BCarbon Stakeholder Meeting

September 14th, 2023

Agenda

- *Current status of climate science, carbon market, and nature-based solutions – Jim*
- *Rewilding as Land Management – James and Robin*
- *BCarbon Applicant and Credit Update – Miguel*


Status report: climate change, carbon markets, and Nature-based Solutions

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INTERGOVERNMENTAL PANEL ON climate change

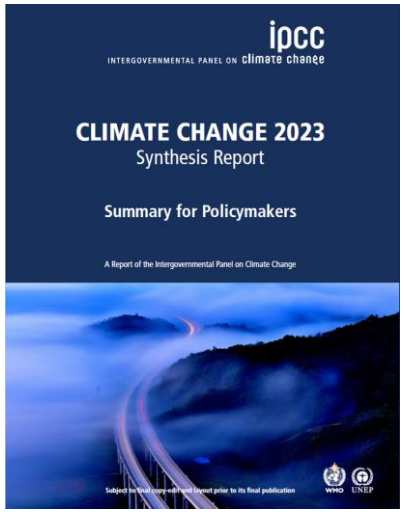
CLIMATE CHANGE 2023

Synthesis Report

Summary for Policymakers

A Report of the Intergovernmental Panel on Climate Change

WMO UNEP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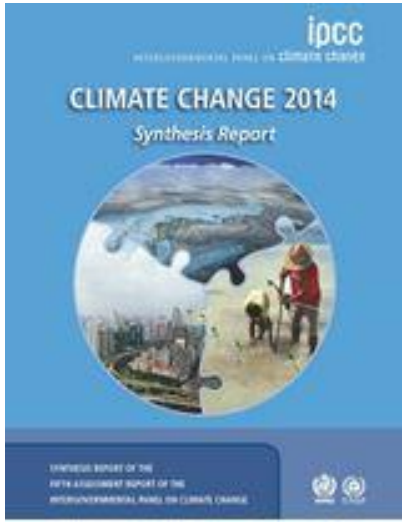
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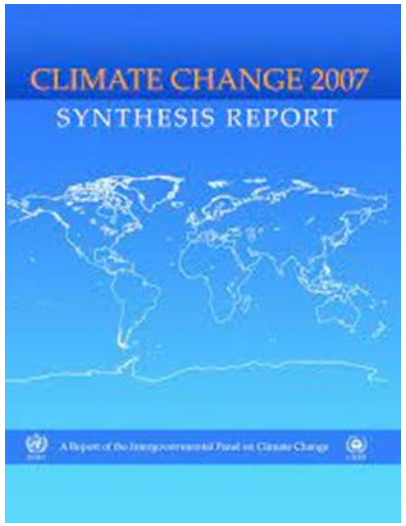
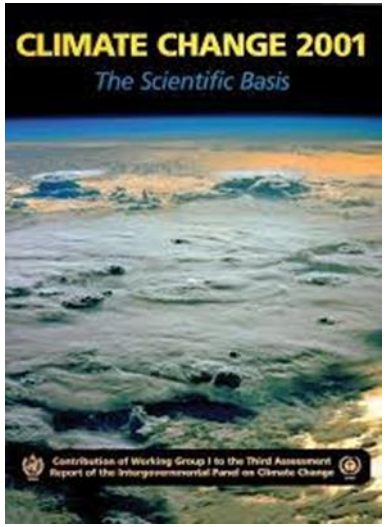
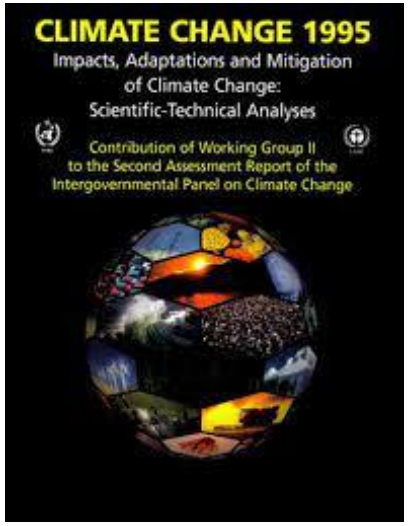

CLIMATE CHANGE 2007
SYNTHESIS REPORT


CLIMATE CHANGE 2001
The Scientific Basis
Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change


CLIMATE CHANGE 1995
Impacts, Adaptations and Mitigation of Climate Change:
Scientific-Technical Analyses
Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change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1990
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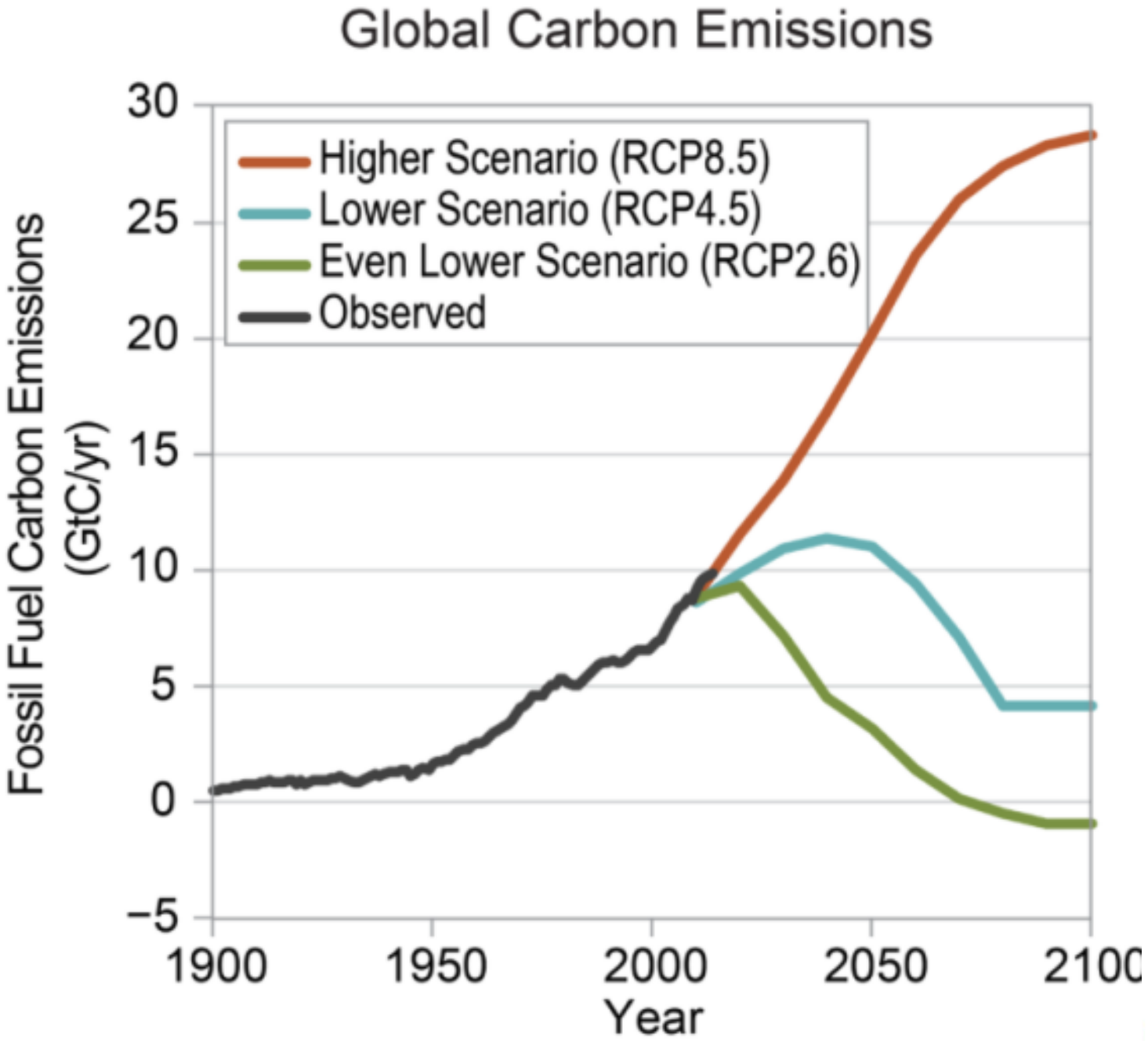
Emission Scenarios



