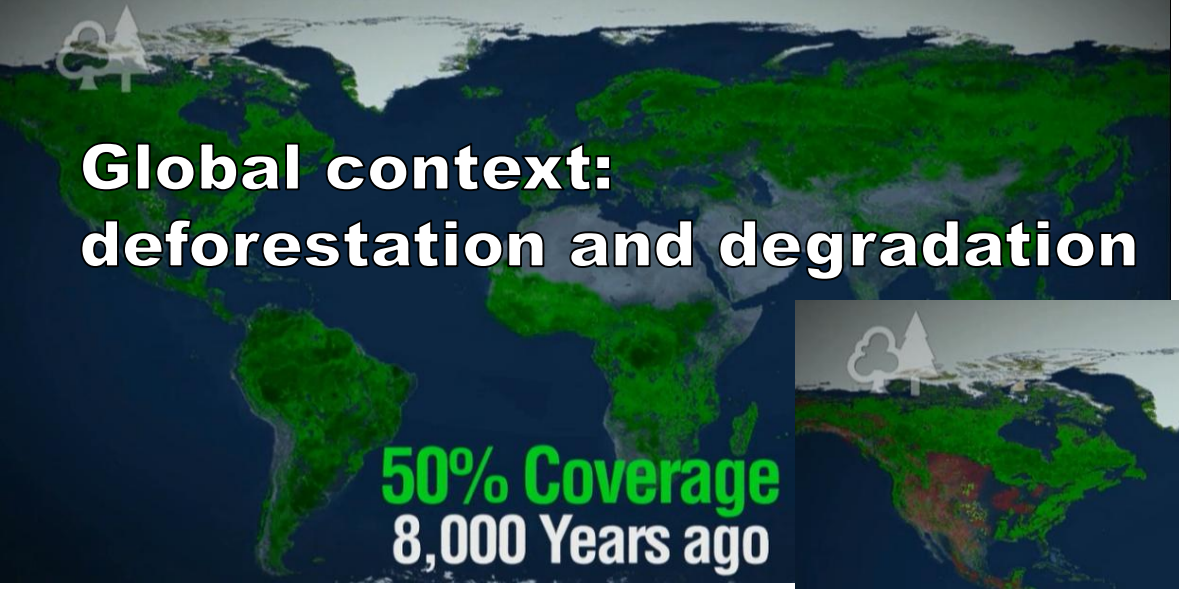
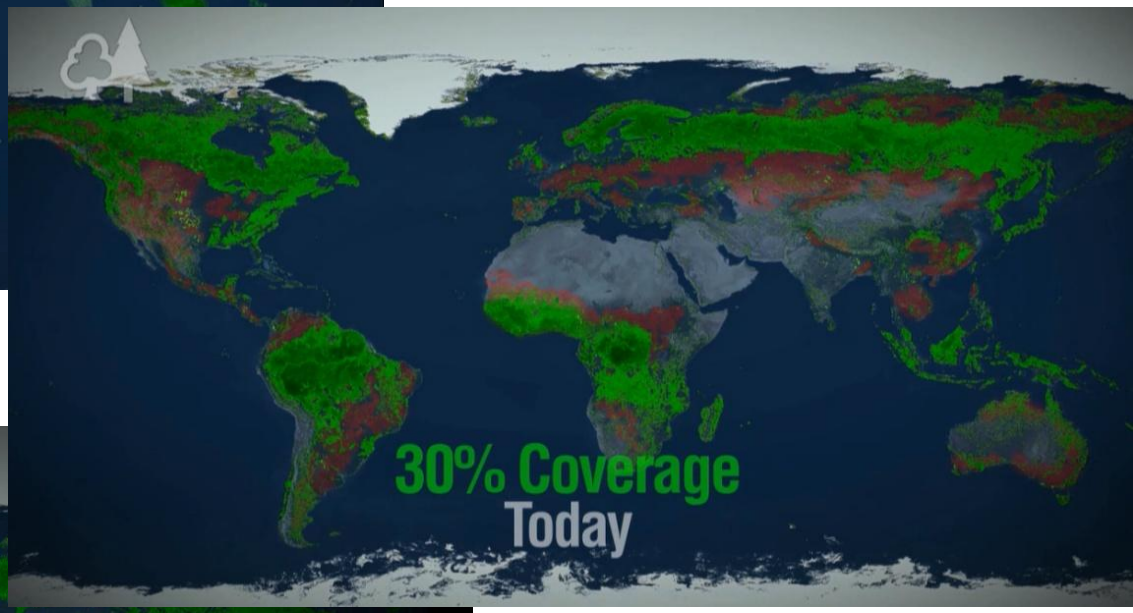
Why we need urgent action for Vancouver Island's endangered old-growth rainforest and community well-being

April 2017
Sierra Club BC

•Ecological integrity
• Environmental services
• Diverse economy
• Climate, mitigation & adaptation
• First Nations rights & stewardship
• Support forest sector transition



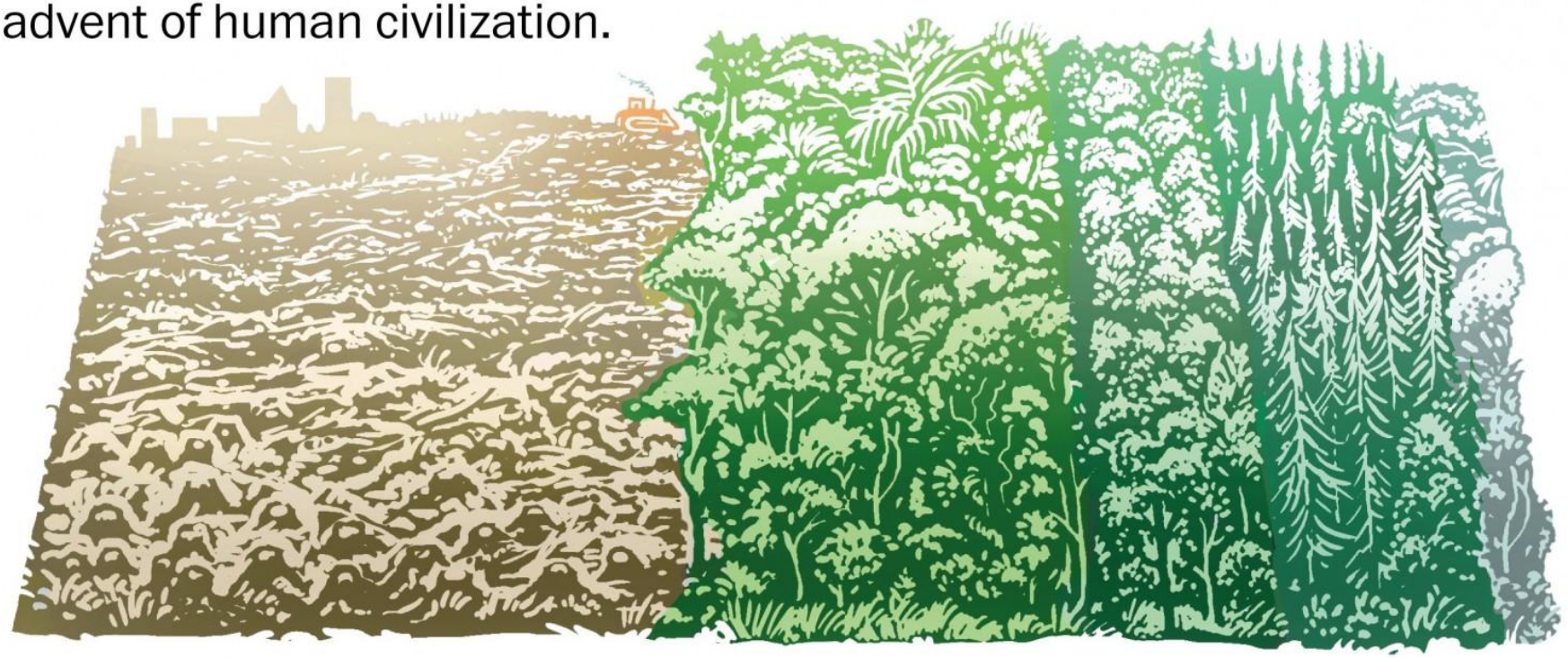


Source: UK gov

Global responsibility: Canada has more trees per person than any other nation

The number of trees has fallen by **46 percent** since the advent of human civilization.

3.04 trillion trees remain.



