



MASSWILDLIFE

Linking Landscapes for Massachusetts Wildlife

David Paulson
Senior Endangered Species Biologist

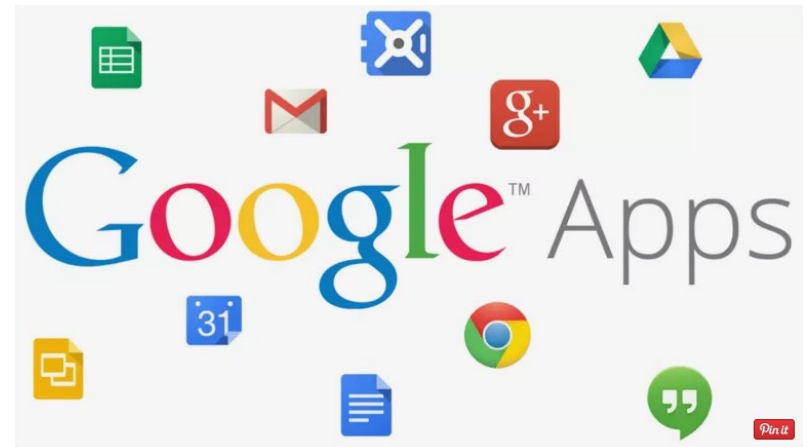
Linking Landscapes for Massachusetts Wildlife



LLMW: Objectives

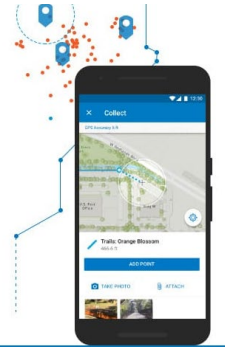
- Enhance, protect, and restore habitats impacted by roads
- Reduce wildlife-vehicle collisions and improve public safety
- Incorporate conservation priorities into transportation planning; and, implement wildlife and transportation research.
 - By implementing this objectives, the agencies will further their ability to preserve rare species populations and enhance the safe passage of wildlife across roads.
 - To help achieve these goals in as cost effective method as possible, a citizen science research program was developed to collect data that could them be used to inform decision-making.

Tools of the Trade



 Collector
for ArcGIS

Accurate data collection made easy



eBird

iNaturalist

Explore Learn Record



Citizen Science & Road Mortality Databases

<https://www.linkinglandscapes.info/>

LINKING LANDSCAPES FOR MASSACHUSETTS WILDLIFE:
2010-2017 ROAD MORTALITY SUMMARY REPORT

Major projects:



Reducing Turtle Roadkill



Mapping Amphibian Crossings



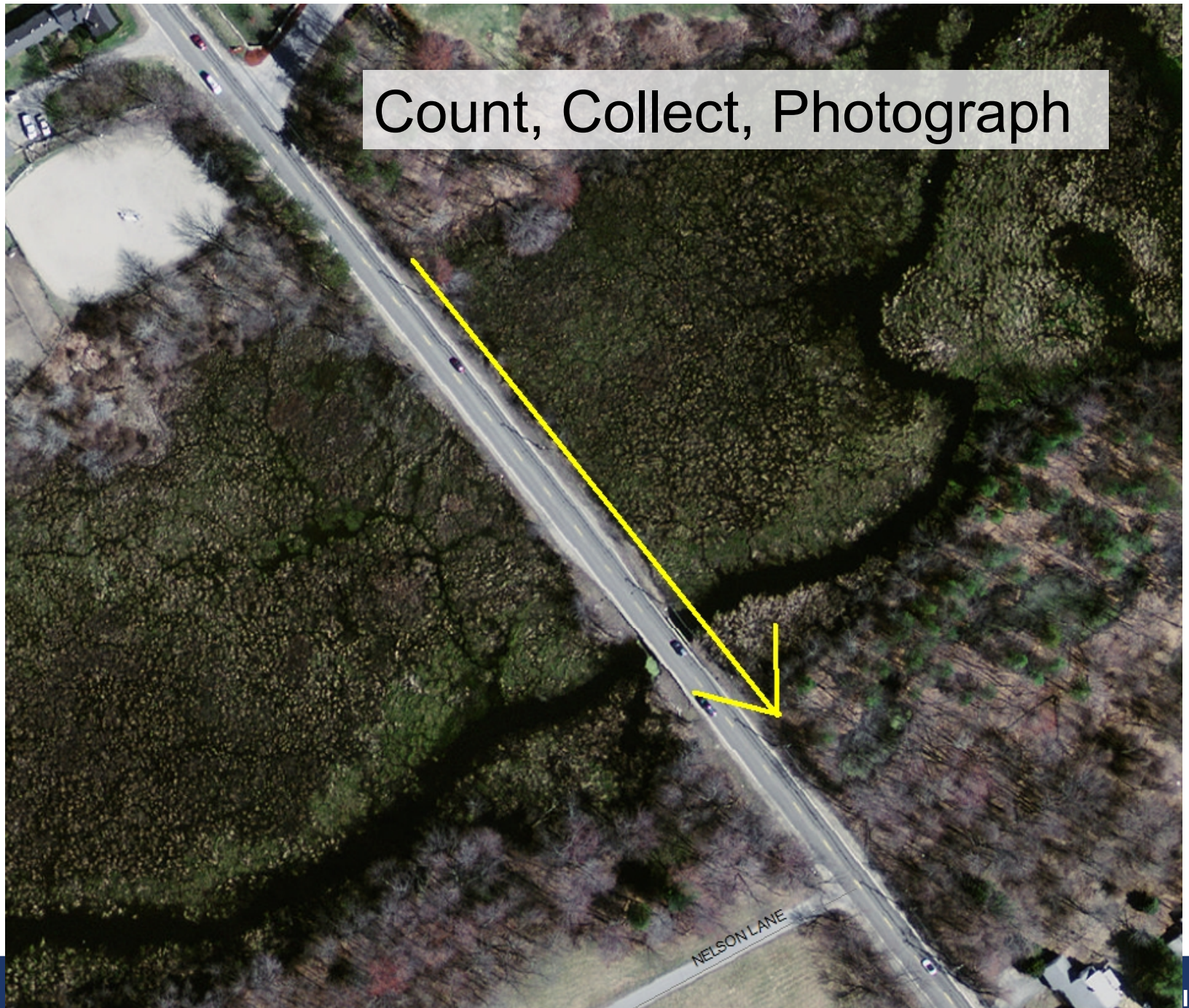
Mapping Wildlife Roadkill

Survey Protocol

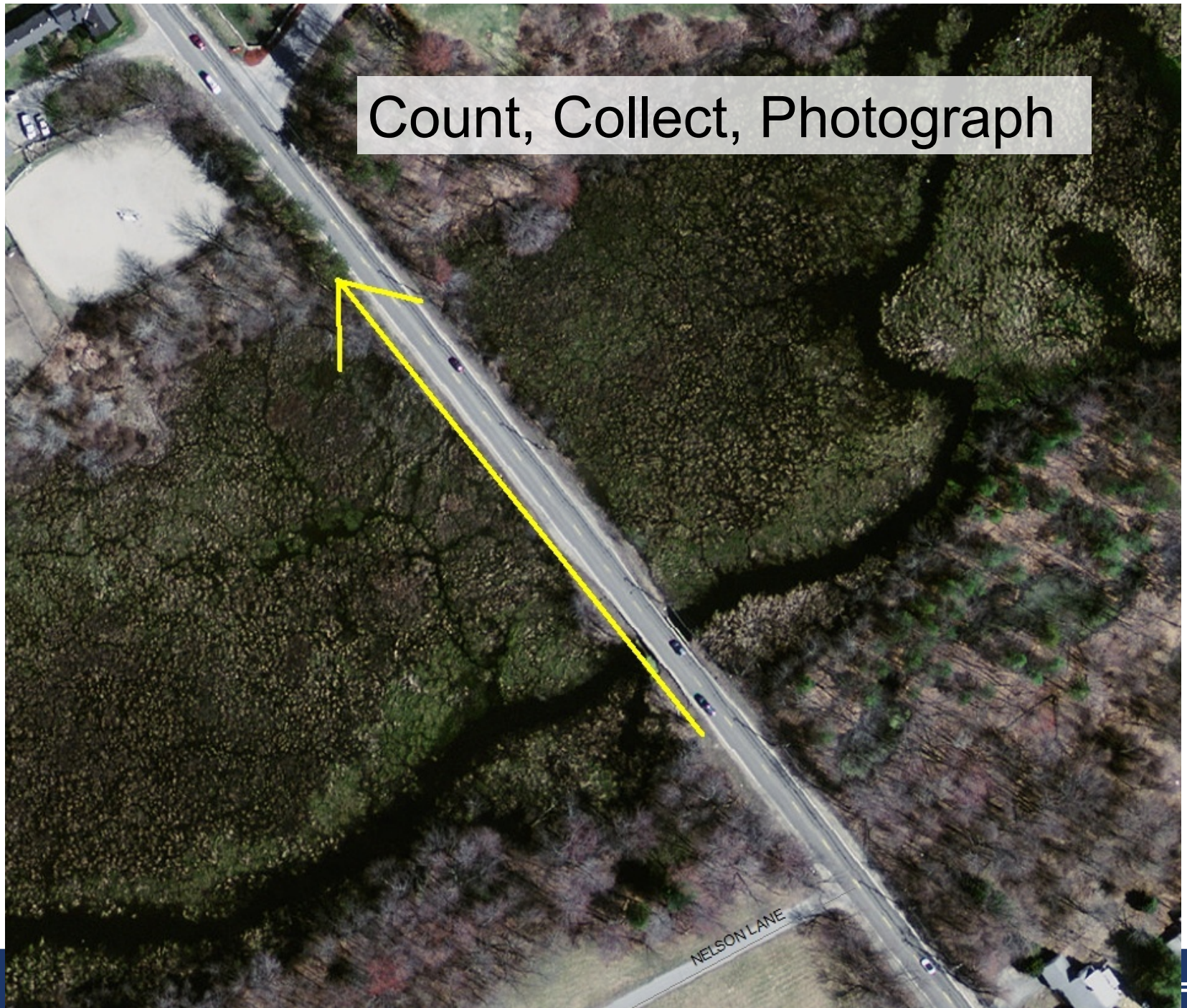
- Count the number of all species of turtles present (dead or alive) on the road or road shoulder
 - Use best judgment in determining whether a partial carcass represents a single turtle
 - You'll also see dead snakes, frogs, birds, and small mammals. These can be tallied en masse, not necessarily by species, and entered with the rest

- Record the number, species, and age (adult, juvenile, hatchling)
 - For painted turtles, under 3-4" carapace length (top shell) is usually juvenile

Count, Collect, Photograph



Count, Collect, Photograph



Field Form

Massachusetts Turtle Roadkill Monitoring Project Field Form

Survey Date: _____

Observer Name(s): _____

Site Name (short description): _____

Site Location (street(s); waterbody; town): _____

Please enter the total number of dead turtles observed during your survey. Follow this number with a breakdown by species, if possible (e.g., painted turtles = 10 adults, 2 juveniles, etc.). Use the comments section at the end of the form for additional space.

Species	Adult	Juvenile	Hatchling	Unknown	Total(s)
Painted					
Snapping					
Musk					
Spotted					
Wood					
Eastern Box					
Blanding's					
Unknown _____					
Unknown _____					
Total(s)					

Additional Information: _____

Statewide Road Mortality Database

Report roadkilled animals using the map and form below.

- Step 1. Navigate to your observation area using the tool bar in the upper-left corner of the map.
- Step 2. Zoom in as far as possible to improve accuracy.
- Step 3: Click on the observation site (a text box with lat/long will appear on the screen).
- Step 4. Complete as much of the form below as possible, and hit '**submit**.'