Observed Warming and its Causes

Human activities, principally through emissions of greenhouse gases, have **unequivocally** caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals *(high confidence). {2.1, Figure 2.1, Figure 2.2}*

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Observed Changes and Impacts

Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred**. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe.** This has led to widespread adverse impacts and related losses and damages to nature and people *(high confidence)*. Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected *(high confidence)*.

Future Climate Change

Continued greenhouse gas emissions will lead to increasing global warming, with the best estimate of reaching 1.5°C in the near term in considered scenarios and modelled pathways. Every increment of global warming will intensify multiple and concurrent hazards *(high confidence)*. Deep, rapid, and sustained reductions in greenhouse gas emissions would lead to a discernible slowdown in global warming within around two decades, and also to discernible changes in atmospheric composition within a few years *(high confidence)*.

Climate Change Impacts and Climate-Related Risks

For any given future warming level, many climate-related risks are higher than assessed in AR5, and projected long-term impacts are up to multiple times higher than currently observed *(high confidence)*. Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming *(very high confidence)*. Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage *(high confidence)*.

Likelihood and Risks of Unavoidable, Irreversible or Abrupt Changes

Some future changes are unavoidable and/or irreversible but can be limited by **deep, rapid and sustained global greenhouse gas emissions reduction.** The likelihood of abrupt and/or irreversible changes increases with higher global warming levels. Similarly, the probability of low-likelihood outcomes associated with potentially very large adverse impacts increases with higher global warming levels. *(high confidence)*

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Adaptation Options and their Limits in a Warmer World

Adaptation options that are feasible and effective **today** will become constrained and less effective with increasing global warming.

With increasing global warming, losses and damages will increase and additional human and natural systems will reach adaptation limits. Maladaptation can be avoided by flexible, multi-sectoral, inclusive, long-term planning and implementation of adaptation actions, with co-benefits to many sectors and systems. *(high confidence)*

Carbon Budgets and Zero Emissions

Limiting human-caused global warming requires net zero CO2 emissions. Cumulative carbon emissions until the time of reaching net zero CO_2 emissions and the level of greenhouse gas emission reductions this decade largely determine whether warming can be limited to 1.5°C or 2°C *(high confidence)*. Projected CO_2 emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C (50%) *(high confidence)*.

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All global modelled pathways that limit warming to 1.5°C (>50%) with no or limited overshoot, and those that limit warming to 2°C (>67%), involve **rapid and deep and, in most cases, immediate** greenhouse gas emissions reductions in all sectors ***this decade***. Global net zero CO_2 emissions are reached for these pathway categories, in the early 2050s and around the early 2070s, respectively. *(high confidence)*

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What If There Is Overshoot?

If warming exceeds a specified level such as 1.5°C, it could gradually be reduced again by achieving and sustaining **net negative** global CO2 emissions. This would require additional deployment of carbon dioxide removal, compared to pathways without overshoot, leading to greater feasibility and sustainability concerns. Overshoot entails adverse impacts, some irreversible, and additional risks for human and natural systems, all growing with the magnitude and duration of overshoot. *(high confidence)*

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Current market status +
future needs

2009-2022: Review of market scandals

A Nonprofit Promised to Preserve Wildlife. Then It Made Millions Claiming It Could Cut Down Trees.

The Forest Mafia: How Scammers Steal Millions Through Carbon Markets

- **24+** avoided deforestation projects on the VCM failed
  - ***Over-crediting*** via inflated baselines
  - ***Leakage*** of deforestation into areas outside project boundary
  - ***Failures*** of so-called “improved” management practices
- **80+** CDM projects at risk of failure
  - Based on ***calculations from models***, not fact-based proof of sequestration
- Numerous scandals of fraud: deception, hacking, etc.

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January 2023: Verra's REDD+ scandal

DIE ZEIT | The Guardian | SourceMaterial

- Many of Verra's REDD+ projects drastically inflate baseline scenarios and fail to bring about substantial decreases in deforestation
- **94%** of credits from 29 projects in the Brazilian Amazon should never have been approved
- **400%** inflation of baseline scenarios across 32 projects across the world
- Key takeaways:
  - ***Metrics and data validation*** must be central to protocols at every step of the way
  - Ongoing ***relationships*** with developers help to ensure project quality
  - Robust and reliable ***modeling*** are vital for predicting any business-as-usual scenarios

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Mid-2023: where are we now?

March: EU bans carbon neutral claims based on offsets alone, rules that companies must distinguish between reductions in their own emissions and use of offsets.

May: UK moves towards greater scrutiny in ads with terms like “Carbon neutral”, “nature positive”

June: Dutch court rules to proceed with KLM airline’s Greenwashing lawsuit – “fly responsibly” ad campaign presented misleading green claims to customers. Like Delta, they engage in carbon offsetting

August: Delta asks federal judge to toss a proposed class action lawsuit over net zero claims. The lawsuit alleges violation of state consumer protection laws and laws prohibiting unfair and fraudulent business practices – certain customers would not have purchased their tickets without “allegedly inaccurate environmental representations”

https://carbonmarketwatch.org/2023/05/11/european-parliament-abandons-neutrality-in-anti-greenwashing-drive/
https://www.theguardian.com/environment/2023/may/15/greenwashing-era-is-over-say-ad-agencies-as-regulators-get-tough
https://www.reuters.com/legal/litigation/delta-air-lines-asks-judge-toss-lawsuit-over-carbon-neutral-claims-2023-08-21/

