

# Importance of Old Growth, Carbon & Birds

National Center for Conservation Science  
and Policy



# Forest Carbon and Birds— What's the connection?

- In many instances—a lot!



# Link between forests carbon and birds

## International

- Degradation and deforestation accounts for ~17% of global carbon emissions
- Tremendous impact on birds (neo-tropical migrants, et al.)

# Link between forests carbon and birds

## Domestic

- Older forests (mature and old growth) = largest stores of carbon
- Older forests = tremendous biodiversity
- Forest biodiversity = important bird habitat
- Endangered Spotted Owls, marbled murrelet, N. Goshawk, largely depend on old trees and forests for their habitat.

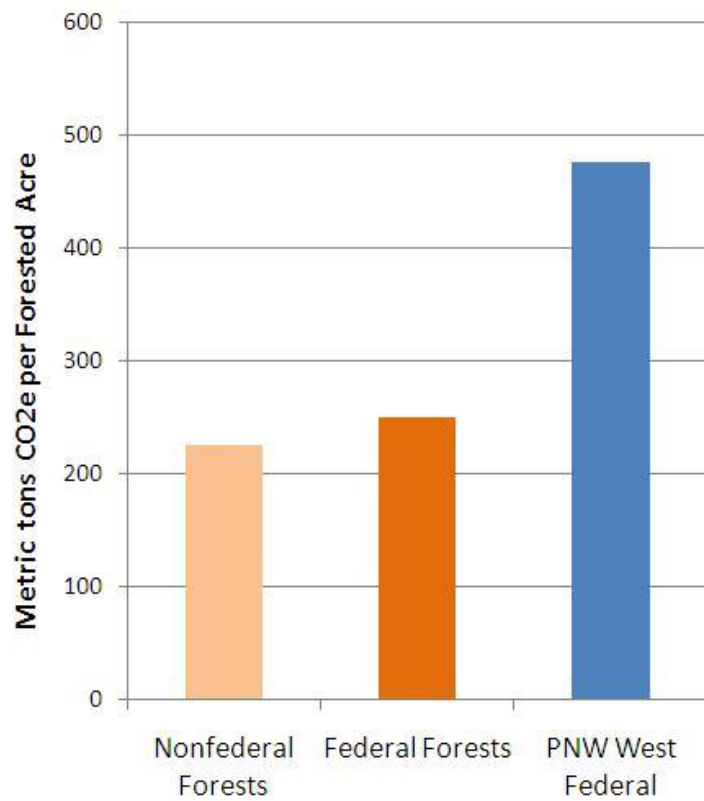
# Equation

Protecting carbon stores in older forests =  
Protecting biodiversity =  
Protecting bird habitat

# How much carbon is there in older forests in U.S.?

- Federal lands have more carbon per acre than non-federal lands
- Moist Forests have the highest C stores per acre (Pacific Northwest and South East Alaska (Tongass National Forest))
- Majority of older forests are on public lands
- Severe deficit of mature and old growth

### Mean Forest Carbon Density by Ownership Continental U.S. (inc. SE Alaska) & PNW West



# Difference Between Carbon Stores and Sequestration

- Sequestration = **Rate** of CO<sub>2</sub> uptake from atmosphere
- Stores = **Amount** of carbon stored in biomass (trees/leaves, soil, down/dead trees)

# Stores and Sequestration

- Both are important strategies for helping to mitigate the impacts of climate change.
- But they are different and can have very different management implications for mitigation and habitat.

# Strategies: Sequestration vs. Stores

1. Increase biological sequestration
  - Reforestation (where natural regeneration isn't occurring)
  - Allow all forests to grow older by reducing/eliminating logging.

# Strategies: Sequestration vs. Stores

## 2. Avoid Emissions

- Protect current stores—stop deforestation and degradation
  - Bush's BLM Western Oregon Plan Revision would have increased by 400% old growth logging
  - Emitting 180 million tons of C or driving every vehicle in Oregon for 33 years.

