



Opportunities for Wildlife Passage in New York: Leveraging Federal Funds for Reducing Wildlife Vehicle Collisions.



Chris Standley
Environmental Science Bureau

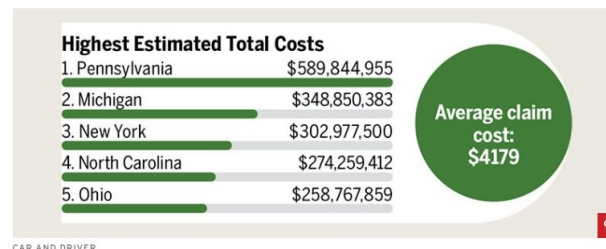


Sarah Lazazzero
Region 4 Construction



Ryan Huggins
Region 4 Design

- **Wildlife-vehicle collisions (WVCs) are common:**
 - Roughly 60-70,000 deer-vehicle collisions (DVCs)/year in NYS
 - Likely hundreds of thousands if we include all wildlife species, large & small
- **Safety & quality of life risks**
 - Nationally – avg. 149 fatalities annually (1975-2020) via DVCs†;
 - NYS – 56 deaths since 2011 via animal-vehicle collisions†
 - Avg. cost – ~\$4,000 per DVC
 - Loss of human lives, loss of species, property damages
 - **NO BENEFITS** from WVCs



†<https://www.iihs.org/topics/fatality-statistics/detail/collisions-with-fixed-objects-and-animals#collisions-with-animals>

Potential Funding for Wildlife Passage & Resiliency

Wildlife Infrastructure Funding Opportunities within the Infrastructure Investment & Jobs Act

Prepared by Renee Callahan, ARC Solutions, info@arc-solutions.org

Program Name	Amount† (FY22-26)	Eligible applicants					New, Expanded, Existing	Process	Federal Share (%)	Eligible wildlife-related projects
		FLMA	Tribe	State DOT	MPO	Local Gov't				
More information about notice and application timing is available in the companion funding calendar: tinyurl.com/ARC-funding-calendar										
Wildlife Crossing Pilot Program ☑ (23 USC 171)	\$350M	✓	✓	✓	✓	✓	New	<u>DG</u> FY22-23 Notice is open! Apps due 8/1/23	Typically 80%	Projects to reduce wildlife-vehicle collisions while improving terrestrial and aquatic connectivity, including non-construction projects involving planning, research, outreach, and feasibility analyses, or construction projects, including all activities that lead to a built project
INFRA ☑ (23 USC § 117)	\$8B	✓ ¹	✓	✓	✓ ³	✓	Expanded	<u>DG</u> Expected Spring '23	INFRA award may be used for up to 60% of project costs	Wildlife crossing projects
Rebuilding American Infrastructure with Sustainability & Equity (RAISE) ☑ (49 USC § 6702)	\$7.5B		✓	✓	✓	✓	Existing	DG	Typically 80%; except rural, disadvantaged, or persistent poverty areas	Wildlife-related highway and bridge projects eligible under Title 23 USC programs, plus projects to improve aquatic connectivity by replacing or rehabilitating culverts or preventing stormwater runoff
Rural Surface Transportation Grant Program ☑ (23 USC § 173)	\$2B		✓	✓	✓ ⁴	✓	New	<u>DG</u> Expected Spring '23	Typically 80%, except ADHS, DASP projects	Wildlife-related projects in Rural Areas otherwise eligible under the Surface Transportation Block Grant Program, Tribal Transportation Program, and Highway Safety Improvement Program
National Culvert Removal, Replacement & Restoration Program ☑ (49 USC § 6703)	\$1B		✓	✓		✓	New	DG	Up to 80%	Projects to replace, remove, or repair culverts or weirs to restore anadromous fish passage, including infrastructure to facilitate fish passage around or over weirs, or weir improvements
Bridge Investment Program ☑ (23 USC § 124)	\$12.5B	✓	✓	✓	✓ ³	✓	New	<u>DG</u> Expected Summer '23	Generally 50% or 80%; up to 90% for off-system bridges	Up to 5% annually may go to projects to replace or rehabilitate culverts to improve flood control and habitat connectivity for aquatic species; environmental mitigation is also an eligible expense during bridge construction / reconstruction
Tribal Transportation Program Safety Fund ☑ (23 USC § 202(e))	\$120M		✓				Existing	DG	Up to 100%	Adding or retrofitting structures or other measures to eliminate or reduce wildlife-vehicle collisions
Nationally Significant Federal Lands & Tribal Projects Program ☑ (FAST § 1123(c))	\$275M	✓	✓	✓ ²	✓ ²	✓ ²	Existing	<u>DG</u> Expected Summer '23	Up to 90% for Federal Lands; 100% for Tribal	Same as Federal Lands Transportation Program, Federal Lands Access Program, and Tribal Transportation Program, except projects must be "continuous"
PROTECT † (23 USC § 176)	\$1.4B	✓ ¹	✓	✓	✓	✓	New	<u>DG</u> Expected Spring '23	Typically 80%, up to 100% for Federal / Tribal	Wildlife infrastructure is not expressly eligible; PROTECT does fund improved infrastructure resiliency via "protective features" such as increasing the size or number of culverts, which may improve aquatic and/or terrestrial connectivity
Pollinator-Friendly Program (23 USC § 332)	\$10M (\$3M in FY23)	✓	✓	✓			New	DG	Up to 100%	Pollinator-friendly activities on roadsides and highway rights-of-way, including planting and seeding native grasses and wildflowers, including milkweed

Suggested citation: Callahan, R. (2023). *Wildlife Infrastructure Funding Opportunities within the Infrastructure Investment & Jobs Act*. Summary prepared on behalf of ARC Solutions, NPCA, Wildlands Network. Bozeman, MT.









