

Green Linear Infrastructure: Science, Policy, and Practice in the U.S.

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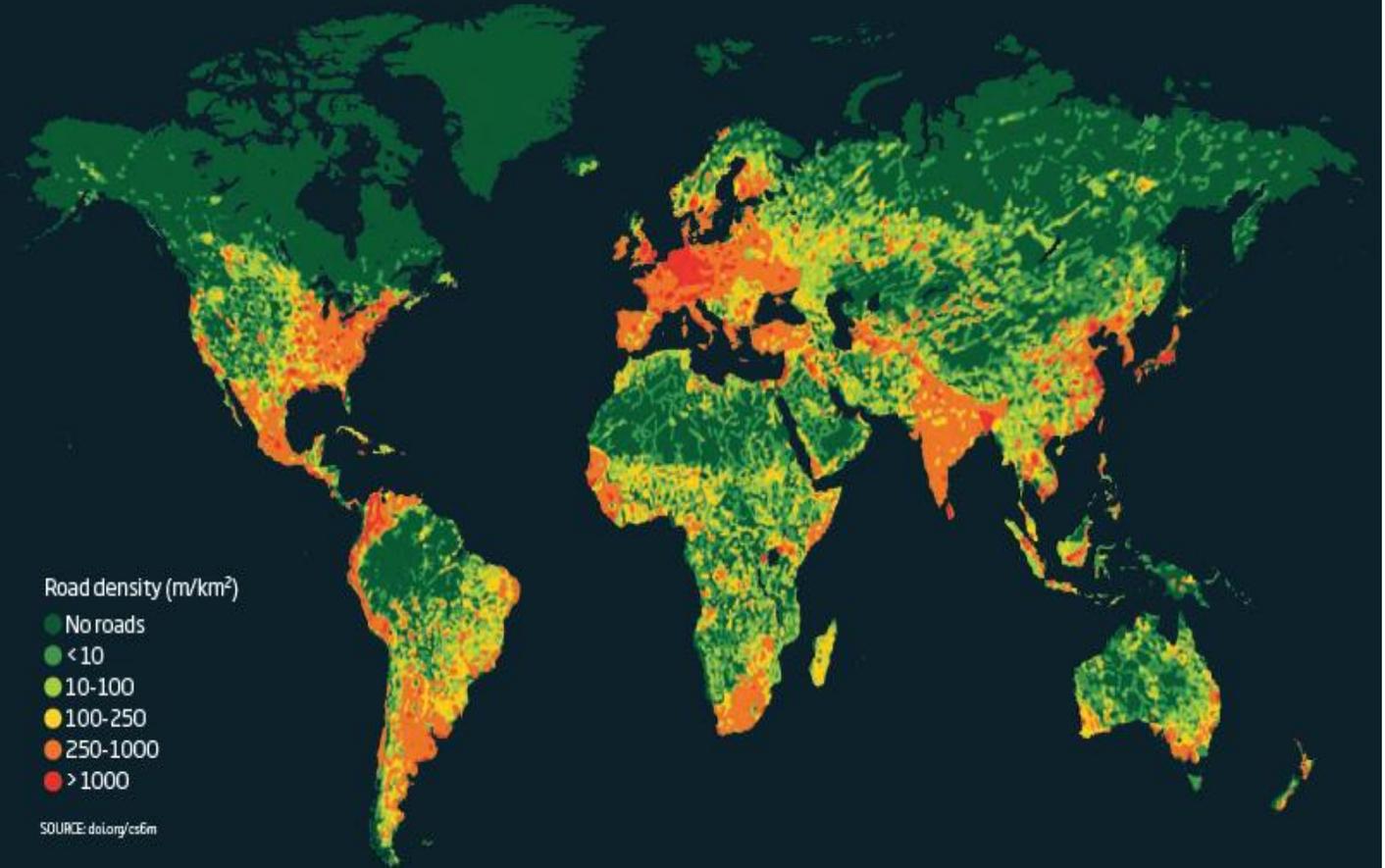
25 million lane kms of new roads projected by 2050

(Dulac, 2013.)

