

Getting to 30x30: Recommendations to Support Greater Private Investment in Private Lands Conservation



COMMON GROUND CAPITAL



ENVIRONMENTAL POLICY
INNOVATION
CENTER

Suggested Citation

Macleod, K., Li, Y-W & Male, T. 2021. Getting to 30x30: Recommendations to Support Greater Private Investment in Private Lands Conservation. Washington, D.C.: Environmental Policy Innovation Center.

Authors

Kavita Kapur Macleod, Ya-Wei (Jake) Li, and Timothy Male

For more information

kavita@policyinnovation.org

Environmental Policy Innovation Center
777 6th St, NW, 11th floor
Washington, D.C. 20001

Cover page: Montana ranch (Flickr/NOAA),
burrowing owl on Southern Great Plains,
monarch butterfly.

This page: Harmon Den, Pisgah National
Forest (Flickr/Jim Liestman).



The mission of the Environmental Policy Innovation Center is to build policies that deliver spectacular improvements in the speed and scale of conservation. Innovation and speed are central to broadening efforts to conserve wildlife, restore special natural places, and deliver people and nature with the clean water they need to thrive.



SUMMARY OF REPORT

The Biden administration has created the biggest opportunity in decades for the country to reimagine and catalyze conservation. Through the “30x30” initiative, the administration will strive “to achieve the goal of conserving at least 30 percent of our lands and waters by 2030”.¹ This initiative is long overdue, as the U.S. is currently losing an estimated 1.5 million acres of natural land to human development annually, or a football field every 30 seconds on average.² Natural land loss and the associated fragmentation of land results in numerous social, economic, and environmental adverse impacts, including to biodiversity. Damage to ecosystems and loss of biodiversity may remove U.S.\$10 trillion from the global economy by 2050.³ The 30x30 initiative started as a broader global initiative to stem the loss of biodiversity by protecting 30% of the Earth’s land and water. The Biden administration’s intention to reach this goal in the U.S. will require an estimated additional 400 million acres of land conserved. Bringing this many additional acres into a conserved state in a way that delivers meaningful and durable conservation outcomes will also require the administration to address two critical conservation gaps in its implementation of 30x30:

- ***Private lands are critical to biodiversity, carbon storage, and other ecosystem services but face the highest risk of development.*** 74% of land in the continental U.S. is privately owned.⁴ The vast majority (80%) of biodiversity hotspots and carbon stock hotspots (nearly 100%) exist on private, unprotected (GAP 4) lands in the U.S.⁵ GAP status code descriptions are provided in Annex I of this report. The U.S. Fish and Wildlife Services (FWS) estimates that 2/3rds of federally listed species under the U.S. Endangered Species Act (ESA) have habitat on private land.⁶ For these reasons, conserving ecologically valuable land for 30x30 will depend greatly on private lands. However, private lands are at the greatest risk for losing biodiversity. Natural lands lost to development from 2001-2017 were lost primarily on private lands (78% of the total loss), perhaps unsurprising given that only roughly 1% of private land in the lower 48 states has permanent protection.⁷ An estimated 70% of U.S. lands fall in the GAP 4 category, with very little protection from conversion to unnatural land cover; GAP 4 lands comprise an even higher percentage of land in the continental eastern part of the U.S.⁸ Further, imperiled species habitat losses are almost twice as large on private lands without conservation easements as on federal land.⁹
- ***Private capital investment in conservation on private lands will be a necessary tool to reach the 30x30 goal.*** Conservation as practiced today is inadequate to conserve the acres of private lands required to meet 30x30 and will not accomplish the transformation of capital flows needed to achieve this goal. One estimate of public investment in land protection suggests that from 1998-2017, a roughly 20-year period, federal government spending of \$14.5 billion was associated with permanent protection of 19.6 million acres of land, or nearly 1 million acres annually for \$723.5 million (\$740 an acre).¹⁰ At this cost per acre, permanently protecting 400 million acres of land would cost the government almost \$300 billion.¹¹ Private capital is crucial to augmenting government spending to reach 30x30.

After existing public conservation measures are counted, we may still need around 100 million acres of private land conservation for 30x30. We estimate that 690 million acres (30%) of the nation's 2.3 billion acres would need to be conserved to reach 30x30. According to USGS GAP status codes, roughly 12% of the nation's 2.3 billion acres are currently protected and fall in GAP 1 and 2 status codes.^{12,13} We estimate this to be 277 million acres, leaving an additional 413 million acres that will need to be conserved to reach 30x30. An initial assessment of where this land might come from suggests that even after public action and designations to conserve land, private lands may still need to deliver around 100 million acres by 2030.¹⁴ Of course, these numbers will vary based on the Biden administration's decision of what counts for 30x30, what areas are prioritized, and how the initiative is implemented, but they provide an idea of the outstanding conservation acres for which new approaches will be necessary. In addition, private lands will be necessary to achieve biodiversity and climate mitigation goals, given the high value of these services on private lands.

Conservation is currently a small part of the U.S. land area and an even smaller part of the U.S. economy. This will need to change to reach 30x30. Only about 12% of America's land is permanently protected and the overwhelming majority of this is public land. Further, the U.S. loses an average of 1.5 million acres of natural land a year.¹⁵ Federal spending on land, water and wildlife programs is estimated at **only 1% of the federal budget**¹⁶ and is a tiny fraction of the \$20 trillion U.S. economy. Further, spending on land, water and wildlife programs has declined in proportion over the past 30 years as compared to the total federal budget.¹⁷ The Biden administration's recent budget proposes just a \$200 million increase for conservation programs.¹⁸ In addition to money that might be required for future conservation, the four land management agencies of the federal government – the U.S. Forest Service (FS), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (FWS), and the National Park Service (NPS) - have an estimated \$19 billion maintenance backlog.¹⁹ In practice, reaching 30x30 will require increased funding to and optimization of existing conservation vehicles. However, even with these programs expanded and optimized, 30x30 will still require a massive private sector investment to fill funding gaps; we will not be able to depend exclusively on public funding to reach the goal.

KEY RECOMMENDED PRINCIPLES FOR 30X30

Given the importance of private lands conservation and private sector investment to 30x30, this report suggests four key principles for meeting 30x30 effectively. These principles focus not just on the number of acres conserved but also on the *quality or effectiveness of conservation* delivered by these acres. Effective conservation is conservation that is implemented to retain or increase biodiversity and/or other ecosystem services such as climate mitigation; is resilient in the face of climate change; and is managed appropriately to maintain key natural ecosystem functions and services. The Biden administration should consider the following principles when implementing 30x30:

1. **Expand what conservation means. Define conservation inclusively to include land protection but also restoration and management/stewardship.** Including restoration and management/stewardship, especially on working lands with farmers and ranchers, will be instrumental to effective and durable conservation, and to achieving buy-in from the public through communicating that 30x30 seeks to include private landowners and their conservation activities. It may be somewhat easy to define a 30x30 acre based only on its level of protection, but this would often not deliver meaningful or durable outcomes for conservation. For example, protection alone does nothing to prevent invasive species from moving into the habitat of pollinator insects. Instead, active management of those habitats is needed to maintain their value for biodiversity. It will be important to establish categories of conservation that meet 30x30 requirements and include different durations and types of protection, restoration, and management. Table 1 presents an example of how conservation that counts under 30x30 could be “tiered” based on the level of protection and/or management provided. The highest tier would reflect permanent protection and permanent management afforded by a management endowment, but management with long-term requirements would also count and may be superior to permanent protection only (Tier 4) where a lack of management could yield sub-optimal conservation outcomes. Table 1 also provides information on potential conservation vehicles at each tier level, including the mitigation/restoration industry as a potential conservation vehicle for tiers 1 to 3. The mitigation/restoration industry is comprised of businesses that invest in advanced compensatory mitigation and non-regulatory ecological restoration. This industry, experienced in land restoration and conservation, could be an important conduit of investment from the private sector to achieve 30x30.

Table 1: Potential Conservation Tiers for 30x30

Conservation Tier	Land Conservation Activity	Potential Conservation Vehicles
1	Permanent protection + permanent management (with endowment)	Mitigation/restoration industry
2	Permanent protection + term management	Mitigation/restoration industry, conservation easements
3	Only term management (no permanent protection)	Mitigation/restoration industry, Farm Bill programs
4	Only permanent protection (no management)	Conservation easements, direct acquisition, public ownership and public lands designation, zoning

2. **Standardize what counts. Establish minimum requirements for 30x30 and tiers of conservation.** Minimum requirements for 30x30 acres that are supported by the federal government are critical to supporting conservation that can scale rapidly. While there may be resistance to having a single and consistent requirement to defining what counts, experience with mitigation markets has demonstrated that multiple standards create disparate outcomes for conservation and can result in a net loss of the environmental asset at risk, such as wetlands.²⁰ States may develop programs and policies that support the overall 30x30 goal - such as a potential evolution in state wildlife action plans - but an approach where states and other entities develop independent and potentially widely disparate qualifications for what counts for 30x30

will slow land conservation, result in lower conservation outcomes, and would serve as a barrier to private conservation investment at scale.

3. **Prioritize actions. Focus conservation activities that count towards 30x30 in areas that maximize biodiversity and other priorities. This must include private lands.** Recent research has shown that biodiversity and carbon storage potential are not well aligned with currently protected lands, and that areas of high biodiversity and carbon storage fall significantly on private lands. The research has also shown that 80% of biodiversity hotspots in the U.S. fall on GAP 4, unprotected, lands.²¹ Mobilizing conservation on these private lands will therefore be critical to meeting a national 30x30 goal. Federal and state entities should develop programs and incentives that target these areas. In addition, it will be critical to focus funding and resources on areas that face development pressure.
4. **Incentivize private sector for-profit investment to meet effective conservation goals.** Public funding alone will not come close to achieving 30x30, especially where effective conservation requires long-term funding for conservation management and the highest, market-based, payment for private land will determine if millions of acres of high biodiversity land will remain in conservation or become lost to land development (e.g., traditional and renewable energy development, housing subdivisions, etc.). We must find ways to make conservation financially competitive with other forms of land use in the most important areas for biodiversity and other ecological goals; otherwise, we will continue to lose land to development. The Biden administration could help to incentivize the private sector to invest more in conservation for 30x30 by establishing a greater degree of certainty and consistency around requirements for 30x30 acres, and by taking other steps towards increasing demand for high-quality conserved acres such as clarifying guidelines around existing conservation programs (e.g., mitigation and conservation banking) and increasing funding to enforce environmental laws such as the ESA. We recommend the mitigation/restoration business industry as one logical conduit for private sector investment: in addition to traditional regulatory mitigation services provided for the ESA and Clean Water Act (CWA), the industry is well suited to grow into a role to provide 30x30 acres under a non-regulatory, voluntary context.