Updated April 4, 2023

Green: A Notice of Funding Opportunity (NOFO) is open and applications are being accepted until the deadline. Click on the program name to view an At-A-Glance summary of eligibility requirements.
Blue: NOFO is expected in Winter 2023.
Orange: NOFO is expected in Spring 2023.
Gold: NOFO is expected in Summer 2023.

https://arc-solutions.org/wp-content/uploads/2022/09/IJA-Wildlife-Infrastructure-Funding-Guide_FINAL.pdf



Potential Funding for Wildlife Passage & Resiliency

Program Name	Amount (FY22-FY26) [†]	Eligible recipients					New, Expanded, Existing	Process	Federal Share (%)	Eligible wildlife-related projects
		FLMA	Tribe	State DOT	MPO	Local Gov't				
<u>PROTECT</u>  [‡] (23 USC § 176)	\$7.3B	✓ ¹	✓	✓	✓	✓	New	State FA	Typically 80%, up to 100% for Federal /Tribal	Wildlife infrastructure is not expressly eligible; PROTECT does fund improved infrastructure resiliency via “protective features” such as increasing the size or number of culverts, which may improve aquatic and/or terrestrial connectivity
<u>Bridge Formula Program</u>  (IIJA § 11108(a)(2)(A))	\$27.5B		✓	✓		✓	New	State FA	Same as 23 USC § 120; plus up to 100% for OSB	Wildlife mitigation appears to be an eligible expense during bridge reconstruction / construction, given expanded definition of “construction”
<u>Highway Safety Improvement Program</u>  (23 USC § 148)	\$15.6B	✓	✓	✓	✓	✓	Existing	State FA	Up to 90%, with statutory exceptions	Adding or retrofitting structures or other measures to eliminate or reduce wildlife-vehicle collisions
<u>Surface Transportation Block Grant Program</u>  (23 USC § 133)	\$64.8B (excluding TAP)		✓	✓	✓	✓	Expanded	State FA	Typically 80%, except projects on Interstate System (90%) & certain states	Construction, addition or retrofitting of wildlife crossings plus projects and strategies to reduce wildlife-vehicle collisions, including project-related planning, design, construction, monitoring, and preventative maintenance
<u>Transportation Alternatives Program (TAP)</u>  (23 USC § 133(h))	\$7.2B		✓	✓ ²	✓	✓	Existing	State FG	Typically 80%, except in certain states	Environmental mitigation to reduce vehicle-caused wildlife mortality or to restore or maintain connectivity among terrestrial or aquatic habitats
<u>Federal Lands Access Program</u>  (23 USC § 204)	\$1.5B		✓	✓		✓	Existing	State FG	Up to 100%	Environmental mitigation to improve public safety and reduce vehicle-caused wildlife mortality while improving or maintaining habitat connectivity
<u>Federal Lands Transportation Program</u>  (23 USC § 203)	\$2.2B	✓					Expanded	Federal FA	Up to 100%	Environmental mitigation to improve public safety and reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; or to mitigate damage to wildlife, aquatic organism passage, habitat, and ecosystem connectivity including constructing, replacing, maintaining, or removing culverts and bridges
<u>Tribal Transportation Program (TTP)</u>  (23 USC § 202)	\$3B		✓				Existing	Tribal FA	Up to 100%	Environmental mitigation to improve public safety and reduce vehicle-caused wildlife mortality while maintaining habitat connectivity; or to mitigate damage to wildlife, aquatic organism passage, habitat, and ecosystem connectivity including constructing, replacing, maintaining, or removing culverts and bridges

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LEGEND

<p>1 Applying jointly with one or more States 2 If requested or sponsored by another eligible entity 3 If the MPO has a population of greater than 200,000 4 MPOs may apply for eligible Rural projects within the MPO that are outside of an Urban Area</p>	<p>Process: Discretionary Grant (DG) - distributed at the national level; Formula Allocation (FA); Formula Grant (FG)</p>
<p>[†] Except as noted, FY22-26 total amounts do not reflect additional General Fund appropriations after FY22. [‡] Formula allocation is distributed to States only. MPOs/tribes/local governments are eligible recipients for PROTECT Discretionary Grant funds. FLMA's can apply jointly with a State or group of States.</p>	<p>Eligible Applicants: Federal Land Management Agency (FLMA); Department of Transportation (DOT); Metropolitan Planning Organization (MPO); Local Government (Gov't)</p>
<p>Green: A Notice of Funding Opportunity (NOFO) is open and applications are being accepted until the deadline. Click on the program name to view an At-A-Glance summary of eligibility requirements. Blue: NOFO is expected in Winter 2023. Orange: NOFO is expected in Spring 2023. Gold: NOFO is expected in Summer 2023.</p>	<p>Sources: Infrastructure Investment & Jobs Act; FHWA Bipartisan Infrastructure Law; FHWA Funding; FHWA HSIP; White House Guidebook; USDOT Upcoming NOFOs; FHWA Competitive Grant Funding Matrix</p>

This guidance chart was prepared by Renee Callahan on behalf of ARC Solutions, National Parks Conservation Association, and Wildlands Network.