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Summary of Problems

- Avoided conversion credits are bulk of carbon credits in voluntary carbon market
- Major problems have emerged with REDD+ projects at the international level
- Major problems have emerged with baseline scenarios of potential risk being unsupported or untrue
- Major concern about fire
- Credits do not represent atmospheric removal

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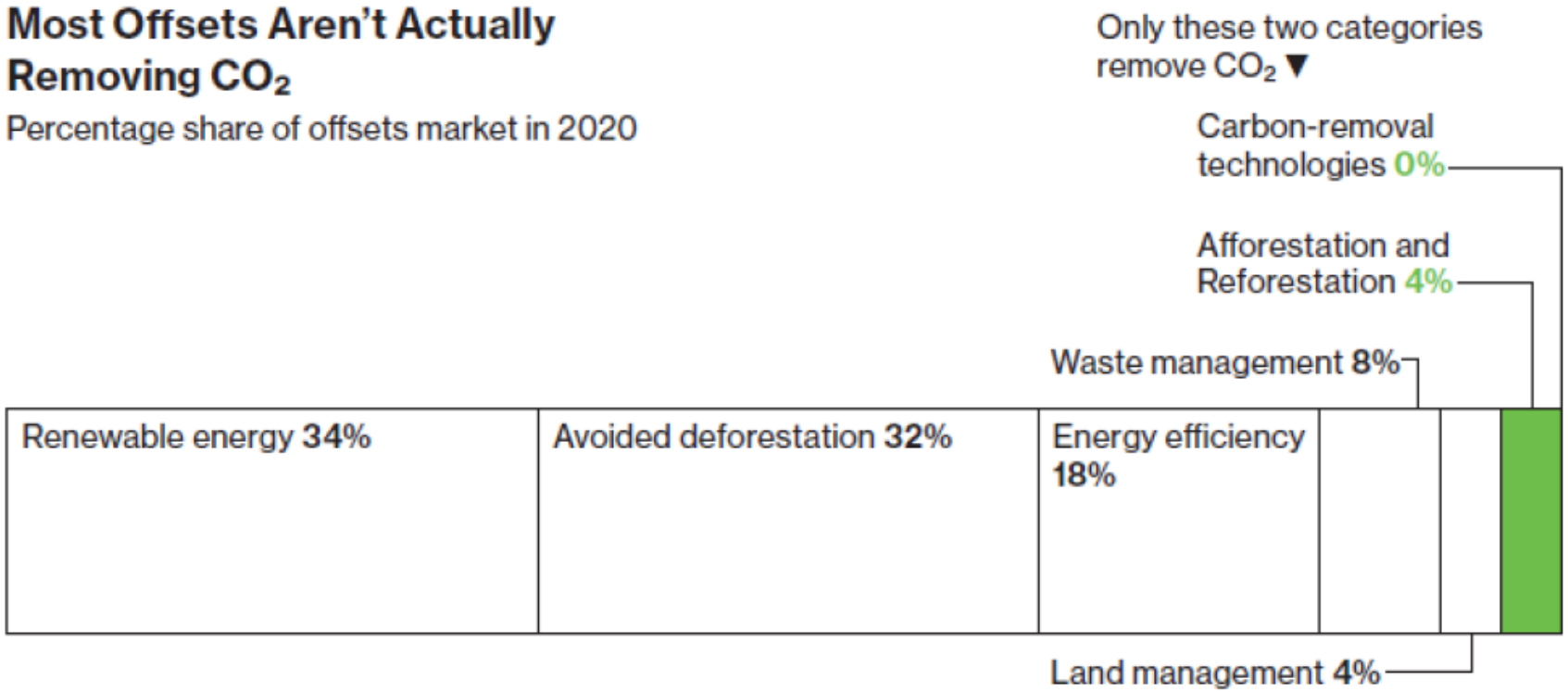
Role of Nature-Based Carbon

- All agree nature has an important role
- Many setbacks have occurred in the last year
- Major focus of BCarbon – creating stability around credits
- Creative ideas
  - Transparency – blockchain and digital MRV
  - Considering modifications to protocols to meet certain concerns
  - Intent to work with buyers

The Carbon Market of the Past

Global Carbon Offset Supply by Type (%) - 2020



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Live Carbon Prices Today

CarbonCredits.com Live Carbon Prices	Last	Change	YTD
Compliance Markets			
European Union	€84.87	+3.84 %	+6.09 %
California	$29.37	-	+1.03 %
Australia (AUD)	$31.00	−1.59 %	−8.28 %
New Zealand (NZD)	$72.60	−0.55 %	−5.00 %
South Korea	$6.85	+11.66 %	−43.13 %
China	$8.25	+3.45 %	+3.81 %
Voluntary Markets			
Aviation Industry Offset	$0.80	−3.61 %	−79.17 %
Nature Based Offset	$1.70	−0.58 %	−63.04 %
Tech Based Offset	$0.89	-	−21.93 %

CarbonCredits.com Real-time Pricing

Click here to learn how carbon credits are priced.

European Carbon Credit Market

EU ETS – is the European carbon credit contract which is exchange traded. It is a Futures contract for the purposes of trading and delivering EUAs (European Union

Nature Based Carbon Offset

N-GEO futures contracts are comprised of Nature-Based offsets projects from the Verra registry – projects that fall under the Agriculture, Forestry, or Other Land

carboncredits.com/carbon-prices-today/

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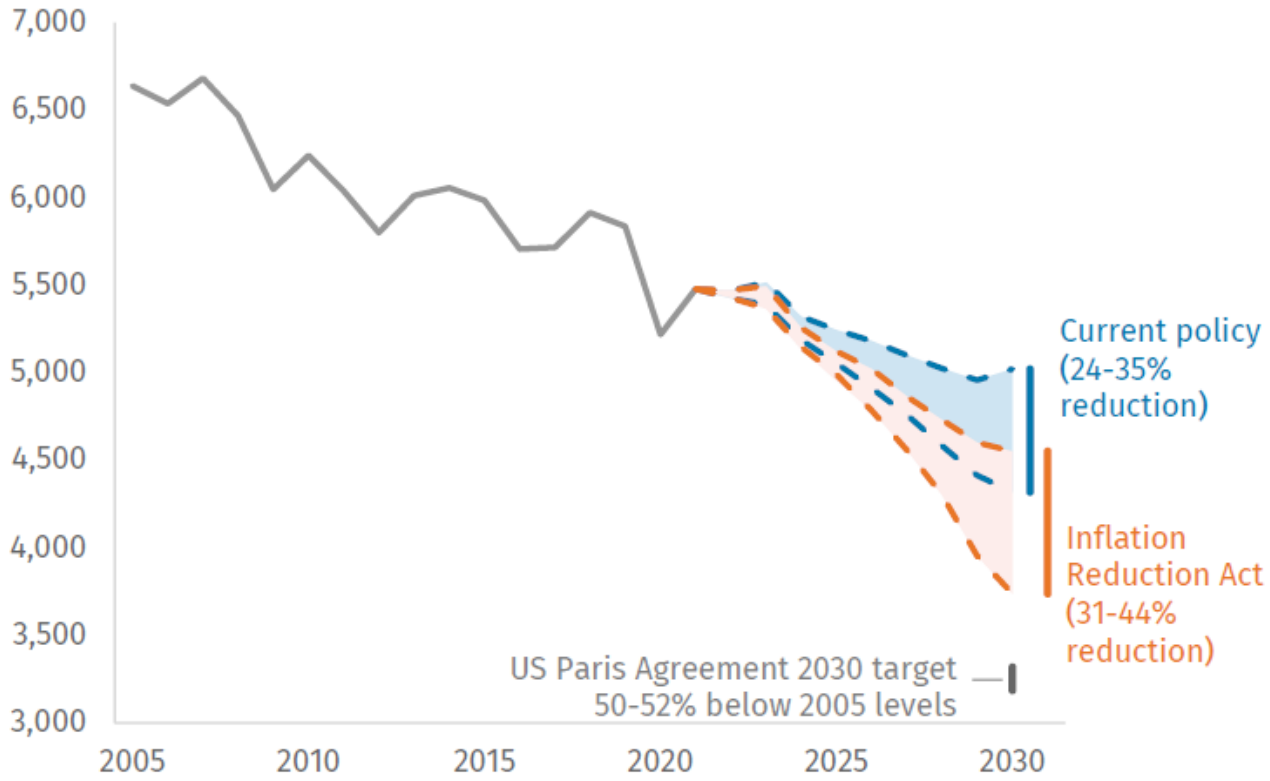
Nature-based solutions often take a backseat. Should we push for more ?

