

The logo for the Northwest BioCarbon Summit is displayed on a white rectangular background. The word "NORTHWEST" is in blue, uppercase letters. To its right are three circular icons: a red circle, a blue circle, and a green circle with a white outline of a globe. Below "NORTHWEST" is the word "BIO" in large, green, uppercase letters. To the right of "BIO" is the word "CARBON" in green, uppercase letters. Below "CARBON" is a blue rectangular box containing the word "SUMMIT" in white, uppercase letters. The entire logo is set against a light green background that features a faint, stylized map of the Pacific Northwest region.

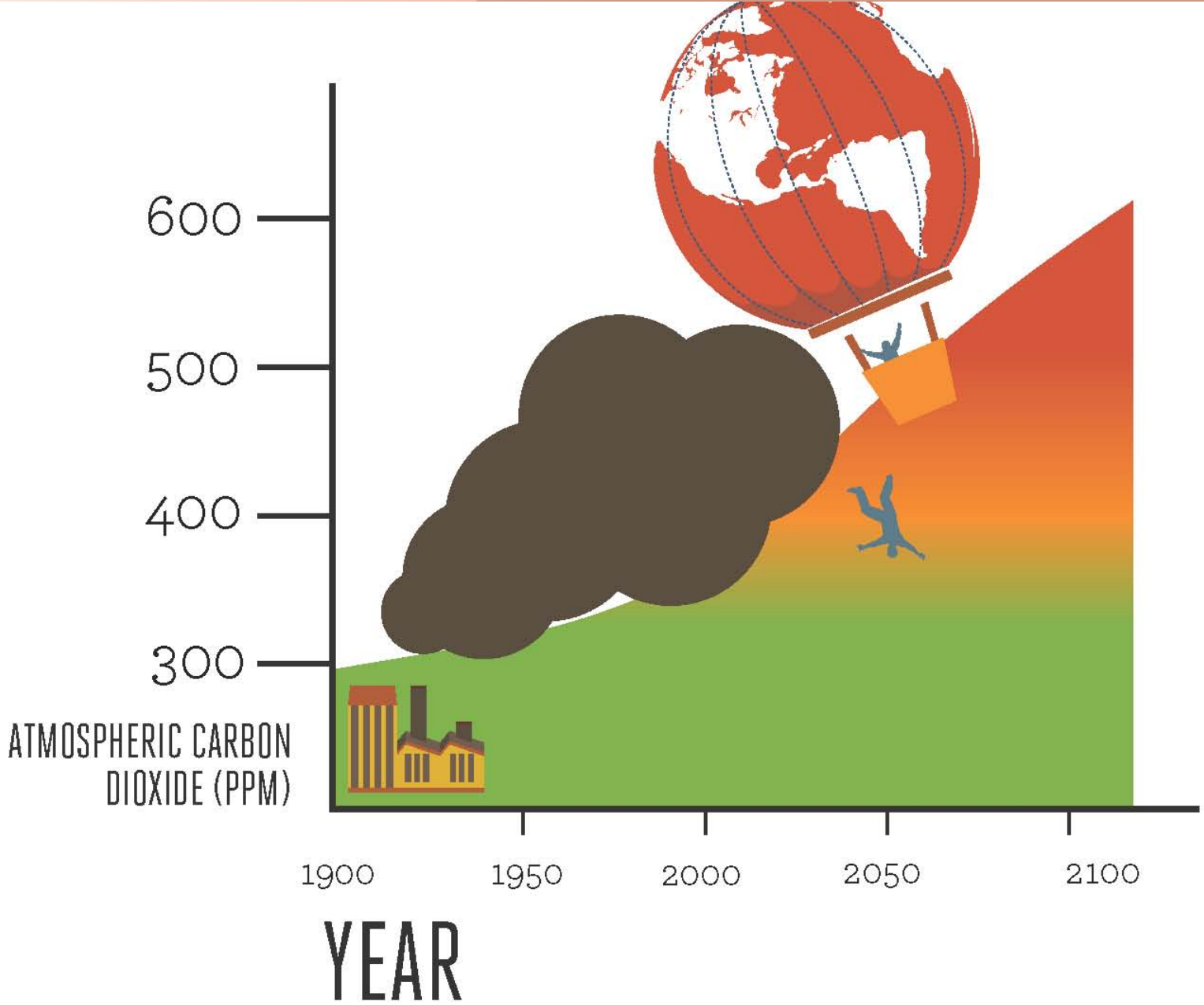
**NORTHWEST**   
**BIO** **CARBON**  
**SUMMIT**