38 | NewScientist | 1 September 2018

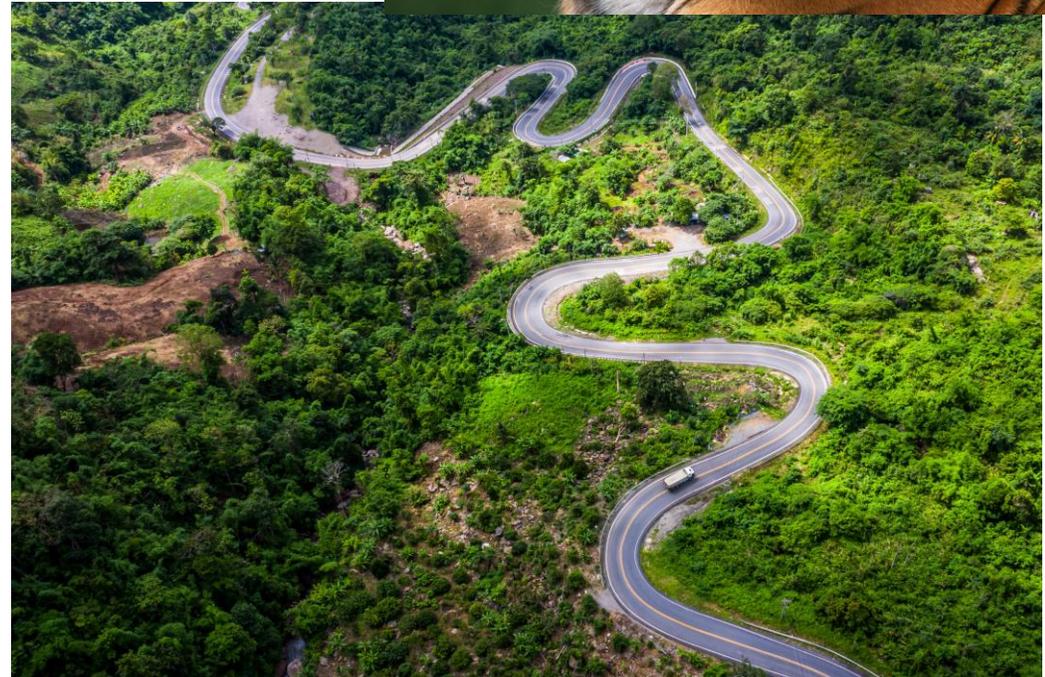
PAVED PLANET

Large infrastructure programmes threaten biodiversity across the globe – with China's Belt and Road Initiative a new threat



Achieving Balance

- Infrastructure development can deliver major socio-economic benefits, but it can also result in serious negative impacts on nature and, in turn, people.
- With careful planning, design, implementation, and policies some negative impacts can be avoided, minimized, or mitigated.