Special thanks to Tony Cady, Colorado Department of Transportation, for his assistance in developing this chart.

ARC Solutions is a not-for-profit partnership whose mission is to identify and promote leading-edge solutions to improve human safety, wildlife mobility and long-term landscape connectivity.

ARC is fiscally sponsored by Social and Environmental Entrepreneurs. **Contact:** Renee Callahan (rcallahan@arc-solutions.org).

National Parks Conservation Association is a non-profit organization whose mission is to protect and enhance America's National Park System for present and future generations. **Contact:** Bart Melton (bmelton@npca.org).

Wildlands Network is a non-profit organization whose mission is to reconnect, restore and rewild North America so that life—in all its diversity—can thrive. **Contact:** Erin Sito (e.sito@wildlandsnetwork.org).



Potential Funding for Wildlife Passage & Resiliency

Program	Eligible Projects
Wildlife Crossings Pilot Program (\$350 million - Discretionary Grant (DG))	Projects to reduce wildlife-vehicle collisions while improving terrestrial and aquatic connectivity. Includes construction and non-construction projects.
Highway Safety Improvement Program (\$15.6 billion - State Formula Allocation (FA))	Adding or retrofitting structures or other measures to eliminate or reduce wildlife-vehicle collisions
Surface Transportation Block Grant Program (\$72 billion State FA) *including Transportation Alternatives Program (TAP)	Construction, addition or retrofitting of wildlife crossings plus projects and strategies to reduce wildlife-vehicle collisions, including project-related planning, design, construction, monitoring, and preventative maintenance
PROTECT (\$7.3 billion State FA; 1.3 billion DG)	Wildlife Infrastructure is not expressly eligible; PROTECT does fund improved infrastructure resiliency via “protective features” such as <u>increasing the size or number of culverts, which could be leveraged toward wildlife and aquatic connectivity</u>

Callahan, R. (2023). Wildlife Infrastructure Funding Opportunities within the Infrastructure Investment & Jobs Act. Summary prepared on behalf of ARC Solutions, NPCA, Wildlands Network. Bozeman, MT

Wildlife Crossing Pilot Program – Notice of Funding Opportunity (4/4/23)

- **\$111,850,000** is available for competitive grant awards over FFY 2022-2023
- Primary Merit Criteria
 - a. **Reduce animal-vehicle collisions (AVCs)**
 - b. **Improve habitat connectivity** for terrestrial and aquatic species
- **Application Deadline - 11:59 PM (EST), August 1, 2023**
- Grants are available for:
 - a. Construction; and
 - b. Non-Construction projects
- Cost-Sharing – **80% Federal**; State 20% (total project cost)
 - Exceptions are available for
 - i. Safety (certain projects) – 100% Federal (construction only)
 - ii. Native/Tribal non-taxable lands can trigger Federal Sliding scale

Wildlife Overpasses



A wildlife overpass in Banff national park, in the Canadian Rockies. Photograph: Ross MacDonald/Banff National Park

Wildlife Underpasses



Grizzly bear family using metal culvert underpass. (Image credit: Banff Wildlife Crossings Project)

Wildlife Passage Benches

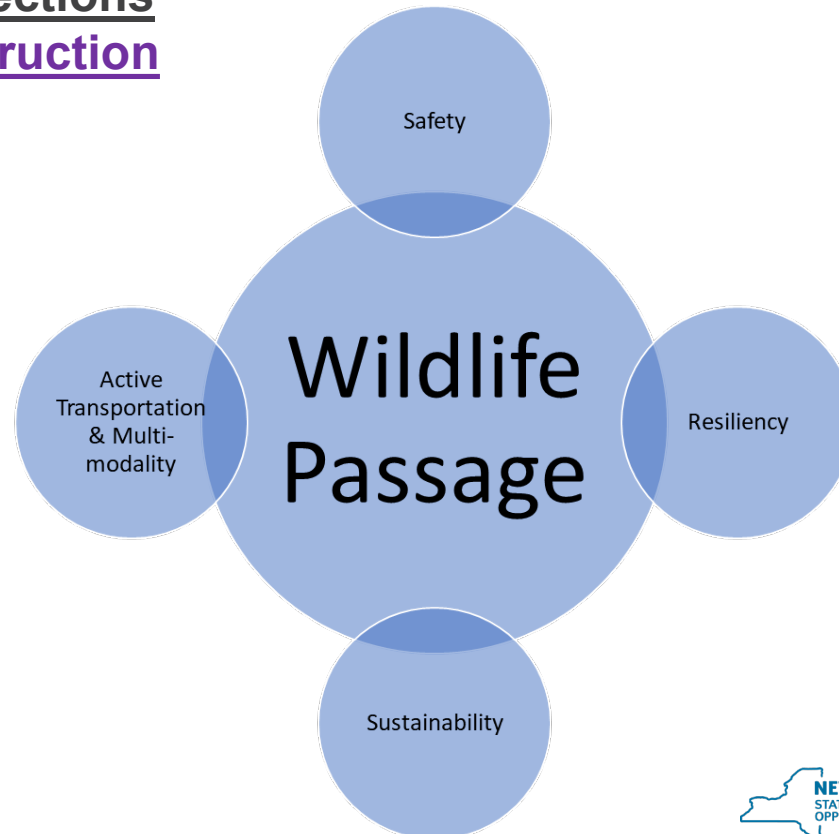


To help deer and other wildlife stay off the roadways, MnDOT uses gravel "passage benches" on most of its river bridge projects. The passage bench is incorporated into bridge riprap and serves to mimic game trails. Wildlife can pass beneath bridges uninterrupted as they travel along the streambank. *Photo by Peter Leete*

