America's Natural Solutions: The Climate Benefits of Investing in Healthy Ecosystems

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My name is Nick Loris, and I am the Vice President of Public Policy at the Conservative Coalition for Climate Solutions (C3 Solutions). Thank you for this opportunity to appear before the select committee to discuss the climate benefits of investing in healthy ecosystems.

My written testimony consists of the following two sections:

- **The economic, environmental, and climate benefits of investing healthy ecosystems.** Natural solutions are integral to reducing the risks of climate change. Conservation, restoration, and better land practices create more opportunities for forests, grasslands, and wetlands to capture and store carbon dioxide. Active land management that promotes healthy forests and eradicates invasive species will also reduce the risk of wildfires, floods and droughts. Various farming and ranching practices such as regenerative agriculture and precision agriculture will result in healthier soils and higher yields while sequestering more emissions and reducing the risk of flooding. In addition, integrating natural climate solutions for remediating abandoned mine sites would minimize environmental liabilities make these sites more economically attractive.
- **Expanding opportunities for investments for healthier ecosystems.** Policymakers should reduce barriers to healthy ecosystem investment, improve incentives for productive federal-state and private partnerships to prevent and eradicate invasive species. Furthermore, Congress and the administration should provide pathways to expand the use of regenerative and precision agriculture and implement reforms that generate alternative funding sources for natural climate solutions.

Section I. The economic, environmental, and climate benefits of investing healthy ecosystems.

Investing in America's natural ecosystems will expand economic opportunities and reduce environmental liabilities. Moreover, healthier ecosystems will produce climate benefits by reducing greenhouse gas emissions and reducing the risks of extreme weather events. Creating positive incentive structures among private property owners, the federal government, tribes, and state and local governments will improve the environmental health of America's land and water systems. Whether it is healthy forests or regenerative farms, empowering landowners to deploy local and specialized knowledge will best deliver economic, environmental, and climate benefits. Landowners have the most to gain from responsible stewardship and the most to lose from mismanagement. Natural climate solutions and healthy ecosystems will not come from treating America's forests, farmland, grasslands, and watersheds as if they should be stored in a museum. Instead, they require active attention, investment, and management.

Active forest management.

Healthy forests are vital for America's environmental health and are an essential natural climate solution. Forests in the United States sequester about 16 percent of annual carbon dioxide emissions.[1] Reducing deforestation and increasing tree cover will protect and enhance a sound natural climate solution to sequester carbon dioxide. Fully restoring understocked, productive forestland in the U.S. could increase carbon sequestration by 20 percent.[2] That is not to suggest a complete stop to logging, mining, building roads or other economic reasons why private property owners may cut down trees. Rather, policymakers should eliminate illegal deforestation, establish defined and legally protected property rights, and increase the availability of compensation for conservation.[3]

If improperly managed, however, America's forests are an economic, environmental, and public safety liability. Wildfires threaten communities, endanger lives and reduce productivity. They spew exorbitant amounts of pollutions and carbon dioxide emissions into the atmosphere. In 2020, California's wildfires emitted more carbon dioxide than the entire state's fossil fuel emissions.[4] Wildfires can also cancel out carbon offset projects, where companies purchase carbon dioxide credits to offset their own emissions. Decomposing trees also release carbon

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[1] Penn State Extension, "How Forests Store Carbon," September 24, 2020, https://extension.psu.edu/how-forests-store-carbon#:~:text=According%20to%20the%20US%20Forest,mainly%20in%20trees%20and%20soil.
[2] Grant M. Domke, et al., "Tree planting has the potential to increase carbon sequestration capacity of forests in the United States," PNAS, Vol 117. No 40, October 6, 2020, https://www.pnas.org/doi/epdf/10.1073/pnas.2010840117
[3] Brad Plumer, "A Cheap Fix for Climate Change? Pay People Not to Chop Down Trees," *The New York Times*, June 20, 2017, https://www.nytimes.com/2017/07/20/climate/a-cheap-fix-for-climate-change-pay-people-not-to-chop-down-trees-uganda.html
[4] Elizabeth Claire Alberts, "'Off the chart': CO2 from California fires dwarf state's fossil fuel emissions," *Mongabay*, September 18, 2020, https://news.mongabay.com/2020/09/off-the-chart-co2-from-california-fires-dwarf-states-fossil-fuel-emissions/