The four principles presented could help to achieve conservation of 30% of the country's land and catalyze a process that would meet other key goals of the Biden administration such as equity and environmental justice, climate mitigation, and sustainable rural livelihoods. Adopting an approach toward 30x30 without minimum requirements will not change how our country conserves land—pursuing important but relatively small conservation victories that will not get us to 30x30. Further, without management and durability, perceived conservation gains can be erased because they are not durable in the face of natural disturbance (e.g., invasive species, climate change) or are at risk of being lost later through conventional development threats. Finally, counting certain types of restoration and management/stewardship as conservation would enable 30x30 to be a **pro-jobs** and **pro-economy** initiative if done right.

INCENTIVIZING THE PRIVATE SECTOR

Reaching the 30x30 goal will require improving conservation tools and increasing the role for private, for-profit land conservation. All of the existing conservation approaches are important to reaching the 30x30 goal: public sector funding will be required to continue and expand important federal easement and conservation programs and support the conservation easement tax deduction; the land trust/nonprofit sector will need to increase its rate of conservation to meet a 10 million acre per year goal; nonprofit and philanthropic money will continue to be required to spur innovation; and the mitigation banking market will need to continue to develop projects that mitigate against development impacts. However, important improvements to these existing tools are required in order to improve land conservation outcomes. For example, the controversy over syndicated easements²² must be solved in order to create certainty and confidence in easements and for private investors to have a legitimate opportunity to invest in conservation that is supported by the Internal Revenue Service (IRS) and conservation community.

More effective policies are needed to address barriers to private investment in conservation. In exploring limitations to growth in the conservation investment space, a recent survey on the state of conservation investment in the U.S. stated that respondents:

Listed their primary challenge to future growth as a *lack of available deals with appropriate risk/return profiles* — a constraint that was repeated when asking respondents about challenges to including more institutional investors in this space and one that was also most-cited in the 2014 report. Respondents also pointed to a number of secondary concerns to growth and expansion for institutional investors, including *small transaction sizes* and *lack of management track records*. Outside of traditional investment concerns, investors also expressed the need for *more government support to absorb risks and to create enabling market conditions through pricing environmental externalities* [emphasis added].²³

Fixing what is broken in existing environmental markets would attract private sector investment. For example, the rules and enforcement of mitigation requirements under the ESA and CWA need to be created (ESA), clarified and enforced to bolster the market for developing and selling compliance-based credits. This would provide repeatable and sustainable transactions that would attract additional private sector investment to the mitigation banking space.

Programs and incentives specific to 30x30 could create demand for private sector land conservation investment. Some ideas in this space include aligning 30x30 with the Biden administration's American Jobs Plan that includes \$10 billion for conservation and resilience workers and would likely require mitigation for transportation and other development impacts;²⁴ providing support for a biodiversity credit market; creating opportunity zones for 30x30 investment; conducting a national RFP for high biodiversity lands; and issuing a 30x30 preservation and restoration tax credit. Coordination of all conservation efforts – public and private – would result in more strategic conservation being put in place on the landscape, the identification of best practices, and location of potential funding sources for innovative conservation programs.

The mitigation/restoration industry is a specific space in which the Biden administration could incentivize the private sector to invest additional dollars in conservation to play a key role in achieving the 30x30 objective. The mitigation industry/restoration industry, comprised of businesses that invest in advanced compensatory mitigation and non-regulatory ecological restoration, is well positioned to deliver conservation outcomes at a scale that drastically exceeds the limited regulatory-driven compliance market or current voluntary market. These businesses are experienced in all elements of conservation we have proposed for 30x30 - restoration, permanent protection, and long-term management – and in working with regulatory agencies that oversee compliance-based mitigation (the U.S. Army Corps of Engineers (ACE) and the FWS). In addition to ecological benefits of conservation, the restoration economy also produces broader positive economic impacts in many sectors.²⁵ Right now, approved wetland and stream mitigation banks and species conservation banks (SCBs) could deliver about 1 million high-value conservation lands with permanent protection and long-term management endowments to 30x30.²⁶ This industry could further expand to provide more advanced compensatory mitigation if existing market weaknesses are addressed and regulatory demand increases. The mitigation/restoration industry is also well-placed to serve as a conduit for additional private investment in 30x30: mitigation/restoration businesses well-versed in developing land as mitigation banks could easily deploy their skills and experience to producing non-regulatory, high-quality restored and/or conserved land.

GARNERING PUBLIC SUPPORT FOR 30X30

Given the geographic and political differences across the United States, the Biden administration will have to leverage a number of different tools to achieve the 30x30 goal. While regulatory approaches are one set of tools, they cannot be the only or even the primary one in many parts of the country. Instead, incentives for landowners to voluntarily participate in 30x30 are crucial to manage any backlash against 30x30 from private property groups, state legislatures and governors concerned about additional federal regulation and in order to achieve the level of private lands enrollment needed to reach the goal from both an acre/area and a biodiversity quality perspective. The Biden administration should articulate its position on potential actions to conserve land for 30x30.

As the Biden administration thinks about next steps for implementing 30x30, it should recognize that the federal government is often not the best ambassador for engaging private landowners or for running markets. States, private sector conservation bankers, businesses, and other non-federal entities will often provide the best boots on the ground for reaching out to landowners. The federal government, however, should define when an acre of land counts toward 30x30. The administration's April 2021 report should seek public input on how each of these entities could contribute to 30x30.

INTRODUCTION: GLOBAL BIODIVERSITY LOSS

The Earth is in a biodiversity and climate crisis. Human activity around the world has caused the Earth to lose and continue to lose a staggering amount of biodiversity, leading to the present “sixth extinction”.²⁷ According to the Campaign for Nature, we’ve lost a staggering amount of biodiversity in a very short period of time: 60% of terrestrial wildlife in the past 50 years; 90% of large ocean fish in the past 100 years; and over 18 million acres of forest every year.²⁸ Much of the world’s land area has been subject to huge reductions in species diversity, with notable hotspots on every major continent (Figure 1).

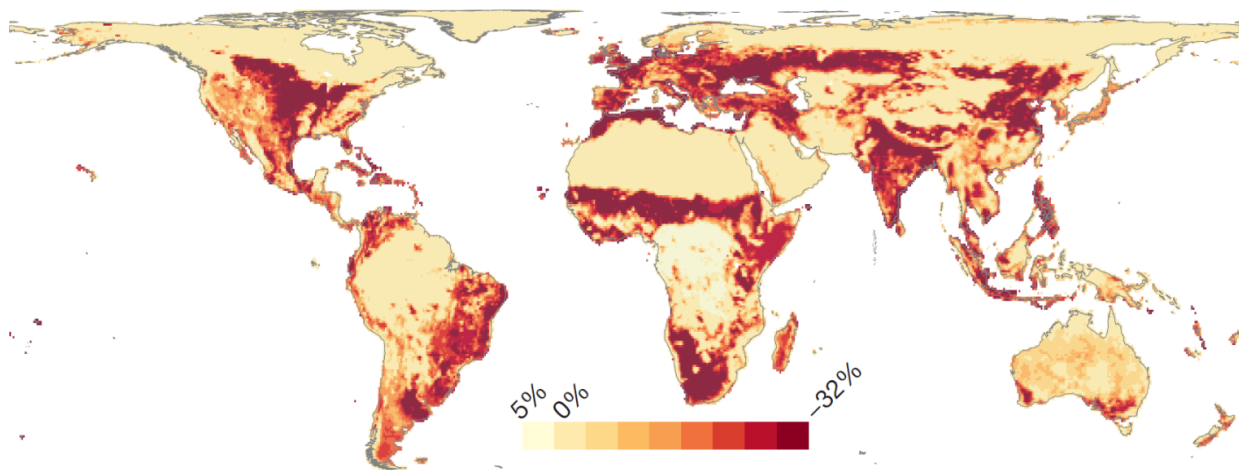


Figure 1: Estimated change in local species diversity caused by human land use changes since 1500 A.D.

Source: Newbold, T., Hudson, L., Hill, S. et al. Global effects of land use on local terrestrial biodiversity. *Nature* 520, 45–50 (2015).

Global efforts to stem biodiversity loss have been limited, in part due to insufficient funding. The 20 Aichi Biodiversity Targets, developed through the Convention on Biological Diversity (CBD) in 2010, reflect one global response to this crisis by setting biodiversity targets for 2020.²⁹ Aichi Target 11 stated that signatories would set aside 17% of their lands and 10% of their oceans for conservation by 2020. However, none of the Aichi Biodiversity Targets set in 2010 were fully met by 2020 and only six were partially met, including Target 11.³⁰ In August 2020, the World Database on Protected Areas (WDPA) showed 15% of the world’s land and 7.5% of the oceans were within protected areas.³¹ Of course, this obscures variation in conservation across countries: in the U.S., the WDPA shows 11.8% of lands protected.³² There are many reasons why conservation outcomes have fallen short of the goal, one of which is insufficient funding. The costs of achieving the twenty Aichi Biodiversity Targets by 2020 were estimated to range from U.S.\$150 billion and U.S.\$440 billion per year.³³ Today, an estimated U.S.\$722 to U.S.\$967 billion per year is required to protect biodiversity globally, but only U.S.\$124 to U.S.\$143 billion is spent annually, leading to a “biodiversity financing gap” of U.S.\$598 billion to U.S.\$824 billion each year.³⁴ Further, private investment lags behind public and development finance institution (DFI) investment (e.g., the International Finance Corporation). A recent survey found that only U.S.\$1.9 billion of the U.S.\$23.4 billion invested in global conservation impact investments from 2009 to 2013 came from the private sector, or just 8%.³⁵

The U.S. is a hotspot of biodiversity loss. In the U.S. specifically, natural land area loss due to human activity from 2001 to 2017 has been estimated at 24 million acres, or 1.5 million acres lost annually (Figure 2).³⁶ These losses are equivalent to a football field of natural land lost to development roughly every 30 seconds.³⁷ Natural area loss is not spread evenly across the country: the South and Midwest lost more land over this time period than the Northeast or West. Biodiversity loss in the Great Plains (Figure 3), resulting primarily from conversion of grasslands to agriculture (livestock and crop production), is striking. Scientists recently estimated that only roughly half of the Great Plains remain intact, with 53 million acres lost since 2009, showing the long-term impact of settlement and cultivation of this fertile area of the country.³⁸ The social, economic and environmental implications of this biodiversity loss are enormous – unhealthy and unbalanced ecosystems, dirtier air and water, reduced crop yields, and increased pandemic risk, to name but a few.³⁹

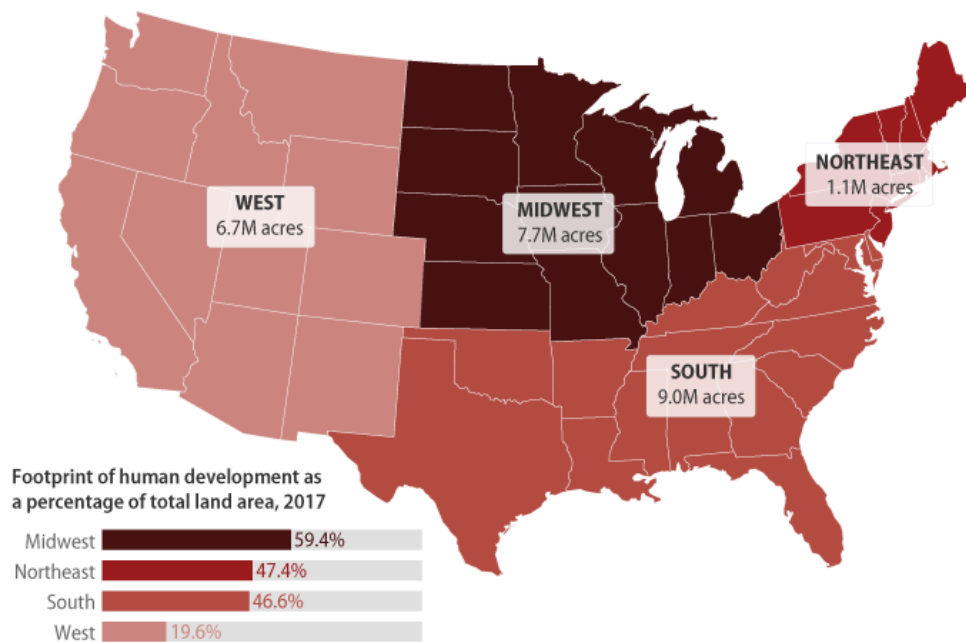


Figure 2: Natural area loss by region, 2001-2017

Source: Theobald et al 2019 as shown in Lee-Ashley et al, Center for American Progress, How Much Nature Should America Keep?, August 6, 2019.

