

Sustainability



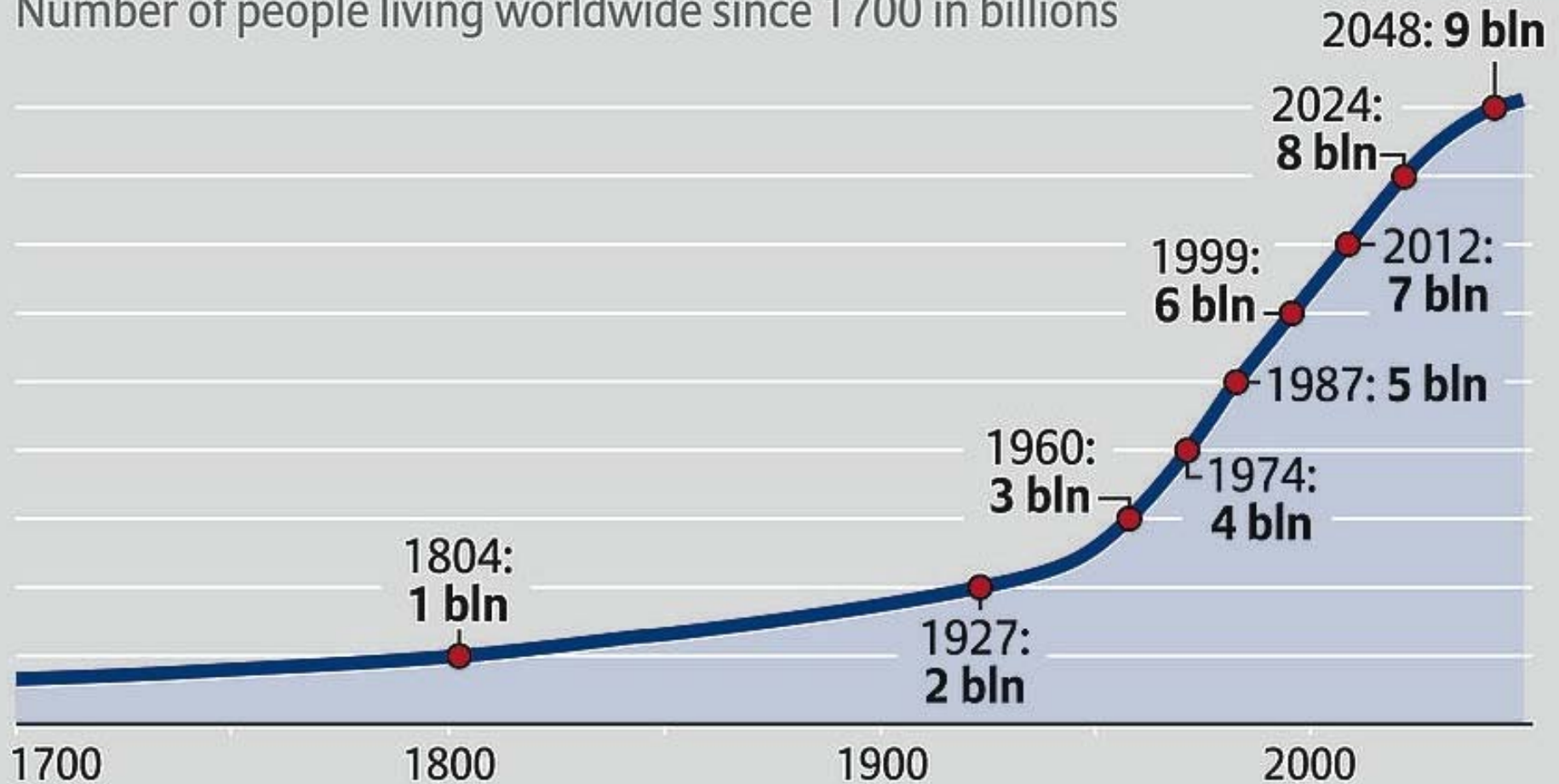
Our Common Future (Brundtland Report)

*"Sustainable development is development that **meets the needs of the present without compromising the ability of future generations** to meet their own needs. It contains within it two key concepts:*