dioxide and methane into the atmosphere. While global decarbonization will help minimize human-induced warming's impact on wildfires and wildfire seasons, a more immediate and effective solution to reduce the size of wildfires is to address the fuel load. The fuel load exacerbates the size and intensity of wildfires. Fuel includes grass, shrubs and small trees as well as dead leaves and materials on the forest floor.[5] Prescribed or controlled burns and timber harvesting will significantly reduce the fuel load, while regulatory morass, litigation, and funding challenges prohibit or impede these activities.

Internationally, establishing defined and legally protected property rights is critical to encourage landowners, including indigenous populations, to reduce global deforestation.[6] Governments, businesses, and private organizations are dedicating more resources (a combined $19 billion pledged at the Glasgow climate summit[7]) to combatting international deforestation. Through domestic rehabilitation efforts and international cooperation, the United States should continue to be an international leader in curbing illegal deforestation and in increasing afforestation efforts.

Address invasive species.

Invasive species are an economic and environmental menace for private property owners, communities, and for public lands and waters. The U.S. Department of Agriculture (USDA) explains that the widespread "economic and social impacts of invasive species include both direct effects of a species on property values, agricultural productivity, public utility operations, native fisheries, tourism, and outdoor recreation, as well as costs associated with invasive species control efforts. A 2021 study estimated that invasive species have cost North America $2 billion per year in the early 1960s to over $26 billion per year since 2010."[8] Rising global temperatures make invasive species worse, and invasive species can also increase the threat of extreme weather. A problematic example of an invasive species worsening the size and intensity of wildfires is the pervasion of cheatgrass and buffelgrass.[9] Invasive species also deteriorate the health of forestland and grassland, which increases erosion and reduces opportunities to sequester more carbon dioxide.

Private property owners have a direct incentive to eradicate invasive species, but those incentives are weaker if eradication requires active planning, coordination and action from multiple landowners. Federal, state, and local government policies and regulations can further complicate coordination.[10] The Infrastructure Investment and Jobs Act allocates $100 million each to the

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[5] U.S. Department of Interior, "Fuels Management," https://www.doi.gov/wildlandfire/fuels
[6] Kathryn Baragwanath and Ella Bayi, "Collective property rights reduce deforestation in the Brazilian Amazon," PNAS, Vol 117., No 34., August 11, 2020, https://www.pnas.org/content/117/34/20495
[7] Catrin Einhorn and Chris Buckley, "Global Leaders Pledge to End Deforestation by 2030*," The New York Times, November 10, 201,* https://www.nytimes.com/2021/11/02/climate/cop26-deforestation.html
[8] Ed Arnett, "This Invasive Species Is Fueling Western Wildfires," Theodore Roosevelt Conservation Partnership, August 28, 2020, https://www.trcp.org/2020/08/28/invasive-species-fueling-western-wildfires/
[9] Colorado State University, "Cheatgrass and Wildfire" https://extension.colostate.edu/docs/pubs/natres/06310.pdf
[10] Hannah Downey, "What are Invasive Species? A Q&A with Chris Costello," The Property and Environment Research Center, September 12, 2016, https://www.perc.org/2016/09/12/what-are-invasive-species-a-qa-with-chris-costello/

Department of Interior and Department of Agriculture to address invasive species.[11] Prevention and early detection are the most cost-effective ways to deal with invasive species.

Furthermore, federal and state governments should consider expanding incentive programs to reduce invasive species. For instance, the nutria is a semi-aquatic rodent that adversely affects wetlands and vegetation in Louisiana. Through a federal-state program, participants can trap and hunt nutria and will receive $6 per nutria delivered to a collection center.[12] Another example is a resource incentive, where Florida's Fish and Wildlife Service provides a permit to harvest one additional spiny lobster for every 25 lionfish (the invasive species) captured. The state also had a contest to see which diver can capture the most lionfish and awards prizes for participants that capture the most. In 2021, the participants collected more than 3,400 lionfish.[13] Different types of incentive programs (bounty, contractor, community, recreation) are effective and can vary depending on the region and species.[14]

Additionally, non-profits are stepping up in a big way. Friends of Tonto National Forest in Arizona, for example, is removing invasive grasses from the national forest after a heavy monsoon season resulted in aggressive growth.[15] Through collaborative relationships with landowners, non-profits and state and local governments, the federal government should continue to prioritize invasive species prevention, early detection systems, and eradication.