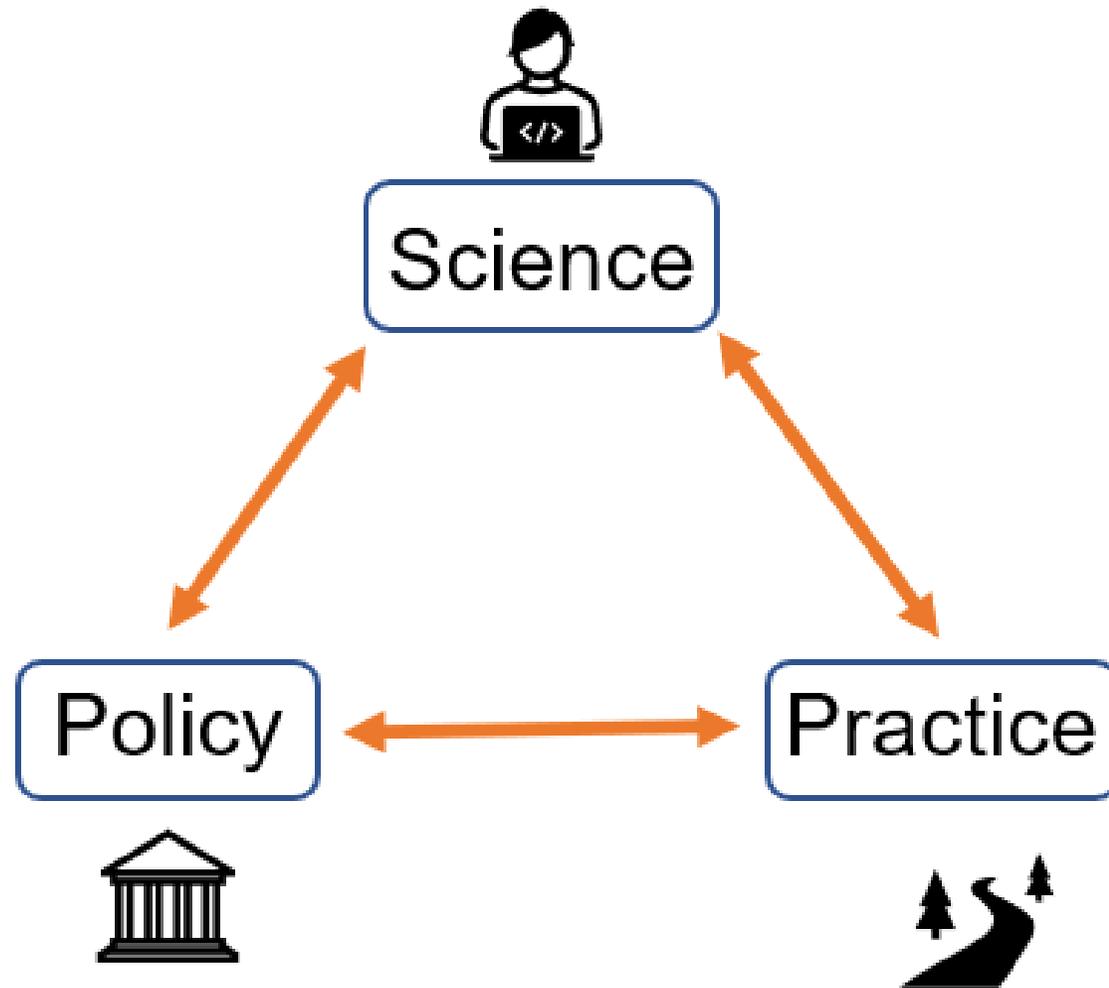


Green Infrastructure Challenges

- ❖ Transboundary issue with many different management authorities and stakeholders needing to be involved
- ❖ Competing agency missions, priorities, and cultures
- ❖ Lack of capacity specific to the issue
- ❖ Lack of dedicated funding streams
- ❖ Complex needs: data, land security, community support, funding
- ❖ Opportunistic approach rather than systematic planning



Overcoming Challenges



To overcome complex challenges,
we need a collaborative,
interdisciplinary approach!

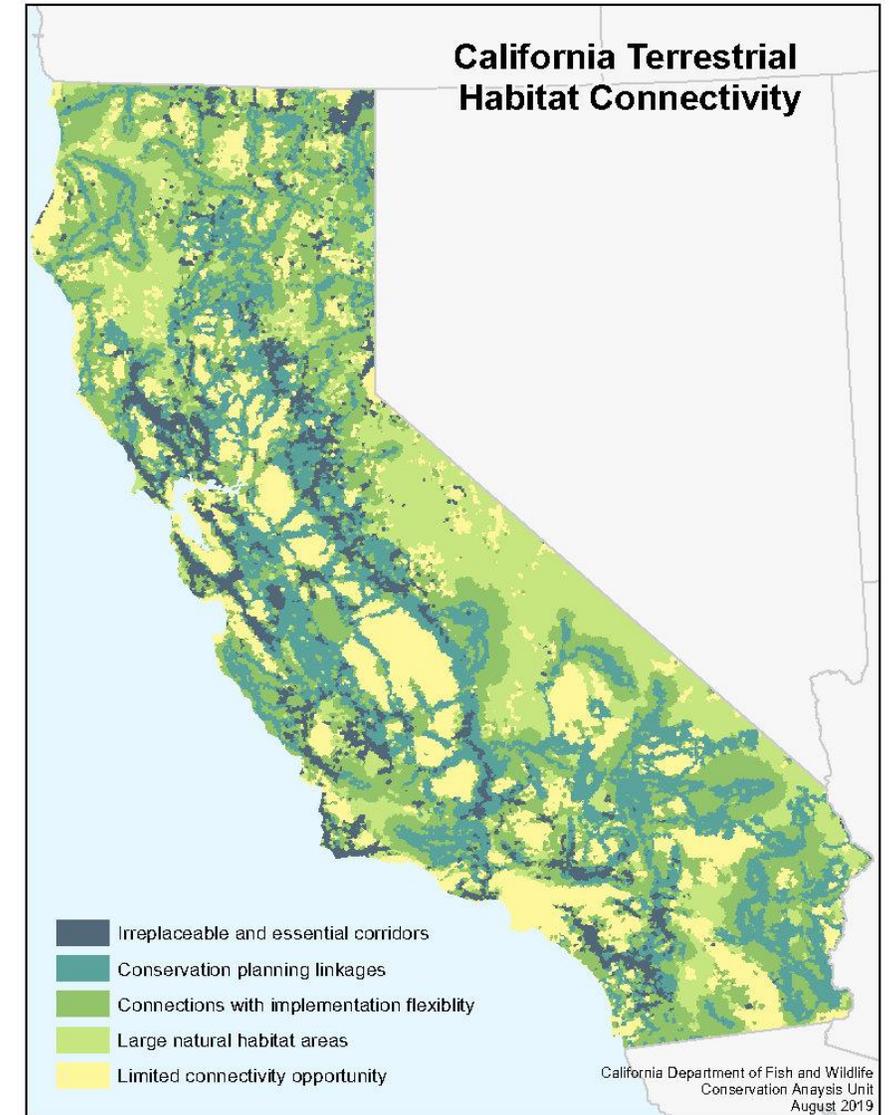
- Biology/Ecology
- Planning
- Engineering
- Economics
- Policy
- Communities