Statewide Road Mortality Database

Report roadkilled animals using the map and form below.

Step 1. Navigate to your observation area using the tool bar in the upper-left corner of the map.

Step 2. Zoom in as far as possible to improve accuracy.

Step 3: Click on the observation site (a text box with lat/long will appear on the screen).

Step 4. Complete as much of the form below as possible, and hit 'submit.'



Map Satellite Hybrid

Lat = 41.83340255790602, Long = -70.94138011336327

POWERED BY Google

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What is your name?
(Last, first)

What is your email address?

What is your name?

(Last, first)

Paulson, David

What is your email address?

linkinglandscapes@gr

Site name

(Give your site a short descriptive name)

Assawompset Pond C

Site location

Street, waterbody, town

Route 105, Assawomp

May survey date

Enter the date of your late-May roadkill survey, e.g., 5/31/10

5/31/10

May survey results

Please enter the total number of dead turtles observed during your survey for each species, if possible (e.g., painted turtles = 10 adults, 2 juveniles, etc.). Use separate lines for each species. Use the space between lines to separate species.

Painted = 10 adults, 2 juveniles
Snapping = 20 adults, 3 juveniles
Spotted = 3 adults, 2 unknown

Additional comments

May Survey
Green Frog = 10
Bull Frog = 15
Northern Water snake = 2
Red-Winged Black Bird = 3
Beaver = 1

Latitude

By clicking on the map, this space will auto-fill. Or, enter GPS coordinates here.

41.83340255790602

Longitude

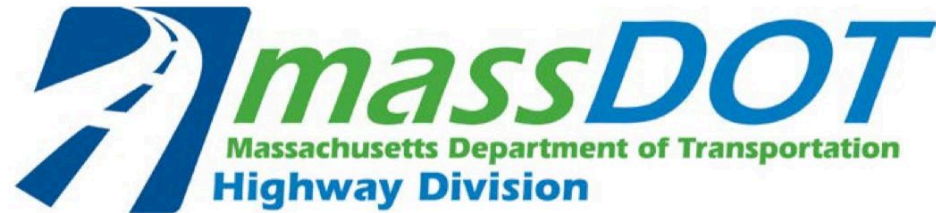
By clicking on the map, this space will auto-fill. Or, enter GPS coordinates here.

-70.94138011336327

Submit

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**Linking Landscapes for Massachusetts Wildlife:
2010-2017 Road Mortality Summary Report
January 2018
Revised March 2018**

Natural Heritage and Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, Massachusetts 01581

and

Massachusetts Department of Transportation, Highway Division
10 Park Plaza, Suite 4160
Boston, Massachusetts 02116

Overview

- January 2010 to September 2017
- 528 volunteers have participated in one or more of these projects
- Resulting in the documentation of over 6,450 observations
- Representing 82 species
- 2,301 locations throughout the state

The Commonwealth contains 16,534 km (10,274 mi) of highways and other major roads and 62,101 km (38,588 mi) of minor roads.

Road density by town (miles per square mile)

- 0.71 - 1.73
- 1.74 - 3.30
- 3.31 - 4.86
- 4.87 - 7.16
- 7.17 - 10.38
- 10.39 - 15.72
- 15.73 - 27.14