Expand regenerative and precision agriculture and invest in innovative agricultural technologies.

Regenerative agriculture can diversify farmers' and ranchers' income and produce many environmental benefits. Those benefits include improved soil health and carbon sequestration, cleaner air and water, and diversified, healthier wildlife habitats. Improved soil health also reduces soil erosion and creates land that is more flood and drought resistant.[16] With access to more data, better information, and newer equipment, producers can improve yields while reducing emissions and unwanted environmental byproducts. Automated technologies, GPS, and

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[11] Laura Bies, "Senate infrastructure bill includes wildlife funding," The Wildlife Society, August 18, 2021, https://wildlife.org/senate-infrastructure-bill-includes-wildlife-funding/

[12] Nutria.com, "Coastwide Nutria Control Program," https://nutria.com/nutria-control-program/coastwide-nutria-control-program/

[13] Florida Fish and Wildlife Conservation Commission, "Lionfish Challenge 2021 Update – June 29," June 29, 2021, https://myfwc.com/news/all-news/lionfish-update-621/

[14] U.S. Department of Interior Invasive Species Advisory Committee, "Harvest Incentives: A Tool for Managing Aquatic Invasive Species," May 15, 2014, https://www.doi.gov/sites/doi.gov/files/uploads/isac_harvest_incentives_white_paper.pdf

[15] Jen Wahl, "Preventing Arizona wildfires: Non-profit removes invasive plants from desert landscape," *12 News*, February 21, 2022, https://www.12news.com/article/news/local/wildfire/preventing-wildfires-arizona-non-profit-removes-invasive-plants-from-desert-landscape/75-a3789cb1-2f9c-45e8-94e1-1f489759120d

[16] The Noble Research Institute, "Regenerative Agriculture Is About Direction Over Perfection," March 2020, https://www.noble.org/news/publications/ag-news-and-views/2020/march/regenerative-agriculture-is-about-direction-over-perfection/

enhanced imagery better optimizes seed planting and treatment application, which reduces the use of fertilizers, pesticides, fuel, and water.[17]

One study has shown that precision agriculture adoption increased corn and soybean yields on existing lands and avoided cultivating another 10.2 million acres of new cropland, the size of 4.5 Yellowstone National parks.[18] Another case study examined the adoption of precision agriculture on a family farm in Illinois and found the family reduced its per acre costs by $67 and reduced greenhouse gas emissions more than 15 percent.[19]

Although not a natural solution, continued innovation and investment in new technologies will drive efficiency, increase output, reduce emissions. Other innovative companies are turning waste into valuable products. For instance, Sedron Technologies processes liquid and solid wastes to useable products for soil nutrition, fertilizer, and drinking water.[20] Pro-growth economic policies that open pathways for more agricultural innovation and investment will maintain American leadership in farming and ranching and deliver natural climate benefits.

Voluntary carbon offset and removal markets.

Voluntary carbon markets can be a cost-effective way for companies and individuals to reduce their climate footprint. In effect, landowners would receive compensation for preventing and reducing greenhouse gas emissions or for sequestering carbon. This could include activities such as planting trees or farming and ranching practices that increase carbon sequestration. For companies that have set their own net-zero targets, especially in hard-to-decarbonize sectors, offsets provide a market-based mechanism to reduce or avoid emissions at lower costs. For others, voluntary partnerships provide opportunities for carbon removal. For instance, Shopify's Sustainability Fund has committed $32 million to carbon removal climate entrepreneurs, many of which are delivering natural climate solutions (for forests, soils, and mineralization).[21]