FIGURE 1

US greenhouse gas emissions

Net million metric tons (mmt) of CO_2-e



Source: Rhodium Group. The range reflects uncertainty around future fossil fuel prices, economic growth, and clean technology costs. It corresponds with high, central, and low emissions scenarios detailed in Taking Stock 2022. Under the central scenario (not shown), the IRA accelerates emissions reductions to a 40% cut from 2005 levels.

Estimates suggest that nature-based solutions can provide up to ***37%*** of the mitigation needed until 2030 to achieve the targets of the Paris Agreement.

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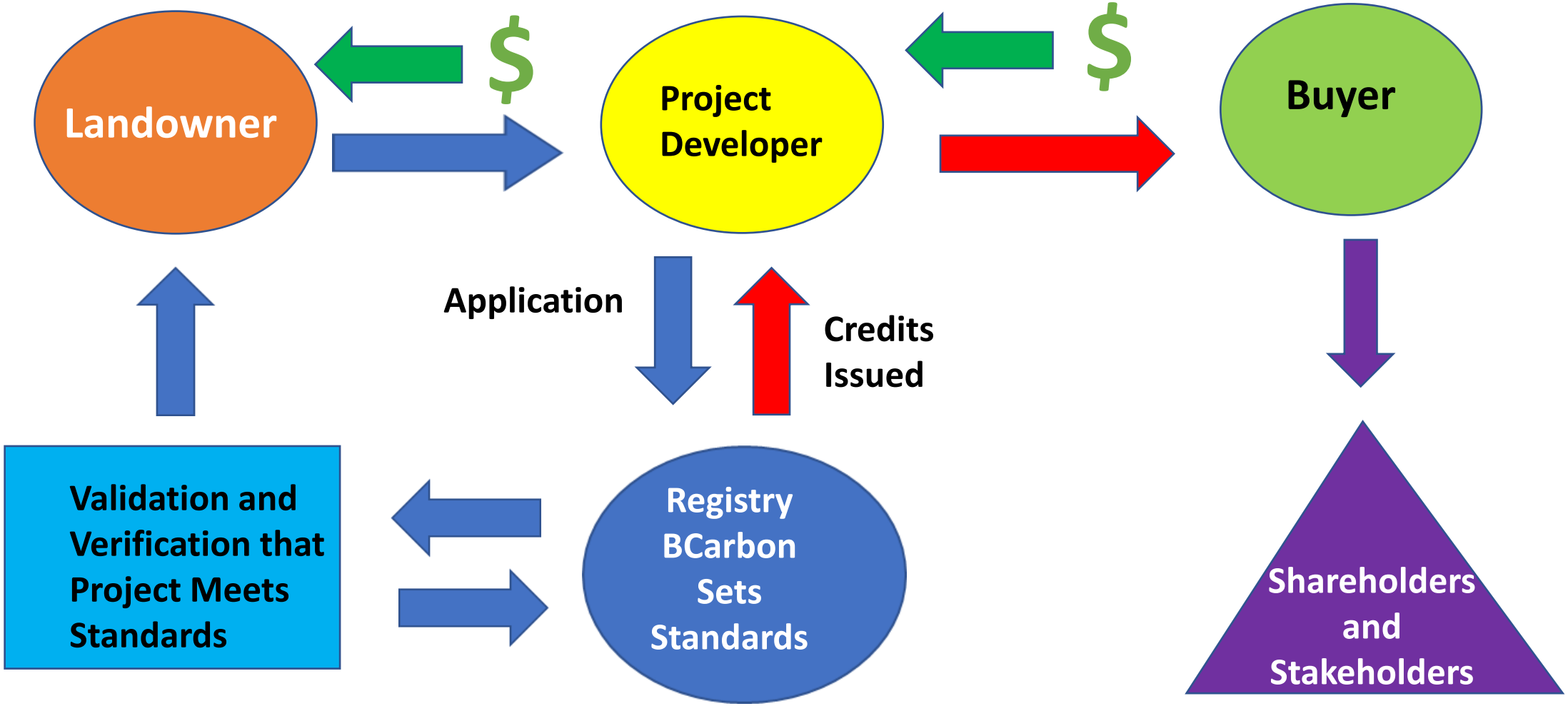
The World of Carbon Credit Transactions