Wildlife Passage Shelves



1. Improved **motorist safety** (75-90% reduction in WVC – lives saved, reduced injuries and property damages)
2. Enhanced infrastructure **resiliency** creates opportunities for wildlife passage
3. Greater **recreational access** - biking, hiking, fishing, canoeing, kayaking
4. Improved **pedestrian safety & access**
 - a. Tying infrastructure into existing trails for biking, walking, commuting, etc.
5. Safer and easier **bridge inspections**
6. Improved **efficiency of construction**



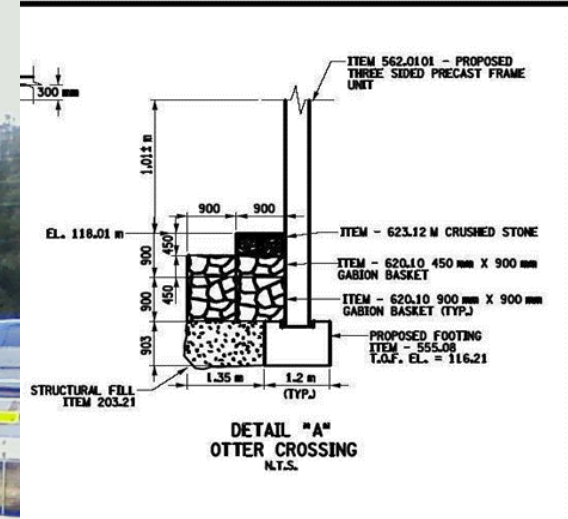
PIN 4031.06 Route 31 over Melvin Brook Clyde, NY