# Stores vs. Sequestration

## 2. Avoid Emissions

### b. Fire restoration—

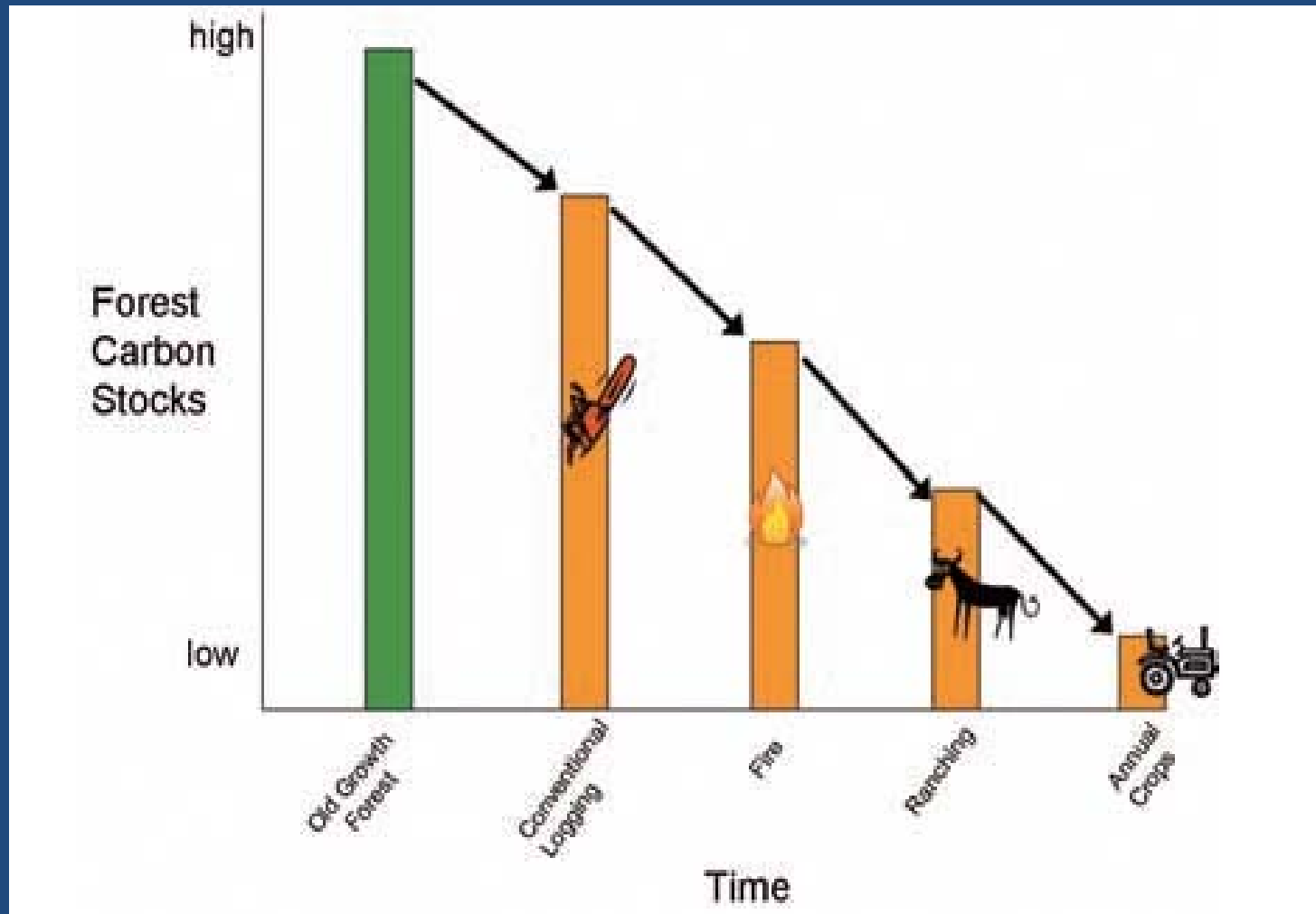
- Yes, forest fires emit carbon, but less than logging—and create great habitat for certain bird species:

- black-backed woodpecker
- white-headed woodpecker, etc.

Seems counter intuitive to those who  
grew up believing in Smokey Bear,  
but....

- Even in severe fires majority of carbon (approx. 80%) carbon remains on site.
- Logging manufacturing, emits the same or more CO<sub>2</sub> to the atmosphere.

# All Disturbances Reduce Carbon



Source: The Nature Conservancy

# Thinning does not increase forest carbon stores

- But can help biodiversity in certain instances (e.g. whiteheaded woodpecker)
- It's a trade off

# Status of the Northern Spotted Owl

- Listed threatened species
- U.S. WatchList, a list of birds of highest conservation concern developed by American Bird Conservancy & Audubon scientists.
- Population in serious decline; 4% across range
- Northwest Forest Plan, good but may be too little too late. But without the plan owls would be MUCH worse off since the listing in 1990.
- Competition from bared owls
- Fire: owls appear fire adapted/use burned forests

# Status of Marbled Murrelet

- Listed threatened species
- U.S. WatchList
- Scientific status review: current trend 4-6% annual decline
- Species will be extinct in Washington, Oregon, and California outside of the Puget Sound area within the next 100 years.

# Owls & Murrelet

- Unless effective conservation actions are taken, both species will soon need to be up-listed under the Endangered Species Act from threatened to endangered.
- Need more, not less habitat.
- Older forests are critical

# Healthy Bird Populations Add Economic Value

- 45 million Americans watch birds (USFWS)
- Bird watching/wildlife viewing contributes \$43 billion annually (Outdoor Industry Foundation)
  - \$23.5 billion equipment, cameras, binoculars
  - \$8 billion trip related
  - \$6.7 billion on books, magazines, fees (USFWS)
- One-third outdoor enthusiasts take at least one bird/wildlife trip a year—nearly 70% visit a forest

# Conclusion

- Need to ramp up habitat protection
- Time to get serious. Forests can be part of the solution to climate change.
- Are we going to let carbon stores hit the atmosphere or protect stores and maintain biodiversity?

# Big Win for Birds!

- Moratorium and legislative protection for mature and old forests, moist forests.
- Let forests increase carbon stores over time = grow old
- Manage for biological diversity, water and carbon build resilience and maintain ecosystem function.
- Shift federal investment to watershed and forest restoration.
- Eliminate habitat fragmentation
- Reduce human stressors