PARTNERSHIPS!!!

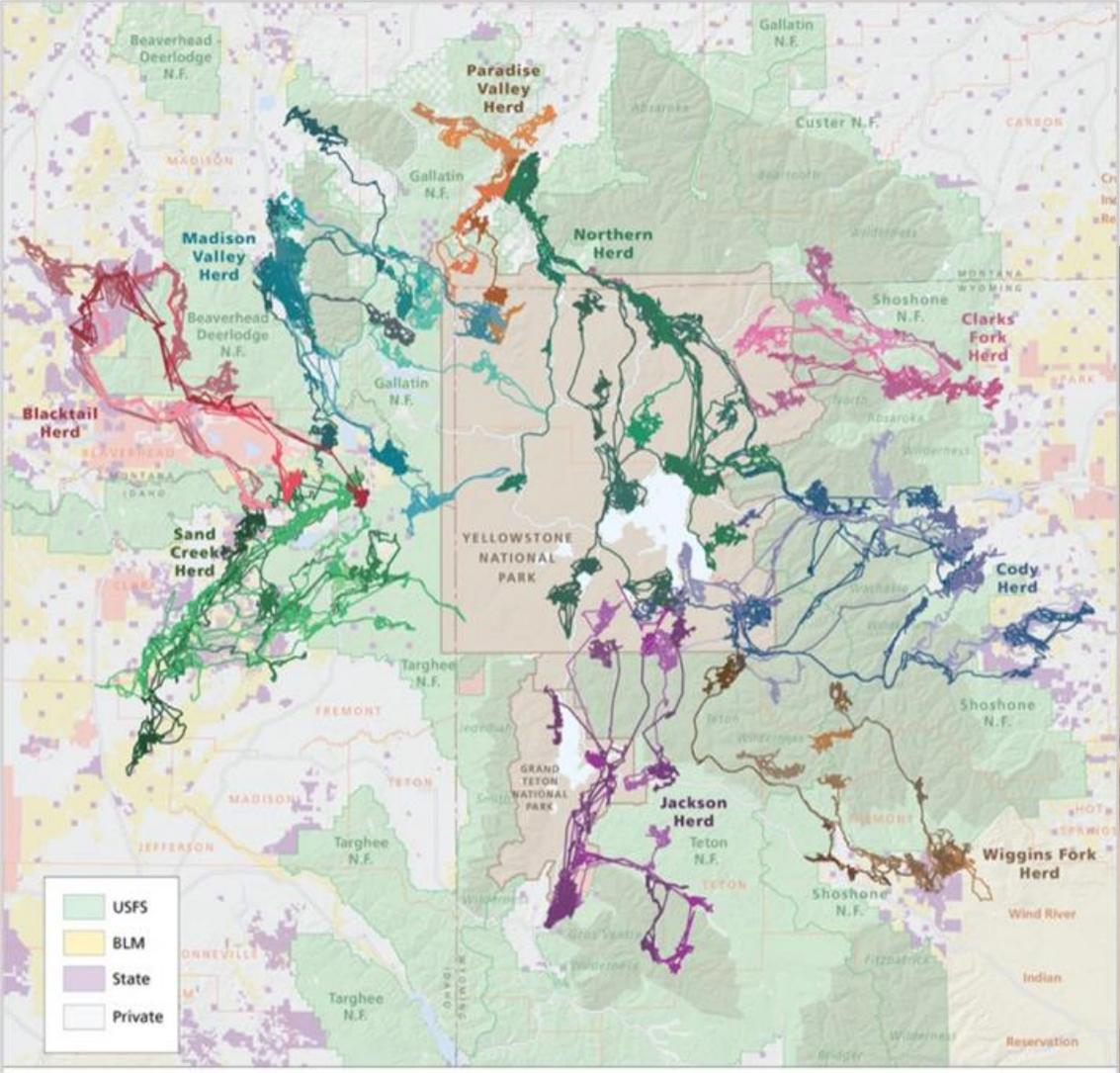
Science: Biodiversity and Transportation

What Information do we need?

