positive
- **21** cows have tested positive (20%)

# Habituation

- Occurs when:
  - Lack of threats
  - Acclimated to human presence
  - Human-associated food sources
  - Food rewards




# Human-associated food sources

- Bird feeders
- Garbage
- Compost
- Pet food





# Progression of Problem Behavior

Coyote Behavior	Progression	Not at all
Frequent use of residential areas	Normal	 SEVERITY Extreme
Frequent daytime activity	Normal	
Nighttime attack on <i>unsupervised</i> pet	Somewhat bold	
Daytime attack on <i>unsupervised</i> pet	More bold	
Attack on leashed pet (human present)	Very bold	
Approaches/ <i>closely</i> follows people; does not flee when heavily harassed	Extremely bold	
Physically attacks people	Aggressive	

These behaviors do not constitute a threat to public safety

These behaviors do constitute a threat to public safety



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# Resolving and Preventing Conflicts

# Modify Human Behavior

- Remove human-associated food sources
- Harassment



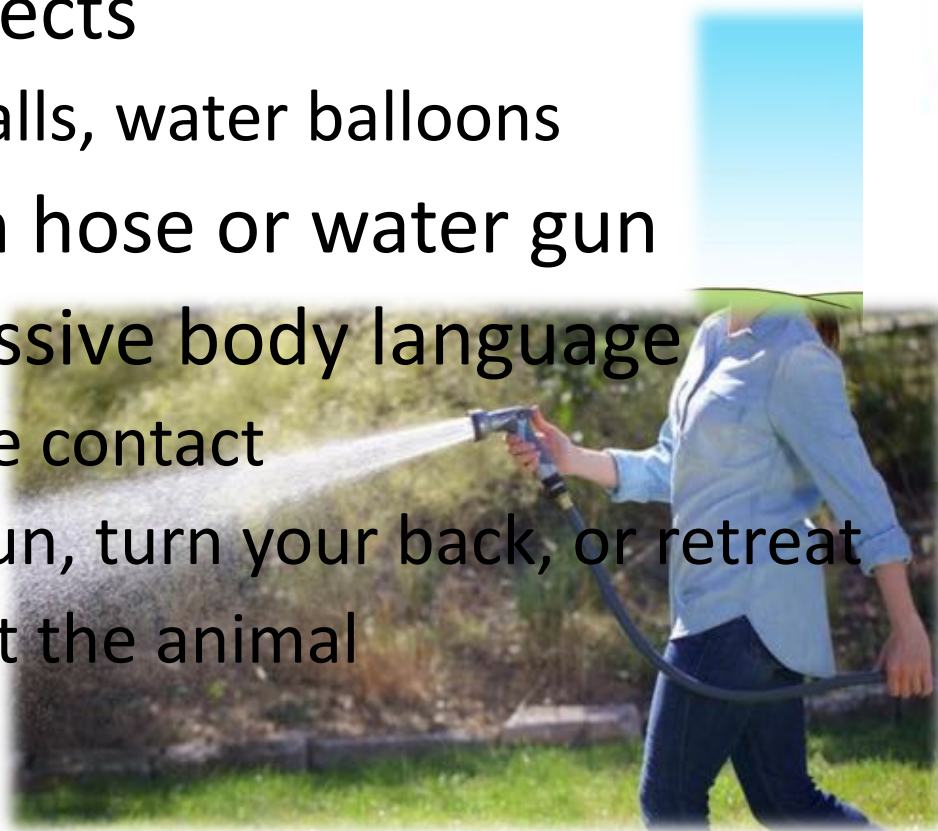
# Eliminate Food Sources

- Remove all bird feeders
- Secure garbage
- Use compost containers



# Harassment

- Loud, offensive noises – not everyday sounds
  - Air horn, whistle, bang pots and pans
- Throw objects
  - Tennis balls, water balloons
- Spray with hose or water gun
- Use aggressive body language
  - Make eye contact
  - Do not run, turn your back, or retreat
  - Charge at the animal



# What should kids do?

- Know the difference between a coyote and a dog
  - Parents teach them not to approach an animal they don't know
- Make themselves look bigger
  - Open coat, wave arms over head
- Slowly back away, do not run
- Find an adult to harass the coyote

# Modify Habitat

- Cut back brushy areas
- Remove brush/rock piles
- Disturb/eliminate den sites



# Exclusion

- Fencing
  - At least 6 feet high
  - Install roll bars
- Containment of livestock & pets
  - Electric fencing
  - Avoid free-range practices
  - Keep house cats indoors
  - Keep dogs leashed and closely supervised
    - A leash does nothing to protect your dog if there isn't a person attached to the other end!





# Tolerance

- Tolerate behavior well within reason
  - General presence w/out nuisance behaviors
  - Howling
  - Pursuit of naturally available food sources





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# Removal of Problem Coyotes

# Removal of a problem coyote is necessary when....

- There is a direct threat to human health and safety
- Property is damaged

ONLY when the responsible coyote can be identified definitively and caught in the act

Cannot indiscriminately remove wildlife

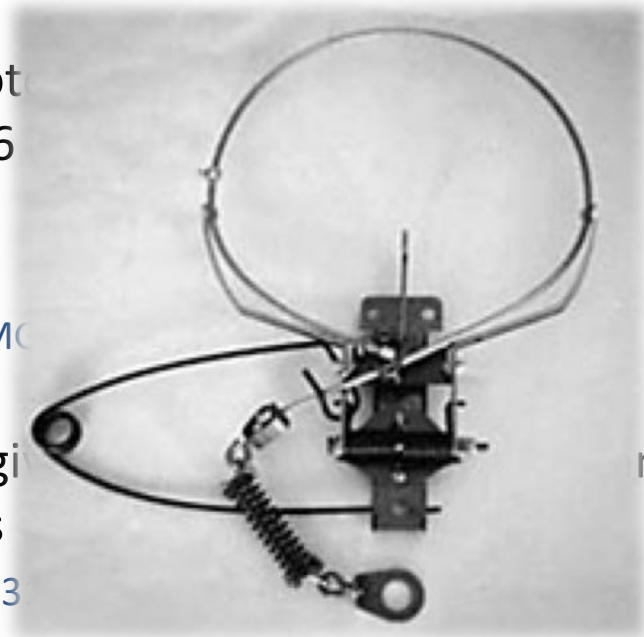
# Legality Issues & Limitations

- **Relocation of wildlife is prohibited**

- Liberation of wildlife prohibited (321 CMR 2.15, Section 4)
- Transportation for the purposes of euthanasia only (321 CMR 2.14 Section 20c)

- **Trapping restrictions**

- Trapped animals must be euthanized or released on same property where caught (321 CMR 2.14 Section 20c)
- Box traps only – not effective for coyotes
- 1996



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# Who can legally remove individual problem coyotes lethally?

- Local law enforcement officers
- Animal Control Officers, if deputized
- MA Environmental Police Officers

**If the animal is confirmed a threat to public safety**

- Coyote certified Problem Animal Control Agents
- Municipal Problem Animal Control Agents
- Licensed hunters and trappers

**All trapping and firearms discharge restrictions apply**

# Who can legally remove individual problem coyotes lethally?

- Property owner (MGL Chapter 131, Section 37)
  - Immediate family member
  - Permanent employee
- Only by legal means (no poison, no prohibited traps, no discharge of firearms within 150' of road)
- Only if animal is caught in the act of damaging property



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