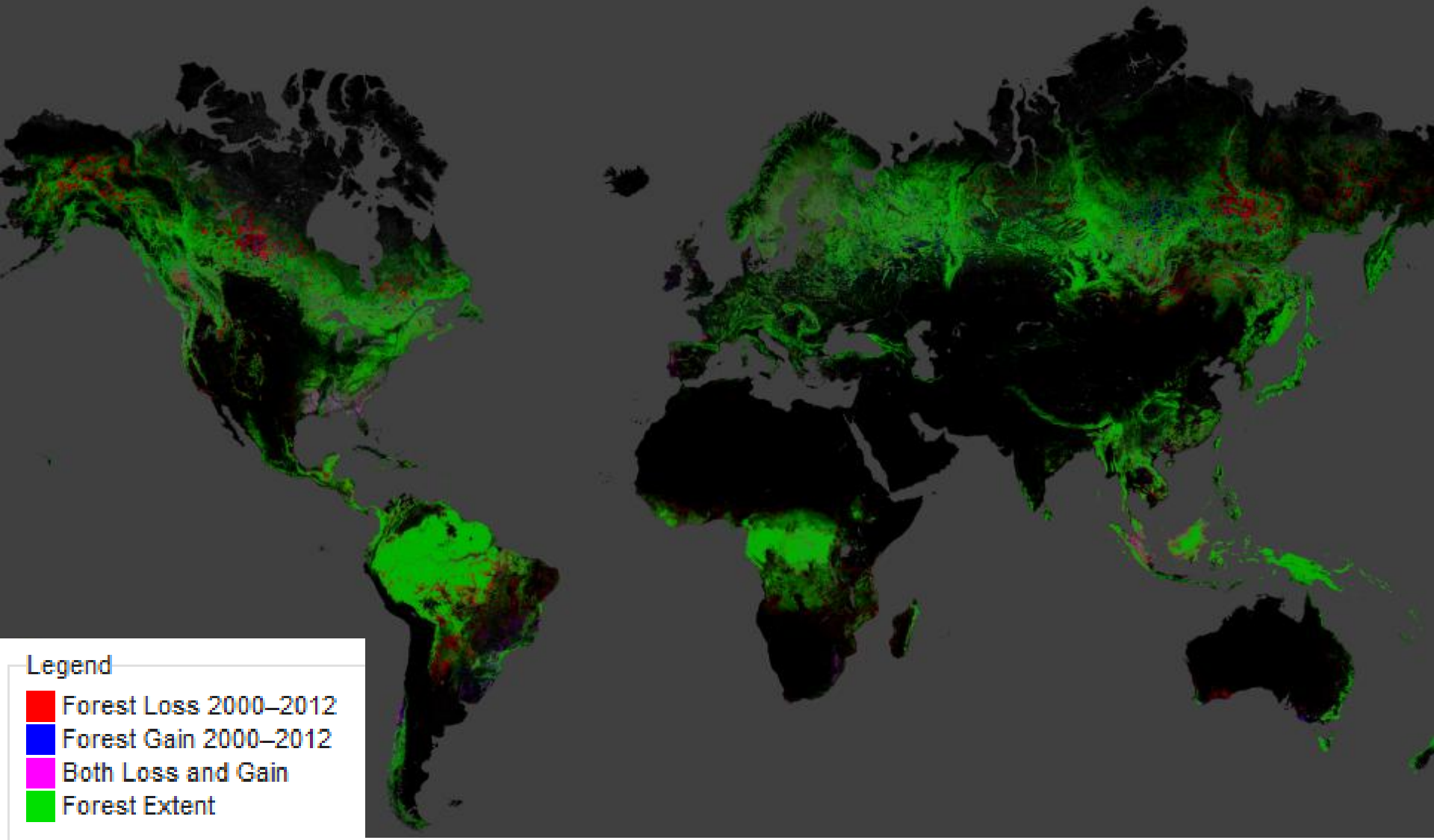
1.39T tropical and subtropical

0.61T temperate

0.74T boreal

SOURCE: Nature

PATTERSON CLARK/
THE WASHINGTON POST



- **150 million hectares deforestation**
- **100 million hectares degradation (8%)**

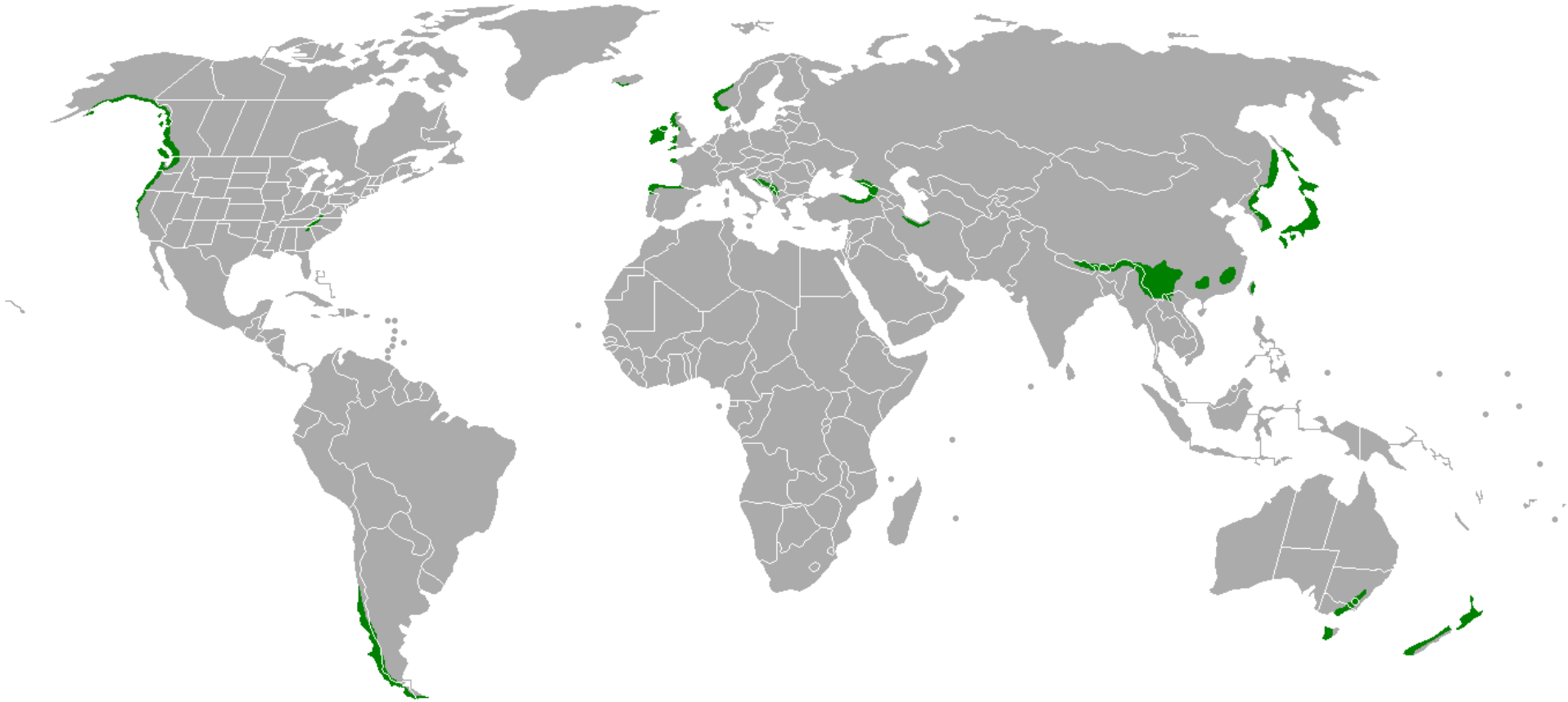
(Canada: 21%, higher than any other country)

Global Forest Change

Published by Hansen, Potapov, Moore, Hancher et al.

UNIVERSITY OF MARYLAND
DEPARTMENT OF GEOGRAPHICAL SCIENCES

November 2013



Temperate rainforests cover about 0.5% of land mass

“Recovery of old growth forest is now an inappropriate, anachronistic concept, given rapid climate change, system unpredictability and scientific uncertainty.” BC ecologist Jim Pojar

Remaining Old Growth
Logged Areas / Second Growth
Haida Gwaii
North & Central Coast
South Coast
Vancouver Island
YK
NWT
AK
BC
AB
WA

Rainforest trends (loss of primary forest)