Structure pre-replacement



Road-killed otter

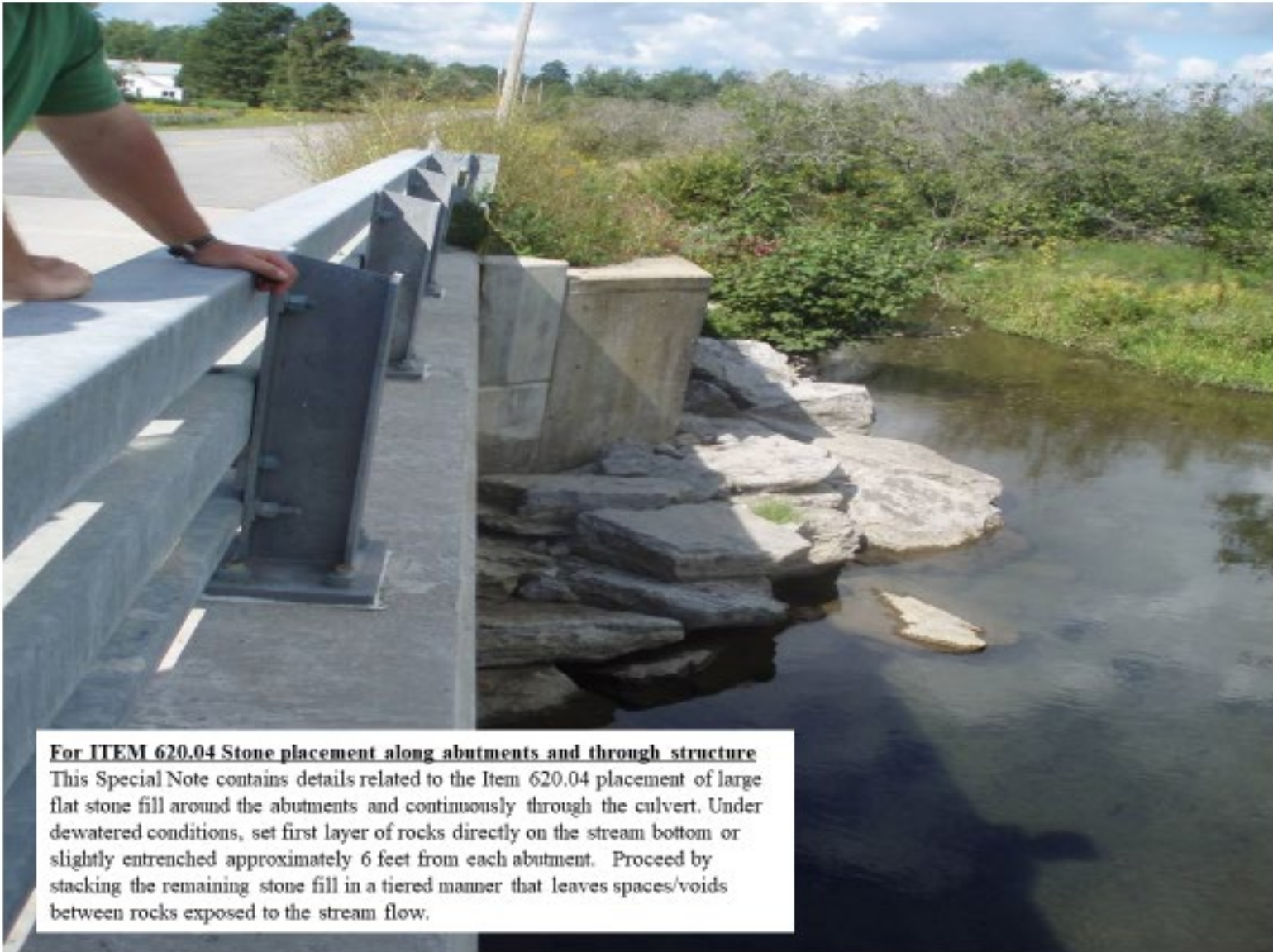


Completed Fall 2011



Otter Tracks Feb. 2013

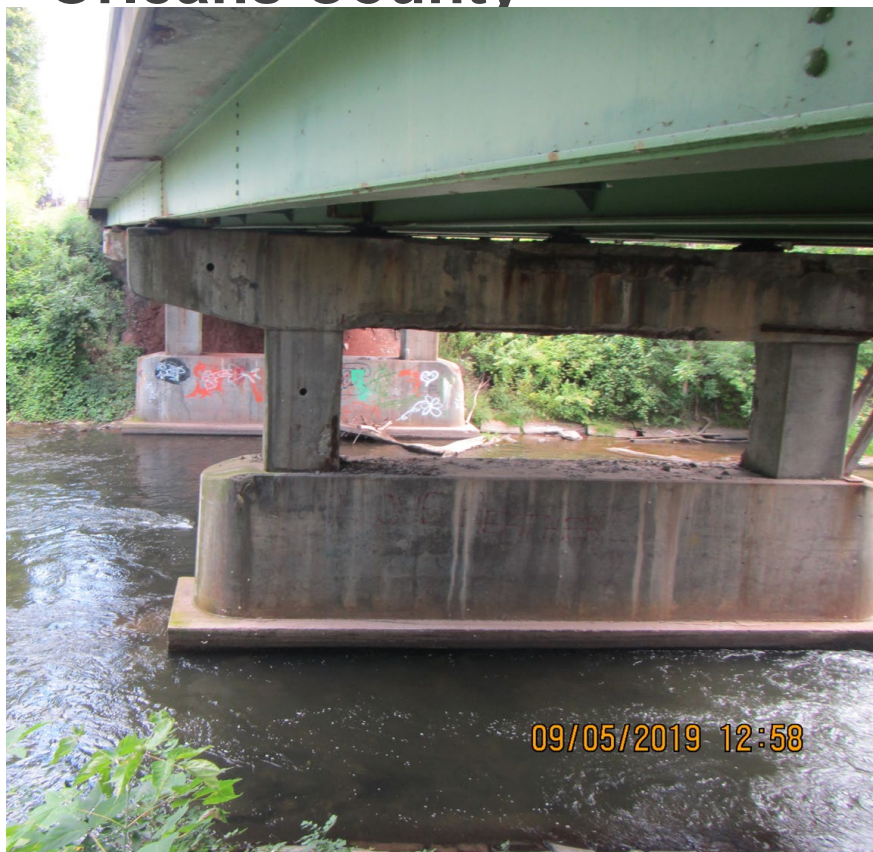
Stacked flat stone



For ITEM 620.04 Stone placement along abutments and through structure

This Special Note contains details related to the Item 620.04 placement of large flat stone fill around the abutments and continuously through the culvert. Under dewatered conditions, set first layer of rocks directly on the stream bottom or slightly entrenched approximately 6 feet from each abutment. Proceed by stacking the remaining stone fill in a tiered manner that leaves spaces/voids between rocks exposed to the stream flow.

Select Fill- PIN 4104.91 Rt. 104 Over Oak Orchard Creek Orleans County



Before



After

Mimic pre-existing conditions-
PIN 4019.79 Rt. 19 over Oatka Creek Warsaw, NY
Wyoming County



Before



After

Stacked Stone on the North



Before



After

Images of wildlife use



REVEAL
TAOTAGAM



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04/07/2023

17:10:03



Department of
Transportation

Images of wildlife use



Images of wildlife use



REVEAL
TACTACAM



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Department of
Transportation

Images of wildlife use



Images of wildlife use



Additional Benefits



- Constructability
- Easier access
- Bridge Inspection
- Fishing access
- Canoe Access
- Trails
- Education