- **Habitat and Connectivity Data:** Where are our core habitats and where are the most intact connections between them. These are the most important places to avoid or mitigate impacts
- **Biodiversity Data:** What species and where? Species of conservation concern.
- **Wildlife Movement Data:** Where are wildlife moving across the landscape and likely to be impacted by infrastructure. How might that shift with climate change?
- **Infrastructure Data:** Where does it exist now and where is it planned for the future? What type?
- **Conflict Data:** Wildlife-vehicle collision information

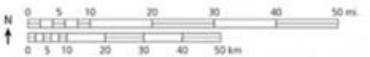


Example: Storytelling around wildlife movement



Elk Migrations of the Greater Yellowstone Ecosystem

- Blacktail Herd
- Clarks Fork Herd
- Cody Herd
- Jackson Herd
- Madison Valley Herd
- Northern Herd
- Paradise Valley Herd
- Sand Creek Herd
- Wiggins Fork Herd



WYOMING MIGRATION INITIATIVE

© 2015 University of Wyoming
 Source: Atlas of Wildlife Migration: Wyoming's Ungulates (in production)
 Cartography: University of Oregon InfoGraphics Lab
 Elk data contributed by: Wyoming Game and Fish Department, Montana Fish, Wildlife, and Parks, Idaho Fish and Game, National Park Service, US Fish and Wildlife Service, Wildlife Conservation Society, Wyoming Cooperative Fish and Wildlife Research Unit, Iowa State University, and Yale School of Forestry and Environmental Studies