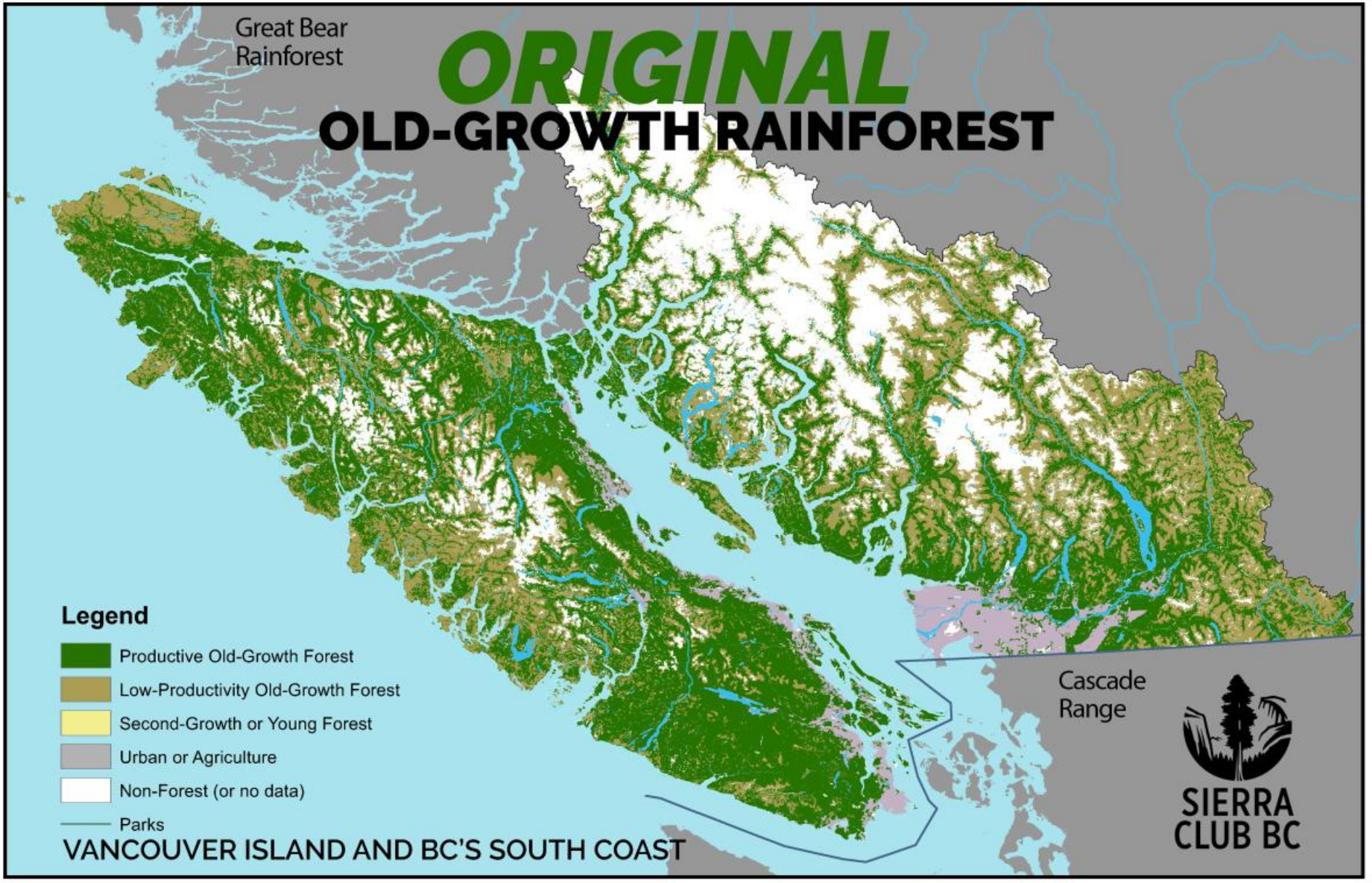
Primary forest loss in *tropical rainforest countries:*

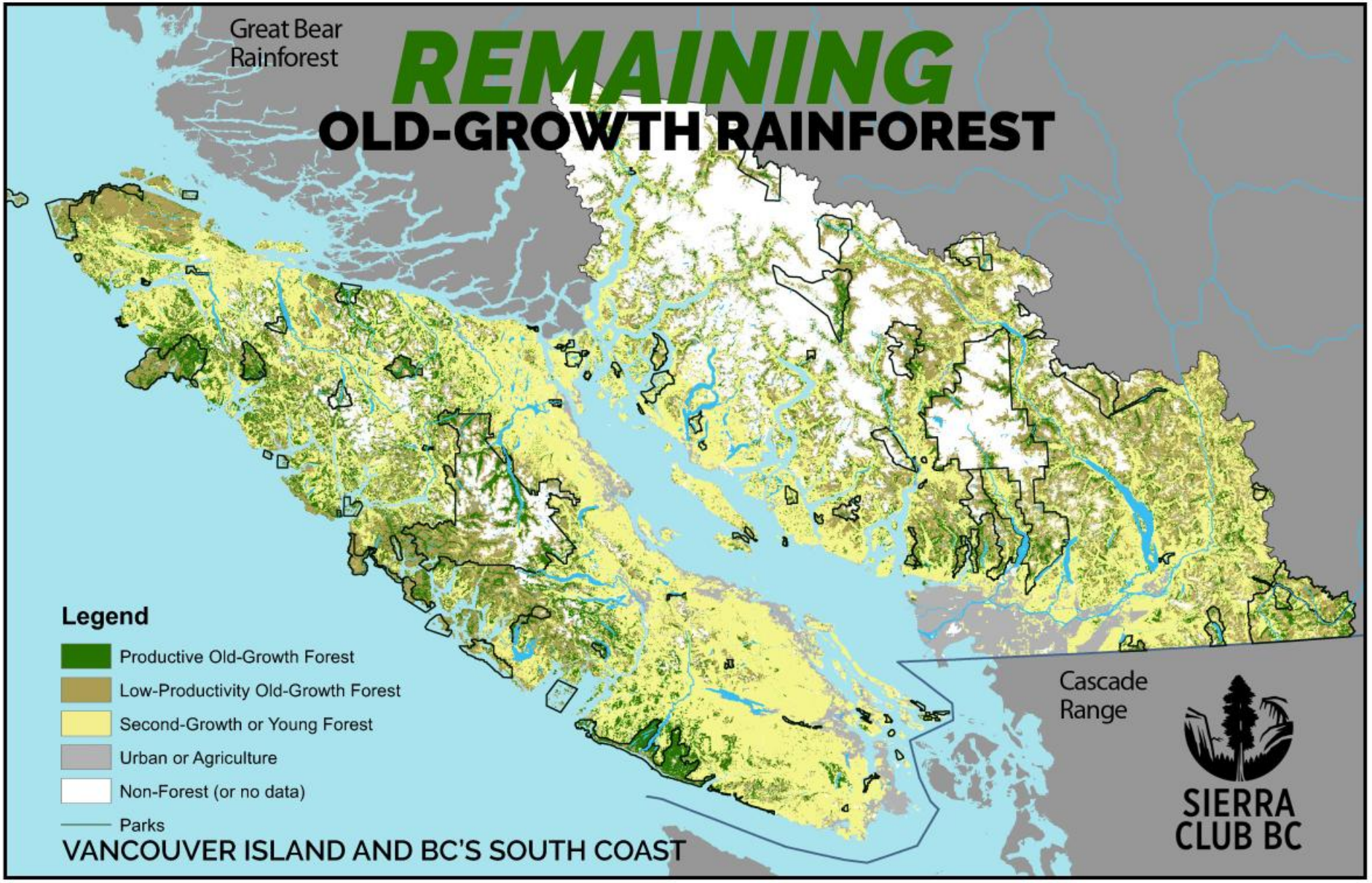
- Overall decline of 10 percent in the last 25 years (from 1990 to 2015, FAO).

Vancouver Island

- Overall decline of 30 per cent in the last 25 years
  original extent: 2,600,000 hectares
  1990: 1,082,000 hectares
  2015: 748,000 hectares
  current rate: 9,000 ha/year or 25 ha/day

Primary forest: characterized by ecological processes largely undisturbed by human activity