- the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

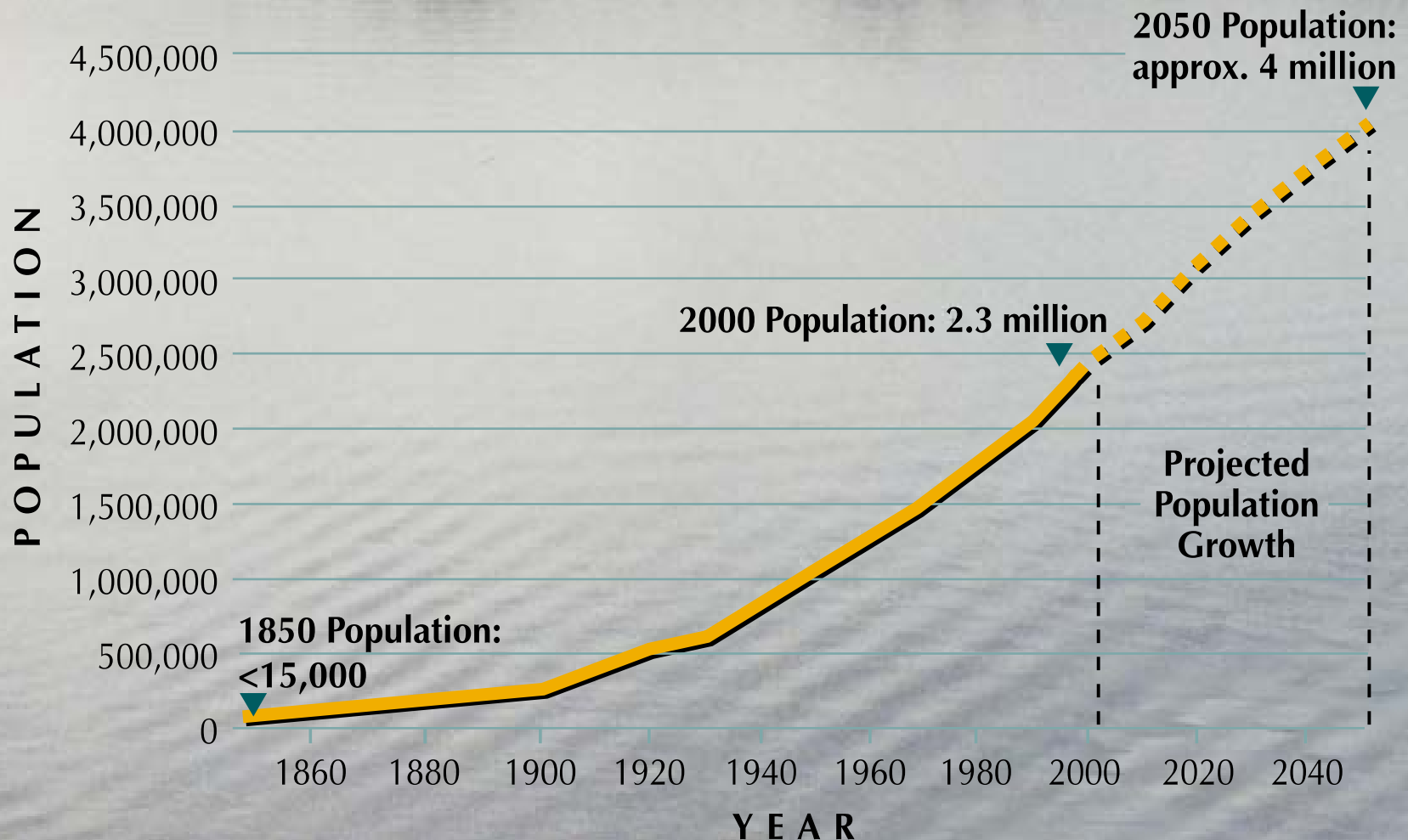
World Population

Number of people living worldwide since 1700 in billions

