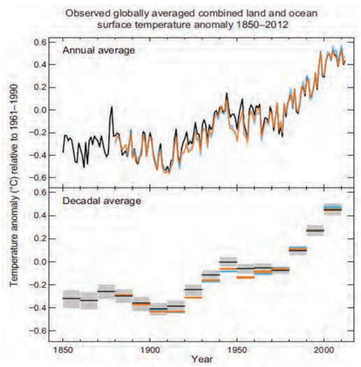
Climate Change in the Pacific Northwest

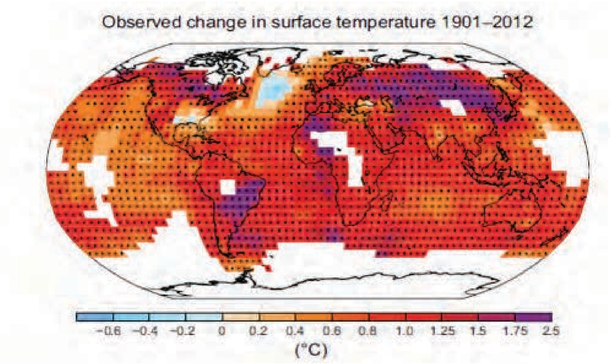
Global Climate Change:

- The Earth is . arming
  - Global annual average temperature has increased 1.5°F since 1880 (through 2012)
  - 2001-2015, every year was warmer than 1990s average
- Warming is not spread evenly throughout planet
- Human-induced climate change is projected to continue and accelerate as global emissions increase

Source: US National Climate Assessment, 2014



Source: Intergovernmental Panel on Climate Change, 2013



Global Emissions Scenarios:

Carbon emissions drive climate change. The more fossil fuels burned, the higher the emissions and global temperatures. *Representative Concentration Pathways (RCP) developed by Intergovernmental Panel on Climate Change (IPCC):*

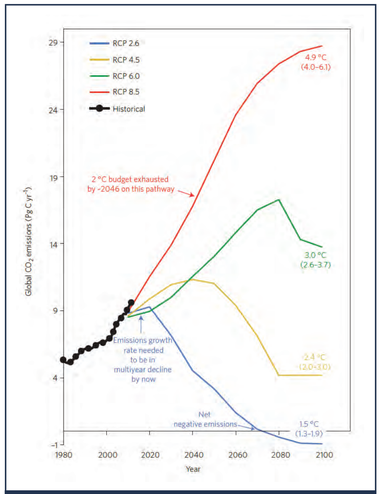
RCP8.5* - Currently surpassing this rate "Business as usual", rising

RCP6.0 - Peak at ~2080, stabilization after 2100

RCP4.5* - Peak at ~2050, stabilization after 2100

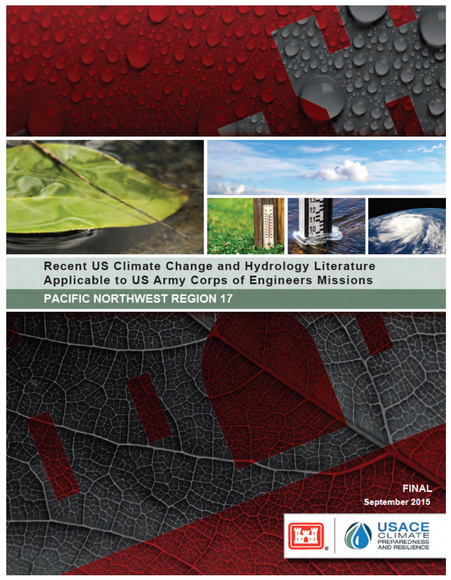
RCP2.6 - Presently no technology to make feasible near-term peak, decline to net negative emissions

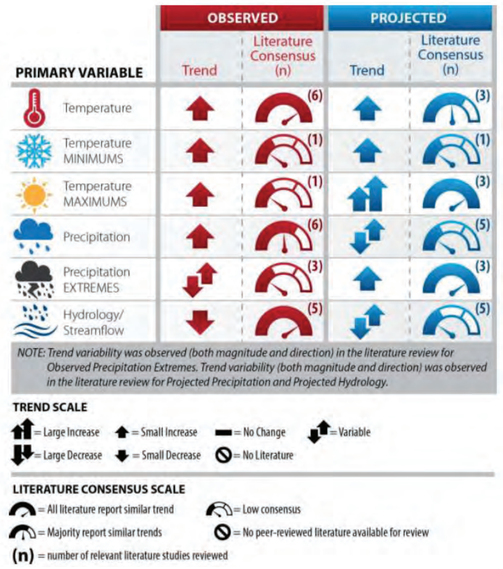
*scenarios used for latest PNW climate change scenarios update



Source: Figure 1. Observed and projected trends in global CO2 emissions under four RCP scenarios. "The climate policy narrative for a dangerously warming world," by T. Sanford et al., 2014 , Nature Climate Change, 4, p. 164-166

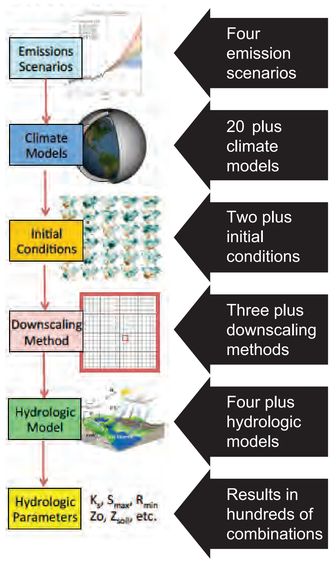
What does Climate Change mean here in the PNW?





Modeling Climate Change in the PNW:

Steps of Modeling Process



- Federal agencies have been monitoring, studying climate change for over a decade
- Converting data from the global to the local level requires many steps
- Each step has multiple methods
- There is no correct combination
- BPA, Reclamation and the Corps are working with University of Washington/Oregon State University on creating new datasets for the PNW
- In 2017 there will be 172 new climate change streamflow datasets
- Reservoir operation modeling is being completed to look at potential effects of climate change in the region