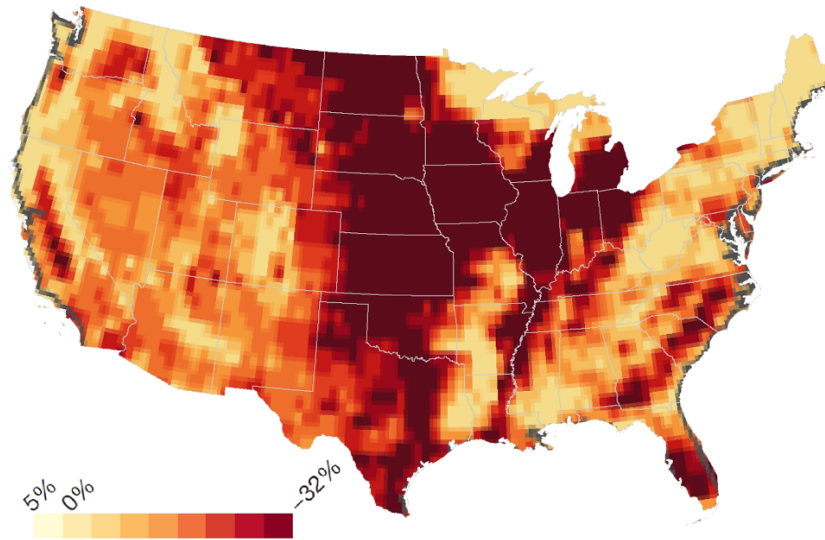


Figure 3: Estimated change in local species diversity caused by human land use changes since 1500 A.D.

Source: Newbold, T., Hudson, L., Hill, S. et al. Global effects of land use on local terrestrial biodiversity. *Nature* 520, 45–50 (2015).

THE 30X30 SOLUTION

The latest global effort to stem biodiversity loss – 30x30 – was recently embraced by the Biden administration. The global 30x30 initiative, rooted in science and explained in the Global Deal for Nature, is aligned with the Paris Climate Agreement and advocates for 30% of Earth to be formally protected with an additional 20% designated as “climate stabilization areas” by 2030 in order to stabilize climate to below 1.5C, reduce species extinction, and maintain certain ecosystem services.⁴⁰ In this way, the 30x30 initiative aims to catalyze societies to protect what is important for long-term planetary health. The U.S. has entered an important conservation moment through the Biden administration’s inclusion of the 30x30 goal in the administration’s January 27, 2021 Executive Order (EO).⁴¹ In addition to global support through major international conservation efforts including the CBD’s Post-2020 Global Biodiversity Framework,⁴² the 30x30 goal had also previously been introduced in the Senate (Senate Resolution 372⁴³) and in the House (House Resolution 835⁴⁴). The 30x30 goal for the U.S., included in an EO focused on climate, equity and environmental justice, and sustainable agricultural communities, represents a once in a generational moment to change the meaning and practice of conservation in the U.S.

The 30x30 goal is considerable: to achieve conservation of 30% of the nation’s land will require hundreds of millions of additional conserved acres. Thirty percent of the total U.S. land area is equal to 690 million acres.⁴⁵ If we assume the United States Geological Survey’s (USGS) GAP status 1 and 2 lands would count towards 30x30 due to their permanent protected status, then protected lands account for 12% of the total U.S. land area (277 million acres), requiring an additional 18% or **413 million acres** of conservation to reach 30%.⁴⁶

Recent research that has highlighted two critical gaps that the Biden administration needs to address with 30x30: (1) unprotected private lands are the most important to protect for biodiversity; and (2) business-as-usual (BAU) conservation will be inadequate to protect the scale of acres on private lands required to meet 30x30 and will not achieve the transformative disruption of capital flows needed to achieve the desired outcome.

1. *Unprotected private lands are the most important to protect for biodiversity.* Unprotected private lands are critical for biodiversity because privately-owned land that is in a natural state is the most frequently converted to other land uses, and because these private lands exhibit significant biodiversity. Natural lands lost to development in the period 2001-2017 were lost primarily on private lands (78% of the total loss), perhaps unsurprising given that only roughly 1% of private land in the lower 48 states has permanent protection.⁴⁷ An estimated 70% of U.S. lands fall in the GAP 4 category, with very little protection from conversion to unnatural land cover; GAP 4 lands comprise an even higher percentage of land in the continental eastern part of the U.S.⁴⁸ From a species perspective, imperiled species habitat losses are almost twice as large on private lands without conservation easements as on federal land.⁴⁹

Further, research both globally⁵⁰ and in the U.S.⁵¹ underscores that improved biodiversity outcomes will necessarily have to leverage conservation on private lands given the vast extent of biodiversity on these lands. Recent research overlaying protected and private lands following GAP status codes in the U.S. with imperiled species richness and ecosystem carbon potential has shown that 80% of biodiversity hotspots in the U.S. are on GAP 4 lands with little protection. GAP 4 lands with high priority for conservation according to these ecosystem metrics exist in the Northeast and Southeast regions of the U.S.⁵² GAP 1 and 2 lands, on the other hand, are protected but are home to less than ¼ of carbon stocks and less than 3% of biodiversity hotspots.⁵³ We also note that using different and more granular metrics on particular ecosystems or species may also identify additional priority areas for conservation, such as the grasslands of central North America.⁵⁴ GAP 3 lands, if brought to conservation standards of GAP 1 and 2, could close the 30x30 acres gap, but 80% of the biodiversity hotspots would go unaddressed.

GAP categories are an imperfect way to think about effective conservation because the quality of biodiversity on the land and management for conservation goals are not requirements for inclusion in GAP 1 and 2 protected areas. GAP 1 and 2 lands have permanent protection but may not overlap with areas of high biodiversity or carbon storage and may not have sufficient or any management in place to maintain the ecosystem function and services of the land in a natural state. Including GAP 3 lands in 30x30 is appealing because permanent protection from conversion is still afforded, but GAP 3 lands are subject to extractive use (e.g., BLM leases) and moving these lands to a higher conservation state, while perhaps getting the U.S. to 30% quickly, would not necessarily pack either a large biodiversity, equity, or stakeholder engagement punch.⁵⁵ GAP 3 lands are also unevenly distributed across the states, comprising much higher proportions of overall area in western states than in the east for example. In addition, federal lands that are classified as GAP 3 may vary significantly by state following from large variations

in federal land ownership in general.⁵⁶ GAP 4 lands, which include private lands, have a high degree of conservation value in terms of biodiversity and carbon storage, but also high potential threats of conversion and development and should therefore be the priority focus of 30x30 activities.

These points highlight that the percentage of the additional required land that will need to be delivered from conservation on private land will be a function of the administration's prioritization of what to conserve, and whether the administration decides to get to 30x30 based on acres alone, or whether the quality of biodiversity and other environmental metrics such as carbon storage are considered. If the quality of conserved acres is prioritized, the administration will necessarily have to include private lands, and find ways to do so that give private landowners market-based value propositions that meet their needs, provide for additional income streams, improve community well-being, and counter other development offers that incentivize land conversion to development.

The figures that follow illustrate these points: Figure 4a shows the extent of protected areas in the U.S. according to the International Union for Conservation of Nature (IUCN) categories. Most protected areas are in the Western U.S.; Figure 4b shows that most of this land is public. Figure 5 prioritizes areas for conservation in the U.S. based on biodiversity richness and protected states and shows that the Southeast U.S. is an area of significant biodiversity but limited protection. Figure 6 summarizes data on species and carbon richness according to GAP status, showing unprotected GAP 4 areas that are a high priority for conservation.