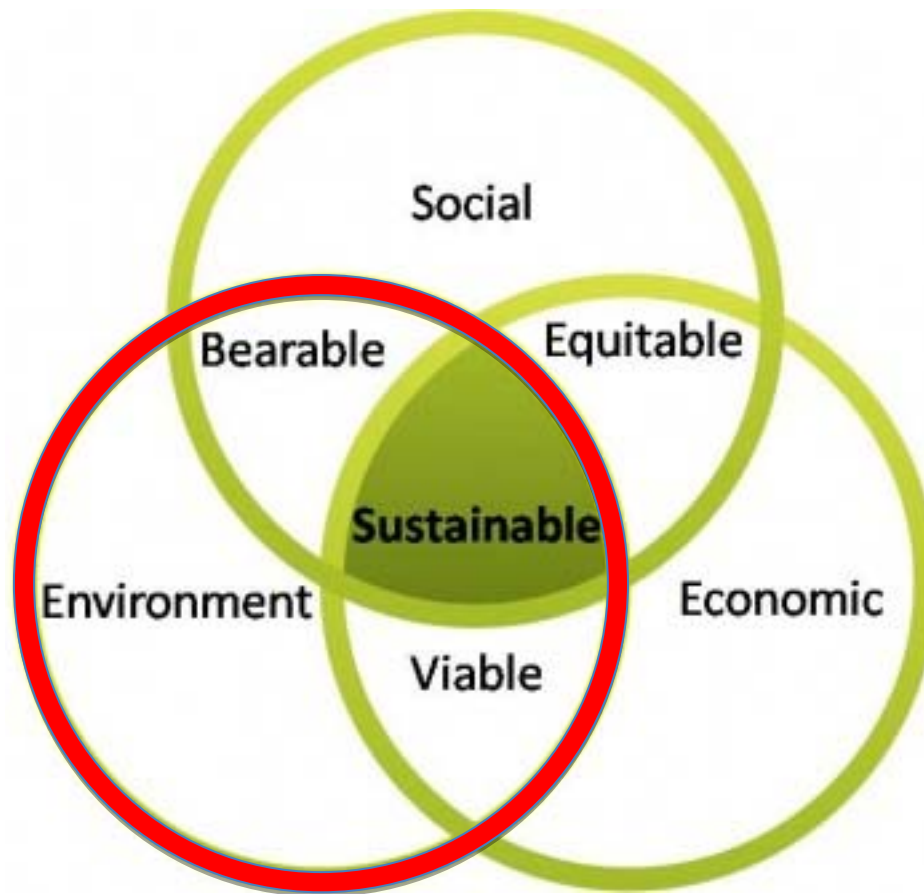


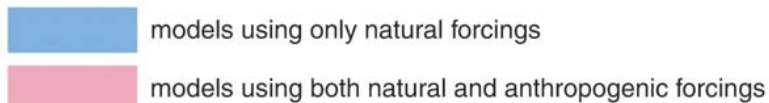
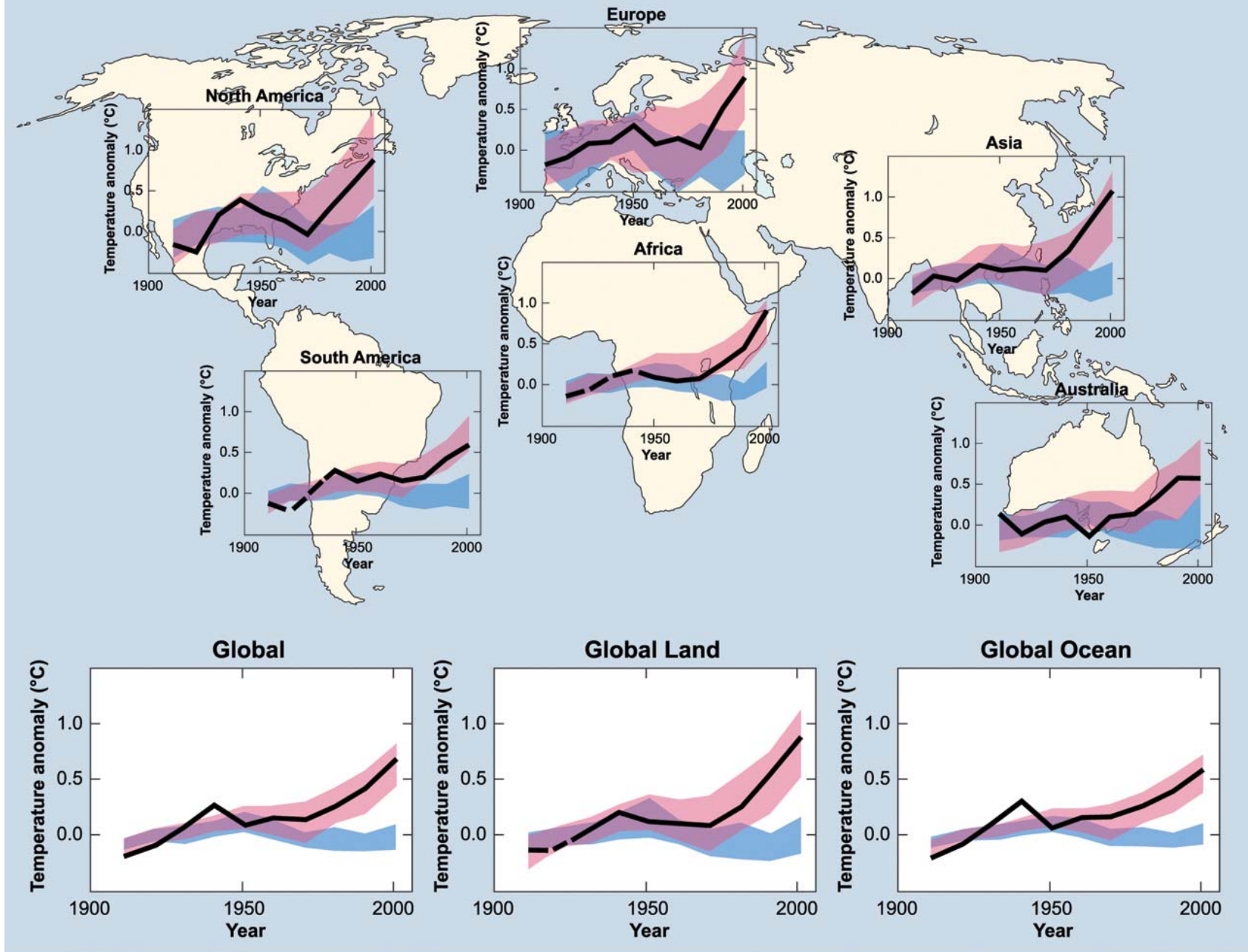
Source: United Nations World Population Prospects, Deutsche Stiftung Weltbevölkerung