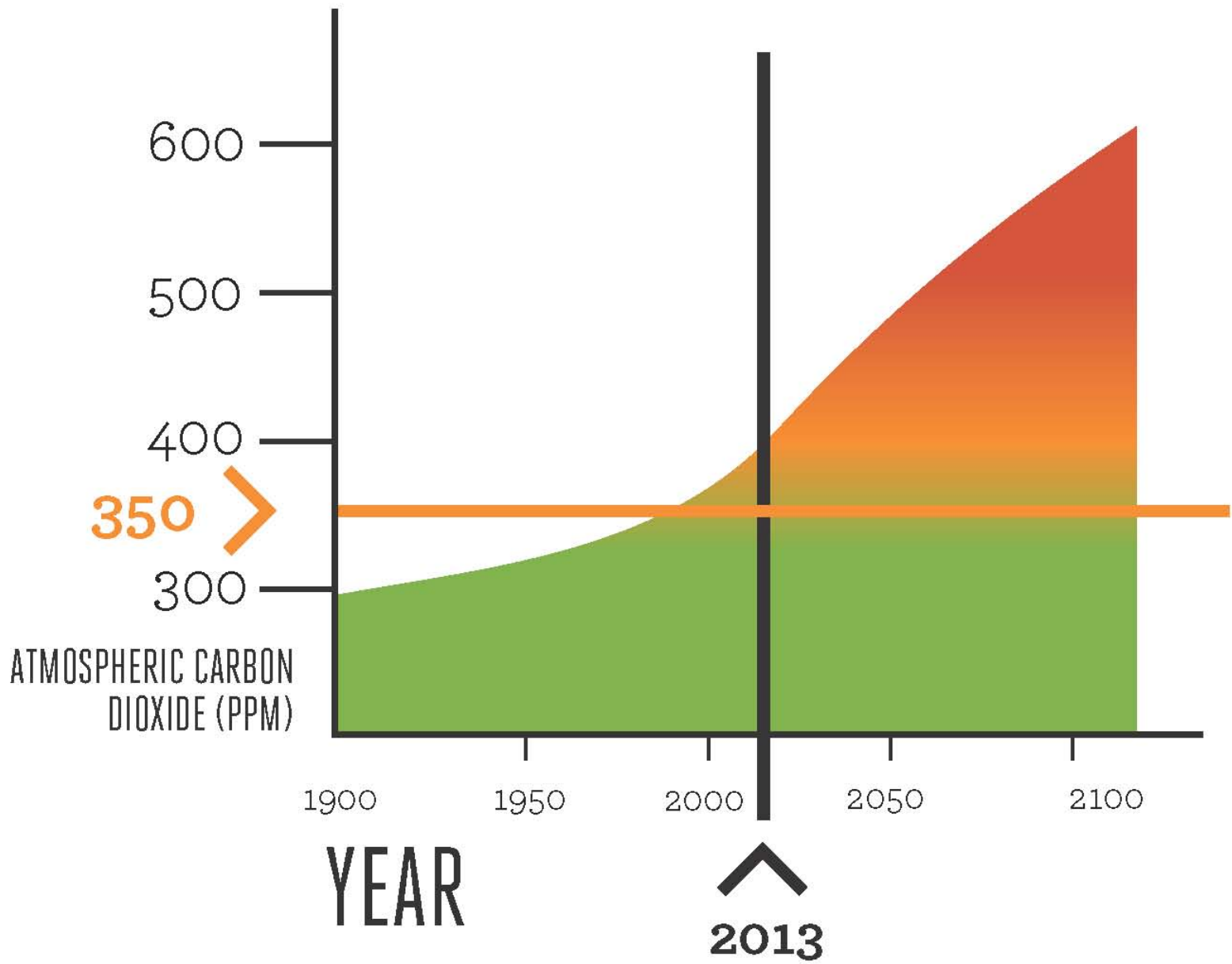
**June 10, 2013**

**Rhys Roth, Climate Solutions**

# Business as usual









# Target

# t



350



## Target Atmospheric CO<sub>2</sub>: Where Should Humanity Aim?

*“If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO<sub>2</sub> will need to be reduced from its current 385 ppm to at most 350 ppm.”*