PIN 4OR0.04 Yates-Carlton Townline Road over Johnson Creek Orleans County

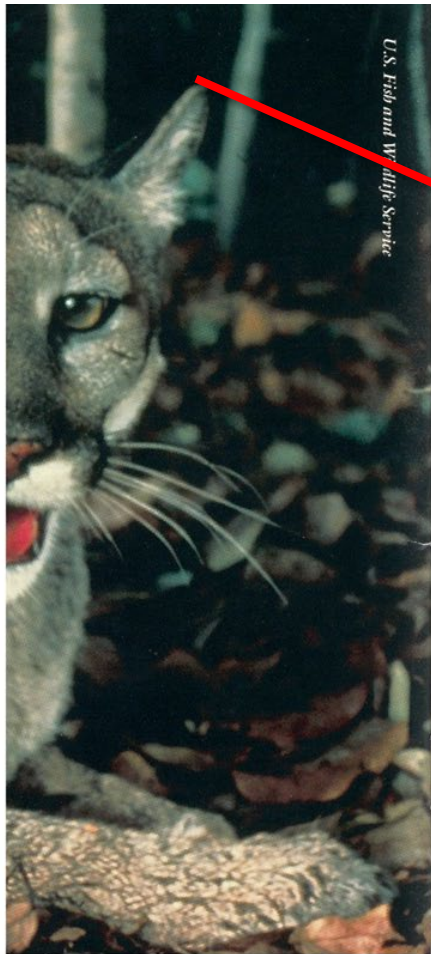


PIN 4OR0.04 Yates-Carlton Townline Road over Johnson Creek Orleans County



Photo credits: Bob Corcimiglia, Region 4 RLPL

Wildlife underpasses....not a new idea



U.S. Fish and Wildlife Service

The problem: Every year, millions of animals are killed on U.S. highways. At least 100 motorists also die when their car or truck hits an animal.

The solution: *Wildlife passages.*

Since the late 1980's, state DOTs in Colorado and other western states have been using them to get mule deer safely across the road. More recently, south-western Florida has used them along I-75 to protect the endangered Florida panther and threatened black bear.

Now the U.S. Army has entered the scene. Army engineers are building two underpasses in Ft. Belvoir, Virginia, to help deer, foxes, and bears safely cross a dangerous six-lane parkway. When they're completed late next year, 44 species may travel through them to reach a wildlife preserve.

Wildlife underpasses protect the smallest and the largest—from Massachusetts' spotted salamander to Nevada's desert tortoise to Colorado's grizzlies. Florida uses eight feet (2.4 meters) high by 24 feet (7.3 meters) long *box culverts* and eight feet (2.4 meters) high by 100 feet (30.5 meters) long *bridges* to protect animals like the black bear and Florida

panther. Other states use three feet (.9 meters) in diameter *pipe culverts* to safeguard reptiles, amphibians, and small mammals.

A light at the end of the tunnel

Wildlife experts are sizing the passage where they may be present also allow his doesn't become creatures. "They animals be a passage," say mental scien Transportati they have to habitat at the

Location is a Evink. "The they're const crosses the h where panth (meter) stret placed radio and bobcats abundant in movements i motion-activ they also cou information To be most o to be combi

Wildlife underpasses can be pipe culverts, box culverts, or bridges such as this bridge on I-75 in Florida.



Florida Department of Transportation

along highway rights-of-way. Florida uses a high chainlink fence with three strands of barbed wire on outriggers for large animals such as deer, panther, and bears, and a lower chainlink for non-climbing animals such as alligators and crocodiles. The fences or barriers run down the highway in both directions until a logical habitat break is reached.

Crossings following these design criteria have been enormously effective. "We haven't lost a single large animal on the I-75 project," says Evink.

What's more, crossings designed for a specific animal are being used by many other creatures. For example, the I-75 underpasses specifically designed to address impacts to the endangered Florida Panther have been

used by a wide variety of other wildlife. Scientists at I-75 crossings have photographed such diverse animals as deer, bear, racoons, alligators, and even turkeys.

That's not all. In low wetlands, bridges can be extended to allow animals moving in the floodplains to safely pass under the highway and continue on their way.

Everywhere, crossings that allow animals to freely move under the highway accomplish more than an end to roadkill. They serve as "genetic corridors" for wildlife, allowing populations to mix and therefore enhancing biodiversity and fitness.

Wildlife crossings do more than help save individual animals from dying—they help prevent species from dying out.



U.S. Fish and Wildlife Service

Wherever they've been constructed, wildlife crossings are proving to be enormously successful in preventing roadkill and enhancing biodiversity.

THANK YOU

QUESTIONS:

CHRISTOPHER.STANDLEY@DOT.NY.GOV

RYAN.HUGGINS@DOT.NY.GOV

SARAH.LAZAZZERO@DOT.NY.GOV



EXTRA SLIDES – PERHAPS FOR QUESTIONS...

Costs

- Keep Under 10% of total project costs
- Only additional cost is Select Fill
- For example, on a multi million dollar bridge replacement project (PIN 4104.91), the cost of the select structure fill for the animal crossing alone was around \$700



Wildlife Species are Valuable¹

- **Intrinsic**

Individual species are valuable independent of their usefulness to people or other species within ecosystems

- **Instrumental/Utilitarian**

Economic – food, medicine(s), clothing, shelter, fuels, goods, recreation, services, etc.

- **Scientific & Educational**

Learning about our world, model organisms, etc.