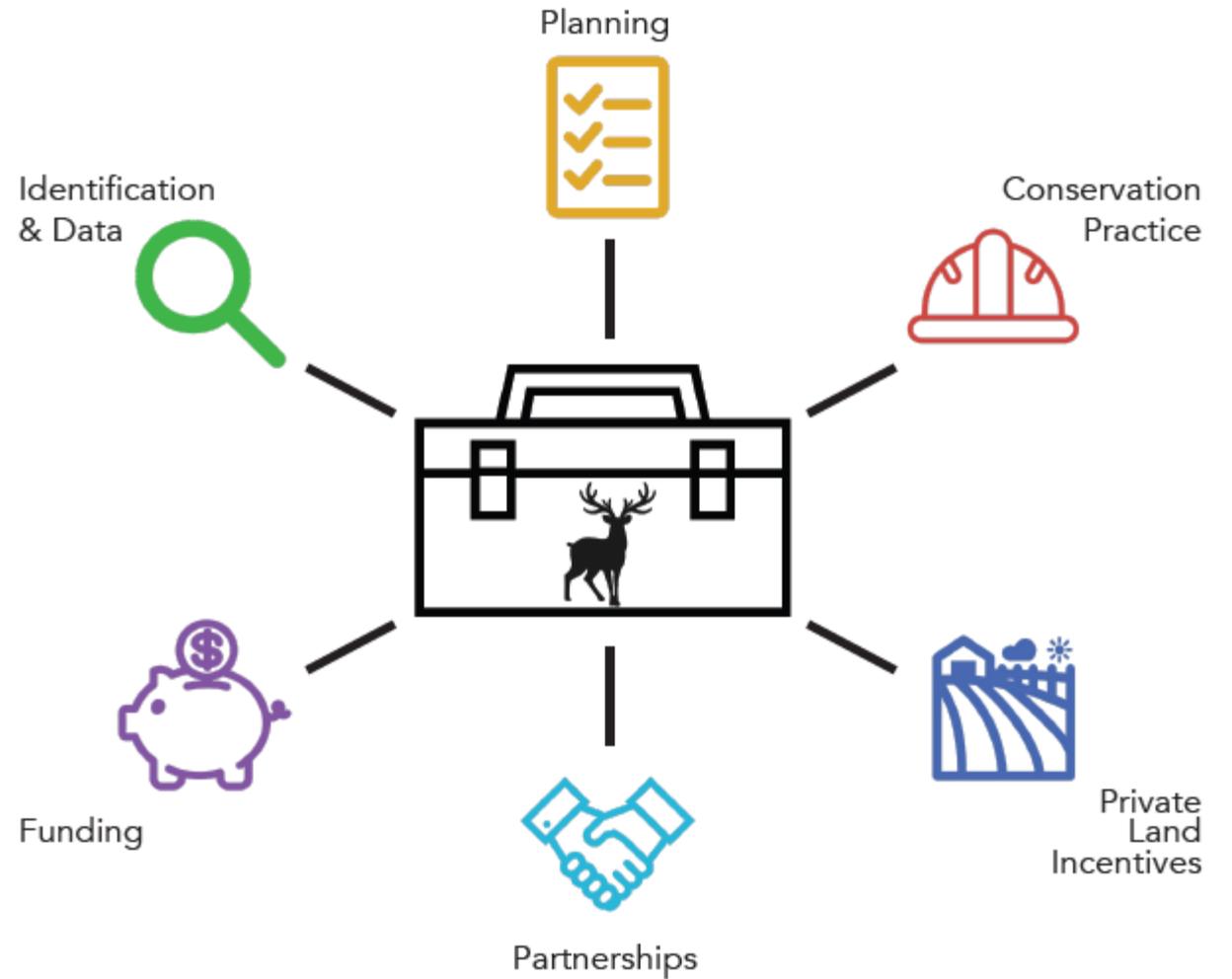
September 18, 2015 DRAFT

WILDLIFE CONNECTIVITY

OPPORTUNITIES FOR STATE LEGISLATION

by Rob Ament, Renee Callahan, Laramie Maxwell,
Grace Stonecipher, Elizabeth Fairbank & Abigail Breuer