Population Growth in Willamette Basin



Sustainability

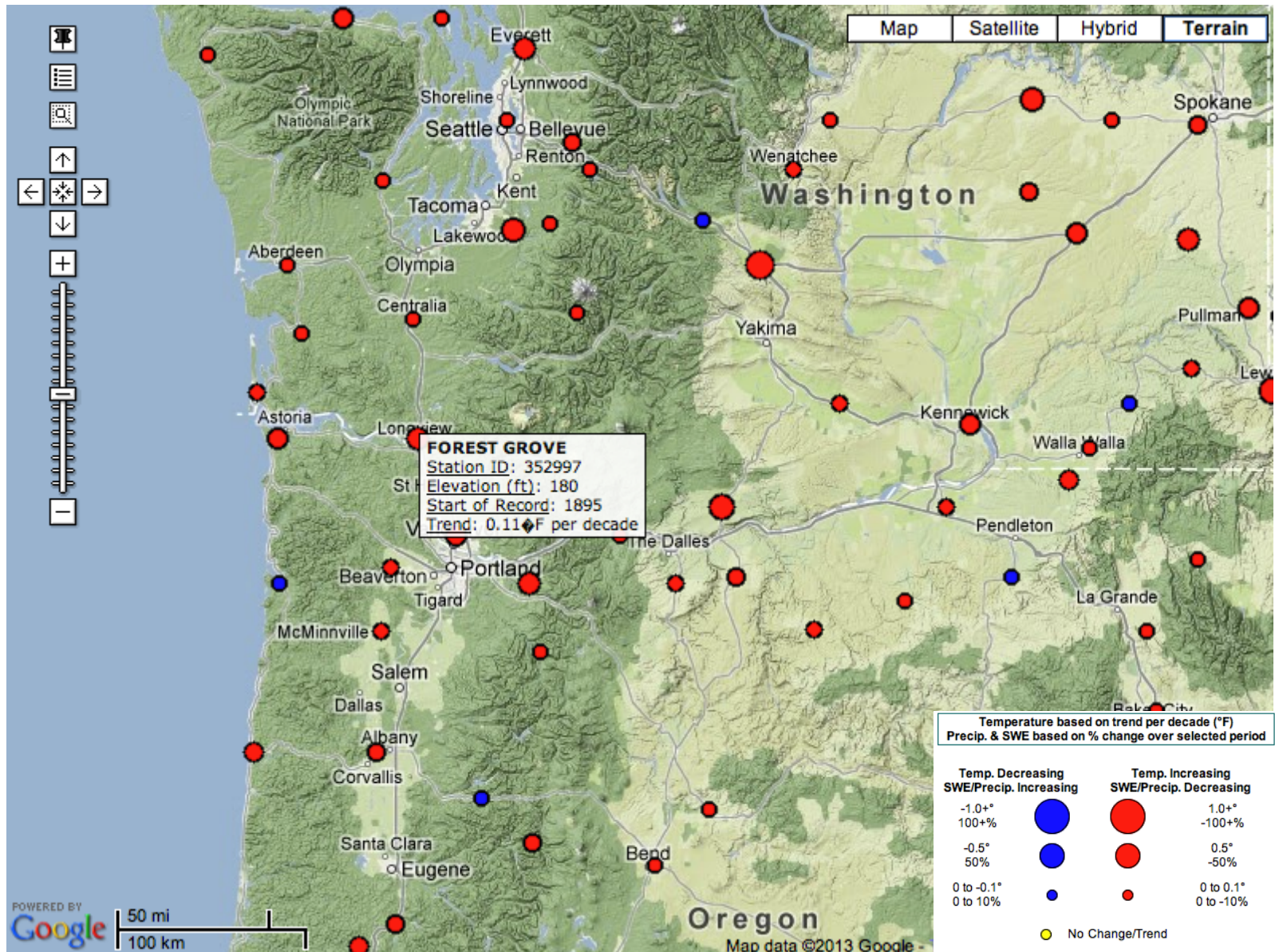




— observations

(IPCC Climate Change 2007)

Mean Temperature Trend Analysis 1895-2010



(<http://climate.washington.edu/trendanalysis/>)

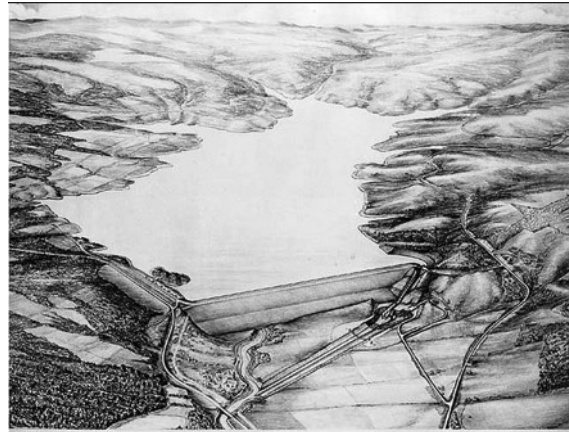
What lies ahead?

Future regional climate change likely marked by:

- Increases in temperature of $\sim 0.5^{\circ}\text{F}$ per decade
- An accentuated warming & drying in summer
- Increased frequency of extreme precipitation
- A northward shift in the storm track and slightly fewer but more intense storms