-- James Hansen et al

# Planet Changing Faster than Expected

## Scientific American: 'Loss of Ice, Melting Of Permafrost And Other Climate Effects Are Occurring At An Alarming Pace'

By Joe Romm on Nov 29, 2012 at 4:02 pm

74

Tweet

479

Like



(79)

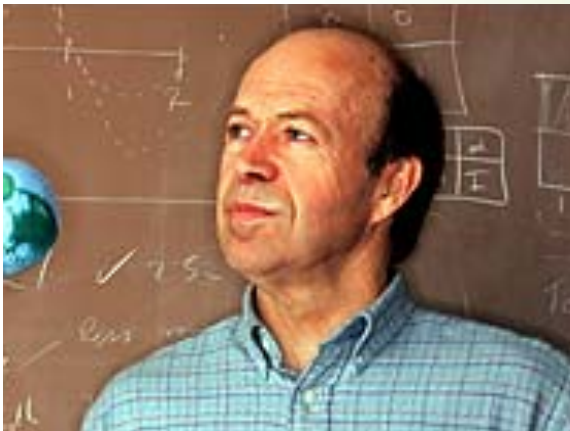
Another day, another (accurate) apocalyptic review of climate science. Joining recent articles in the *New York Times* and *New Scientist* is a [terrific piece](#) in *Scientific American* by science writer John Carey.

Carey has collected an assortment of epic quotes and nightmare scenarios from leading climatologists. As he explains (behind a paywall):



**The latest data from across the globe show that the planet is changing faster than expected.** More sea ice around the Arctic Ocean is disappearing than had been forecast. Regions of permafrost across Alaska and Siberia are spewing out more methane, the potent greenhouse gas, than models had predicted. Ice shelves in West Antarctica are breaking up more quickly than once thought possible, and the glaciers they held back on adjacent land are sliding faster into the sea. Extreme weather events, such as floods and the heat wave that gripped much of the U.S. in the summer of 2012 are on the rise, too. The conclusion? **"As scientists, we cannot say that if we stay below two degrees of warming everything will be fine,"** says Stefan Rahmstorf, a professor of physics

***“Our global climate is nearing tipping points. Changes are beginning to appear, and there is a potential for explosive changes with effects that would be irreversible – if we do not rapidly slow fossil fuel emissions over the next few decades.”***