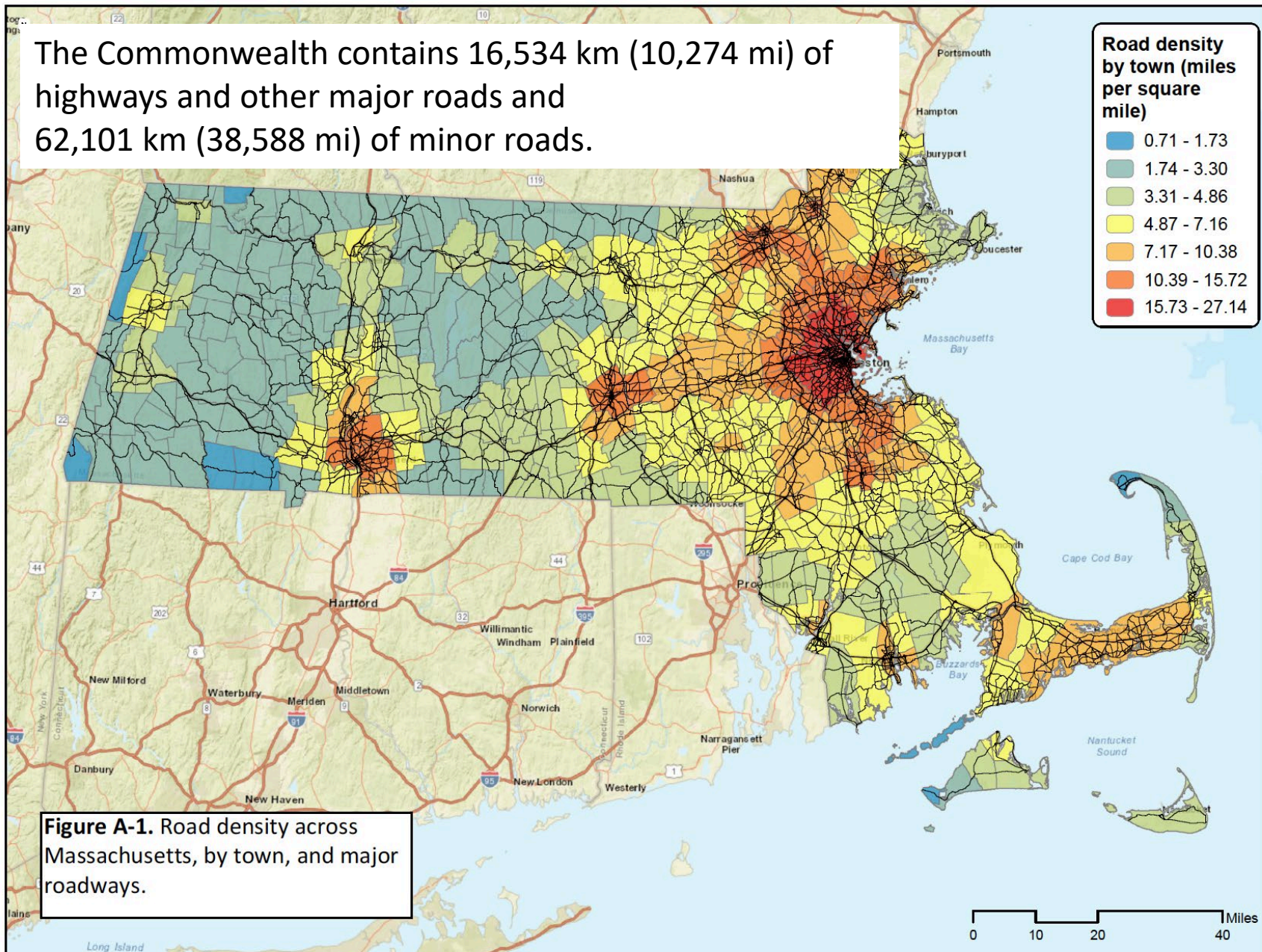
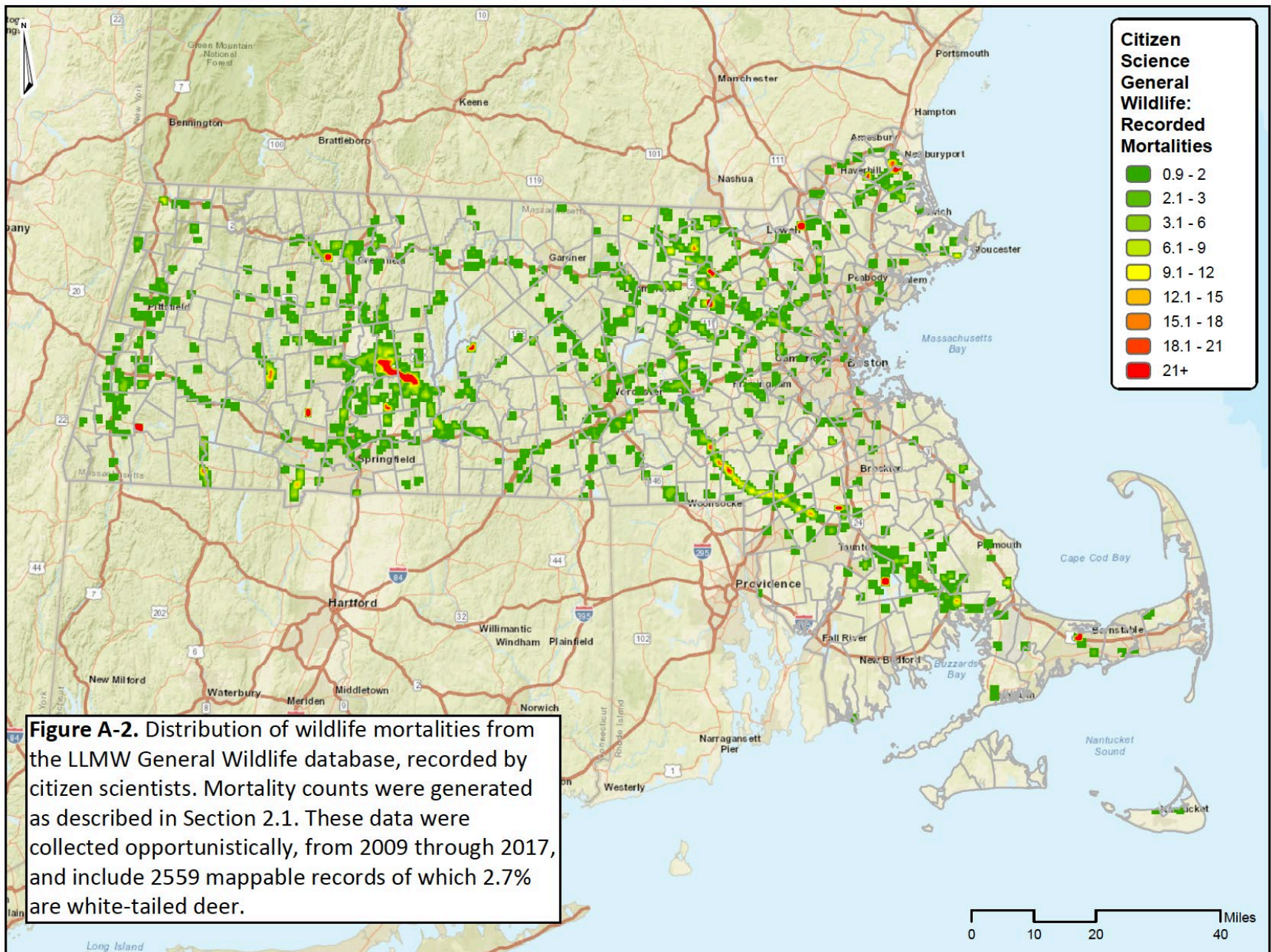