Great Bear Rainforest
ORIGINAL
OLD-GROWTH RAINFOREST
Legend
Productive Old-Growth Forest
Low-Productivity Old-Growth Forest
Second-Growth or Young Forest
Urban or Agriculture
Non-Forest (or no data)
Parks
VANCOUVER ISLAND AND BC'S SOUTH COAST
Cascade Range
SIERRA CLUB BC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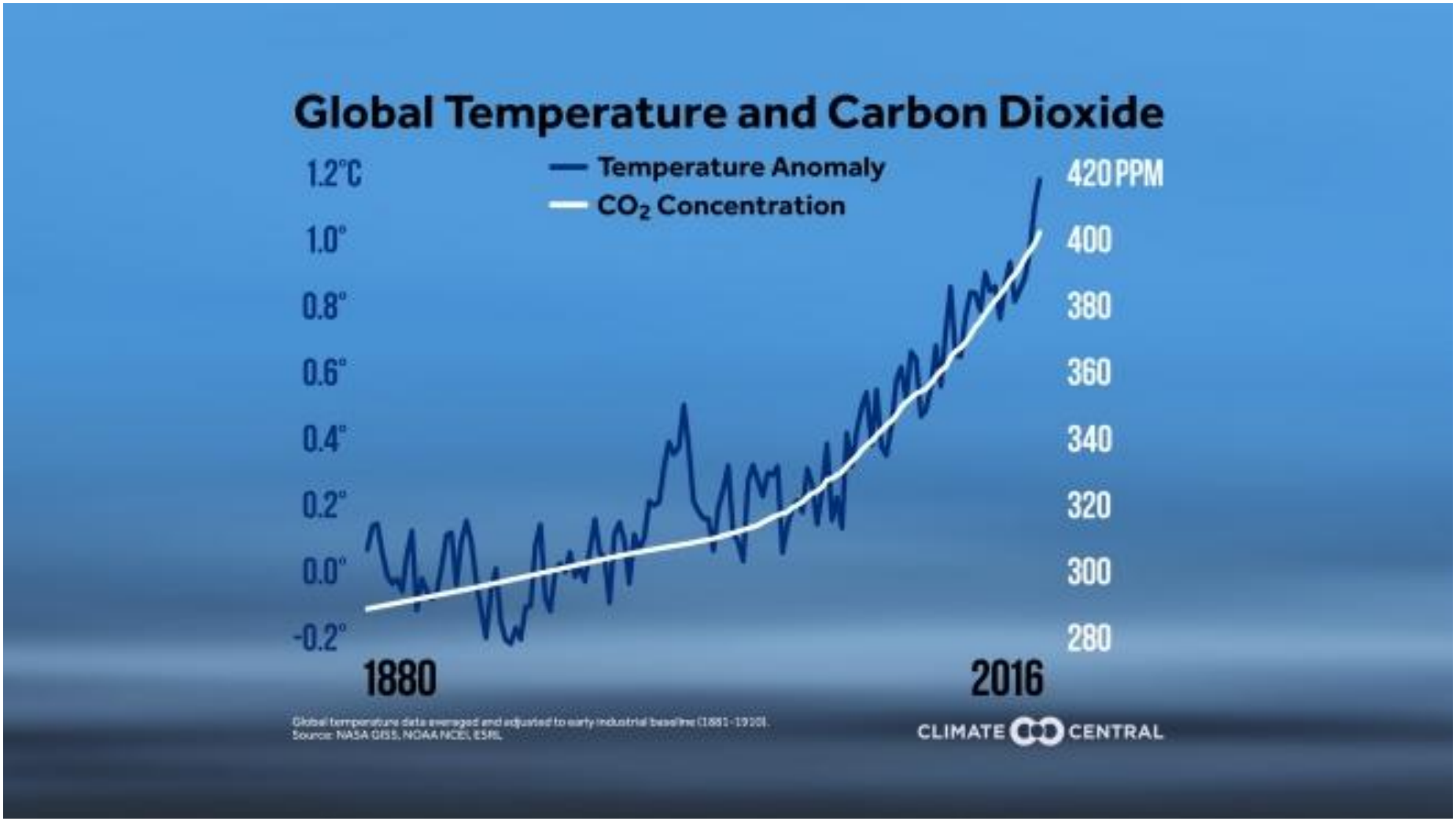
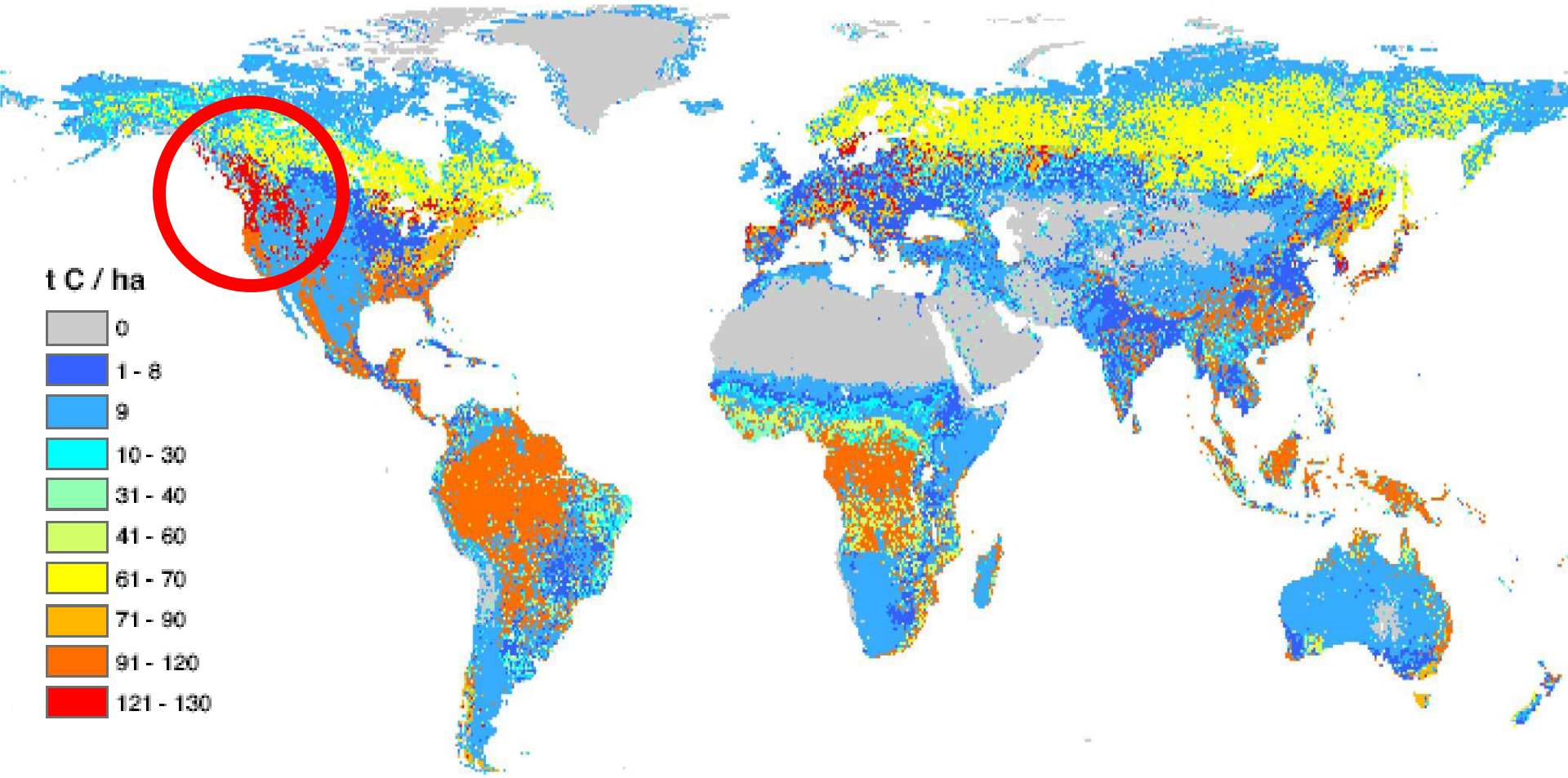
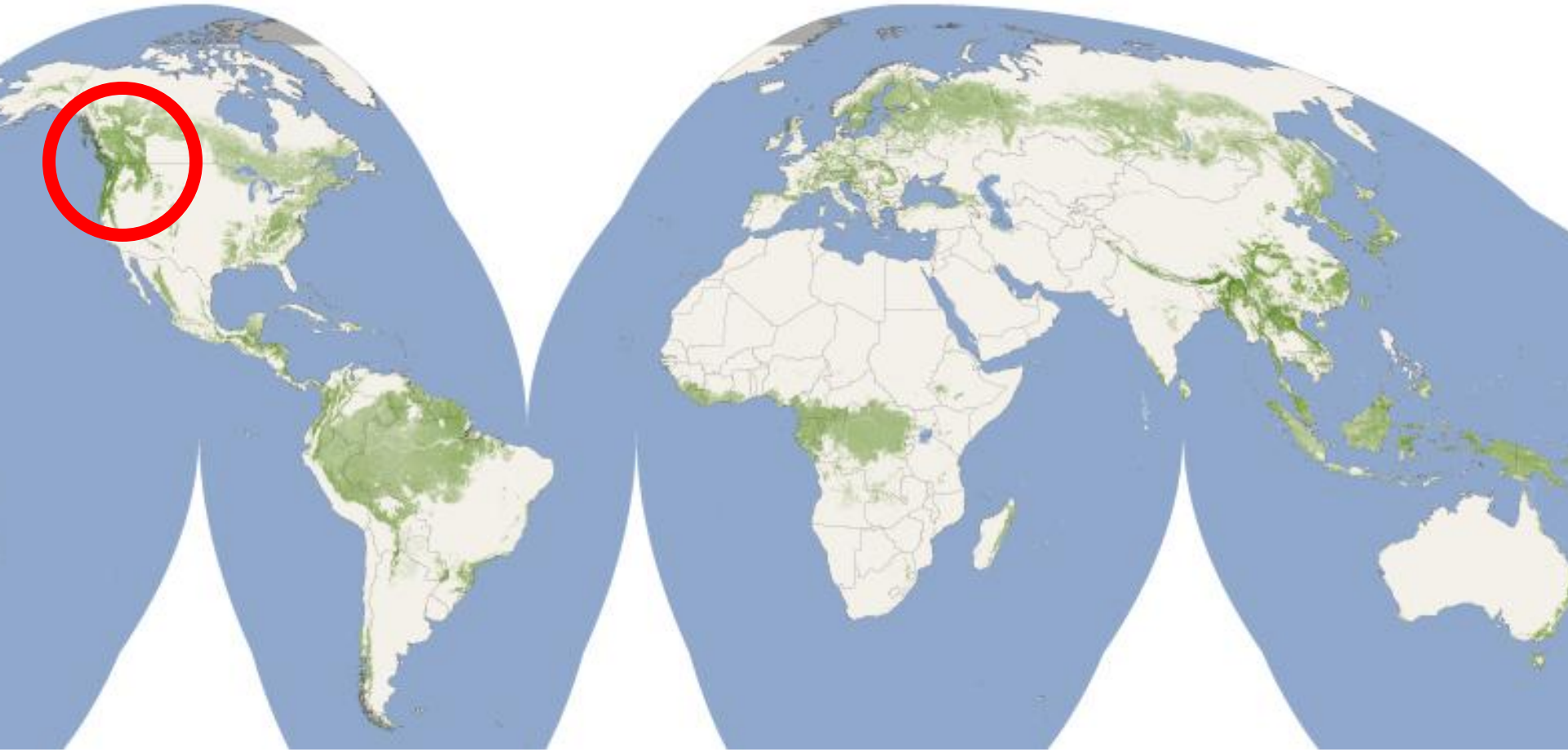

Global Temperature and Carbon Dioxide
Temperature Anomaly
CO2 Concentration
1.2°C
1.0°
0.8°
0.6°
0.4°
0.2°
0.0°
-0.2°
420 PPM
400
380
360
340
320
300
280
1880
2016
Global temperature data averaged and adjusted to early industrial baseline (1881-1910).
Source: NASA GISS, NOAA NCEI, ESRL
CLIMATE CENTRAL

Global Forest Carbon Density



R. Naidoo, A. Balmford, R. Costanza, B. Fisher, R. E. Green, B. Lehner, T. R. Malcolm, and T. H. Ricketts. Global mapping of ecosystem services and conservation priorities. *PNAS July 15, 2008 vol. 105 no. 28 9495-9500.*
http://www.pnas.org/content/suppl/2008/07/07/0707823105.DCSupplemental/0707823105SI.pdf

NASA Tree Height Map



Wood products can be climate friendly, but...