These markets are not without their challenges. In some instances, offset projects did not materialize in the ways expected. For example, satellite imagery has shown that forest preservation or reforestation projects covered only a fraction of the land they were intended to cover.[22] Another challenge is accurately measuring the emissions avoided or reduced. Soil samples taken to measure carbon stored can vary depending on which methods samplers use. Renewable power output can change from day-to-day. A reforestation project could be wiped out by a wildfire. The greatest challenge in verifying offsets is proving additionality. In other words, how can we be sure that farmers or businesses aren't getting paid for something they were going

[17] Association of Equipment Manufacturers, American Soybean Association, CropLife America, and National Corn Growers Association, "The Environmental Benefits of Precision Agriculture in the United States," https://app.box.com/s/3s8x8xq1olm2ygmsguo8iu56mgaowl4l
[18] Ibid.
[19] Ibid.
[20] Sedron Technologies, https://www.sedron.com/varcor/
[21] Shopify, "Going All In To Get Carbon Out: Shopify's Commitment to Climate Entrepreneurs Reaches $32M," March 28, 2022, https://news.shopify.com/going-all-in-to-get-carbon-out-shopifys-commitment-to-climate-entrepreneurs-reaches-32m
[22] Lisa Song, "An Even More Inconvenient Truth: Why Carbon Credits for Forest Preservation may be Worse Than Nothing," *ProPublica*, May 22, 2019, https://features.propublica.org/brazil-carbon-offsets/inconvenient-truth-carbon-credits-dont-work-deforestation-redd-acre-cambodia/

to do anyway? For example, if a company makes an investment in a new energy savings technology for financial reasons, but that technology also reduces emissions, those emissions reductions are not additional. For many reasons, proving or disproving that counterfactual is difficult to do.

These markets, however, have made dramatic improvements in collecting accurate data, improving carbon accounting methodologies, and having transparent, proper oversight. Third-party verifiers are improving methods to demonstrate the veracity of emissions reductions. For instance, one verifier tests soil at the beginning of an offset project, collects samples over the years and then inputs the data "into an agricultural carbon model that estimates the sequestration that's taken place."[23] Other companies, including Nori, are using blockchain technology to create a voluntary, verifiable carbon removal market for buyers and sellers.[24] The Environmental Defense Fund, World Wildlife Fund and Oeko-Institut (Germany) are setting up a carbon credit quality initiative.[25]

Like other methods to rehabilitate ecosystems that produce climate benefits, incentives matter. Jonathan Wood, research fellow at the Property and Environment Research Center (PERC), writes that carbon markets will work best when they "incentivize compliance, rather than relying on enforcement."[26] Wood writes, "If offsets are only purchased to comply with the regulation, neither the purchaser nor the seller necessarily has the incentive to ensure that the offsets provide results. Instead, those incentives depend on how closely the regulator scrutinizes transactions and monitors long-term compliance."[27] With the right incentive structure and through weeding out fraudulent credits, voluntary carbon markets can make meaningful gains in reducing emissions and reducing risks of climate change.[28] The federal government could be a hub of information, offer technical assistance,[29] and provide any necessary verification for the inclusion of carbon markets in international agreements.[30]

Embrace sound science on genetically modified crops and genetically engineered animals. Genetically modified (GMs) crops have been paramount to feeding American households and enabling farmers to produce higher yields with fewer resources. Genetically modified crops such

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[23] Jim Giles, "Digging into the complex, confusing and contentious world of soil carbon offsets," *GreenBiz*, February 26, 2021, https://www.greenbiz.com/article/digging-complex-confusing-and-contentious-world-soil-carbon-offsets

[24] Nori, "The Nori Carbon Removal Marketplace," https://nori.com/

[25] Environmental Defense Fund, "Carbon Credit Quality Initiative: Assessing the quality of carbon credits," August 3, 2021, https://www.edf.org/climate/carbon-credit-quality-initiative

[26] Jonathan Wood, "A Role for Carbon Markets?" The Property and Environment Research Center, May 29, 2019, https://www.perc.org/2019/05/29/a-role-for-carbon-markets/

[27] Ibid.