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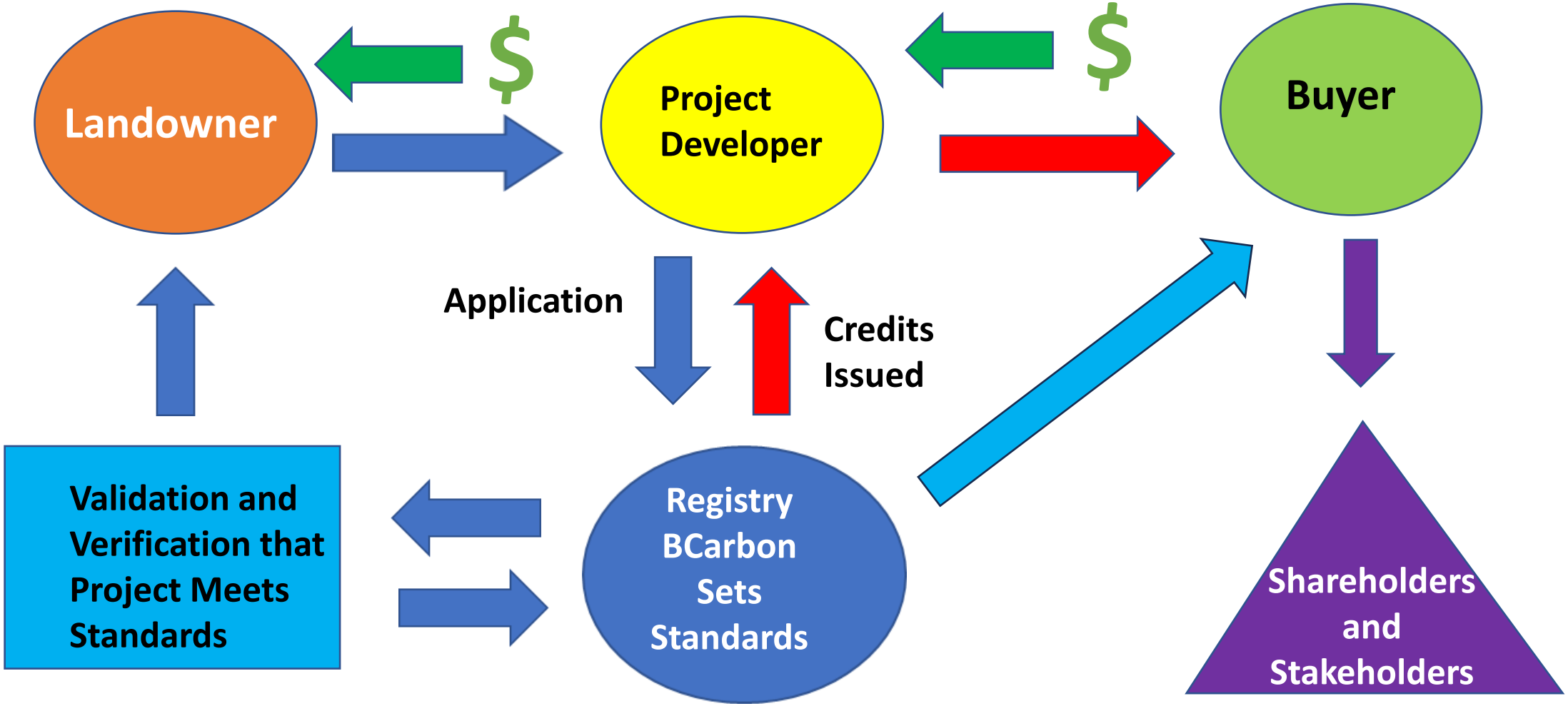

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Buying Nature-Based Carbon Credits Is Like Buying a Car

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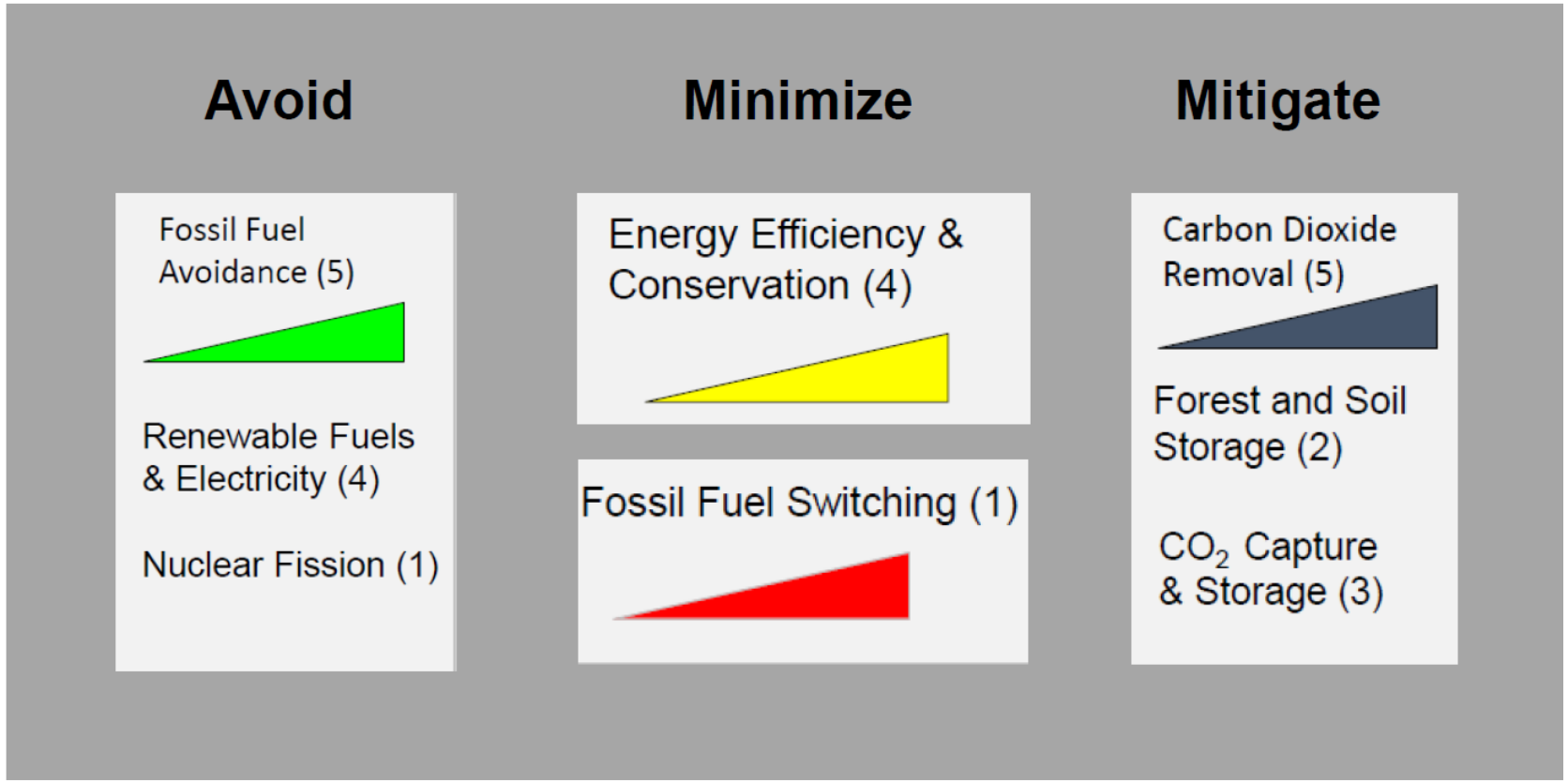
Potential Solutions – Working With Buyers

- Focus on credits that are provable
  - Drawdown credits
  - Physical improvement/protection credits
- Tailor protocols to needs of buyers