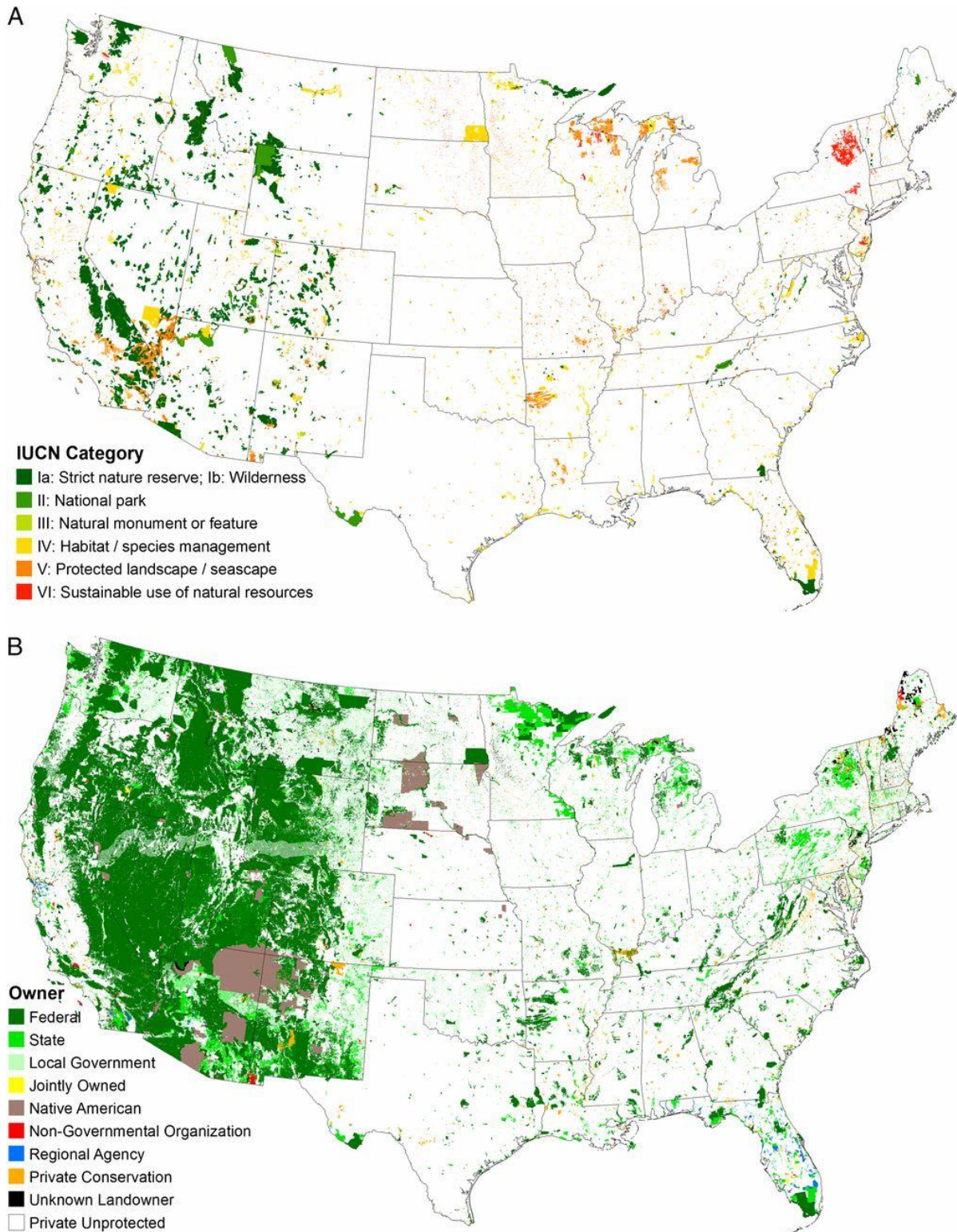


Figure 4: Maps depicting land protection (A) and land ownership (B) in the U.S.

Source: Jenkins, C. N., K. S. Van Houtan, S. L. Pimm, and J. O. Sexton. 2015. U.S. protected lands mismatch biodiversity priorities. *Proceedings of the National Academy of Sciences U.S.A* 112: 5081– 5086.

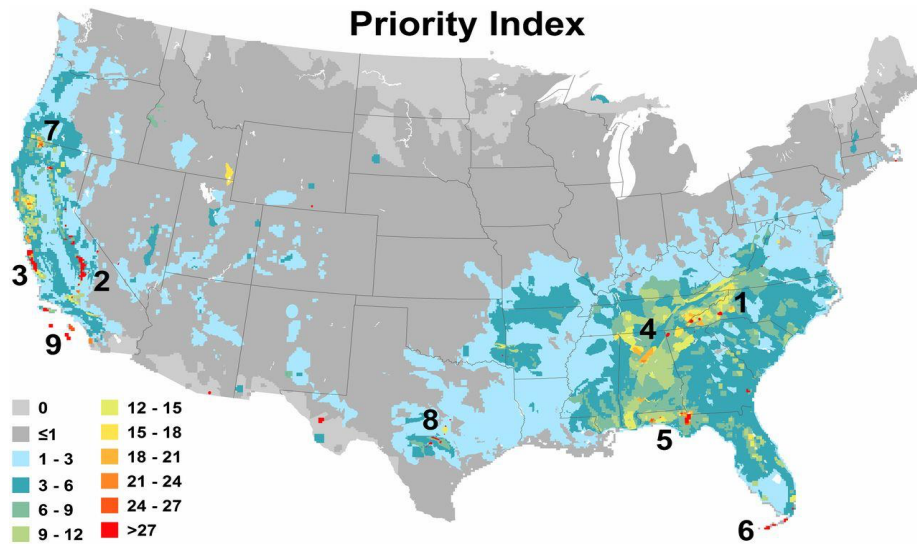


Figure 5: Recommended priority areas to expand conservation.

Source: Jenkins, C. N., K. S. Van Houtan, S. L. Pimm, and J. O. Sexton. 2015. U.S. protected lands mismatch biodiversity priorities. *Proceedings of the National Academy of Sciences U.S.A* 112: 5081– 5086.

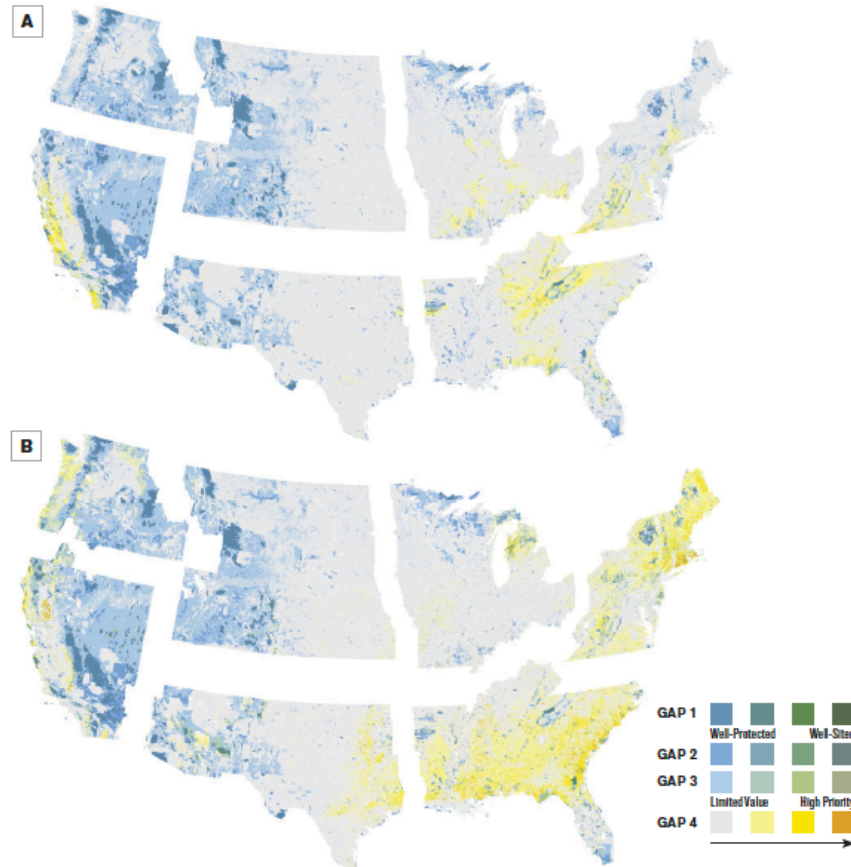


Figure 6: Maps depicting priorities for conservation based on protected status and imperiled species richness (A) and ecosystem carbon (B)

Source: Rosa, Lindsay and Malcom, Jacob. 2020. *Getting to 30x30: Guidelines for Decision-makers.*

2. ***BAU conservation will need to be supplemented by additional private land conservation to reach the 30x30 goal.*** Sources of existing conservation include Congressional and Presidential national monument designation; conservation easements facilitated by the federal conservation easement income tax deduction and public funding; federal Farm Bill programs that provide funding for land protection and conservation practices; and the mitigation banking market. ***After existing public conservation measures are counted, we may still need around 100 million acres of private land conservation for 30x30.***⁵⁷ We estimate that 690 million acres (30%) of the nation's 2.3 billion acres would need to be conserved by 2030 to reach the 30x30 goal. According to USGS GAP status codes, roughly 12% (277 million acres) of the nation's 2.3 billion acres are currently protected (GAP 1 and 2). Therefore, an additional 413 million acres that will need to be conserved to reach the 30x30 goal. Of course, these numbers will vary based on the Biden administration's decision of what counts for 30x30, what areas are prioritized, and how the initiative is implemented, but they provide an idea of the outstanding conservation acres for which new approaches will be necessary. In addition, private lands will be necessary to achieve biodiversity and climate mitigation goals, given the high value of these services on private lands. It is also important to note that in a BAU scenario, the U.S. is losing and would continue to lose an estimated 1.5 million acres of natural land a year.⁵⁸ Table 2 summarizes some existing land conservation statistics for the U.S. This table is not exhaustive and represents a rapid assessment of major conservation activity in the U.S., but it underscores the need for additional land conservation initiatives above BAU conservation in order to reach a goal in the hundreds of millions of acres.

Table 2: Acres Conserved by a Sample of Land Conservation Mechanisms in the U.S.

<i>Land Conservation Mechanism</i>	<i>Acres Conserved</i>
National Monument Designation	Obama designated ~5.4 million acres [1]; a conservative estimate is that Biden may designate ~8 million acres. Presidents have tended to increase the quantity designated over their predecessor.
Conservation Easements	In 2015, the Land Trust Alliance (LTA) estimated that land trusts have conserved 56 million acres across the country [2]. Data from State Profiles of the National Conservation Easement Database (NCED) suggest that Land Trust Alliance (LTA) members have conserved 1-2 million acres annually [3]; recently the LTA has set a goal to conserve 10 million acres a year [4].
Mitigation banks	Roughly 1 million acres are conserved within approved and pending mitigation banks in the U.S. [5] If market weaknesses and dysfunction are addressed, the mitigation banking industry may be able to deliver 10 to 30 million acres of high-value, non-regulatory, conserved land by 2030.
Natural Resource Conservation Service (NRCS)/Farm Bill Programs	<p>Agricultural Conservation Easement Program (ACEP): Protected 4.4 million acres over 25 years [6].</p> <p>Healthy Forest Reserve: 676,000 acres under 105 conservation easement agreements from FY2006 – FY2015; 43,500 acres under conservation practices from FY2009 – FY2020 [7].</p> <p>Forest Legacy Program: 2.8 million acres of private forest land conserved since 1990 [8].</p> <p>Community Forest Program: 25,000 acres conserved [9].</p> <p>Regional Conservation Partnership Program: Between 2014 and 2018, NRCS awarded 375 RCPP projects. ~25 million acres benefit from NRCS contracted activity [10].</p> <p>Environmental Quality Incentives Program (EQIP): ~13 million acres/year contracted for 10 years of conservation practices [11].</p> <p>Conservation Stewardship Program (CSP) – 10 million acres on average/year contracted from FY 2010-2010 [12].</p> <p>Conservation Reserve Program (CRP) – 20 million acres cumulative enrollment in November 2020 [13].</p>
Land and Water Conservation Fund (LWCF)	Protected more than 5 million acres over 50 years [14].
Department of Defense (DoD) Readiness and Environmental Protection Integration (REPI)	Protected 775,000 acres over 18 years [15].
Sentinel Landscapes	Protected over 467,000 acres of land over 7 years; implemented sustainable management practices on an additional 2.3 million acres [16].
Public land acquisition and easement conservation	From 1998-2017, federal government spending permanently protected 19.6 million acres of land, or nearly 1 million acres annually [17].
<p>Note: Data and information are from: [1] Congressional Research Service, National Monuments and the Antiquities Act, November 30, 2018; [2] Land Trust Alliance 2015 Census; [3] Center for American Progress, The Race for Nature, June 23, 2020; [4] Land Trust Alliance, A challenge for the new decade, https://www.landtrustalliance.org/blog/challenge-new-decade/; [5] Data from personal communication with EcoBlu Analyst, January 24, 2021; [6] USDA NRCS, ACEP, https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/; [7] USDA NRCS, Healthy Forests Reserve Program, https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_hfrp.html; [8] U.S. Forest Service, Forest Legacy, https://www.fs.usda.gov/managing-land/private-land/forest-legacy/; [9] U.S. Forest Service, Community Forest Program, https://www.fs.usda.gov/sites/default/files/CFP%20Status%20Map%20FY2020%20033021.pdf; [10] USDA NRCS Regional Conservation Partnership Program Congressional Report 2019, https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/rcpp/; [11] Estimated from data at https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_eqip.html; [12] Estimated from data at https://www.nrcs.usda.gov/Internet/NRCS_RCA/reports/fb08_cp_cstp.html; [13] USDA, The Conservation Reserve Program: A 35-Year History, 2020, https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/Conservation/PDF/35_YEARS_CRP_B.pdf; [14] The Wilderness Society, Land and Water Conservation Fund, https://www.wilderness.org/articles/article/land-and-water-conservation-fund; [15] U.S. Department of Defense, 2021 REPI Report to Congress, https://www.repi.mil/Portals/44/Documents/Reports_to_Congress/REPI2021RTC.pdf; [16] USDA Sentinel Landscapes, https://sentinellandscapes.org/landscapes/; [17] The Trust for Public Land, <i>Conservation Almanac</i>, 2019, www.conservationmanac.org. Note that some of these acres may double count the NRCS/Farm Bill programs and LWCF, DoD REPI and Sentinel Landscapes acre estimates included in the table.</p>	