[28] Steve Schwartzman, et al., "What ProPublica's forest carbon credits story still gets wrong – and right (with update)," Environmental Defense Fund, May 23, 2019, http://blogs.edf.org/climate411/2019/05/23/what-propublicas-forest-carbon-credits-story-gets-wrong-and-right/

[29] See, for instance, Senator Mike Lee's amendment to the Growing Climate Solutions Act, https://www.lee.senate.gov/2021/6/growing-climate-solutions-act

[30] Frank Watson, "COP26: Nations strike deal on international carbon markets at Glasgow summit," *S&P Global*, November 14, 2021, https://www.spglobal.com/commodity-insights/en/market-insights/latest-news/energy-transition/111421-cop26-nations-strike-deal-on-international-carbon-markets-at-glasgow-summit

as golden rice have been instrumental in combatting global hunger and malnutrition.[31] These crops are safe, tested and approved by regulatory agencies in the U.S. (Food and Drug Administration) and around the world. By improving output on existing cropland and reducing the use of herbicides and insecticides, GMs have significant environmental and climate benefits (both for emissions reductions and climate resiliency).

A June 2020 study found that, in 2018, GM crops raised farm income nearly $19 billion and raised farm income $225 billion from 1996-2018. The same study found that in 2018 the "combined GM crop-related carbon dioxide emission savings from reduced fuel use and additional soil carbon sequestration were equal to the removal from the roads of 15.3 million cars."[32] Similarly, genetically engineering animals has proven to make them healthier, more productive, and more environmentally friendly. For example, genetically engineered cows have more disease-resistant milk, which reduces the emissions per gallon of milk produced.[33] Moreover, researchers have inserted a gene into cows to produce more male offspring, which weigh more but eat less.[34] Again, the result is greater output with a small environmental footprint.

Section II. Expanding opportunities for healthy ecosystem investment.

There is no shortage of opportunities to invest in America's natural ecosystems and reap the economic, environmental and climate benefits that come with it. To capitalize on those opportunities, policymakers should reduce the regulatory barriers that obstruct or delay ecosystem investment. Congress and the administration should also explore ways to improve incentives for constructive partnerships and generate alternative funding sources for natural climate solutions.

Such reforms offer several noteworthy advantages. Permitting reforms will allow preventative and restorative ecosystem investments to occur more resourcefully. Efficient permitting and collaboration will stretch taxpayer dollar furthers further, inject more private capital into natural ecosystem rehabilitation, and incentivize investments in stewardship. The outcome will be a cleaner environment, more protection from extreme weather and greater reductions in greenhouse gas emissions. To that end, policymakers should:

- **Streamline forest and invasive restoration projects, expedite judicial review, and expand opportunities for timber development**. An April 2021 PERC report highlights the environmental and climate benefits of forest restoration. The report details many

[31] Daniel Norero, "Unfairly demonized GMO crops can help fight malnutrition," Alliance for Science, June 20, 2018, https://allianceforscience.cornell.edu/blog/2018/06/unfairly-demonized-gmo-crops-can-help-fight-malnutrition/

[32] Graham Brookes & Peter Barfoot, "GM crops: global socio-economic and environmental impacts 1996-2018," PG Economics, Ltd, United Kingdom, June 2020, https://pgeconomics.co.uk/pdf/globalimpactfinalreportJuly2020.pdf

[33] Robert Wall et al., "Genetically enhanced cows resist intramammary Staphylococcus aureus infection," Nat Biotechnol. April 2005, https://pubmed.ncbi.nlm.nih.gov/15806099/

[34] Kristin Houser, "This genetically modified cow could transform beef production," Freethink, July 26, 2020, https://www.freethink.com/science/gmo-food

pragmatic recommendations to expedite forest restoration processes and encourage collaborative partnerships.[35] Notable policy solutions include making categorical exclusions easier to apply for, excluding prescribed burns from state emissions calculations, requiring lawsuits to be filed quickly and resolved quickly, narrowing the scope of the Endangered Species Act to on-the-ground impacts of endangered species, opening timber markets for export, and allowing the Forest Service to be a "Good Neighbor" with states, tribes, and counties.[36]