Buyer Obligation – Diverse Set of Strategies; Cannot Rely Solely on Offsets



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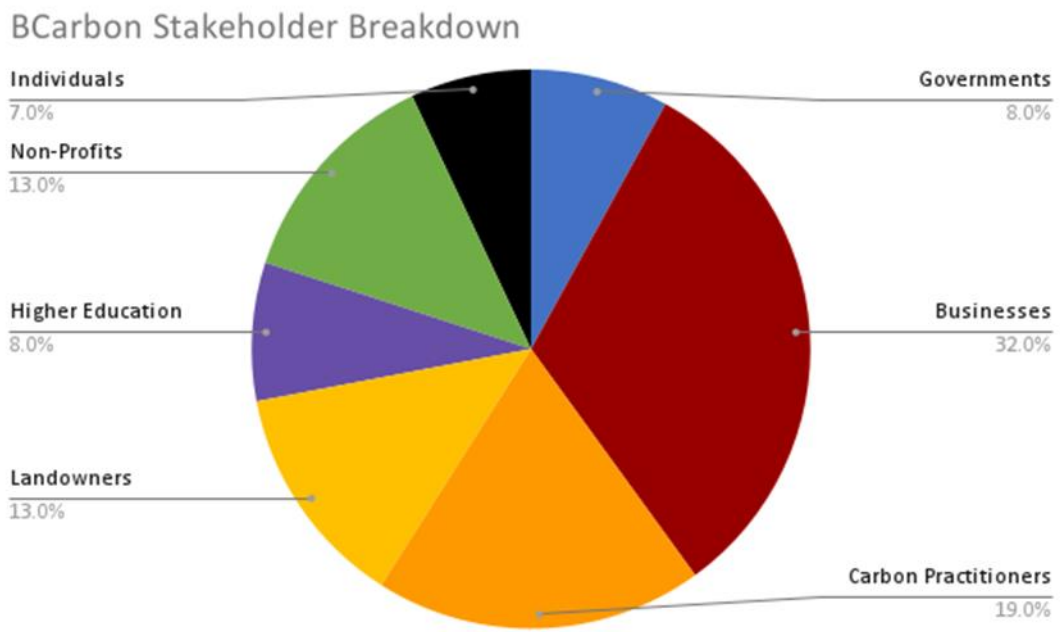
Potential Solutions - Transparency

- BCarbon Stakeholder process
  - Openness in protocol development
- No black box credits
  - Full access to computations
  - Ability to independently verify credits
  - Potential for digital MRV



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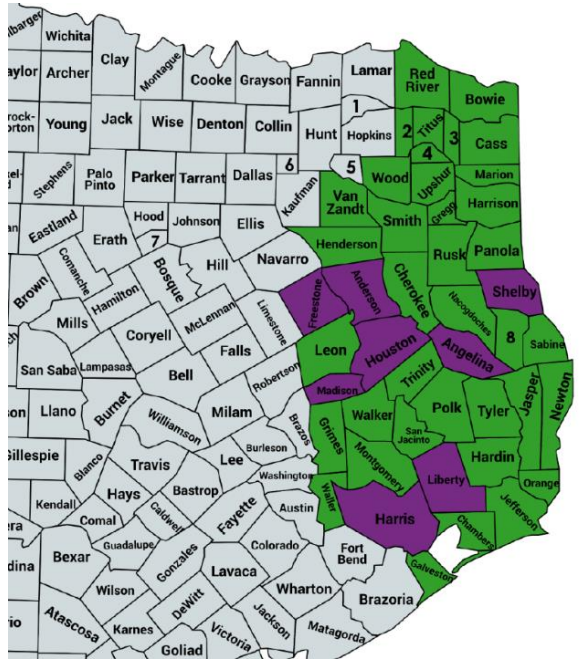
Potential Solutions – Meeting Multiple Goals

- Carbon +
- Meeting DEI ESG Goals
  - Working with BIPOC landowners
  - Involvement of minority community in projects
- Meeting biodiversity Goals
  - Endangered Species
  - Species diversity



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Potential Solutions – New/Targeted Protocols

Existing Protocols

- Soil
- Forest
- Coastal Living Shoreline Blue Carbon
- Methane Capping

New Proposed Protocols

- DEI Small Landowner
- Commercial Timber
- Biochar
- Excellent Steward
- Biodiversity
- Indigenous Populations
- Photovoltaic + Soil

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Questions and Discussion

“There is a deep systems intelligence present in ecosystems, biology, DNA and cells, that our conscious minds could never hope to manage, which is why that knowledge is below consciousness. This is Nature’s intelligence, silent yet all pervading.”

-Christopher Chase

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Making Rewilding Reality

James FitzGerald

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What is rewilding?

- Seeks to restore the ability of ecosystems to function with minimal human intervention
- Emphasis on fauna
- Core principles
- A spectrum of approaches ranging from Pleistocene rewilding to agricultural and urban restoration

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The traditional approach

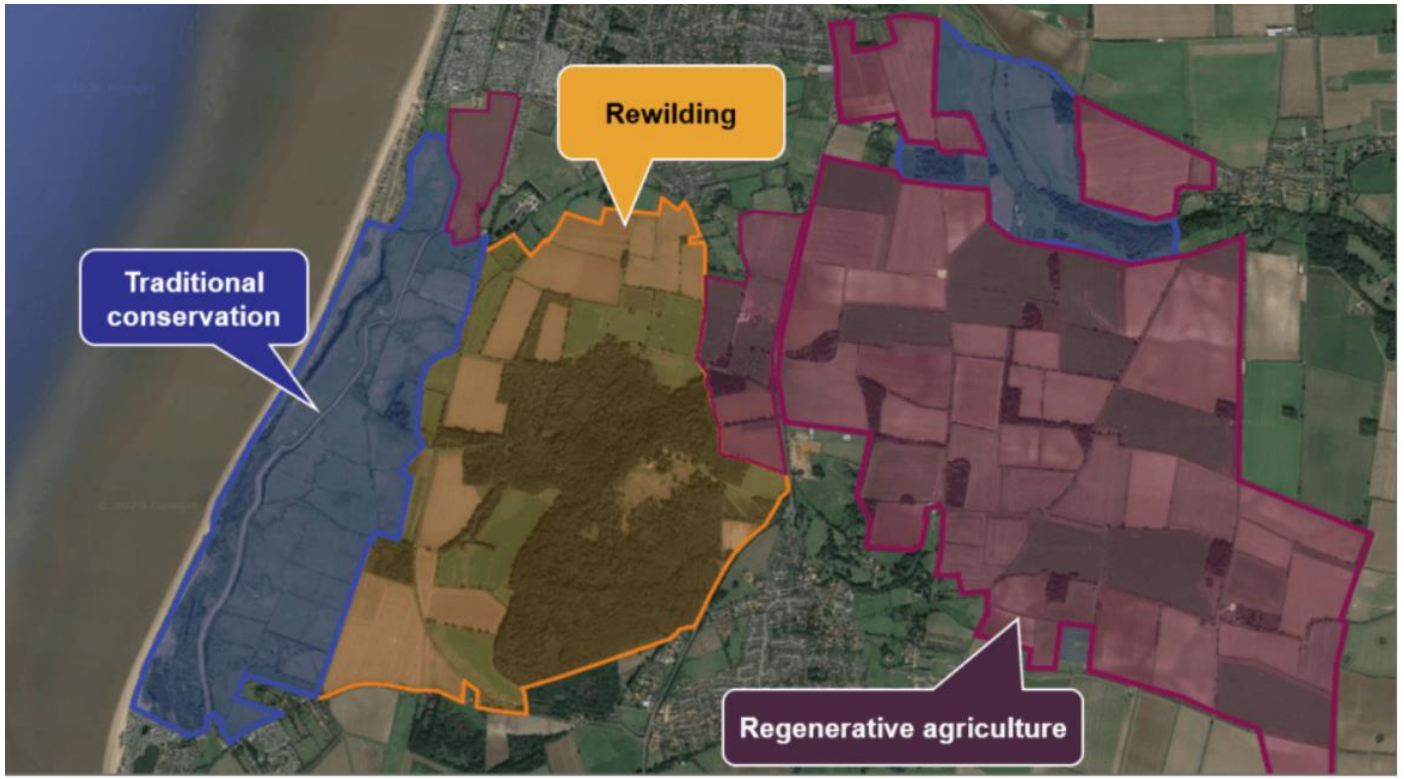
- Cores, corridors, and carnivores
- Success and controversy
- Takeoff in Europe and the UK
- Extension of the concept beyond conventional “wilderness”
  - Agriculture
  - Water
  - Cities