Effect on Agriculture

- Water
- Perennial crops
- Pathogens
- Pests



John's Engraving
SCOGGINS DAM & RESERVOIR



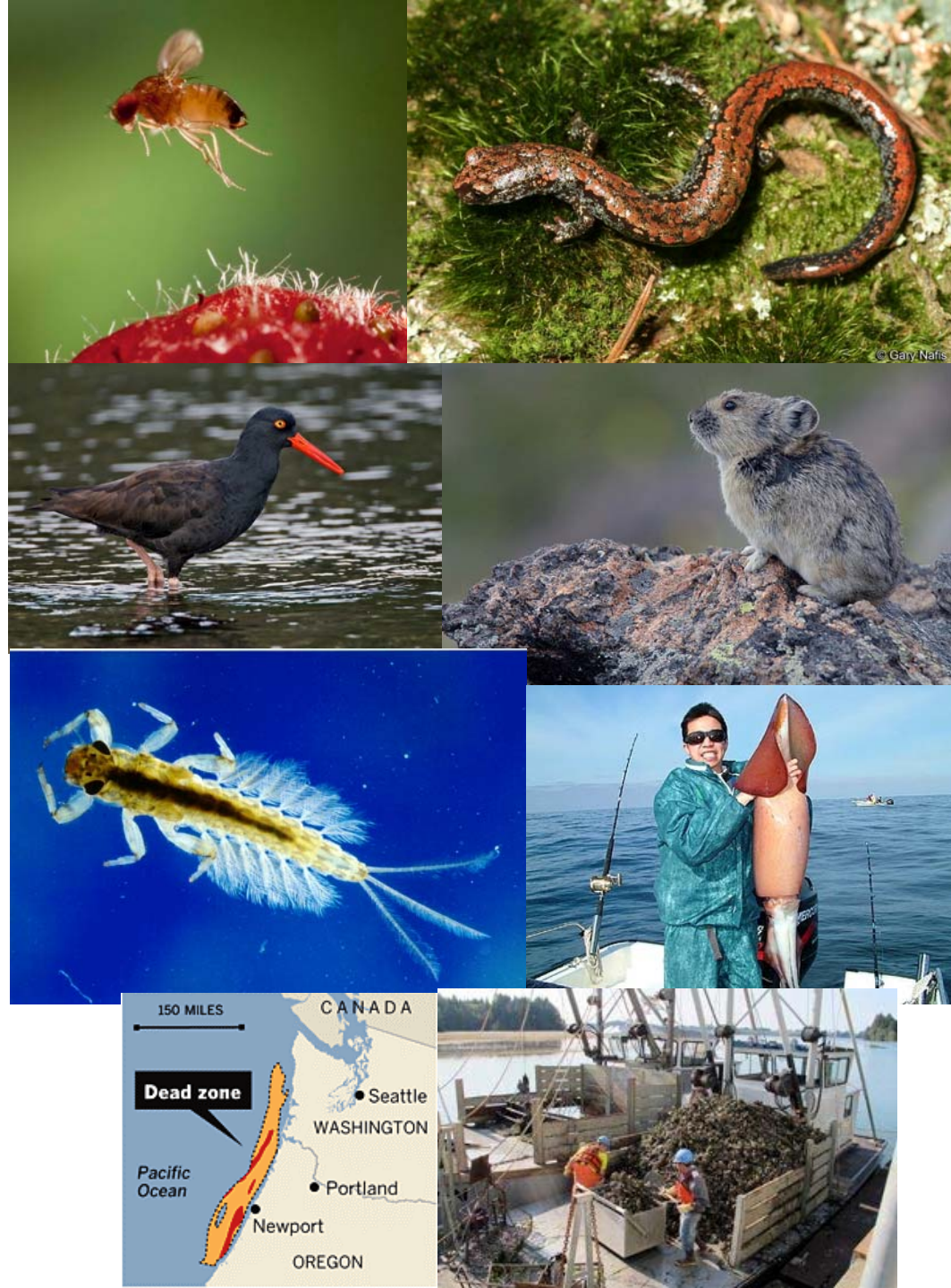