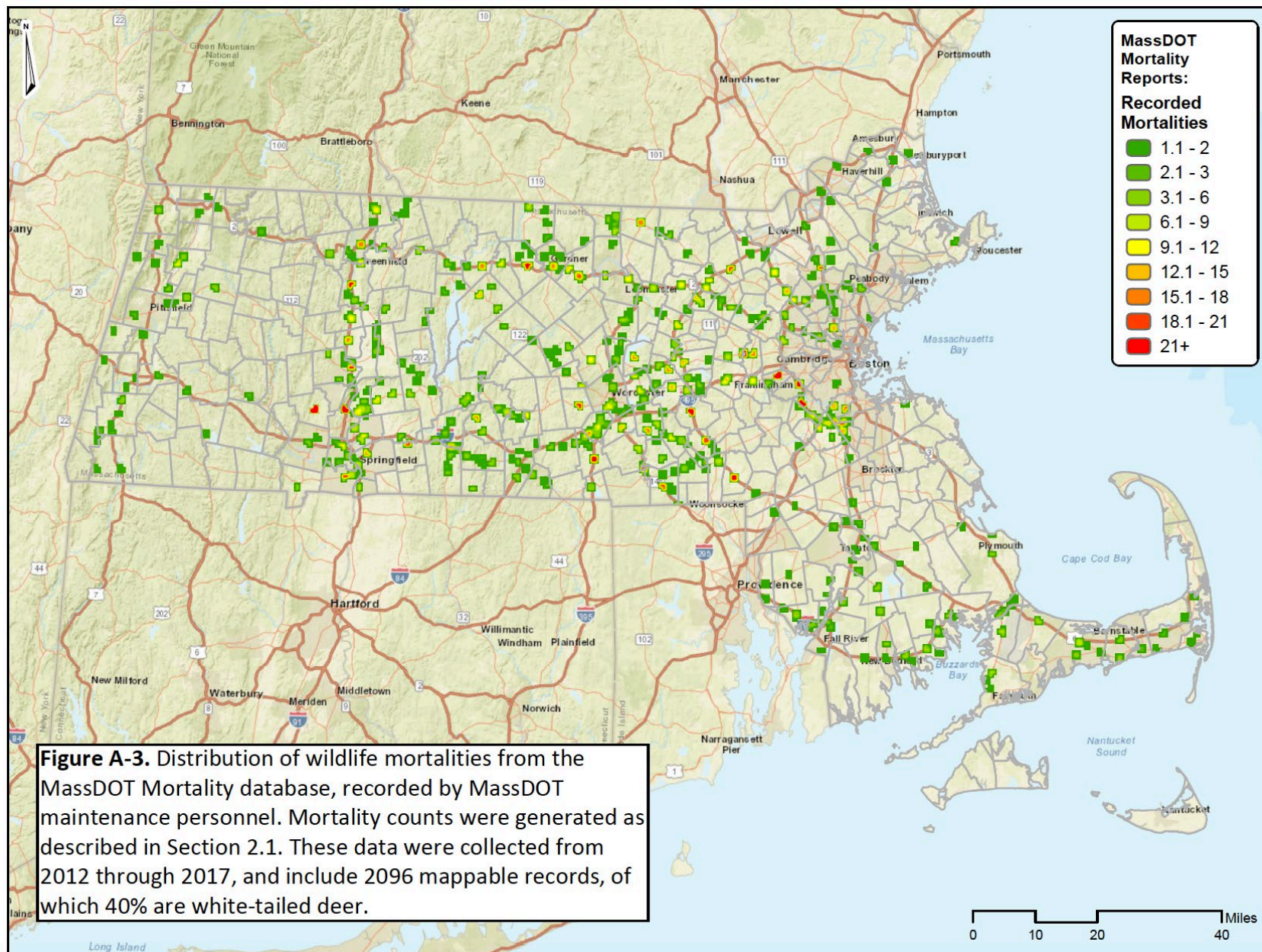