Agricultural rewilding

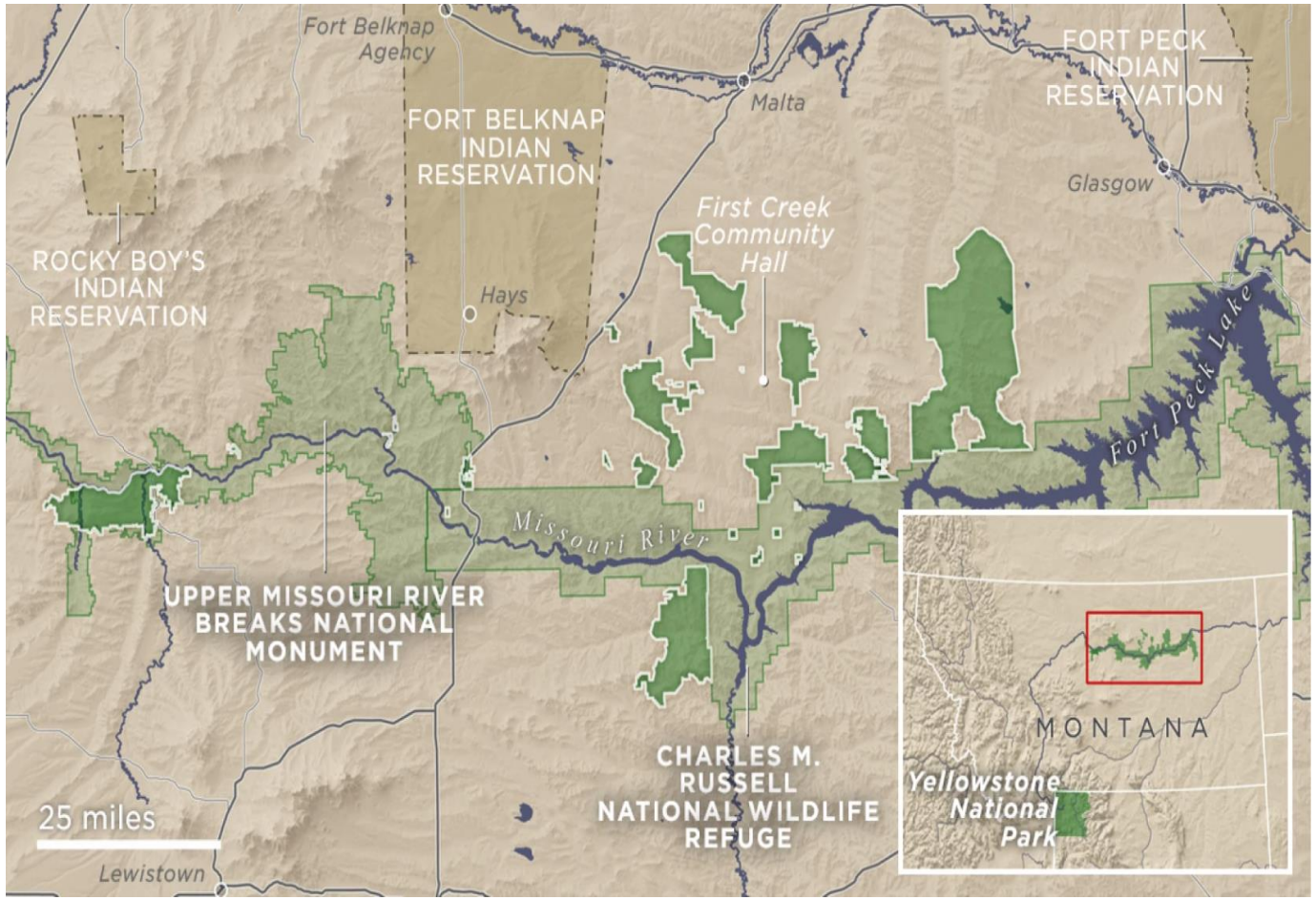
- Lies between agroecology and traditional rewilding
- Wild crops, grazers, and farming for nature
- Complementarity with regenerative agriculture

Case study: UK

- Government programs
- High-profile projects
- Focus on connectivity and interaction with other land regimes
- Contrasts with the US and Europe



Case study: American Prairie



- 3.2-acre rewilding effort in Montana
- Bison grazing
- Local tensions: “Save The Cowboy, Stop The American Prairie Reserve”
- Bridging the divide