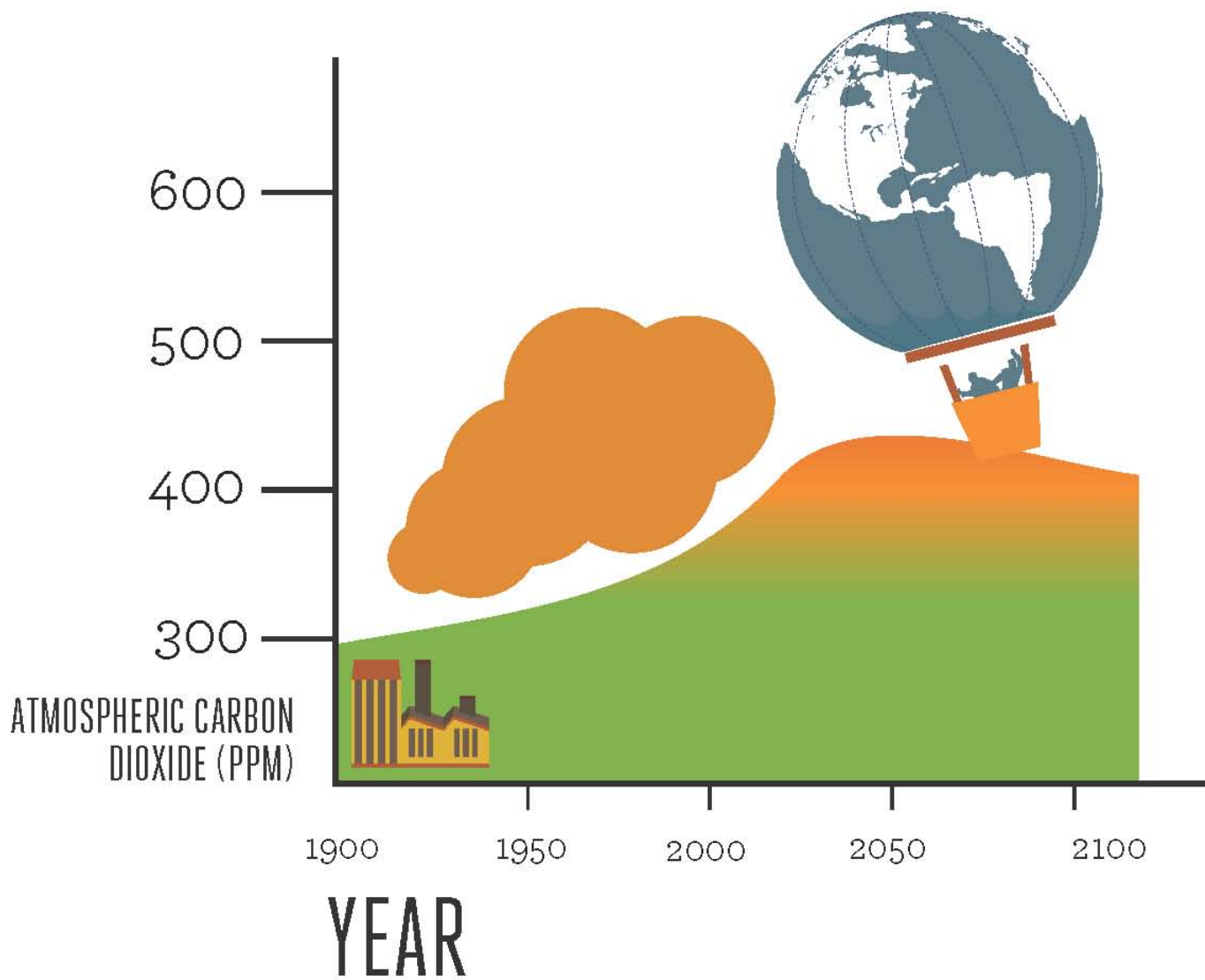


**Dr. James Hansen, Director,  
NASA’s Goddard Institute of  
Space Studies**

# The first climate solution

**Rapid transition  
off of fossil fuels  
to clean energy**







# The second climate solution

**Mobilize nature to scale up BIOCARBON – carbon storage in soils, plants and trees**



# Biocarbon Solutions



rapidly phase out  
fossil fuels

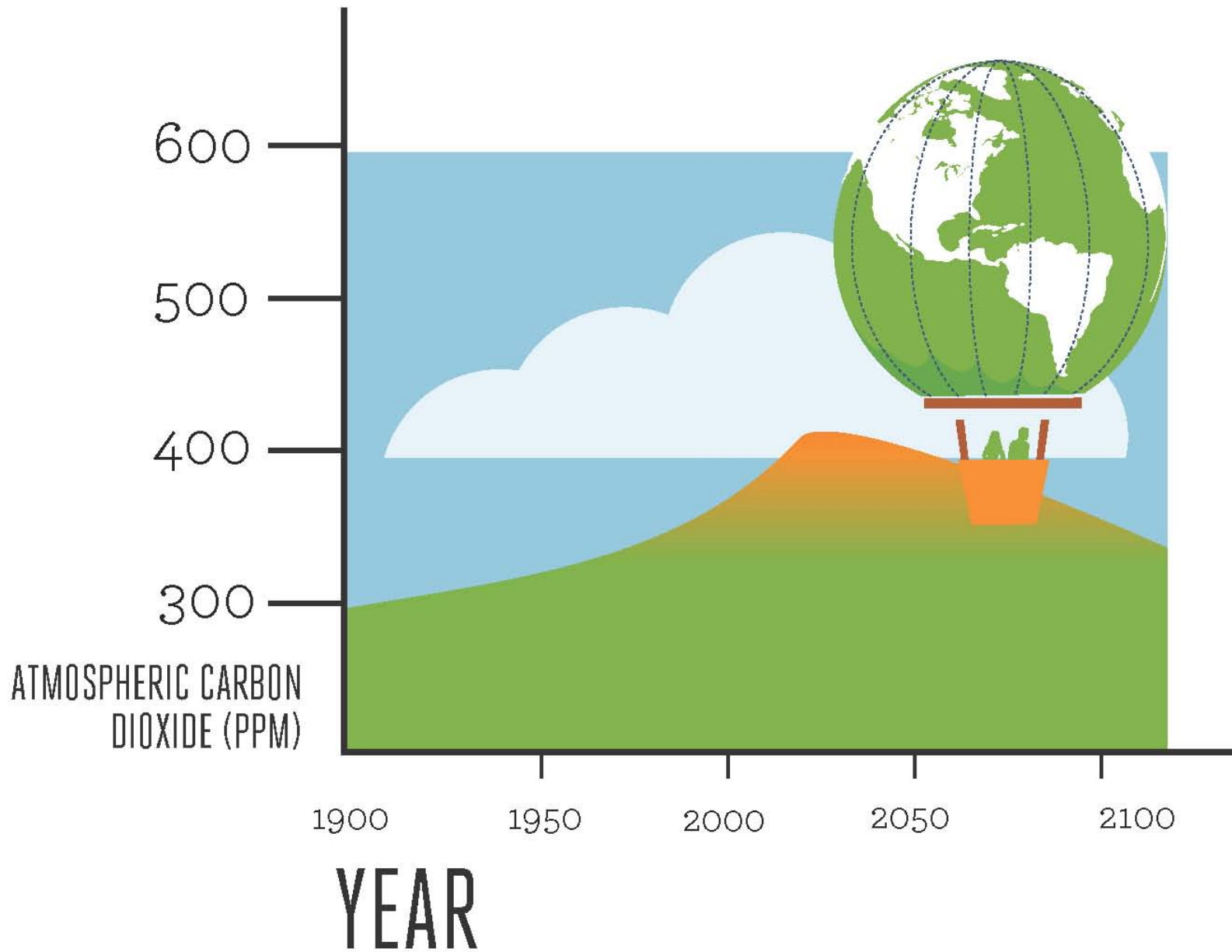
healthy  
forests

greener  
communities

bioeconomy

soil-building  
agriculture

blue carbon







***Purpose:*** Establish our region as a leading laboratory and incubator for the science of biological carbon storage, and for the policies, best practices and business models that we must scale globally to address climate change.

– ***Key principle:*** Good biocarbon projects have multiple benefits





# Healthy Forests



## Managing forests for biocarbon:

- **Protect large, contiguous tracts of our great forests in their natural state;**
- **Prevent more forests from being converted to suburbs;**
- **Restore forests for connectivity across the urban-rural-wild landscape;**
- **Increase carbon stocks on working forest lands;**