There are several reasons why the BAU approach to land conservation is insufficient to reach the 30x30 goal and why new and innovative approaches to conservation will be required:

- **Money available for conservation is thus far limited compared to investment flows to traditional development activities.** It is far easier to secure a loan for housing or energy development, or even a far-reaching entrepreneurial venture through venture capital funds, than it is for conservation. This is due to reliable and consistent returns on investment for the former two sectors (housing and energy) and to an increased rate of return relative to the potential risks for the latter. The conservation market space is still nascent as it is not yet as developed, predictable, or consistent. The current economic model therefore yields development as the highest and best use of land in many cases and most investment is delivered to industries that tend to damage the environment (Table 3). We are not suggesting how to solve this problem and it may not be solvable, but there is clearly disruptive thinking required to change the BAU scenario of conservation and development in order to achieve 30x30.

Table 3: Investment Flowing into Conservation vs. Development

Conservation has Billions	Development Infrastructure has Trillions
Traditional Easements	Commercial & Residential Development
Hunting/Pitman Robertson	Oil & Gas
Farm Bill Programs	Wind & Solar
Non-funded landowner CCAAs	Transmission
Voluntary random acts of kindness	Fragmentation (Ranchettes)
NGO investments	Transportation Infrastructure

- **For the most part, conservation is not yet an attractive land use compared to conventional development.** Except for a small subset of altruistic conservationists, until private landowners see a significant benefit to their bottom line over other uses of their land – such as selling to developers for land uses that pay more than conservation (e.g., energy development, housing subdivision, or ranchette development) – they will be unlikely to turn to conservation. Cultural differences across the country also create an unwillingness for some to support easements, or a regulatory approach to conservation. Finally, the process for enrolling in some existing conservation programs may be too cumbersome for many landowners.
- **Current levels of public funding are insufficient to meet the 30x30 goal either in terms of quantity or quality.** Funding available for easements and long-term conservation practice payments is insufficient to cover the hundreds of millions of acres required to meet 30x30. Table 2 outlines the quantity of conservation occurring under various conservation programs in the U.S.; these programs are already associated with considerable funding outlays. Further, Farm Bill and other public funding for conservation is cyclical and vulnerable to political shifts and pressure from budget deficits. The current administration’s FY2022 budget request includes a \$200 million increase for 30x30-related conservation work, but much more will be needed.⁵⁹

Finally, limited funding available for long-term monitoring may leave private lands conservation unaccountable and actual conservation outcomes weak.⁶⁰

As John Kerry, United States Special Presidential Envoy for Climate, recently stated in reference to climate change: “The solution is going to come from the private sector, and what government needs to do is create the framework within which the private sector can do what it does best, which is allocate capital and innovate and begin to take the framework that’s been created.”⁶¹ The same could be said for achieving 30x30.

KEY PRINCIPLES FOR REACHING 30X30

This section details the four principles we recommend the Biden administration adopt in devising implementation plans to reach the 30x30 goal.

1. EXPAND WHAT CONSERVATION MEANS

Land conservation should be expanded beyond permanent protection to also include shorter but effective time horizons. This definition of conservation challenges the notion of permanence as the only standard or always the gold standard of conservation. Of course, permanence in conservation is extremely critical to protecting our biodiversity and ecosystems, and we can and should continue to deploy permanent conservation where ecological conditions are stable. Permanent conservation can also be an effective tool in areas where successful restoration has occurred and has the requisite financial assurances to maintain the ecological gains. In areas subject to change in a shorter time horizon, shorter requirements for conservation (e.g., 40 years instead of 100 years) may be good enough and may provide flexibility in moving conservation with shifting ecosystems and habitat. However, with these shorter requirements it is paramount to have sustained and long-term funding sources to ensure the conserved areas/biodiversity values can be protected through management - even beyond the end of the agreement – or else the protections will just be lost to development in the future. Further, permanent protection is sometimes a non-starter for some private landowners primarily due to limited income streams that do not fully compensate for lost future development rights, especially under non-market-based (traditional/charitable or government-funded) easements. Under 30x30, the Biden administration needs options for offering those landowners term-limited legal protections that would count toward 30x30 but be able to permanently fund the conservation gains at a market rate should the conservation need to move in the future.

Land conservation should be defined inclusively to include land protection and restoration and management/stewardship. Protection, restoration and management/stewardship of land are different elements of overall conservation of land. Preservation of land, which many may think of when hearing the word conservation, suggests no management and is a forward-looking idea to prevent or remove human disturbance or impact on the land, which would continue to be wild in a protected state. Conservation, on the other hand, is open to management and is also forward-

looking, aiming to keep the land in a certain state and prevent further degradation either with or without management. Restoration is backward-looking but involves a great deal of human intervention and management, as it seeks to return or restore the land to a “natural” state. The land can then be protected or not. One useful comparative example here is the “Other effective area-based conservation measures” (OECM) conservation designation defined by the IUCN which recognizes long-term conservation of areas outside of formally protected areas.⁶²

Effective conservation relies on management for biodiversity and other ecosystem services with or without protection, although having both is preferred. Protection without management leaves natural areas vulnerable to increasing threats of disease, invasive species, and wildfire resulting from climate change and can be problematic in keeping protected areas resilient.⁶³ For example, 1,000 acres of permanently protected private land with a management endowment that provides for long-term stewardship to meet high ecological standards is likely better from a conservation outcomes perspective than unmanaged wilderness vulnerable to climate change, invasive species, wildfire, and other human and natural disturbances.

Conservation activities under 30x30 could be divided into separate tiers to indicate the land conservation activities occurring (Table 4). Conservation tiers could vary based on the land conservation activity deployed from protection or management only to higher tiers that combine protection and management. Tiers are also arranged to incentivize a range of entities to participate in 30x30 from individual landowners to the mitigation/restoration industry.

Table 4: Potential Conservation Tiers for 30x30

Conservation Tier	Land Conservation Activity	Potential Conservation Vehicles
1	Permanent protection + permanent management (with endowment)	Mitigation/restoration industry
2	Permanent protection + term management	Mitigation/restoration industry, conservation easements
3	Only term management (no permanent protection)	Mitigation/restoration industry, Farm Bill programs
4	Only permanent protection (no management)	Conservation easements, direct acquisition, public ownership and public lands designation, zoning

Management and protection requirements could shift according to relative development risk.

Management is critical to delivering effective and durable conservation and may be more important than permanent protection in areas subject to less intense development pressure. There are many landscapes in the U.S. that are likely to remain as they exist today, even absent formal protection, due to declining rural populations and other factors that reduce development pressure on the land. Identifying these lands and ensuring that instruments (e.g., regulations, local land use rules, economic signals) are maintained that make these lands more valuable as they are than in a developed state may be equivalent in nature to formal protection. Tools employed for conservation should be organized according to the development risk present in a particular geography. For example, a large portion of U.S. grazing lands that are privately held and managed and are successful at maintaining a large portion of native biodiversity could be recognized as sufficiently conserved to

some extent and could be included in what counts for 30x30. Where it makes ecological sense, private sector actors such as mitigation bank developers could facilitate aggregation of smaller landholdings across multiple landowners into conservation banks in these areas.

Land conservation should engage private landowners around management for conservation goals at the farm, ranch or forest level. Private landowners are critical to the success of the 30x30 initiative in the U.S. Landowners holding ranches in the West, agricultural lands in the Midwest, and agricultural and forest lands in the East will be important partners in 30x30 if biodiversity conservation and carbon mitigation benefits are prioritized. However, some areas are currently opposing 30x30 at the state level;⁶⁴ and certain counties are refusing to grant easements. Ideological and/or family concerns about easements are sometimes at play, as is the impact of easements on the landowner's financial bottom line. Conventional permanent easements (charitable tax donations or percentages of appraised value payments from government programs, also called “non-market-based easements” in this report) are sometimes a non-starter with landowners due to limited financial benefits they receive from donating the land or payments that are lower than market rate-based easement programs. A “market-based” easement reflects a negotiation between a landowner and a development-type entity which could include mitigation/restoration businesses. The value of a market-based easement often depends on the market value of the land; the land's income generation potential from existing and future uses; other commodity prices; and the opportunity costs associated with permanent extinguishment of development rights in perpetuity. These are important factors to engage landowners on and to understand if financial incentives for conservation are to be broadly accepted.

At some point, a minimum timeframe across all tiers should be determined and a funding mechanism identified to maintain compensation to private landowners under term arrangements.

If permanent conservation is not possible in some parts of the country or with some landowners due to cultural, economic, ecological and other factors, the question then becomes what is the minimum timeframe that still counts toward 30x30? We are not in a position to recommend a specific minimum at this early stage of our analysis, but we recommend the Biden administration think about this issue on the scale of decades versus years. A minimum timeframe would also allow for differentiation between shorter-term Farm Bill payments that pay for annual practices such as row crops (e.g., CRP) and longer-term investments in agricultural lands (e.g., CSP).