- **Maximize funding and flexibility for wildfire prevention, reforestation, and afforestation efforts**. Bipartisan legislative proposals including the Emergency Wildfire and Public Safety Act[37] and the Trillion Trees and Natural Carbon Storage Act[38] have many sensible provisions to improve wildfire prevention and enhance natural climate solutions. The bills would provide funding and accelerate the use of fire detection equipment (including the use of satellites), matching grant programs for tree planting, seed and sapling funding, and small tweaks to federal agency technical assistance for carbon sequestration and forest management activities. Congress should also explore mechanisms to solve budgeting challenges of long-term forest restoration projects. As the PERC report underscores, "Under the Antideficiency Act and appropriations rules, the Forest Service cannot obligate funds in advance of appropriations or after funding has expired. This constrains its ability to participate as an equal financial partner when states, tribes, or private groups are willing to contribute funds to forest restoration."[39] PERC recommends the creation of a restoration fund that would provide the funding certainty and commitment toward long-term projects.
- **Reform the National Environmental Policy Act.** Investments in healthy ecosystems and natural climate solutions often run into burdensome, time-consuming permitting challenges. In addition, conservation practices can be held up for years in litigation. The consequence has been missed opportunities to thin forests or eradicate invasive species, resulting in much worse environmental and climate outcomes. A common obstacle that can block or delay investments in projects that enhance ecosystems, reduce emissions, and provide natural resilience for communities is the National Environmental Policy Act

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[35] Holly Fretwell and Jonathan Wood, "Fix America's Forests: Reforms to Restore National Forests and Tackle the Wildfire Crisis," The Property and Environment Research Center, April 12, 2021, https://www.perc.org/2021/04/12/fix-americas-forests-reforms-to-restore-national-forests-and-tackle-the-wildfire-crisis/

[36] Ibid.

[37] S.4431 - Emergency Wildfire and Public Safety Act of 2020, https://www.congress.gov/bill/116th-congress/senate-bill/4431#:~:text=This%20bill%20addresses%20wildfire%20preparedness,wildfire%20due%20to%20climate%20change.

[38] S.4985 - Trillion Trees and Natural Carbon Storage Act, https://www.congress.gov/bill/116th-congress/senate-bill/4985/text

[39] Holly Fretwell and Jonathan Wood, "Fix America's Forests: Reforms to Restore National Forests and Tackle the Wildfire Crisis," The Property and Environment Research Center, April 12, 2021, https://www.perc.org/2021/04/12/fix-americas-forests-reforms-to-restore-national-forests-and-tackle-the-wildfire-crisis/

(NEPA). President Nixon signed NEPA into law more than 50 years ago. Since then, many federal, state, and local environmental laws have been enacted, creating a confusing web of unclear, overlapping, and complex requirements. As columnist Ezra Klein recently wrote in the New York Times, NEPA is "part of a broader set of checks on development that have done a lot of good over the years but are doing a lot of harm now. When they were designed, these bills were radical reforms to an intolerable status quo. Now they are, too often, powerful allies of an intolerable status quo, rendering government plodding and ineffectual and making it almost impossible to build green infrastructure at the speed we need."[40] Green infrastructure also encompasses investments in natural climate solutions. Rather than have pragmatic evaluations of risk and trade-offs, NEPA has too often devolved into a tool to stunt the development of cleaner infrastructure and to delay projects that will restore America's ecosystems.

While the Infrastructure Investment and Jobs Act included and codified some important reforms, a more systemic overhaul is necessary. Two legislative proposals that would properly narrow the scope of NEPA are the Undoing NEPA's Substantial Harm by Advancing Concepts that Kickstart the Liberation of the Economy Act (UNSHACKLE Act)[41] and the Building United States Infrastructure through Limited Delays and Efficient Reviews Act of 2021 (BUILDER Act).[42] Environmental reviews are a critical part of any project, as is the participation of the public and communities affected by the project. NEPA reform is not about removing environmental safeguards but increasing accountability, improving efficiency, and curbing excessive litigation.