CARBON AT RISK

B.C.'s Unprotected Old-Growth Rainforest

Sierra Club BC, February 2013
Jens Wieting, Forest and Climate Campaigner
Mapping Analysis by Dave Leversee

Logging on Vancouver Island
Photo: TJ Watt

SIERRA CLUB BC

Vol 455|11 September 2008|doi:10.1038/nature07276

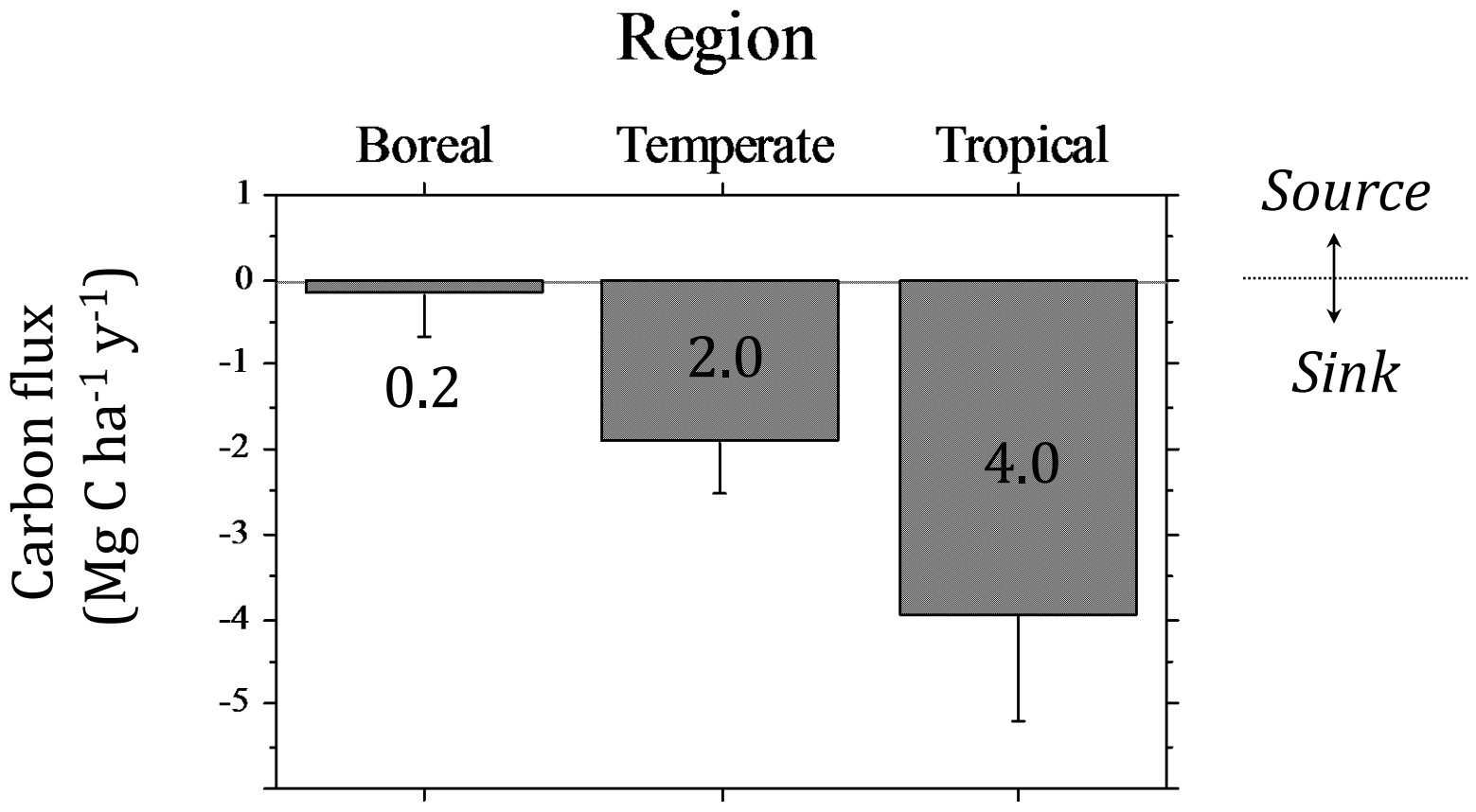
nature

LETTERS

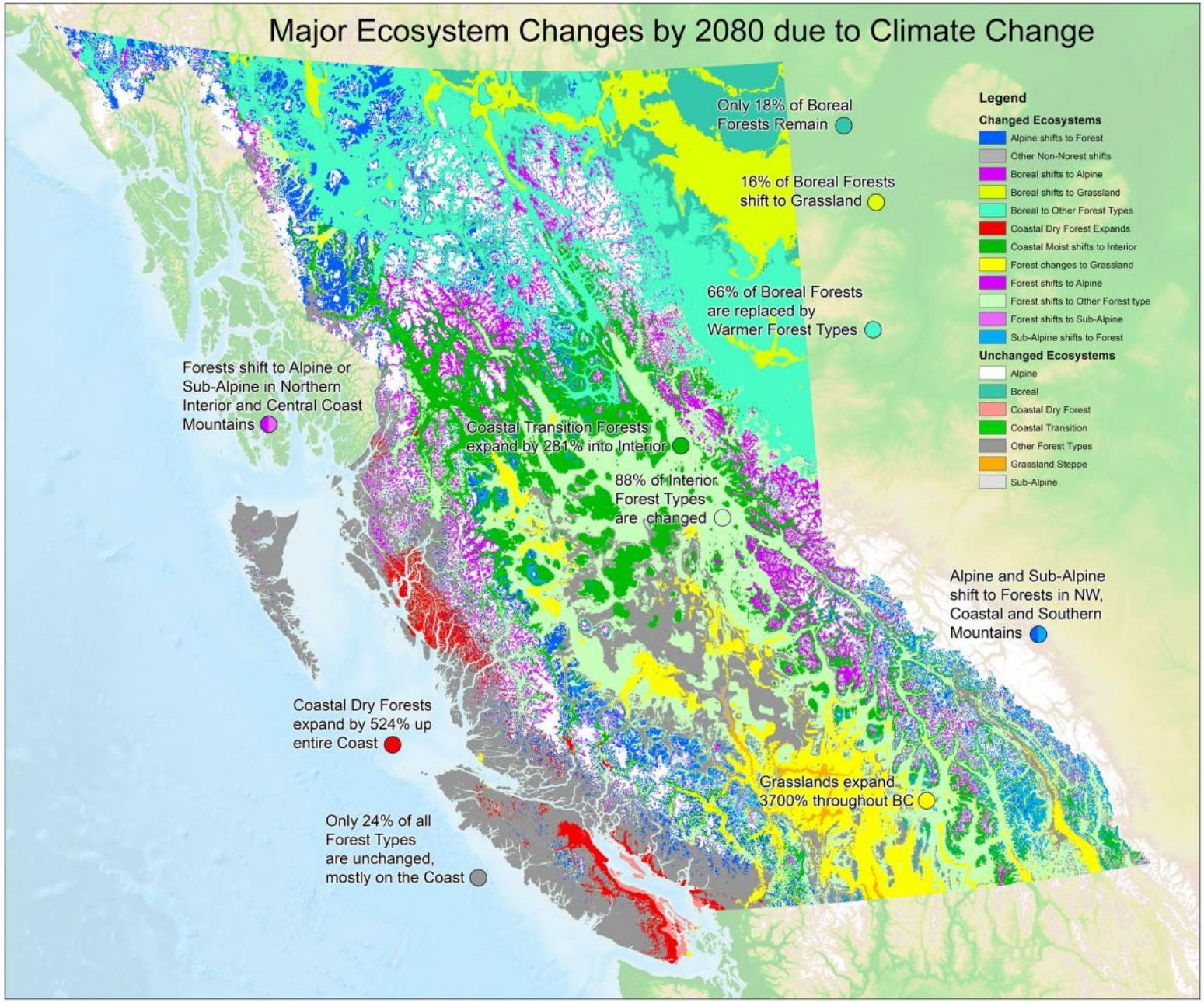
Old-growth forests as global carbon sinks