The Mitigation/Restoration Industry: Benefits of Including Restoration in 30x30

The mitigation/restoration industry is well poised to help deliver quality conserved acres for 30x30. The compliance mitigation market is driven by regulations under the CWA and ESA and provides for off-site mitigation options for unavoidable development impacts from residential, transportation infrastructure, commercial and industrial development project. Mitigation banks restore, manage and protect lands in a manner that brings the land to a more natural state to provide in-kind mitigation for wetland, stream and species impacts elsewhere. Banks include all elements of conservation that we have proposed for 30x30: restoration, permanent protection, and management. Critically, requirements for management include a long-term endowment to ensure effective and durable conservation. All of these requirements for proposed mitigation bank sites are thoroughly evaluated by experts at either the ACE or FWS. Mitigation banks also provide conservation outcomes without impacting tax revenues; can provide a cost-effective mitigation alternative for permittees/developers especially in areas with high land values; transfer liability for natural resource impacts from the permittee/developer to the mitigation bank; establish contiguous and concentrated habitat for listed species; and lead to broader positive economic impacts in many sectors that comprise the restoration economy.⁶⁵ For this reason, mitigation banks represent some of the best lands that can contribute to 30x30.

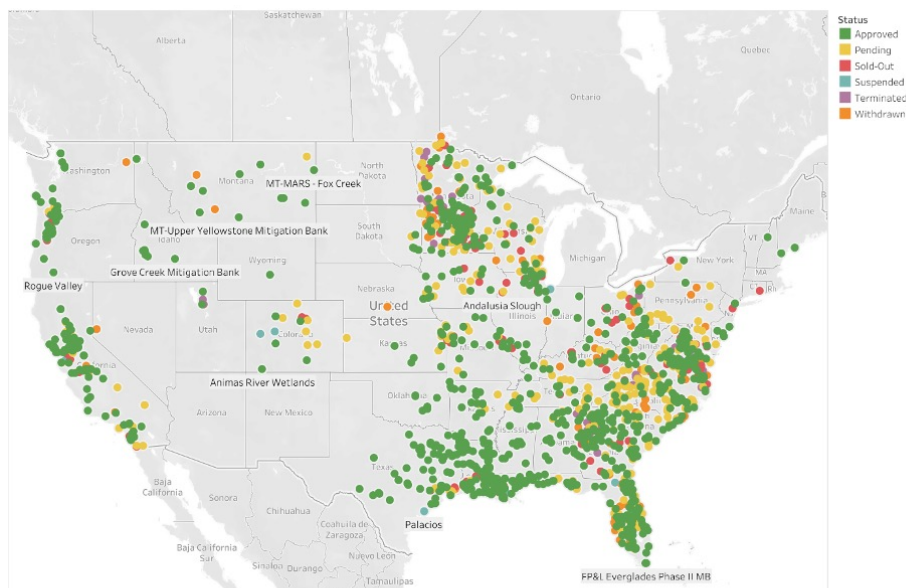


Figure 7: Private Commercial Banks in the U.S.

The value of what the mitigation banking market can deliver is significant. In 2020, there were 2,489 mitigation banks (wetland, stream, and conservation banks) located predominantly in the Southeast, Midwest, and along the Pacific Coast (Figure 7). Freshwater wetlands represent roughly 40% of the market share; SCBs represent 35%; streams 19%; and tidal wetlands 7%. Together, these banks have an estimated market value of 1.43 billion; approved and pending banks cover roughly 1 million acres.⁶⁶ In 2020, there were almost 180 SCBs established in the U.S., with between 3 and 14 SCBs established annually from 2008-2020. Credits generated from SCBs exceed sale volumes. Credits from species conservation banks reached a high of over 200,000 in 2020. Roughly 97,000 species credits were sold in the period 2000-2020. The market value of species conservation banks in the U.S. reached a high of \$800 million in 2016 and in 2019 was estimated at nearly \$600 million.⁶⁷ SCBs are not evenly distributed in the U.S. – as species regulated under the ESA are also not evenly distributed - with only 16 states having one or more SCBs. California has the vast majority of SCBs (89), followed by Florida (12), and Texas (9).⁶⁸ However, due in part to market uncertainties, credits generated from SCBs exceed sale volumes.

Benefits of mitigation banking include direct conservation outcomes within the Banks, and broader economic impacts. In a paper estimating the economic impact (economic output and jobs) of the “restoration economy”, or the economic activity that supports the mitigation banking market, the authors calculated that the “domestic ecological restoration sector directly employs ~ 126,000 workers and generates ~ \$9.5 billion in economic output (sales) annually. This activity supports an additional 95,000 jobs and \$15 billion in economic output through indirect (business-to-business) linkages and increased household spending.”⁶⁹ These broader economic benefits of the mitigation/restoration industry means that the industry supports other economic goals, such as job creation, economic development, and sustainable rural livelihoods.

2. STANDARDIZE WHAT COUNTS

Guiding conservation could include establishing a national minimum for land that counts towards 30x30 and tiers that account for different conservation activities (management, restoration, protection).

Establish minimum requirements for 30x30 acres. National minimum requirements for 30x30 acres would ensure that 30% of U.S. land meets a clearly articulated minimum biodiversity level. The minimum requirement could be set such that permanent protection is one requirement of one class and has extra incentives. There could also be a cap on the quantity of temporary conservation that is allowed to ensure that a relatively large portion of lands coming into 30x30 have permanent protection. This flexibility would allow protected areas such as GAP 1 and 2 lands to count but would also allow other low-hanging fruit to be captured, such as federal Sentinel landscapes, DoD REPI lands, and BLM and other GAP 3 federal lands that are brought to a higher conservation status, provided there is funding available to allow them to do so. A federal minimum that did not require permanent protection would allow for management activities focused on conservation on private lands to count towards the 30x30 goal, though perhaps in a discounted way as described below. Management of acres that would count could be contemplated for activities such as managing for pollinators through beekeeping or establishment of monarch butterfly habitat in urban areas. These conservation activities, while small in area, may be important for habitat provision and connectivity through urban areas. Again, finding long-term funding assurance for temporary acres is a huge challenge but critically important.

This tiered framework for 30x30 suggested in Table 1 underscores that incentives and financial structures need to be aligned with revenue sources. Private investment will be possible where a revenue source connects to a land conservation activity to provide a return on investment and there is certainty in this emerging market that it will not be arbitrarily undermined by a lower standard product. A recent report exploring how NRCS could leverage private capital for farm conservation practices listed practices such as water and energy-efficient irrigation improvement, nutrient management, and use of anaerobic digesters as practices that could provide a financial return.⁷⁰ Similar practices could be identified for 30x30 conservation activities where revenue could be generated as payments for environmental outcomes or avoided costs that result from conservation activities. Public and corporate philanthropic funding could also be directed to those conservation activities for which a revenue source cannot be identified.

Tiers established above the minimum standard could incentivize better conservation outcomes. While all tiers suggested in the table above are important, some will have higher standards for preservation, management/stewardship, and restoration, such as in Tier 1. While a national minimum requirement for 30x30 would set a floor for 30x30 conservation across all tiers, incentives should be structured to catalyze conservation outcomes above the minimum and to steer conservation towards higher tiers. It is important to note that there are trade-offs between the tiers

(e.g., protection only may leave landowners who are anti-easement out and may not address landowner livelihood issues). The Biden administration could define the minimum level of each conservation component required at each tier level. Other potential implementation ideas for this tiered system include:

- ***Higher tiers/standards could be reflected in a scaling of how acres count for 30x30.*** Acres that are only protected or only managed may be subject to some discount rate that accounts for risk associated with potential future changes to the land without secured funding to steward the land in the case of protection only or to account for some risk of conversion for management only.
- ***For each tier, the approach could be acres-based or also incorporate outcomes-based programs.*** There could be inherent efficiencies or benefits to outcomes-based approaches that could create additional revenue streams for the private conservation developer and/or landowner similar to a pay for performance model.
- ***Funding allocation could be divided across tiers.*** Money could be allocated to the different tiers to ensure that providers within each category have the opportunity to develop 30x30 acres. Funding allocation may be higher for higher tiers to reflect higher costs associated with measurement, monitoring, verification, and long-term management (such as with mitigation banks).

3. PRIORITIZE ACTIONS

Public funding for conservation should be geographically prioritized. The Biden administration should focus the most government dollars on those areas of highest priority for conservation, which can be determined through engagement with scientists; multiple stakeholders from the public, private, and nonprofit sectors; and private landowners.

Prioritization of where the tiered standards are applied can happen according to an index of metrics. Here it is important to note that the Biden administration should support a consistent hierarchy of metrics used to prioritize 30x30 conservation. The prioritization analysis could be conducted by USGS or another agency to develop a map that federal, state and local government could use in implementing 30x30 conservation activities. It will be important that the metrics not be overly complicated, be transparent in nature, and come with an effective outreach program to educate interested stakeholders on how metrics are employed to create priority areas for 30x30 conservation.

An index of metrics such as those listed below could identify GAP 4 lands that are biodiversity-rich but do not have protected status as defined by USGS as well as private lands that rate highly in terms of biodiversity and the relative threat of degradation or conversion/development. From a risk perspective, layers such as the resilience of land to climate change could reduce risk to investors of conservation outcomes. From a co-benefits perspective, layers that identify geographic areas that

have been underinvested in, similar to the model of New Markets Tax Credits zones, could help steer conservation activities to address equity, environmental justice, and sustainable rural livelihoods. Combining these layers may lead to conservation opportunity zones that are both resilient and that address under-investment in conservation in certain geographies.

Potential metrics for a 30x30 “conservation index” could include one or more of the following:

- Biodiversity/species richness
- Connectivity/wildlife/climate corridors
- Ecosystem services (e.g., water provision, filtration)
- Relative threat of degradation or conversion/development
- Access to open space and recreational opportunities
- Equity & environmental justice
- Sustainable rural livelihoods
- Level of degradation, i.e., how far removed is the land from a natural state
- Resiliency of land to climate change (e.g., The Nature Conservancy’s Resilient Lands Mapper)
- Priority landscapes, e.g., tall grass prairie

Prioritization of private investment in land conservation may be effective in areas exhibiting both high biodiversity (and other metrics according to the prioritization framework adopted) and high development or conversion risk. The vehicles emphasized for effective conservation in Table 5 will depend on the relative biodiversity richness of an area combined with the development threat present in that same area. High biodiversity richness may provide quantifiable ecosystem services or values (e.g., recreation opportunities) that could provide returns for private investment in conservation. In areas where development threats are also high, mitigation may be more prevalent and private investment based on returns may be necessary to bring a higher price for conservation.

Table 5: Example Matrix for Identifying Private Investment Opportunities

Example Matrix for Identifying Private Investment Opportunities Biodiversity Richness	Development Threat	
	High	Low
High	Emphasize Tiers 1 - 3 Emphasize incentives for private investment.	Emphasize Tier 4 Emphasize private and public investment.
Low	Not prioritized, though overlay of other metrics may lead to prioritization.	Emphasize Tier 4. Can restore to some better biodiversity level through management; can protect; but lands that don’t reach the federal minimum for 30x30 would not count even if protected.

4. INCENTIVIZE PRIVATE SECTOR FOR-PROFIT INVESTMENT

Increasing private funding on private lands will be key to producing a meaningful 30x30 outcome.