- **Provide efficient and flexible pathways for invasive species prevention, detection, and eradication.** Congress should expedite permitting for any invasive species eradication plans (see NEPA reform bullet), and the Department of Interior and Department of Agriculture should have the flexibility to use federal funds to experiment with different prevention and detection methods (within the confines of statutory requirements). The federal government should also explore opportunities to collaborate with the private sector and state and local governments to expand the use of incentive programs (bounty, contractor, community, recreation). Many of these programs, which vary by region and species, have proven to be effective.[43] The Interior Department Invasive Species Advisory Committee should continue and expand its outreach and

[40] Ezra Klein, "Government Is Flailing, in Part Because Liberals Hobbled It," *The New York Times*, March 13, 2022, https://www.nytimes.com/2022/03/13/opinion/berkeley-enrollment-climate-crisis.html

[41] H.R.3814 - UNSHACKLE Act, https://www.congress.gov/bill/117th-congress/house-bill/3814?q=%7B%22search%22%3A%5B%22UNSHACKLE+Act%22%2C%22UNSHACKLE%22%2C%22Act%22%5D%7D&s=2&r=1

[42] H.R.2515 - Building United States Infrastructure through Limited Delays and Efficient Reviews Act of 2021, https://www.congress.gov/bill/117th-congress/house-bill/2515?q=%7B%22search%22%3A%5B%22BUILDER+ACT%22%2C%22BUILDER%22%2C%22ACT%22%5D%7D&s=1&r=1

[43] U.S. Department of Interior Invasive Species Advisory Committee, "Harvest Incentives: A Tool for Managing Aquatic Invasive Species," May 15, 2014, https://www.doi.gov/sites/doi.gov/files/uploads/isac_harvest_incentives_white_paper.pdf

provide recommendations and technical assistance on program implementation and how to avoid unintended consequences.[44]

- **Integrate natural climate solutions into abandoned mine site cleanups**. There are hundreds of thousands of abandoned mine sites on federal lands, and policymakers should turn these environmental liabilities into opportunities. Establishing better incentives for abandoned mine clean up can turn health, safety, and environmental dangers into productive, cleaner lands and waters.[45] The Good Samaritan Remediation of Abandoned Hardrock Mines Act[46] would be an important step forward that helps reduce the liability risk of remediating abandoned mine sites.

- **Explore alternative funding pathways**. **Increase user fees and charge international visitors higher fees.** To address invasive species at federal and state parks or waters including the Great Lakes (where 25 invasive species of fish and numerous invasive plants have entered the lakes since 1880[47]), parks should charge market rates for entrances.[48] That revenue could be used to address deferred maintenance at parks but also to address environmental concerns such as invasive species. Charging international visitors to federal parks by increasing visa fees or for out-of-state visitors to state parks (as many do) will generate additional revenue for conservation efforts. Vouchers could be offered to low-income communities to ensure all Americans have access to U.S. parks.

- **Expand opportunities for investment in more efficient agricultural equipment, and for investment in precision and regenerative agriculture.** Innovative agricultural technologies and more efficient practices enable farmers and ranchers to produce more with less. Congress should reform laws to encourage investment in new equipment by making immediate expensing a permanent fixture of the tax code. Immediate expensing will allow farmers and ranchers to deduct the cost of automated, more efficient equipment in the year the cost is incurred rather than over years using cumbersome depreciation schedules. Congress could also consider leveraging existing USDA programs to incentivize precision agriculture and regenerative agriculture practices. For instance, the Producing Responsible Energy and Conservation Incentives and Solutions for the Environment Act (PRECISE Act) would expand USDA conservation loans and programs to include precision agriculture investments and provide technical assistance for farmers and ranchers who want to pursue soil health planning.[49] Furthermore, the

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[44] Ibid.
[45] Jonathan Wood, "Prospecting for Pollution: The Need for Better Incentives to Clean Up Abandoned Mines," The Property and Environment Research Center, February 2020, https://www.perc.org/wp-content/uploads/2020/02/prospecting-for-pollution-abandoned-mines.pdf
[46] S.3571 - Good Samaritan Remediation of Abandoned Hardrock Mines Act of 2022, https://www.congress.gov/bill/117th-congress/senate-bill/3571/text
[47] U.S. Environmental Protection Agency, "Invasive Species in the Great Lakes," February 3, 2022, https://www.epa.gov/greatlakes/invasive-species-great-lakes
[48] Nicolas Loris, "Tackling the Enormous Deferred Maintenance Backlog for America's National Parks," The Heritage Foundation, June 9, 2020, https://www.heritage.org/environment/report/tackling-the-enormous-deferred-maintenance-backlog-americas-national-parks
[49]Producing Responsible Energy and Conservation Incentives