John Estlin

- **Spiritual**

People's love of life – coined "Biophilia" by E.O. Wilson

- **Ecological:**

Species interact with one another and the environment – ecosystem stability & services

- **Bequest**

Providing species for future generations – cultural heritage, inheriting ecosystems and species for quality of life



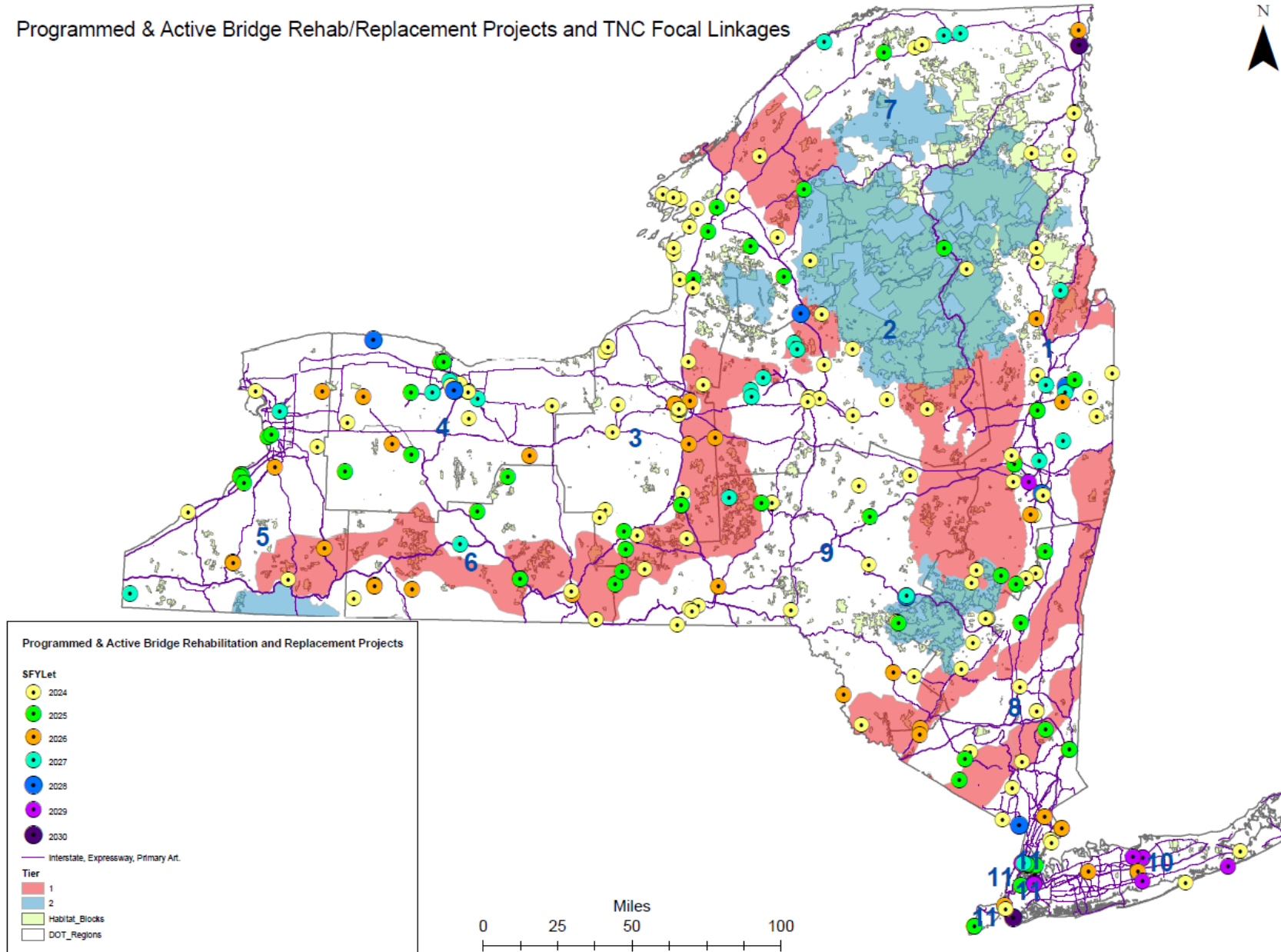
Clay Belt

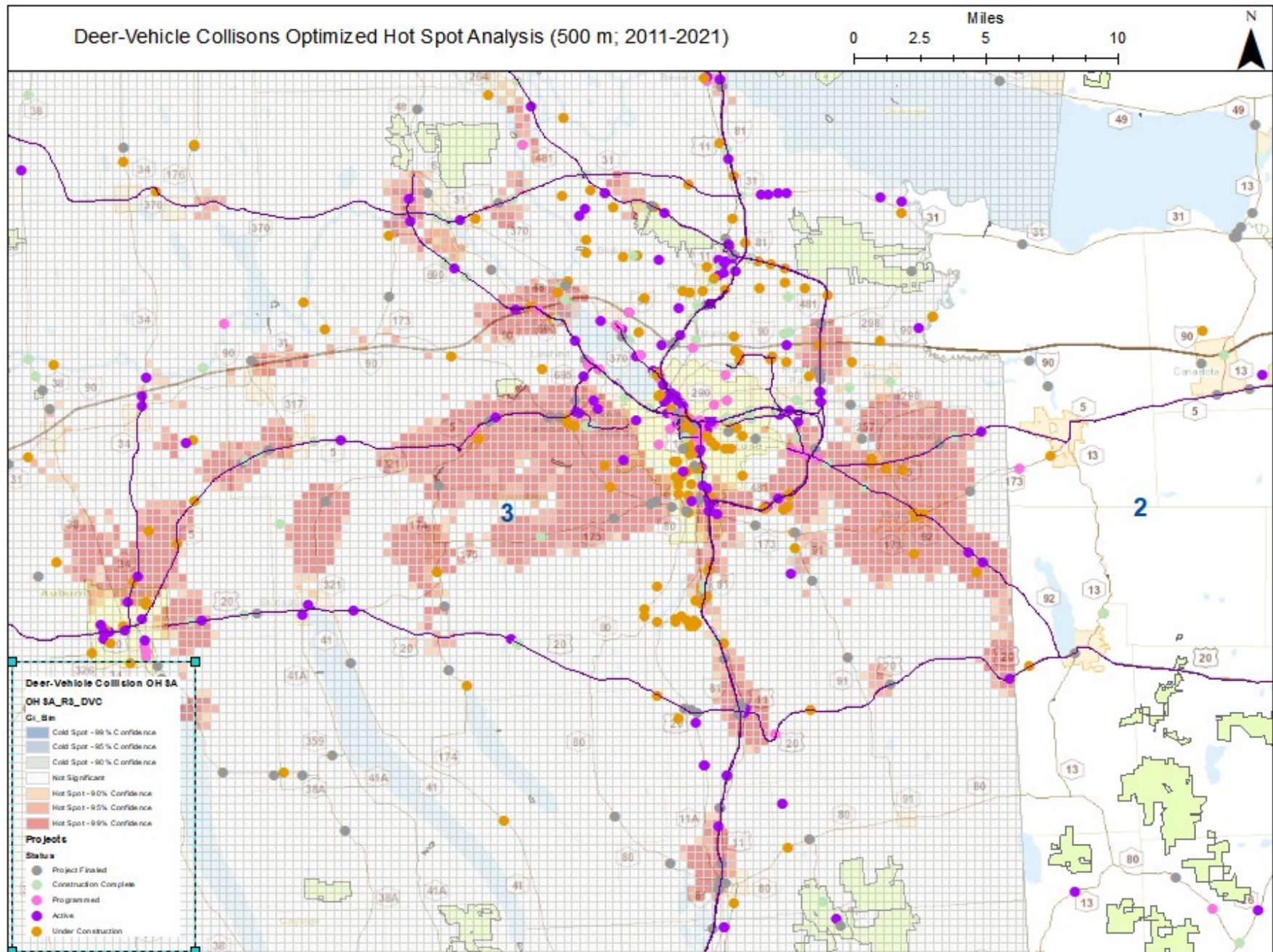
Twan Leenders

Robert Cameron



Programmed & Active Bridge Rehab/Replacement Projects and TNC Focal Linkages





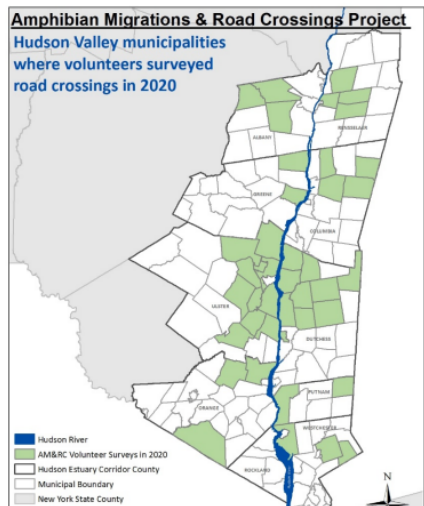
Amphibian Migrations and Road Crossings Project 2020 Project Summary



Many New Volunteers in 2020!

This year, we were thrilled to see a continued high level of participation in the Amphibian Migrations & Road Crossings (AM&RC) Project, with 110 volunteers in the Hudson River estuary watershed, plus another eight participants outside of the watershed – 74 of those volunteers were new to the project! We welcome and thank both our new and returning volunteers. Together, **you helped at least 2,850 salamanders, frogs, and toads** to stay safe on roads during their breeding migrations.