As discussed earlier, BAU conservation and funding will be insufficient to meet the 30x30 land conservation goal. Existing conservation methods are important and should be made strategically, but private capital will be required for the 30x30 goal. Private land conservation often requires a much bigger financial incentive than conservation on public lands—it often isn't possible or desirable to regulate the way to a good conservation outcome on private lands. For this reason, the Biden administration will need to develop incentives around funding, technical assistance, reputational benefit, and other areas. Further, as discussed, public dollars alone won't be enough to effectively engage private landowners. Hence, private dollars are an essential and overlooked tool for conservation and will be critical to funding land conservation on private lands for 30x30. In exploring limitations to growth in the conservation investment space, a recent survey on the state of conservation investment in the U.S. stated that respondents:

Listed their primary challenge to future growth as a *lack of available deals with appropriate risk/return profiles* — a constraint that was repeated when asking respondents about challenges to including more institutional investors in this space and one that was also most-cited in the 2014 report. Respondents also pointed to a number of secondary concerns to growth and expansion for institutional investors, including *small transaction sizes* and *lack of management track records*. Outside of traditional investment concerns, investors also expressed the need for *more government support to absorb risks and to create enabling market conditions through pricing environmental externalities* [emphasis added].⁷¹

Private capital flows to conservation are currently small but growing. A recent survey estimated U.S.\$8.2 billion in private capital was invested in conservation from 2004-2015, with recent rapid increases – total private investments increased by 62% between 2014 and 2016.⁷² While this number is small compared to public investment in conservation (U.S.\$31.7 billion from 2009-2015) this is attributable in part to ecosystem markets currently being driven mostly by regulatory requirements. As we have seen with other industries such as clean power, these types of markets can be scaled up rapidly with the right policy vehicles and incentives. Further, investments from both the public and private sectors in habitat conservation are small compared to investments in sustainable food and fiber production. Of course, all of these numbers are a tiny fraction of the U.S.\$20 trillion economy, underscoring that underinvestment in conservation relative to other sectors is fueling natural land loss.

A critical goal of the Biden administration should be to enable financially sustainable approaches to protecting and managing land through leveraging private capital. These approaches would result from continued demand for land protection, restoration, and management/stewardship. Demand for conserving 30x30 acres could come from both compliance and voluntary activity on private lands, including:

- Mitigation requirements for compliance with the ESA and CWA
- Corporate Environment, Social, and Governance (ESG) commitments (e.g., net-zero biodiversity loss commitments, net-zero carbon commitments)
- Voluntary biodiversity offsetting (e.g., voluntary carbon markets)
- Voluntary conservation practices (e.g., easements, Farm Bill-type conservation activities)

Mitigation requirements for compliance with the ESA and CWA are likely to increase with the Biden administration's Infrastructure Bill.⁷³ The Infrastructure Bill would create greater investments in mitigation banking, and as such would likely address financing for Tier 1 conservation. The regulatory offsets delivered for CWA and ESA compliance could be expanded to include additional conservation gains in areas detailed in the 30x30 strategy above.

The mitigation/restoration economy is a space in which the Biden administration could incentivize the private sector to invest additional dollars in conservation to play a key role in achieving the 30x30 objective. Specifically, the mitigation industry/restoration economy is well positioned to deliver conservation outcomes at a scale that drastically exceeds the limited regulatory-driven compliance market or voluntary market. Additional transaction activity in both wetland/stream banking under the CWA and in SCBs under the ESA could be facilitated by clearer and more consistent guidance and enforcement. Mitigation requirements under the ESA have not been developed into a rule yet; the 2008 rule for Compensatory Mitigation for Losses of Aquatic Resources governs mitigation under the CWA and is a primary reason why wetland and stream banking is more established than species conservation banking.⁷⁴ To deliver a greater quantity of biodiversity-rich private acres to 30x30, the Biden administration should improve guidance and enforcement of mitigation requirements under the CWA and ESA in order to spur growth in the mitigation market and encourage solutions that can scale-up. Key to this will be improving current market design by establishing clearer guidelines,⁷⁵ enforcing mitigation requirements under the ESA to create continued and sustained demand by credit buyers, accelerating the pace at which banks are permitted, and taking steps to expand the market through mechanisms such as direct credit purchase. Prioritization for mitigation banks makes the most sense in areas of the U.S. where there are species listed under the ESA, where there are impacts to aquatic resources, where development requiring mitigation is present, and where land values are high – in these areas, developers may be incentivized to mitigate off-site through credit purchases. Importantly, the mitigation/restoration industry is well-placed to serve as a conduit for additional private investment in 30x30: mitigation/restoration businesses well-versed in developing land as mitigation banks could easily deploy their skills and experience to producing non-regulatory, high-quality restored and/or conserved land.

In order to increase the number of conserved acres on private lands for 30x30, we advocate boosting incentives for voluntary, market-based conservation on private lands. Voluntary conservation on private lands would draw in a larger set of stakeholders from across the political spectrum and would deliver lands into conservation that are biodiversity rich but currently unprotected. In addition to providing funding to bolster the ability of existing federal and state conservation

programs to deliver conservation, we suggest some creative ideas that the Biden administration could consider to address missing funding pieces for the different conservation tiers above. These potential program ideas could facilitate the private, for-profit market in delivering outcomes for 30x30 and could be expanded upon in a future report to help the administration weigh options after the April 27 report.

- ***Provide support for a biodiversity credit market.*** The Biden administration could consider establishing guidelines and support for a biodiversity credit market, similar to guidelines for water quality trading, cap and trade for power plant emissions, and mitigation banking that have been previously released by government agencies. The administration could also consider establishing a 30x30 credit floor price, and/or directly purchasing biodiversity credits from the mitigation market and/or a potential future biodiversity credit market.
- ***Create opportunity zones for 30x30 investment.*** Opportunity zones for conservation would indicate geographic areas in which tax breaks for conservation investment would be provided. This option would create additionality in the acres brought into 30x30 because restoration would not be tied to mitigation for impacts elsewhere. Of course, a tax credit is a cost to the government and funding would have to shift away from other spending or be generated through cost savings that may result for the government pursuant to conservation activities that generate other cost saving co-benefits.
- ***Conduct a national request for proposals (RFP) for high biodiversity lands.*** A national RFP for high biodiversity lands would identify the biodiversity and/or other 30x30 goals. The RFP could specify areas that to be delivered to a particular standard would require restoration, attracting private sector conservation developers to participate.
- ***Issue a 30x30 restoration tax credit.*** A restoration tax credit could be structured to increase in value with increasing conservation tiers, so that Tier 1 would receive the highest credit value per credit. A question is whether these credits would be property tax or income tax deductions. Property tax deductions would incentivize landowners who may hold significant land assets that don't deliver income of note to the landowner, while income tax deductions would attract landowners who have income at a sufficient level for the deduction to make a financial difference.
- ***Issue a 30x30 Environmental Impact Bond (EIB).*** EIBs use a pay-for-success model where repayment is a function of the performance of selected metrics of success. Private firms could issue 30x30 bonds and the government could repay the bonds based on delivery of verified 30x30 acres. States could set up Revolving Loan Funds (RLFs) to help private landowners with the up-front costs of protecting, managing, or restoring land.
- ***Consider "conservation value capture".*** Similar to land value capture, municipalities and states may be able to realize greater tax revenues from increasing land values pursuant to conservation, especially in more developed areas and if 30x30 acres could count in urban areas. In this case, reinvestment in areas that address equity and environmental justice would be important.

GARNERING PUBLIC SUPPORT FOR 30X30

Given the geographic and political differences across the United States, the Biden administration will have to leverage a number of different tools to achieve the 30x30 goal. While regulatory approaches are one set of tools, they cannot be the only or even the primary one in many parts of the country. Instead, incentives for landowners to voluntarily participate in 30x30 are crucial to manage any backlash against 30x30 from private property groups, state legislatures, and governors concerned about additional federal regulation and in order to achieve the level of private lands enrollment needed to reach the goal from both an acre/area and a biodiversity quality perspective. The Biden administration should articulate its position on potential actions to conserve land for 30x30.

As the Biden administration thinks about next steps for implementing 30x30, it should recognize that the federal government is often not the best ambassador for engaging private landowners or for running markets. States, private sector conservation bankers, businesses, and other non-federal entities will often provide the best boots on the ground for reaching out to landowners. The federal government, however, should define when an acre of land counts toward 30x30. The administration's April 2021 report should seek public input on how each of these entities could contribute to 30x30.

ANNEX I: GAP STATUS CODES

USGS GAP Status Codes are defined as follows:

Status 1: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a natural state within which disturbance events (of natural type, frequency, intensity, and legacy) are allowed to proceed without interference or are mimicked through management. Examples of Status 1: National Parks, Wilderness Areas

Status 2: An area having permanent protection from conversion of natural land cover and a mandated management plan in operation to maintain a primarily natural state, but which may receive uses or management practices that degrade the quality of existing natural communities, including suppression of natural disturbance. Examples of Status 2: National Wildlife Refuges, State Parks, The Nature Conservancy Preserves

Status 3: An area having permanent protection from conversion of natural land cover for the majority of the area, but subject to extractive uses of either a broad, low-intensity type (e.g., logging, Off Highway Vehicle recreation) or localized intense type (e.g., mining). It also confers protection to federally listed endangered and threatened species throughout the area. Examples of Status 3: National Forests, BLM Lands, State Forests, some State Parks

Status 4: There are no known public or private institutional mandates or legally recognized easements or deed restrictions held by the managing entity to prevent conversion of natural habitat types to anthropogenic habitat types. The area generally allows conversion to unnatural land cover throughout or management intent is unknown. Examples of Status 4: Unknown areas, private lands, developed or agriculture areas

Source: USGS PAD-US Data Overview, https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/pad-us-data-overview?qt-science_center_objects=0#qt-science_center_objects (last visited April 21, 2021).