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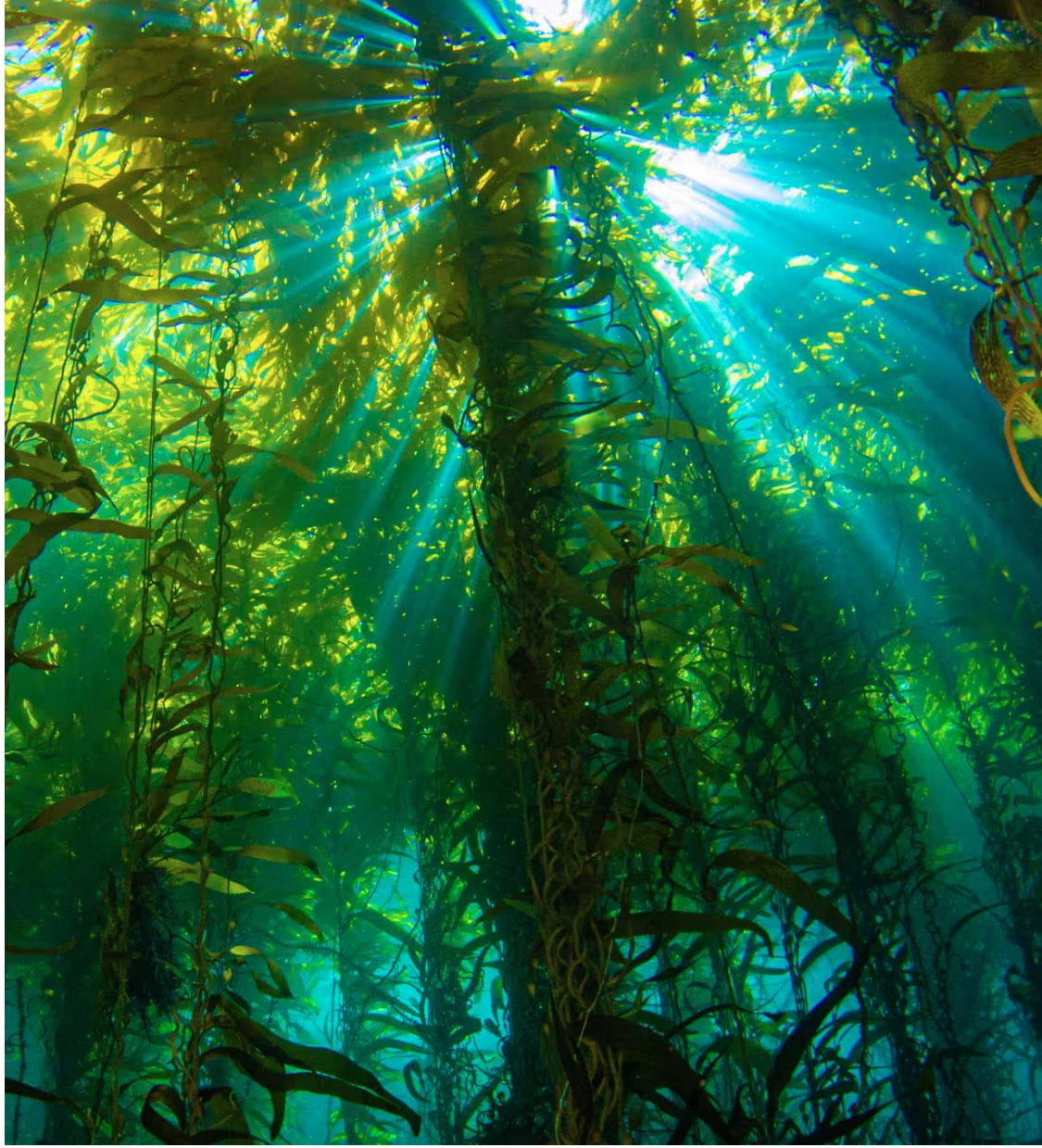
Rewilding water: a rising swell

- Historically overlooked in rewilding movement
- Wide range of projects underway
- River and delta restoration
  - Rewilding by rewiggling
- Seagrass and kelp
- Species reintroductions



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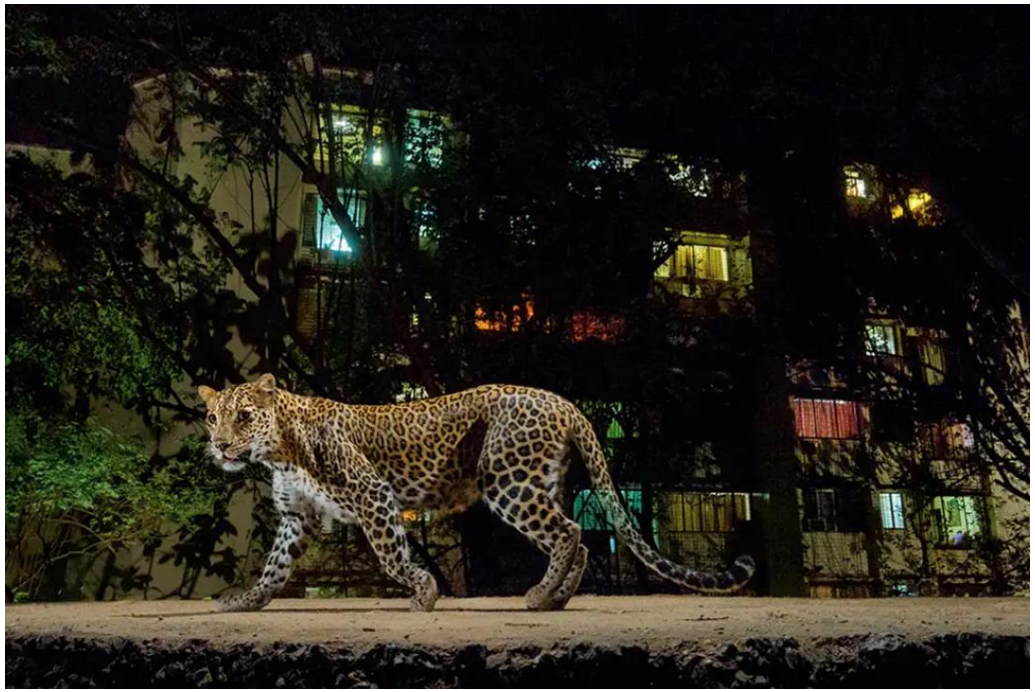

Cities: the last frontier?

- Explosion of interest in urban rewilding
- Sometimes closer to restoration
- Examples include
  - London: birds and beavers
  - Delhi: micro-forests for leopards
  - Singapore: return of ungulates

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Climate potential

- Well-documented carbon sequestration and climate resiliency benefits
- Rewilding Britain Blue Carbon report
- *Nature* study: “this study is a message that …we can’t put our eggs in one basket, waiting for a high-tech CO2 removal machine. We need to work within nature tech; that’s been around for millions of years.”

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Conclusions

- Rewilding done right would be part of a spectrum of approaches tailored to local needs
- Need to be conscious of tensions with existing land-use regimes
- Significant overlap with nature-based solutions

Soil and Forestry Application Update

- Applications under Review:
  - Soil – North Dakota – Approx. 13,000 acres
  - Forestry – Oklahoma, Texas, Arkansas – Approx. 15,000 acres

- 2023 Expected Applications:
  - Soil – Montana (72,000 acres), West Virginia (26,000 acres), Texas (7,000), United Kingdom (TBD acres)
  - Forestry – Montana – Approx. 14,000 acres

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Upcoming Meetings

- ***Stakeholder Working Group –*** Thursday October 5, 9 AM CT
- Upcoming subcommittees TBA

Starting in October, stakeholder meetings will resume on the first Thursday of the month.

All meetings held via Zoom.

To join any subcommittee, please email Sarah.Swackhamer@BCarbon.org