This year's volunteers surveyed **127 miles** of roads in **42 municipalities** in **nine counties** in the Hudson River estuary watershed (see map). In addition, amphibian enthusiasts in Erie, Onondaga, and Saratoga counties submitted migration data. We appreciate all of your vigilance to keep yourselves safe, record and share your observations, and help amphibians!



"Don't be impatient with me. Bear in mind that I hop around among all of you big beasts like a harmless and helpless frog who is afraid of being squashed."
- Paul Ehrenfest to Albert Einstein, 1920



2020 Hudson Valley Migration by the Numbers

(Note: includes small amount of volunteer data from outside the estuary watershed)

3,349 live amphibians **54 %**
 2,617 dead amphibians **46%**
 2,857 amphibians assisted across roads
 16 amphibian species
 702 live salamanders
 210 dead salamanders
 2,647 live frogs and toads
 2,407 dead frogs and toads
 118 volunteers braved the rain and cold!
309.7 volunteer hours

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For Release: Sunday, May 22, 2022

DEC Urges New York Drivers to 'Give Turtles a Brake'

In May and June, Motorists Asked to Watch for Turtles Crossing the Road

New Wildlife Crossing Fund Will Raise \$500 Million to Combat the Biodiversity and Climate Crisis By Accelerating the Building of Wildlife Crossings Across the World