-
- ¹ The White House, Executive Order on Tackling the Climate Crisis at Home and Abroad, January 27, 2021.
- ² Conservation Science Partners (CSP). 2019. Methods and approach used to estimate the loss and fragmentation of natural lands in the conterminous U.S. from 2001 to 2017. Technical Report. Truckee, CA.
- ³ Roxburgh, T., Ellis, K., Johnson, J.A., Baldos, U.L., Hertel, T., Nootenboom, C., and Polasky, S. 2020. Global Futures: Assessing the global economic impacts of environmental change to support policy-making. Summary report, January 2020.
- ⁴ Morgan, J., Rhoden, C., White, B., and Riley, S. 2019. A State Assessment of Private Lands Wildlife Conservation in the United States. *Wildlife Society Bulletin*. 43. 328-337. 10.1002/wsb.997.
- ⁵ Rosa, Lindsay and Malcom, Jacob. 2020. Getting to 30x30: Guidelines for Decision-makers.
- ⁶ U.S. Fish & Wildlife Service 2017. ESA Basics.
- ⁷ Lee-Ashley, M., Rowland-Shea, J., and Richards, R. Center for American Progress 2019. The Green Squeeze.
- ⁸ Rosa and Malcolm 2020.
- ⁹ Eichenwald, A., Evans, M., Malcom, J. 2020. US imperiled species are most vulnerable to habitat loss on private lands. *Frontiers in Ecology and the Environment*. 18. 10.1002/fee.2177.
- ¹⁰ The Trust for Public Land, *Conservation Almanac*, 2019, www.conservationalmnac.org. This figure does not include state and local spending on conservation and reflects only lands that are permanently conserved (via fee title or conservation easement). It does not reflect land leases or exchanges, or lands managed under a contract arrangement. It also does not fully reflect private land conservation.
- ¹¹ This figure is a back-of-the-envelope rapid estimate based on federal government spending on fee acquisition and conservation easements as contained in the Trust for Public Land's Conservation Almanac 2019. The figure may be a significant underestimate of actual costs of conservation if costs associated with long-term management of conserved lands are not included in spending as contained in the database, if lands conserved skew towards more rural lands that are less expensive, or where costs expended to protect land reflect only a percentage of the market value of land.
- ¹² Rosa and Malcolm 2020.
- ¹³ GAP 1 lands are protected, and natural disturbances are not managed; GAP 2 lands are protected but natural disturbances are managed by human intervention, such as with fire suppression. GAP 3 lands are protected from development, but certain extractive and other uses are permitted. GAP 4 lands are not protected.
- ¹⁴ We develop this estimate by assuming that over nine years to 2030, 1/2 of GAP 3 lands (~200 million acres) will count for 30x30 because they are subject to some additional conservation; 90 million acres will be permanently protected by land trusts; 9 million acres will be protected through acquisition or easement using federal funding; 8 million will be designated as national monuments by President Biden under the 1906 Antiquities Act; 10 million acres under the Conservation Reserve Program (15-year contracts) will count for 30x30; and the 1 million existing acres in mitigation banks will count while another 20 million acres are added to 2030. While the exact math is equivalent to roughly 75 million acres, to be conservative on the quantity of acres delivered by other mechanisms we increase this number to 100 million acres required from the private sector.
- ¹⁵ CSP 2019.
- ¹⁶ Land Trust Alliance, Public Funding, <https://www.landtrustalliance.org/public-funding> (last visited April 19, 2021).
- ¹⁷ Land Trust Alliance, Public Funding, 2021.
- ¹⁸ Executive Office of the President, Office of Management and Budget, President's request for fiscal year (FY) 2022 discretionary funding, April 9, 2021.
- ¹⁹ Congressional Research Service, Federal Land Ownership: Overview and Data, February 21, 2020.
- ²⁰ National Research Council. 2001. Compensating for Wetland Losses Under the Clean Water Act. Washington, DC: The National Academies Press.
- ²¹ Rosa and Malcolm 2020.
- ²² Internal Revenue Service, News Release, June 25, 2020. "IRS offers settlements for syndicated conservation easements being mailed to certain taxpayers with pending litigation".
- ²³ Ecosystem Marketplace, State of Private Investment in Conservation 2016.
- ²⁴ The White House, Fact Sheet: The American Jobs Plan, March 31, 2021.
- ²⁵ BenDor T., Lester T.W., Livengood A., Davis A., Yonavjak L. 2015. Estimating the Size and Impact of the Ecological Restoration Economy. *PLoS ONE* 10(6): e0128339.
- ²⁶ Data from personal communication with EcoBlu Analyst, January 24, 2021.

-
- ²⁷ Ceballos, G., Ehrlich, P., Raven, P. 2020. Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction. *Proceedings of the National Academy of Sciences* 117 (24) 13596-13602; DOI: 10.1073/pnas.1922686117.
- ²⁸ Campaign for Nature, <https://www.campaignfornature.org/why-30-1> (last visited April 20, 2021).
- ²⁹ In 1992, the Convention on Biological Diversity (CBD), a legally binding international treaty for the conservation and sustainable use of biodiversity, was signed at the Rio Earth Summit by 196 countries.
- ³⁰ Secretariat of the Convention on Biological Diversity. 2020 Global Biodiversity Outlook 5. Montreal.
- ³¹ Secretariat of the Convention on Biological Diversity, 2020.
- ³² Protected Planet: USA, <https://www.protectedplanet.net/country/USA> (last visited April 21, 2021).
- ³³ CBD High-Level Panel. 2014. Resourcing the Aichi Biodiversity Targets: An Assessment of Benefits, Investments and Resource needs for Implementing the Strategic Plan for Biodiversity 2011-2020.
- ³⁴ Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobinde la Puente, J. 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.
- ³⁵ NatureVest and EKO Asset Management Partners. 2014. Investing in Conservation: A landscape assessment of an emerging market.
- ³⁶ Major human stressors considered were agriculture, energy, transportation, and urbanization. CSP 2019.
- ³⁷ CSP 2019.
- ³⁸ World Wildlife Fund, *Plowprint* 2016.
- ³⁹ For example, see [Cardinale et al 2012](#) for unhealthy and unbalanced ecosystems; [Cardinale 2011](#) for water quality; and [Keesing et al 2010](#) for increased pandemic risk.
- ⁴⁰ Dinerstein et al. 2019. A Global Deal For Nature: Guiding principles, milestones, and targets, *Science Advances* 19, Vol. 5, no. 4, eaaw2869; DOI: 10.1126/sciadv.aaw2869.
- ⁴¹ The White House, January 27, 2021.
- ⁴² Convention on Biological Diversity, Preparations for the Post-2020 Biodiversity Framework.
- ⁴³ U.S. Senate Resolution 372 - A resolution expressing the sense of the Senate that the Federal Government should establish a national goal of conserving at least 30 percent of the land and ocean of the United States by 2030.
- ⁴⁴ U.S. House Resolution 835 - Expressing the sense of the House of Representatives that the Federal Government should establish a national goal of conserving at least 30 percent of the land and ocean of the United States by 2030.
- ⁴⁵ When calculated from a total U.S. territory area of 2.3 billion acres.
- ⁴⁶ GAP Status code definitions are provided in Annex I.
- ⁴⁷ Lee-Ashley et al 2019.
- ⁴⁸ Rosa and Malcolm 2020.
- ⁴⁹ Eichenwald et al 2020.
- ⁵⁰ Maxwell, S., Cazalis, V., Dudley, N., Hoffmann, M., Rodrigues, A., Stolton, S., Visconti, P., Woodley, S., Maron, M., Strassburg, B., Wenger, A., Jonas, H., Venter, O., and Watson, J. 2020. Area-Based Conservation in the 21st Century. 10.20944/preprints202001.0104.v1.
- ⁵¹ Rosa and Malcolm 2020.
- ⁵² Rosa and Malcolm 2020.
- ⁵³ Rosa and Malcolm 2020.
- ⁵⁴ Wilsey, C.B., Grand, J. Wu, J., Michel, N., Grogan-Brown, J., Trusty, B. 2019. North American Grasslands. National Audubon Society, New York, New York, USA.
- ⁵⁵ Some have argued for a BLM “land swap” given the huge quantity of land owned by the Bureau. In this mechanism, BLM would swap pieces of land with private landowners in order to consolidate BLM lands for more meaningful conservation. This has not come to pass despite being an idea in circulation.
- ⁵⁶ For example, federal land ownership ranges from only 0.3% of land in Iowa and Connecticut to 80% of land in Nevada. Congressional Research Service, February 21, 2020.
- ⁵⁷ We develop this estimate by assuming that over nine years to 2030, ½ of GAP 3 lands (~200 million acres) will count for 30x30 because they are subject to some additional conservation; 90 million acres will be permanently protected by land trusts; 9 million acres will be protected through acquisition or easement using federal funding; 8 million will be designated as national monuments by President Biden under the 1906 Antiquities Act; 10 million acres under the Conservation Reserve Program (15-year contracts) will count for 30x30; and the 1 million existing acres in conservation banks will count while another 20 million acres are added to 2030. While the exact math is equivalent to roughly 75 million acres, to be conservative on the quantity of acres delivered by other mechanisms we increase this number to 100 million acres required from the private sector.

⁵⁸ CSP 2019.

⁵⁹ The FY2022 budget request for discretionary funding for USDA – “In support of the goal of conserving 30 percent of land and water by 2030, the discretionary request includes significant investments within the Forest Service and the Natural Resources Conservation Service to support the health and resilience of public and private lands. These investments would encourage voluntary conservation across the Nation’s forests, farms, and ranches, while allowing land owners to continue to work their land, which complements the innovative conservation efforts that States and the agriculture community are pursuing” – and for the Department of the Interior – “The discretionary request provides an additional \$200 million for science-driven conservation to align management of the Nation’s natural resources with America’s climate, biodiversity, and clean energy needs. This investment would support the goal of conserving 30 percent of land and water by 2030, including through voluntary actions and incentives that support the stewardship efforts of farmers, ranchers and other private landowners.” Source: Executive Office of the President, April 9, 2021.

⁶⁰ Conniff, Richard. Why Isn’t Publicly Funded Conservation on Private Land More Accountable? *Yale Environment* 360, July 23, 2019.

⁶¹ Budryk, Zack. “Kerry: ‘No government is going to solve’ climate change,” *The Hill*, March 26, 2021.

⁶² An OECM is defined by the Convention on Biological Diversity as “A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values. CBD, 2018.

⁶³ Long, E. and Biber, E. 2014. *The Wilderness Act and Climate Change Adaptation*, *Environmental Law* Vol. 44:632.

⁶⁴ Walker, Kayla. “30 x 30 Part III: Western States Stand Against Plan,” *Western Ag Reporter*, April 8, 2021.

⁶⁵ BenDor et al 2015.

⁶⁶ EcoBlu Analyst, 2021 State of the Markets.

⁶⁷ EcoBlu Analyst, 2021.

⁶⁸ EcoBlu Analyst, 2021.

⁶⁹ BenDor et al 2015.

⁷⁰ Encourage Capital, NRCS and Investment Capital: Investing in America Together (September 2017).

⁷¹ Ecosystem Marketplace 2016.

⁷² The total here reflects conservation investment in sustainable food and fiber production (e.g., forestry, agriculture, fisheries); habitat conservation (e.g., mitigation banking, forest carbon trading); and water quality and quantity protection (e.g., watershed protection, water quality trading). Conservation investments are defined here as “Investments intended to return principal or generate profit while also resulting in a positive impact on natural resources and ecosystems. In addition, conservation impacts must be the intended motivation for making the investment; they cannot be simply a by-product of an investment made solely for financial return.” Ecosystem Marketplace 2016.

⁷³ The White House, March 31, 2021.

⁷⁴ United States, Department of Defense and Environmental Protection Agency, “Compensatory Mitigation for Losses of Aquatic Resources.” *Federal Register* Vol. 73, No. 70. Page 19594 (April 10, 2008).

⁷⁵ In 2003, the USFWS issued guidance for the establishment, use and operation of conservation banks in order to advance conservation banking for compensatory mitigation of adverse impacts to species listed under the ESA. In 2016, the 2016 Endangered Species Act (ESA) Compensatory Mitigation Policy was introduced and then withdrawn in 2018 by the Trump administration.