- **Build markets Forest Stewardship Council-certified products or better – and grow public awareness of the importance of supporting local FSC wood products suppliers.**

**Important to note:** Soil carbon is a big piece of the forest biocarbon picture, but in many carbon calculating models soils are poorly represented.



# Healthy Forests

innovation partner

**NORTHWEST**   
**BIO CARBON**  
**INITIATIVE**

**Build Local Alliance**



**Conservation Northwest**



**Friends of Trees**



**Hyla Woods**



**Ecotrust Forest Management**



**Gifford Pinchot Taskforce**



**Northwest Natural Resource Group**



**Pacific Forest Trust**







# Greening Our Communities



## **Biocarbon solutions in our communities include:**

- **Creating new green spaces and urban forests**
- **Converting pavement to greener uses**
- **Replacing standard lawns with low-maintenance native plantings**
- **Building community gardens**
- **Planning development to protect and grow biocarbon**
- **Moving from grey to green infrastructure**



# Greening Our Communities

innovation partner

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**BIO**CARBON  
INITIATIVE

**Garden Raised  
Bounty**



**The Intertwine  
Alliance**



**King County**



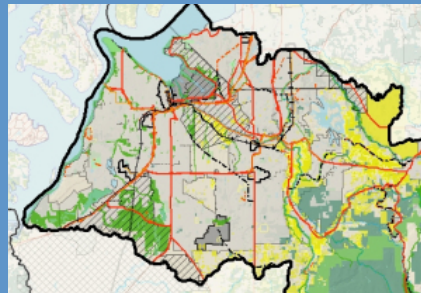
**Pierce Co-Tacoma  
Community Gardens**