Grapevine Climate / Maturity Groupings



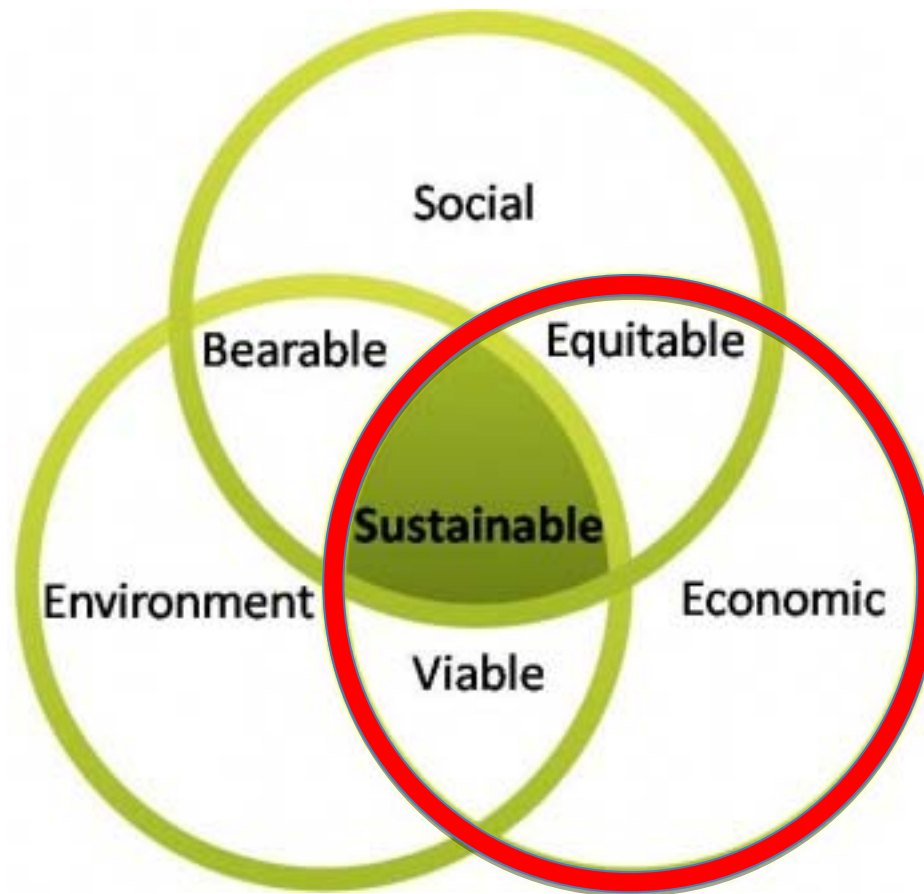
- Pinot Noir: 14.0-16.0°C
- Oregon ca.1950: <14.0°C
- Oregon now: >15.0°C