Figure A-1. Road density across Massachusetts, by town, and major roadways.





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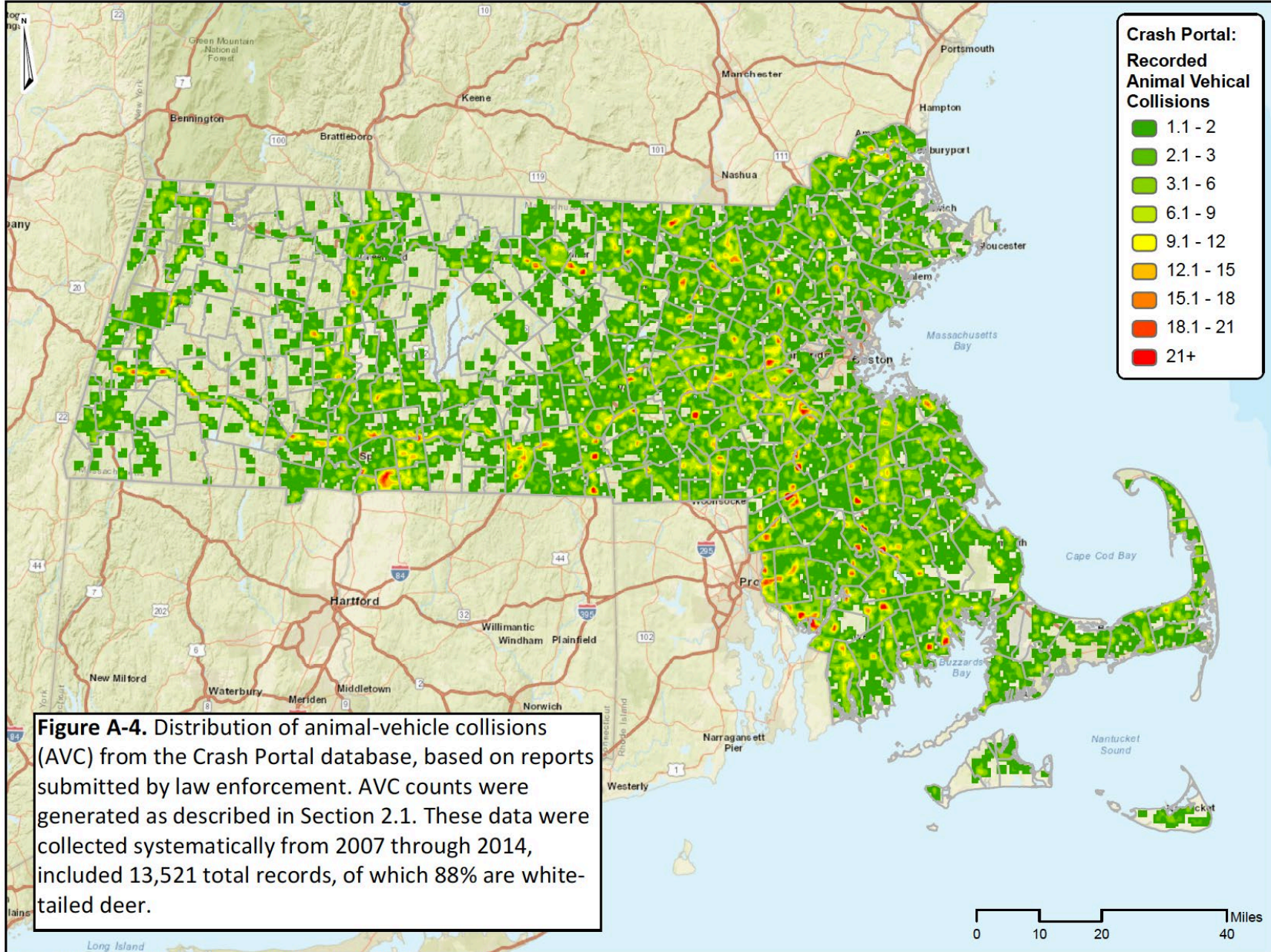