**Portland BES**



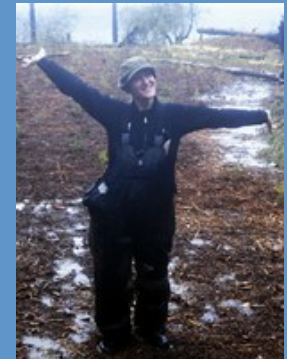
**Regional Open Space  
Strategy (ROSS)**



**Seattle Public  
Utilities**

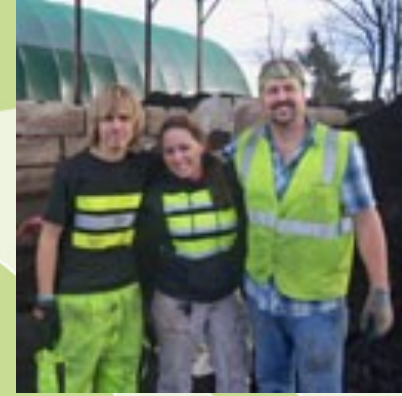


**Sound Native Plants**





# Bioeconomy: Recycling Organics



**Transforming organic ‘waste’ into soil-building resources:**

- **Feedstocks:** Food waste, yard clippings, tree trimmings, wood waste, animal and human manures
- **Soil-enhancing Products:**
  - Composts
  - Biosolids
  - Biochars





# Bioeconomy

innovation partner

NORTHWEST   
**BIO CARBON**  
INITIATIVE

Cedar Grove Composting



Pacific NW Biochar Initiative



Sunmark Environmental



US Biochar Initiative







# Soil-building Agriculture



**Biocarbon Solutions** in agriculture include:

- **Restore and preserve wild and agricultural lands**
- **'Close the loop on poop'**
- **Replace synthetic fertilizer with organics**
  - **Compost, biochar, cover crops, biodigester byproducts**
- **Low/no-till farming**
- **New cropping – perennials, crop rotations**



# Soil-building Agriculture

innovation partner

NORTHWEST   
**BIO** CARBON  
INITIATIVE

American Farmland Trust



The Climate Trust





# Blue Carbon



**Blue carbon** is the capture of carbon pollution in ocean plants and sediments on the seabed.

- **Strategies include restoring seagrasses; kelp forests; tidal salt marsh; mangroves; sea otters; forage fish; and oyster beds.**
  - **NSF-funded researchers found seagrass meadows store 90% of their carbon in soil, and can store >2x as much per year as forests per acre.**
- **QUESTION: Do inland wetlands store carbon? Are they 'blue carbon'?**





# Blue Carbon

innovation partner

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INITIATIVE

## EarthCorps





# *Natural Infrastructure: A Climate-Smart Solution*

**Can complement ‘hard’ infrastructure to reduce costs; has applications spanning the landscape:**

- Stormwater solutions
- Water cooling and cleaning up wastewater treatment
- Protecting drinking water and recharging groundwater
- Harvesting ‘waste’ to build healthy soils
- Restoring watersheds to reduce flooding and aid wildlife

**Important Climate Benefits:**

- reduces fossil fuels, increases biocarbon storage, improves resilience

**Oregon and Washington are early-adopters. To scale up:**

- Help smaller communities adopt proven stormwater solutions
- Move from single-issue to integrated, comprehensive approach
- Quantify the co-benefits!

# NBI Steering Committee



**Dennis Canty,  
American  
Farmland Trust**



**Brent Davies,  
Ecotrust**



**Mitch Friedman,  
Conservation  
Northwest**



**Becky Kelley,  
Washington  
Environmental  
Council**



**Teresa Koper,  
The Climate Trust**



**Patrick Mazza,  
Climate Solutions**



**Amanda Stanley,  
Wilburforce  
Foundation**



**Laurie Wayburn,  
Pacific Forest  
Trust**



**Steve Whitney,  
Bullitt Foundation**



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