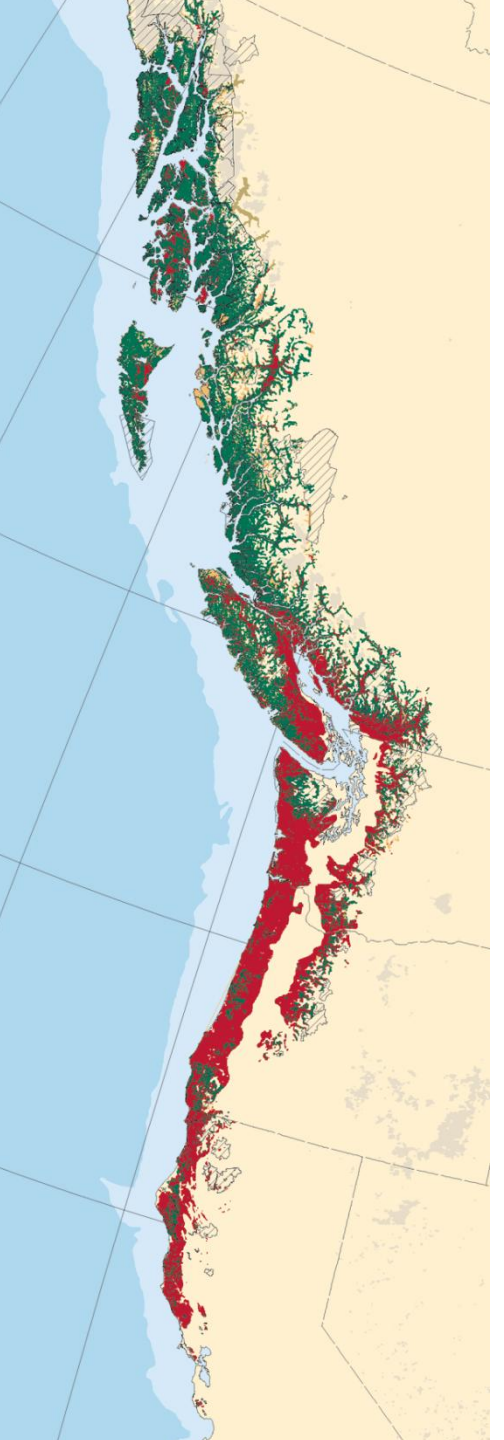
Sebastiaan Luyssaert[1,2], E. -Detlef Schulze[3], Annett Börner[3], Alexander Knohl[4], Dominik Hessenmöller[3], Beverly E. Law[2], Philippe Ciais[5] & John Grace[6]

Summary of eddy flux studies conducted in old-growth forests



Unpublished meta-analysis of 21 eddy flux studies (9 boreal, 7 temperate, 5 tropical)


Major Ecosystem Changes by 2080 due to Climate Change
Only 18% of Boreal Forests Remain
16% of Boreal Forests shift to Grassland
66% of Boreal Forests are replaced by Warmer Forest Types
Forests shift to Alpine or Sub-Alpine in Northern Interior and Central Coast Mountains
Coastal Transition Forests expand by 281% into Interior
88% of Interior Forest Types are changed
Alpine and Sub-Alpine shift to Forests in NW, Coastal and Southern Mountains
Coastal Dry Forests expand by 524% up entire Coast
Grasslands expand 3700% throughout BC
Only 24% of all Forest Types are unchanged, mostly on the Coast
Legend
Changed Ecosystems
Alpine shifts to Forest
Other Non-Norest shifts
Boreal shifts to Alpine
Boreal shifts to Grassland
Boreal to Other Forest Types
Coastal Dry Forest Expands
Coastal Moist shifts to Interior
Forest changes to Grassland
Forest shifts to Alpine
Forest shifts to Other Forest type
Forest shifts to Sub-Alpine
Sub-Alpine shifts to Forest
Unchanged Ecosystems
Alpine
Boreal
Coastal Dry Forest
Coastal Transition
Other Forest Types
Grassland Steppe
Sub-Alpine



Twenty-five international environmental organizations call for urgent action for Vancouver Island's rainforest and communities

April 10, 2017

State of British Columbia's Coastal Rainforest

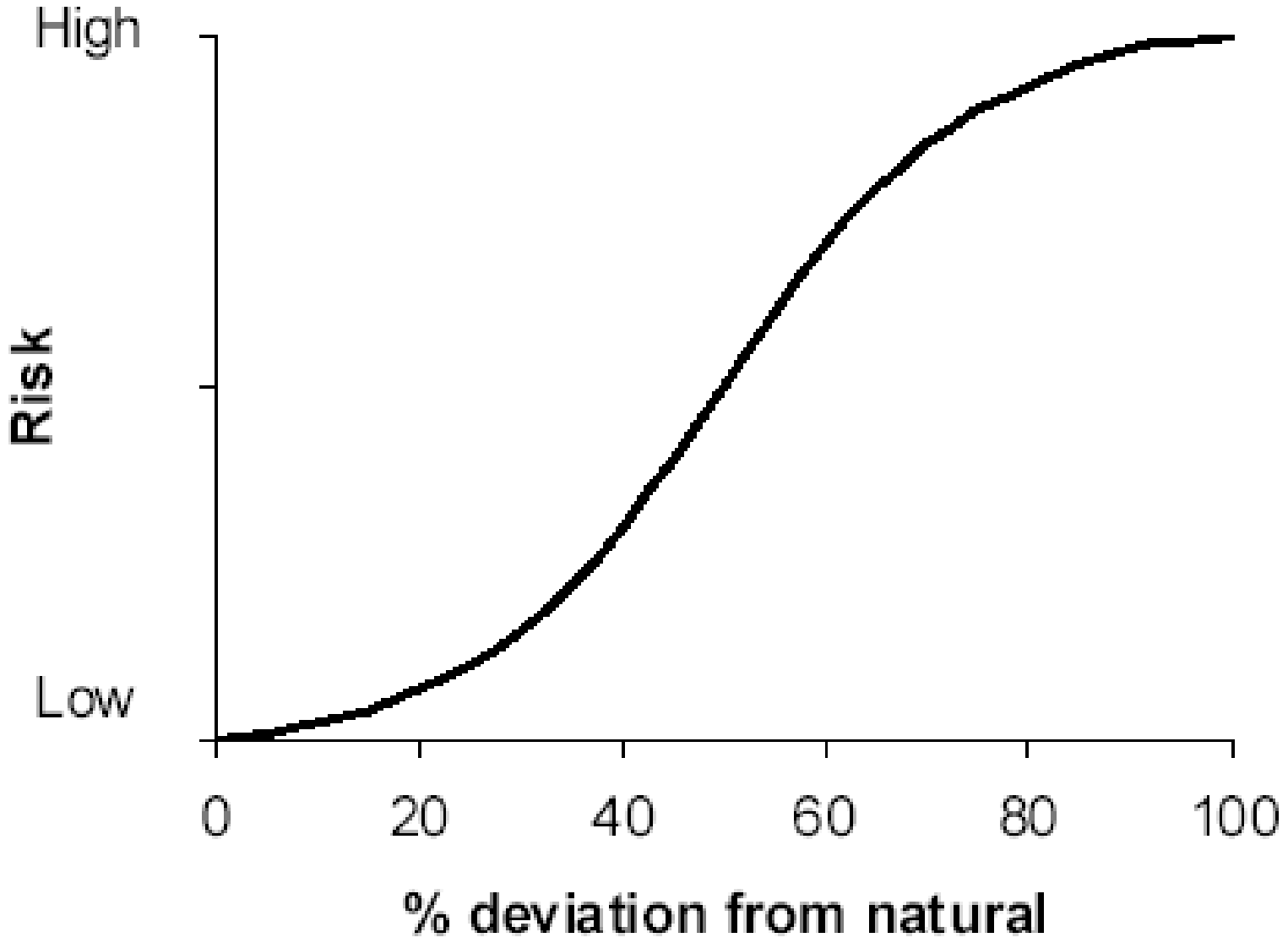
Mapping the Gaps for Ecological Health and Climate Protection