Naturally Offsetting Emissions by Managing and Implementing Tillage Strategies (NO EMITs Act)[50] would compensate farmers for lost revenue for a period that farmers and ranchers switch to a healthier soil cropping system. Funds could also be available for technical assistance for farmers and ranchers that transition to regenerative practices in which they could consult with USDA's conservation service experts, non-profits, or other farmers.[51]

- **Provide accurate accounting of the environmental and climate effectiveness of conservation programs.** Voluntary USDA conservation programs provide important assistance to farmers and ranchers, protect the environment, and increase carbon sequestration in soil and trees. Conservation programs help protect drinking water, preserve wildlife habitat, prevent soil erosion, and protect and restore forests and wetlands.[52] Data collection, transparency, and evaluation will maximize the efficiency of these initiatives and safeguard the taxpayers from waste, fraud, and abuse. The bipartisan, bicameral Farmer-Driven Conservation Outcomes Act of 2020 would authorize the USDA to identify goals, metrics, and assessment processes to measure the effectiveness of conservation programs.[53] Developing goals, metrics, and monitoring programs and modifying the programs as necessary will provide sound scientific data to maximize conservation efforts. Data collection, monitoring, and evaluation will also better inform efforts to capture and sequester carbon.

- **Keep GM labeling voluntary and promote the economic and environmental benefits of GM crops and animals.** Mandatory labeling could create a negative stigma about genetic engineering, which would undermine the evidence that GM crops and animals are scientifically safe and beneficial for farmers, consumers, and the environment. Evidence also suggests that non-GMO labels may reveal enough information to consumers to deem mandatory labels unnecessary.[54] Additionally, USDA should consider reinstating its GM checkoff program to convey the minimal risks and economic and environmental benefits of GM crops and animals. While the USDA should not be in the business of picking

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and Solutions for the Environment, https://republicans-agriculture.house.gov/uploadedfiles/04.14.2021_preciseacthinsonsummary.pdf?utm_campaign=2760-396

[50] H.R.2508 - Naturally Offsetting Emissions by Managing and Implementing Tillage Strategies Act of 2021, https://www.congress.gov/bill/117th-congress/house-bill/2508/text?r=95&s=1

[51] U.S. Department of Agriculture, Natural Resources Conservation Service Technical Service Providers, https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp/

[52] U.S. Department of Agriculture, Conservation Programs, https://www.fsa.usda.gov/programs-and-services/conservation-programs/

[53] H.R.6182 - Farmer-Driven Conservation Outcomes Act of 2020, https://www.congress.gov/bill/116th-congress/house-bill/6182/text

[54] Aaron Adalja et al., "Direct and Indirect Effects of Mandatory GMO Disclosure with Existing Voluntary Non-GMO Labeling," March 2022, https://deliverypdf.ssrn.com/delivery.php?ID=674066092020080070126007004087016101038046007020059034127065092110126100099074031028056033058006042055014031029109121124084098053082054001060121119079000100104073006061053066087025064088072020125013070024065027124087029031088097081069022122103072028104&EXT=pdf&INDEX=TRUE

winners and losers, public perception, acceptance, and communication of sound science and data is key to legitimizing GMs where widespread skepticism still exists.[55]

Conclusion

Investment in healthy ecosystems is smart economic and climate policy. Eradicating invasive species, rehabilitating forests, promoting sustainable agriculture, and encouraging responsible land and water use practices are pragmatic natural climate solutions. Stronger ecological health and biodiversity in the United States and around the world will reduce emissions and build up natural resiliencies to a changing climate. To expand natural climate solutions, policymakers should remove barriers to ecosystem investments and encourage collaborative partnerships that harness the power of positive incentives.

[55] Brian Kennedy and Cary Lynne Thigpen, "Many publics around world doubt safety of genetically modified foods," Pew Research Center, https://www.pewresearch.org/fact-tank/2020/11/11/many-publics-around-world-doubt-safety-of-genetically-modified-foods/