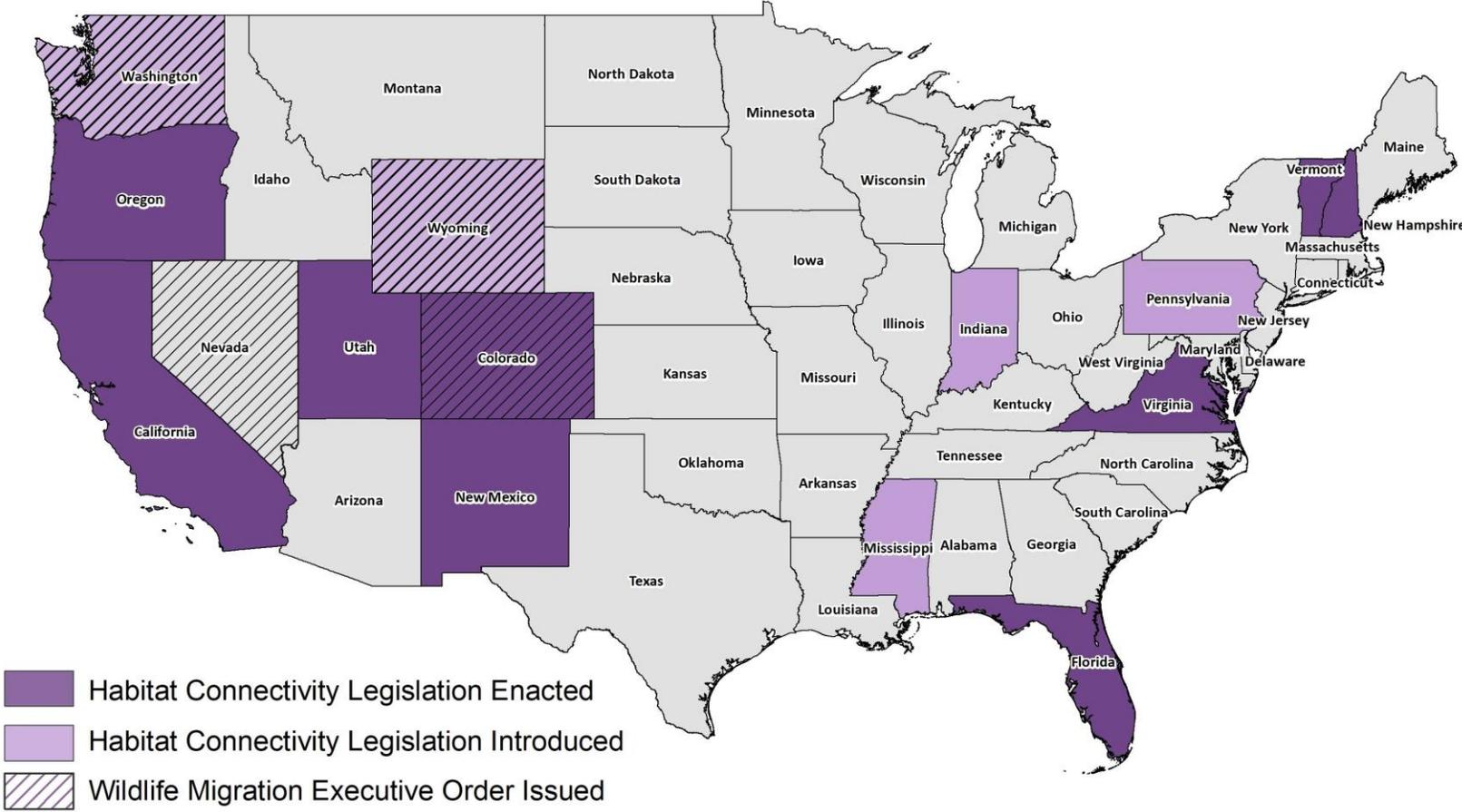
CENTER FOR LARGE LANDSCAPE CONSERVATION



State Habitat Connectivity Policies

State Habitat Connectivity Policies

- State legislatures across the nation are pursuing habitat connectivity legislation.
 - Legislation has passed in CA, OR, UT, NM, FL, VA, NH, and ME.
 - Legislation has been introduced in WA, CO, WY, MS, IN, and PA.
- Governor's across the nation are also devoting attention to the issue.
 - WA, NV, WY, and CO have issued executive orders protecting wildlife migration.



**Bipartisan Infrastructure
Law:
Dedicated Funding for
Wildlife Crossings!**



Wildlife Crossing Pilot Program

Purpose and Funding

- **Purpose:** encourage states to adopt measures to reduce wildlife vehicle collisions and improve terrestrial and aquatic connectivity.
- USDOT will distribute funds via a competitive grant program: **\$350M over 5 years**
- At least 60% of the grant funding will go towards projects in rural areas.



Pilot Program *Evaluation Criteria*

“**Primarily**, the extent to which the proposed project is likely to protect motorists and wildlife by reducing the number of wildlife-vehicle collisions and improve habitat connectivity for terrestrial and aquatic species”

Secondarily, the extent to which the project:

- (A) Encourages non-Federal contributions (including PPPs)
- (B) Supports local economic development
- (C) Incorporates innovative technologies
- (D) Provides opportunities for education and outreach
- (E) Includes monitoring and evaluation
- (F) Other relevant criteria determined by USDOT



“Wildlife Crossing Safety” Policies

USDOT will:

- Develop an updated Wildlife-Vehicle Collision Reduction Study, including a Report to Congress and Best Practices Manual. Create a series of workforce development and training courses for transportation and wildlife professionals, based on the WVC study.
- Develop a standardized methodology for collecting and reporting wildlife collision and carcass data. Provide a template to help states voluntarily implement the guidance.
- Establish guidance that includes a threshold to determine whether a highway should be evaluated for potential projects to reduce WVCs and improve habitat connectivity.
- Consult the 2011 FHWA “Wildlife Crossing Structure Handbook” when developing design criteria for new construction or rehabilitation of a federal highway.
- Determine if upgrades to bridges and tunnels should include measures to improve habitat connectivity. Train inspectors to assess terrestrial and aquatic passage.

Additional Funding Opportunities

- Up to \$20 Million per year for **projects to reduce WVCs while maintaining terrestrial and aquatic habitat connectivity** on Federal Public Lands.
- **Wildlife crossing projects** are eligible for funding under three other major transportation funding programs, each of which will distribute billions of dollars over the next 5 years.
- **Projects to improve aquatic habitat connectivity** are eligible for funding under several existing transportation funding programs. Collectively, these programs will also distribute billions of dollars over the next 5 years.
- **Projects to enhance pollinator habitat**, including planting native vegetation, are eligible under the Pollinator-friendly Practices on Roadsides and Highway Rights-of-Way Program, which will distribute a total of \$10 million over the next 5 years.