Figure A-4. Distribution of animal-vehicle collisions (AVC) from the Crash Portal database, based on reports submitted by law enforcement. AVC counts were generated as described in Section 2.1. These data were collected systematically from 2007 through 2014, included 13,521 total records, of which 88% are white-tailed deer.

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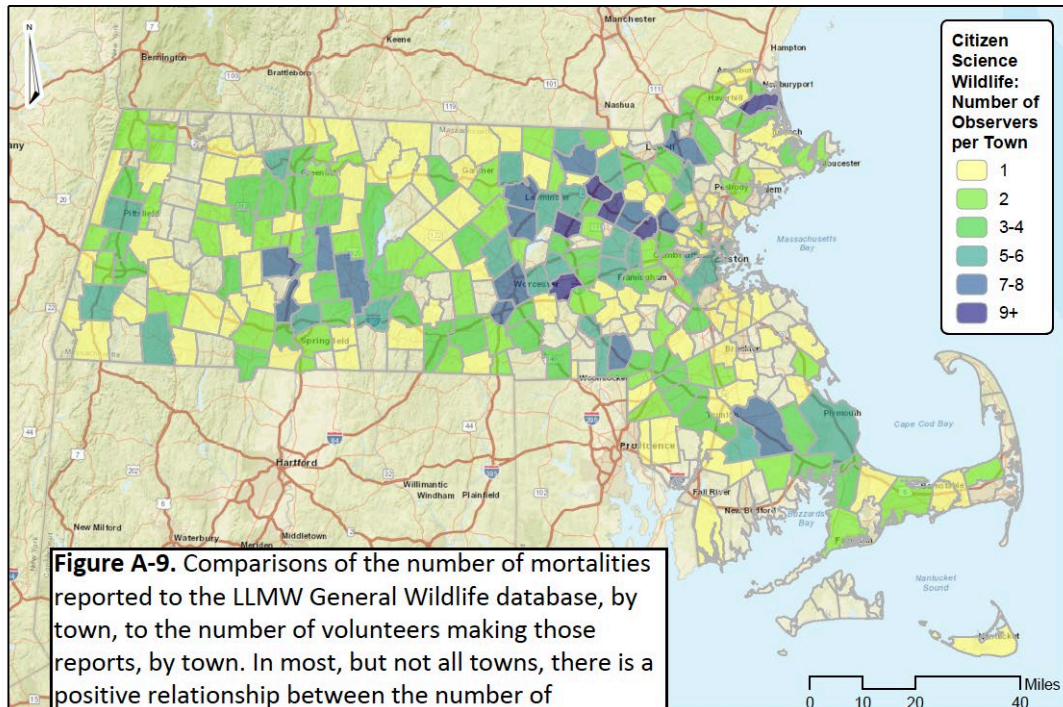
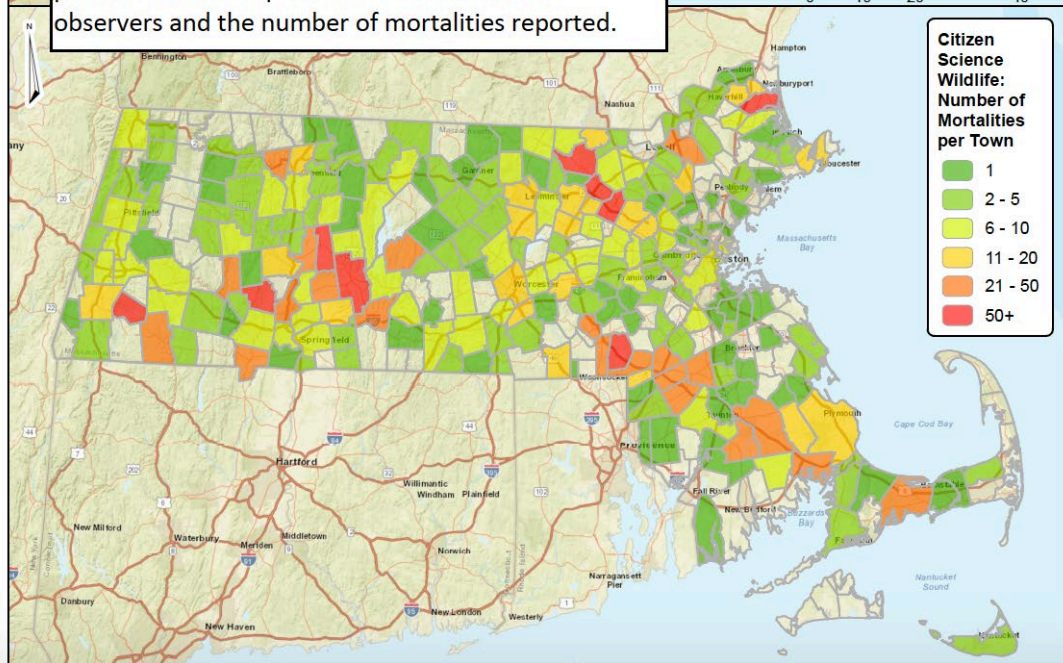
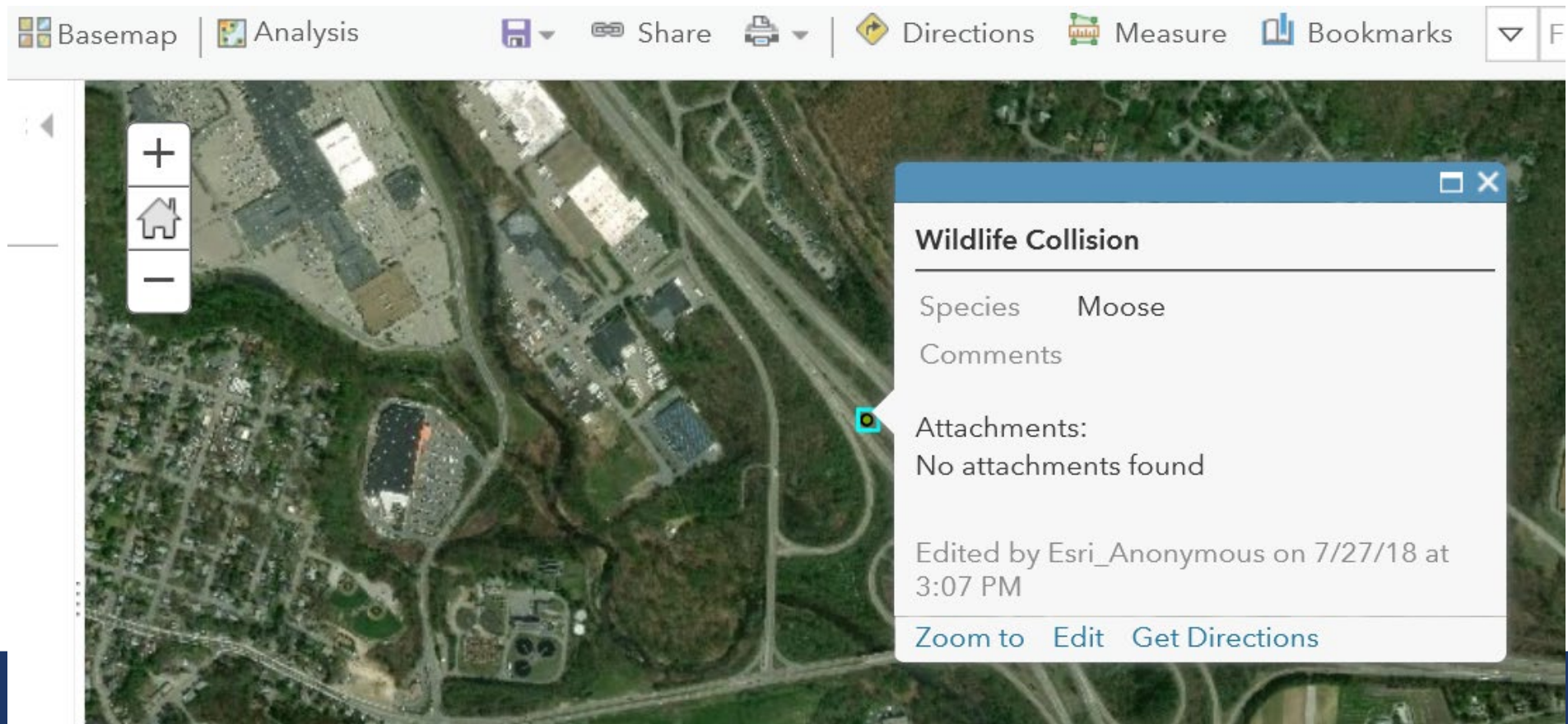