Effect on Wildlife

- Invasive species
- Amphibian decline
- Coastal birds
- Range contraction
- Aquatic insects
- Salmon decline
- “Dead zones”
- Ocean acidification

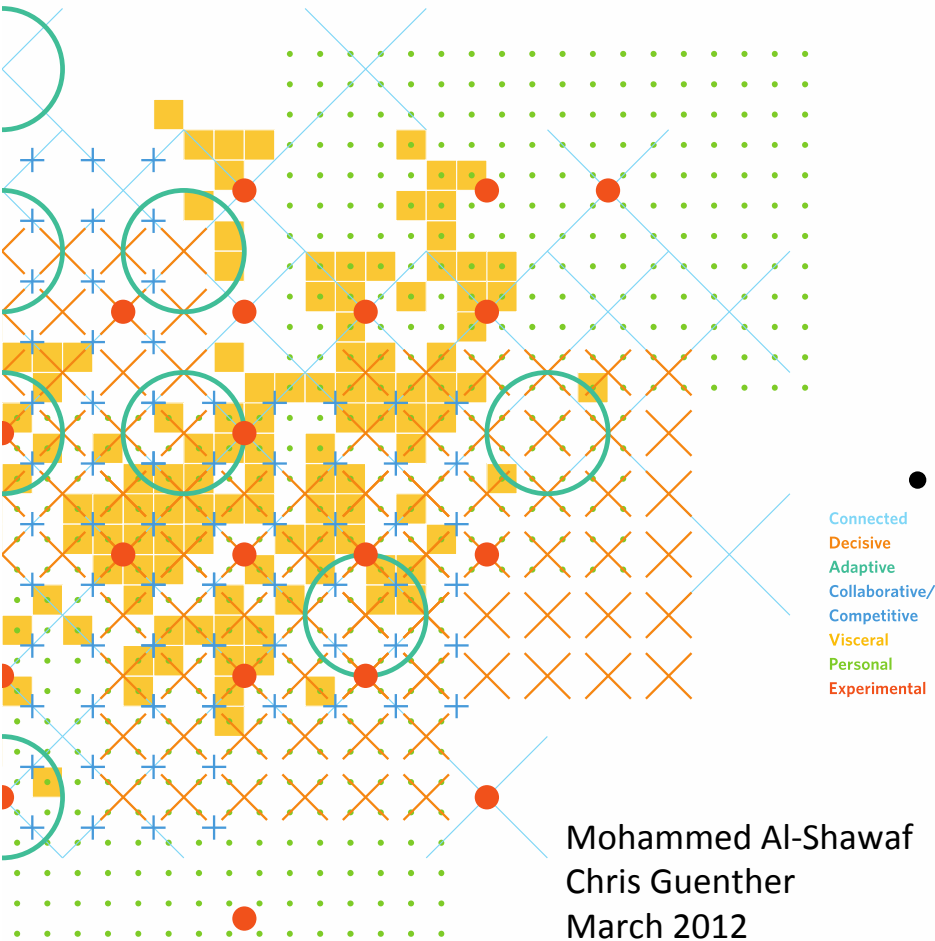


Sustainability



Citystates

How cities are vital to the future of sustainability



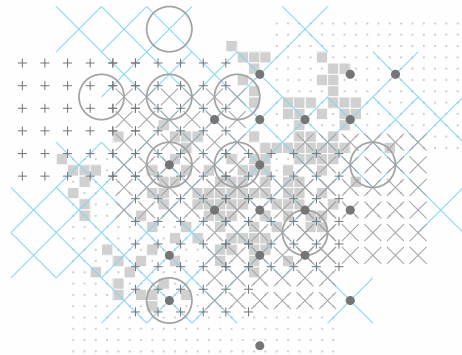
- While efforts to establish meaningful national or international-level climate policies are largely stalled, cities are charging ahead with ambitious approaches to both mitigation and adaptation.
- And while many companies struggle to integrate business and sustainability at the macro level, at the city level companies & entrepreneurs are developing and testing new technologies and business models that address market needs.