A Toolkit for Developing Effective Projects Under the Federal Wildlife Crossings Pilot Program

By: Kylie Paul, Anna Wearn, Rob Ament, Elizabeth Fairbank & Zack Wurtzebach

December 2021



Reducing Wildlife-Vehicle Collisions and Improving Habitat Connectivity



Encouraging Non-federal Investment



Supporting Local Economic Development and Tourism



Incorporating Innovative Technology



Providing Educational and Outreach Opportunities



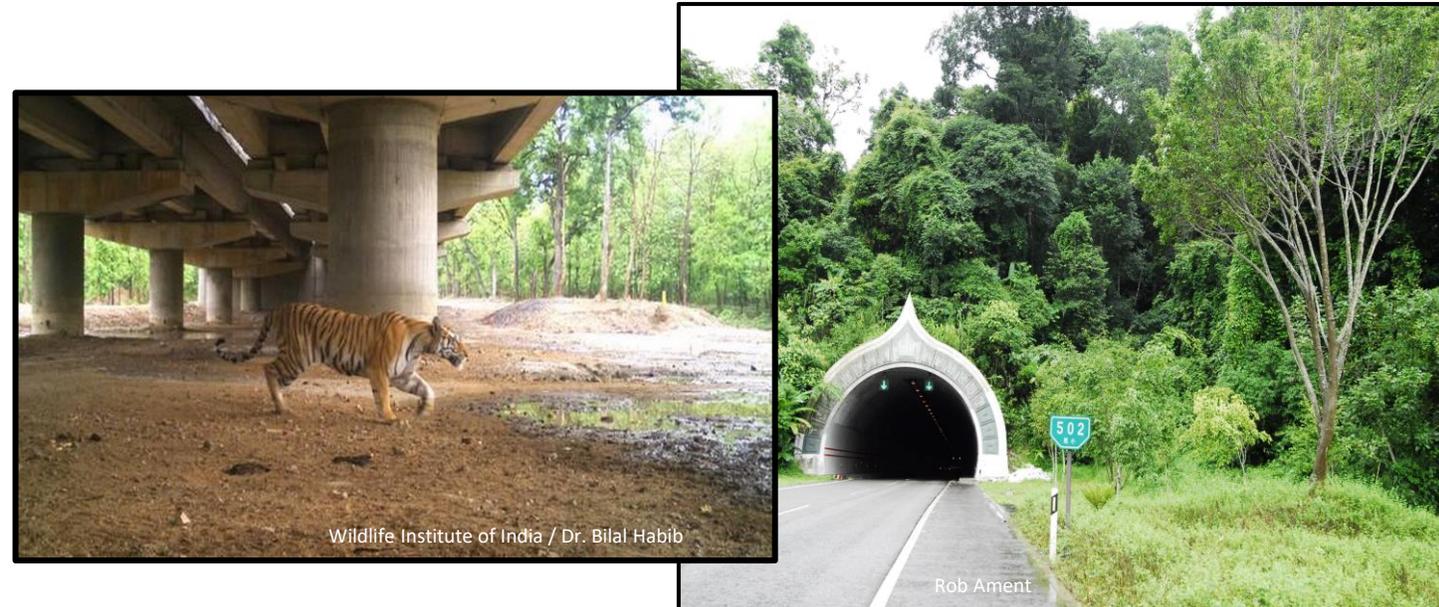
Monitoring and Evaluating Project Effectiveness



Available online at: <https://largelandscapes.org/bipartisan-infrastructure-law/>



Building a Foundation for Linear Infrastructure Safeguards in Asia (LISA)



BUILDING A FOUNDATION FOR LINEAR INFRASTRUCTURE SAFEGUARDS IN ASIA

USAID has launched an assessment of the capacity of Asian countries to develop wildlife-friendly linear infrastructure (LI); it focuses on roads, railways, and electric transmission lines. This year-long project seeks to understand the challenges and barriers that slow the adoption and implementation of safeguards that protect Asia's diverse wildlife species and their critical habitats from the region's rapidly expanding linear infrastructure. Additionally, the program will provide for the development of training materials for use in multiple capacity building workshops that will be conducted as a part of the program.

STATEMENT OF PROBLEM

Asia is home to some of the world's most diverse and complex ecosystems, which provide natural capital, underpin economic vitality and increase resilience to environmental change. Yet, much of Asia's rich natural heritage is threatened by the rapid expansion of LI development. Without proper safeguards, ongoing and anticipated expansion of LI will further fragment vital habitats, impact biodiversity and increase wildlife mortality.

Questions?



Thank you!
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