Figure A-9. Comparisons of the number of mortalities reported to the LLMW General Wildlife database, by town, to the number of volunteers making those reports, by town. In most, but not all towns, there is a positive relationship between the number of observers and the number of mortalities reported.



Wildlife Collisions Collector App

- Purpose: Wildlife roadway mortality mobile app
- Partners: MassDOT, MassWildlife



Mapping Our Vulnerable Infrastructure

Tool - “MOVIT”

- Purpose: Map locations of repeat flooding, erosion, and infrastructure structure damage to storms
- Partners: MassDOT- ENV, GIS, District Operations & Maintenance



Moose Vehicle Collisions



Turtle Signage, Barrier Fencing and Crossing Structures

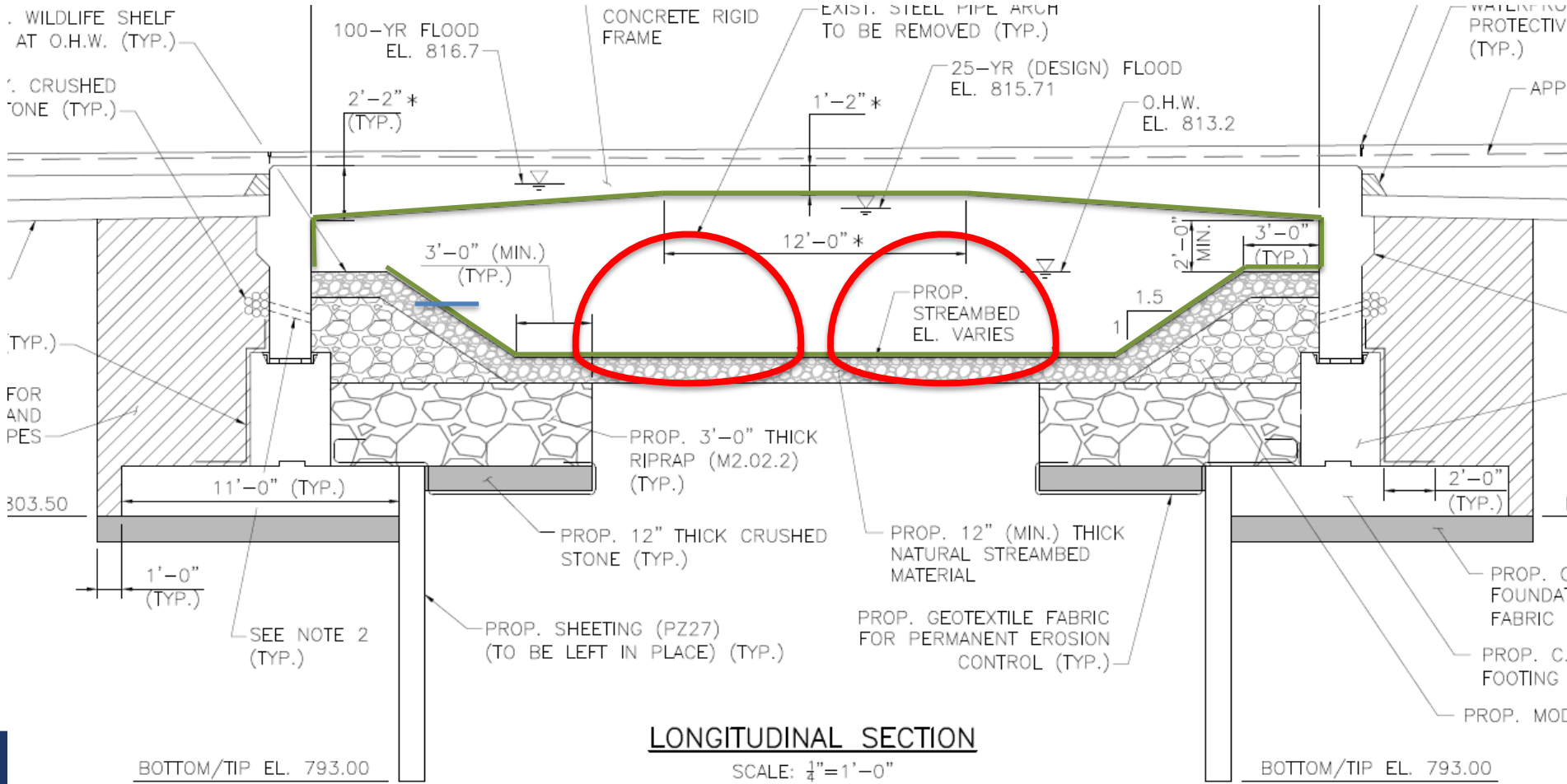




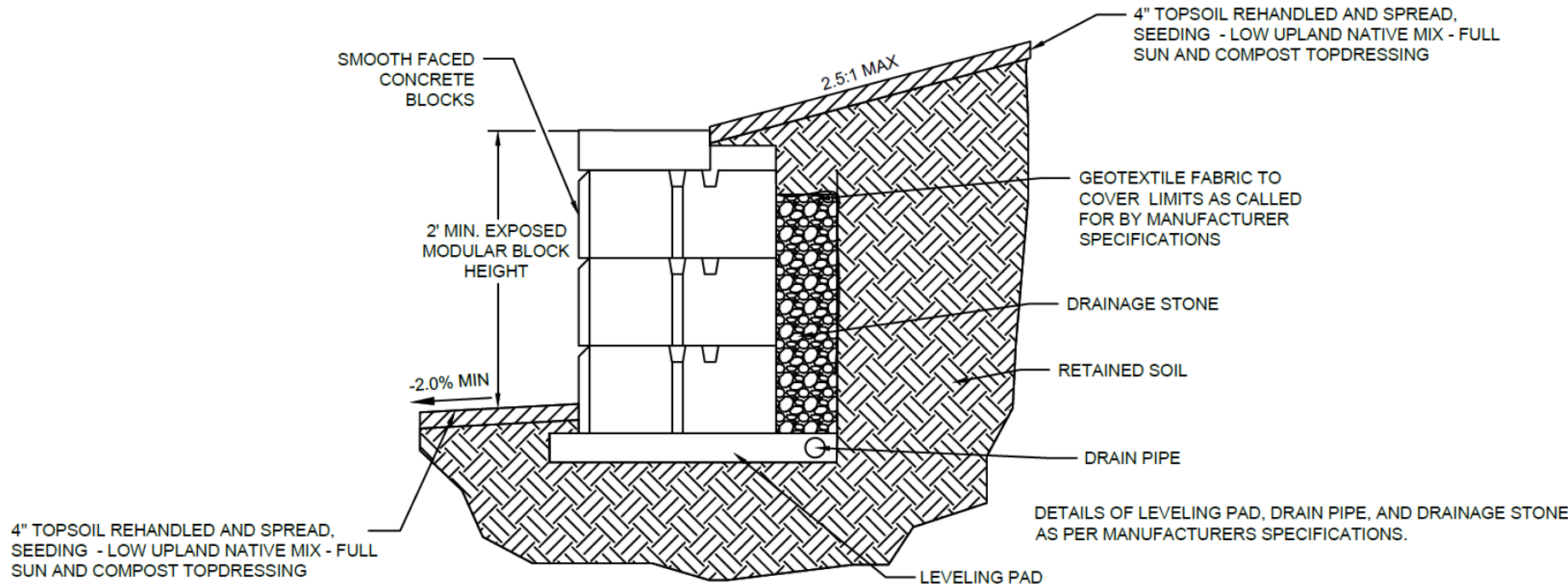
Hubbardston – Turtle Friendly Bridge & Concrete Turtle Barrier



- Ex. 6.5'x9' Cor. Metal Arches
- Prop. 40' Concrete Bridge



Hubbardston – Turtle Friendly Bridge & Concrete Turtle Barrier



PERMANENT TURTLE BARRIER - MODULAR BLOCK

NOT TO SCALE

Hubbardston – Turtle Friendly Bridge & Concrete Turtle Barrier



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Google Earth

“Innovation in Wildlife and Transportation Coordination”



Questions

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