Sierra Club BC

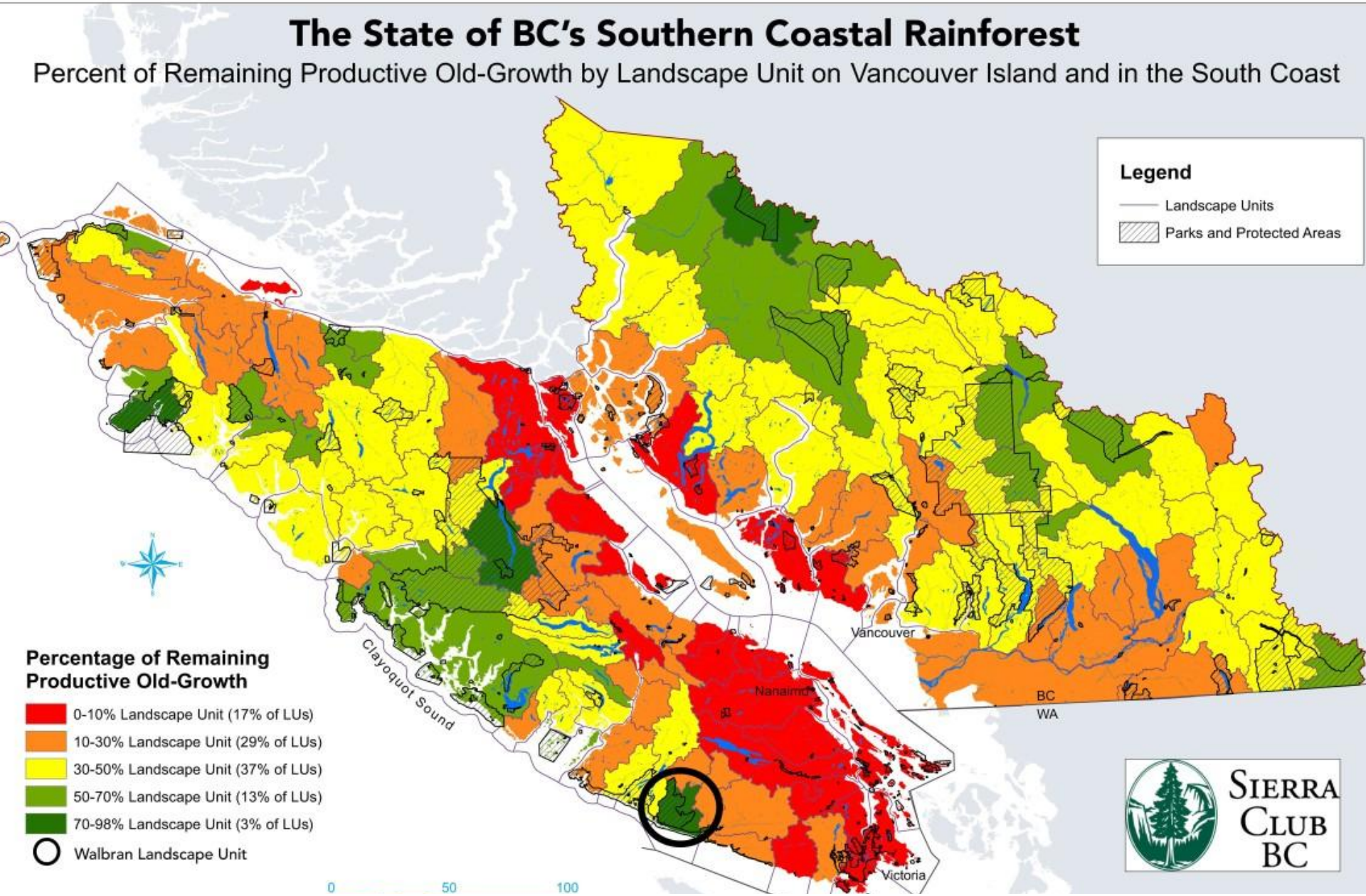
December 2009

Vancouver Island
3,383,000 ha.

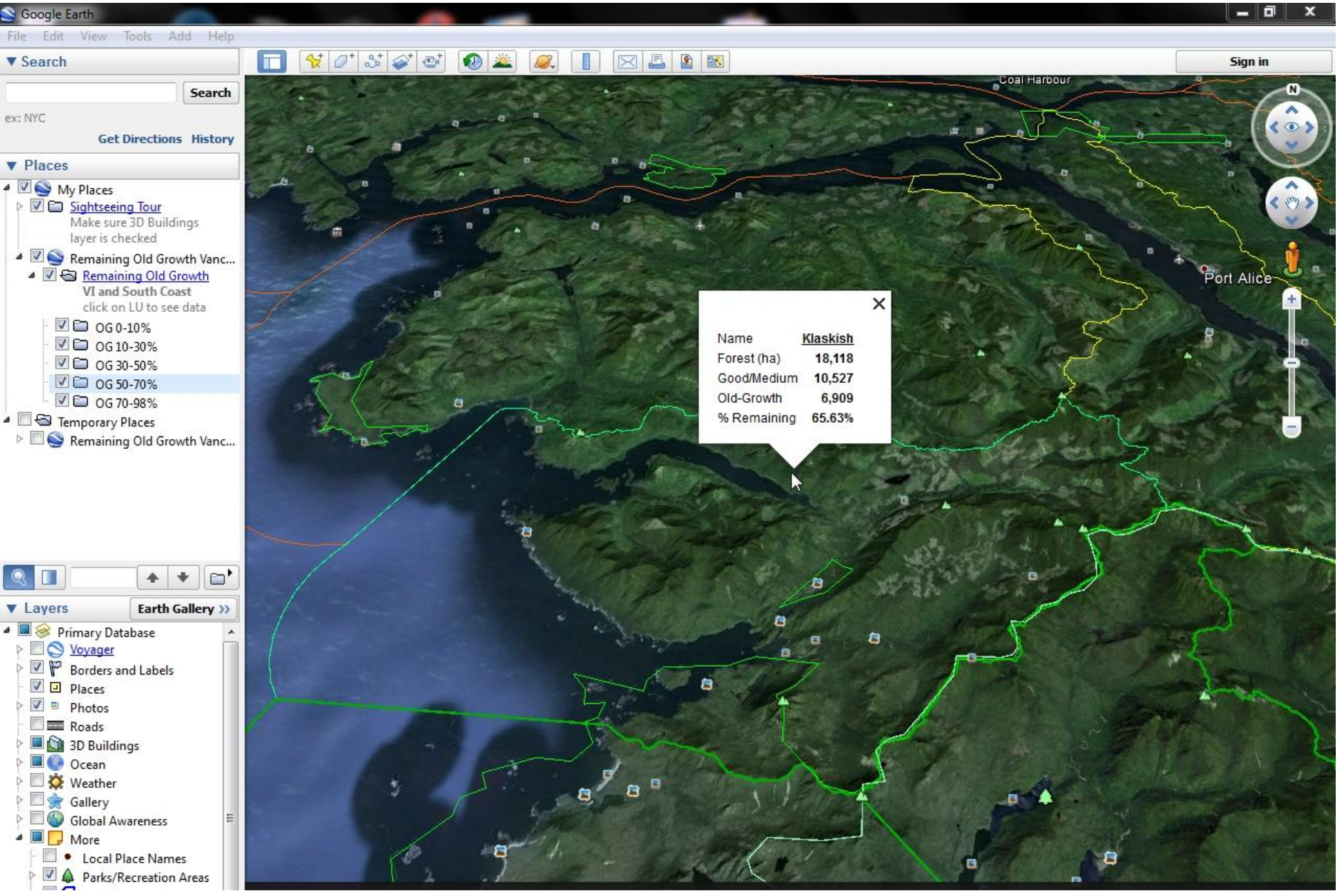
Good Productivity
Medium Productivity
Poor Productivity
Unknown Productivity
Non-Forest Areas
Urban / Agricultural Areas



Source: EBM Handbook, CIT



Remaining Good+Medium OG 25%, protected 8%, Good, low, flat OG 9%, protected 4%


Google Earth
File Edit View Tools Add Help
Search
Search
ex: NYC
Get Directions History
Places
My Places
Sightseeing Tour
Make sure 3D Buildings layer is checked
Remaining Old Growth Vanc...
Remaining Old Growth
VI and South Coast
click on LU to see data
OG 0-10%
OG 10-30%
OG 30-50%
OG 50-70%
OG 70-98%
Temporary Places
Remaining Old Growth Vanc...
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Local Place Names
Parks/Recreation Areas
Sign in
Coal Harbour
Port Alice
Name Klaskish
Forest (ha) 18,118
Good/Medium 10,527
Old-Growth 6,909
% Remaining 65.63%

- Very high ecological risk for old-growth ecosystems
- Questionable economic benefit of status quo logging in light of negative impacts for tourism, salmon, water, carbon, worsening climate impacts (droughts, floods)
- BC economy less dependent on resource industry (e.g. tourism now $16 billion, 16% + visitors 2016)
- First Nations rights, new conservation options
- Growing support for protection (UBCM, business, unions...)
- EBM/GBR solution elements can be applied in other regions

Sierra Club recommendations for improved forest management

- Maintain natural, resilient forest ecosystems and reduce carbon emissions
- Support forestry operations and value added businesses that create a higher number of jobs per tree
- Restore government funding for stewardship, monitoring, enforcement, inventories and research
- Adjust the Annual Allowable Cut
- Assist forestry dependent communities to restore healthy forests and forestry opportunities as part of a diverse economy