Linchpins, Levers & Lessons

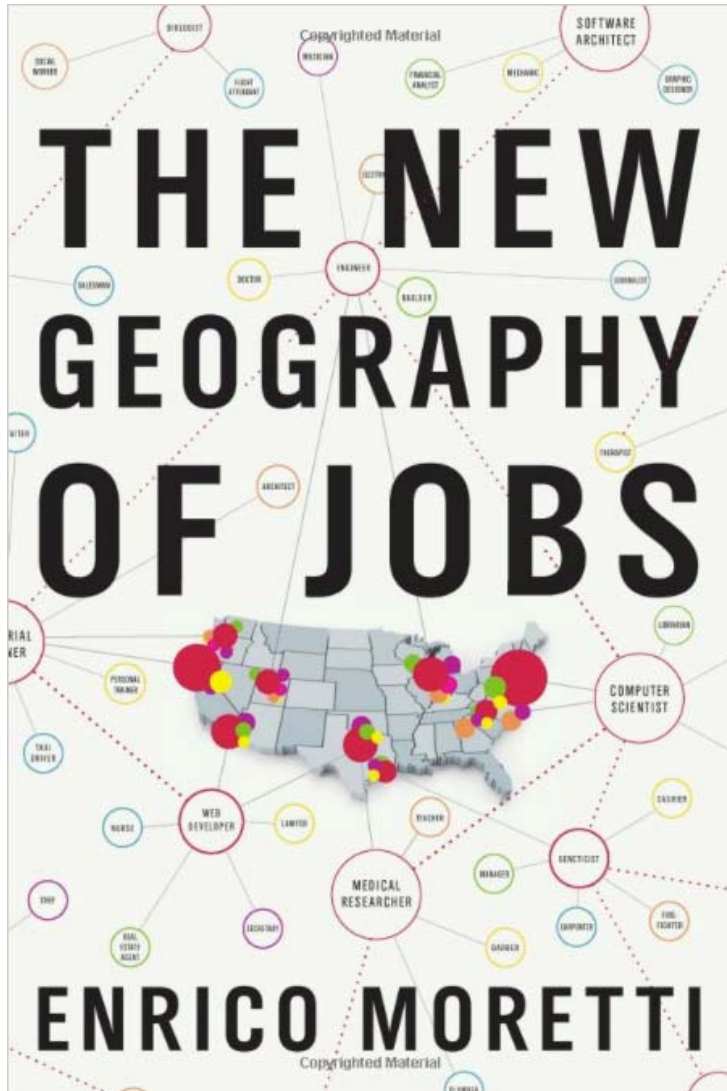
- **Linchpins:** As cities come to house more and more people, metabolize a greater share of resources, and further shape the broader physical, economic and social landscape we inhabit, their sustainability becomes key to planetary sustainability.
- **Levers:** As hotbeds of innovation, cities could effect the speed and efficiency with which we develop new sustainability solutions. Furthermore, because of their growing power and influence, cities may provide a crucial means for replicating and driving successful solutions to scale.
- **Lessons:** Many cities are setting the example for how to confront challenging issues head-on. As such, they provide numerous lessons for how to address sustainability challenges more widely.

Cities & Sustainability

“Cities must become an even greater focal point of sustainable development, and that through nurturing their particular strengths and attributes, we may improve the potential of cities’ own sustainability and that of the planet, all while contributing to a more vibrant economic future.”



Cities as magnets for growth



- Positive Ecologies multiply innovation, creativity and wealth
- Negative Ecologies fall further behind

Sustainability



Equity

**The
Economist**

For richer, for poorer

Growing inequality is one of the biggest social, economic and political challenges of our time. But it is not inevitable, says Zanny Minton Beddoes (Oct 13th 2012)



Helix of Sustainability



Plants grow, making sugars, starches, oils, cellulose and other complex molecules from simple raw materials, mostly water, CO₂ and sunshine.

In addition to harvesting food, people extract fuel and base materials for industry and commerce.

Manufacturers make wares, measuring profitability in environmental and social terms as well as financial.

The end-user reuses and repairs, only recycling after as long a useful life as possible.

At the end of its life the article decays, reducing large complex molecules to simple raw materials by the action of bacteria and fungi - composting

Plants grow, making sugars, starches, oils, cellulose and other complex molecules from simple raw materials, mostly water, CO₂ and sunshine.