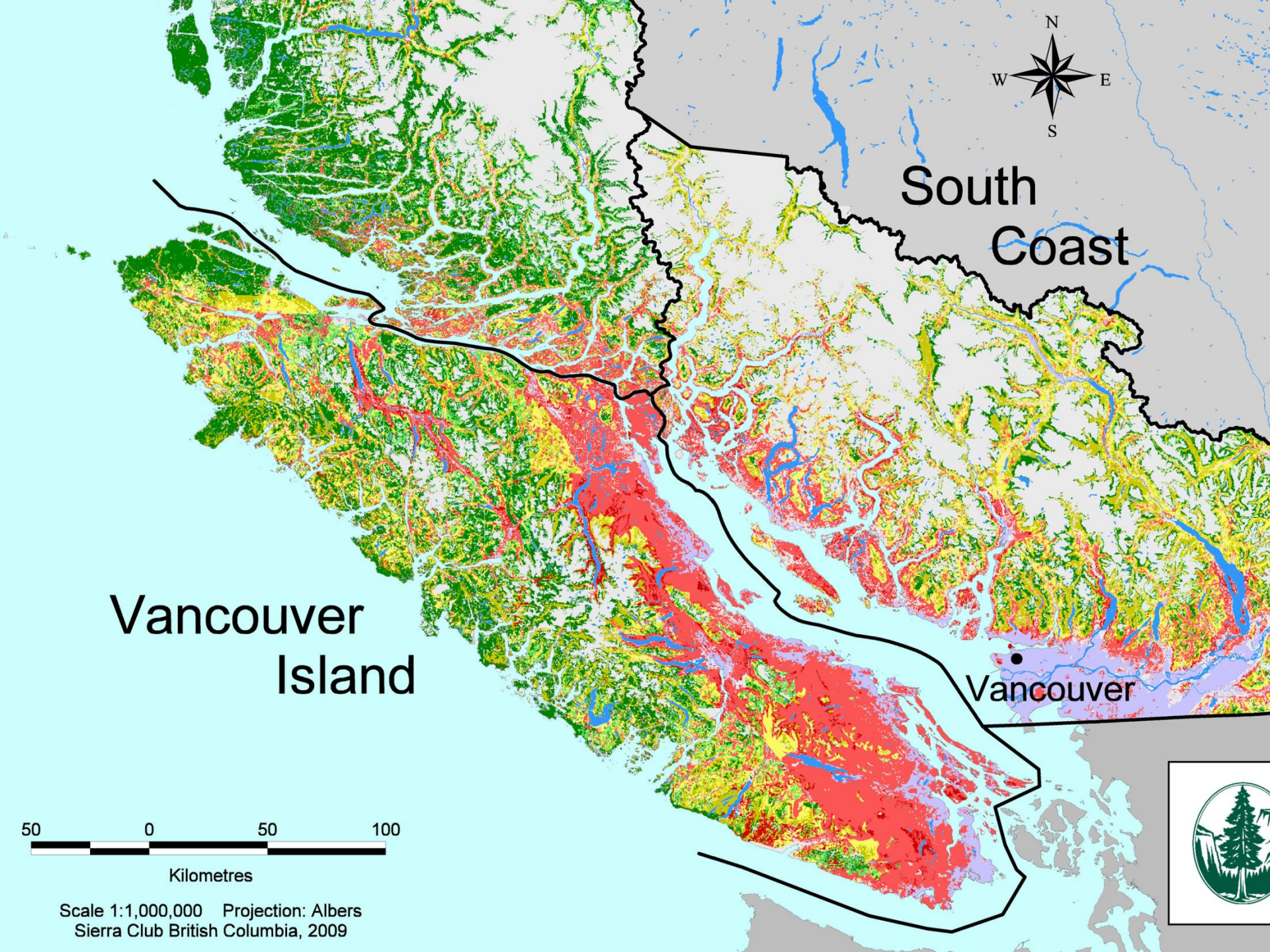
Vancouver island

- Support First Nations aspirations towards protection of intact valleys in Clayoquot Sound
- Identify remaining intact rainforests, create a ‘solution space’ and develop proposals for new protected areas
- Introduce new conservation measures across the landscape such as restoration reserves (30% by landscape & ecosystem)

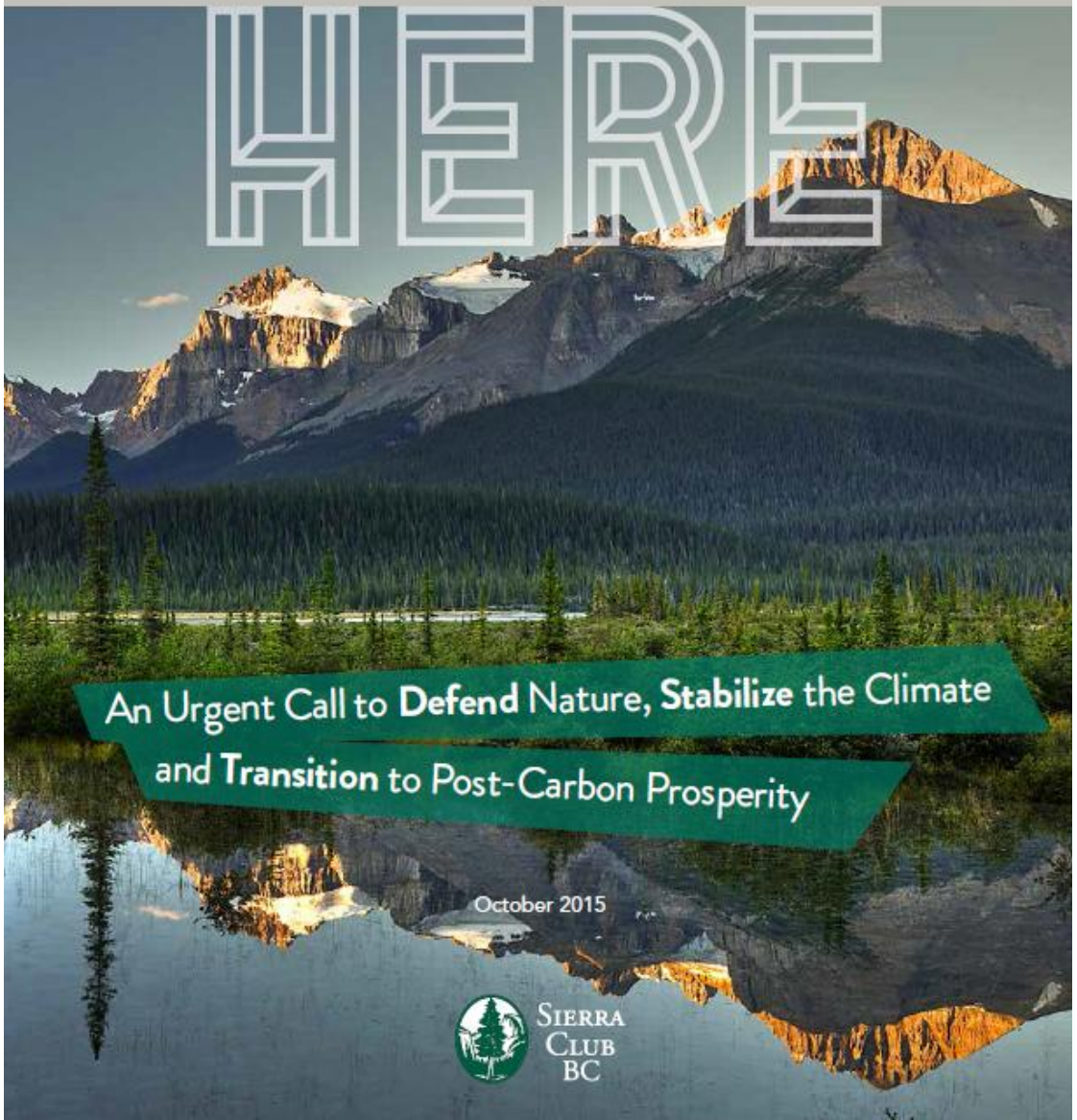
Great Bear Rainforest

- Ensure capacity for ongoing implementation, monitoring and review of the 2016 Great Bear Rainforest Agreements

Some Important Areas Proposed for Protection and Restoration
1- Central Walbran Valley
2- Intact Watersheds of Clayoquot Sound
3- Klaskish River & East Creek Valleys
4- Mid & Upper Tsitika River Valley
5- Nahmint River & Henderson Lake Valleys
6- Koksilah River Valley
7- McLaughlin Ridge
8- Mt Horne & Cameron River Canyon
9- Gordon River East - Edinburgh Mountain
10- Nootka Island
11- Tahsis & Reiner River Valleys
12- Mt Nora
13- West Sayward
14- Artlish River Valley
15- Nimpkish Lake
16- Mt Wolfenden
Port Hardy
Port McNeill
Campbell River
Courtenay
Qualicum Beach
Parksville
Port Alberni
Tofino
Nanaimo
Ladysmith
Duncan
Victoria
Vancouver
Pacific Ocean
Clayoquot Sound
Salish Sea
Locator Map
YT
NT
AK (USA)
BC
AB
WA (USA)
0 200 km
N
0 25 50 km
Remaining Productive (Biggest Trees) Low Elevation Old-Growth Forest
Other Less Productive Old-Growth Forest (High Elevation, Bog Forests, Smaller Trees)
Logged Areas (urgent need for reserves to restore natural forest conditions)
First Nations Reserve Lands
Provincial Parks & National Park Reserves
Tla-o-qui-aht First Nation Tribal Parks


N
W
E
S
South
Coast
Vancouver
Island
Vancouver
50
0
50
100
Kilometres
Scale 1:1,000,000 Projection: Albers
Sierra Club British Columbia, 2009

The FUTURE IS HERE



An Urgent Call to **Defend** Nature, **Stabilize** the Climate and **Transition** to Post-Carbon Prosperity

October 2015

Sierra Club BC