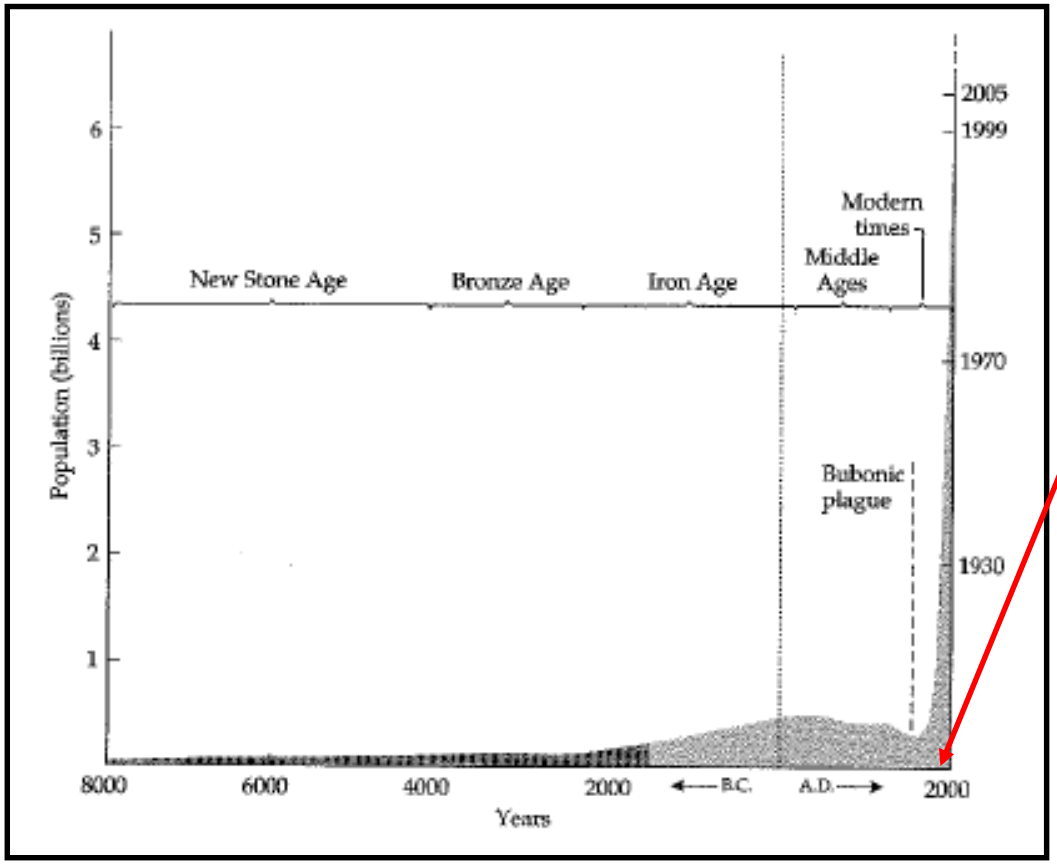
Main Points

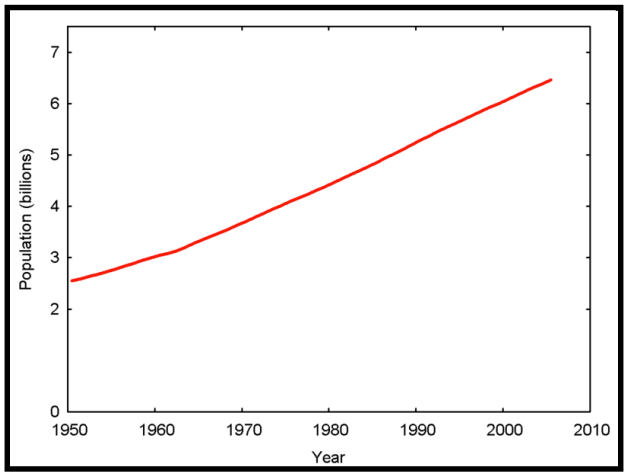
1) **What is conservation biology?**
   -- defining stochasticity
   -- an inconvenient truth regarding human economies and conservation

Pre-reading: Thursday 26 January. Novinger and Rahel.
Thursday 31 January. Drietz.

Terms: conservation biology, stochastic

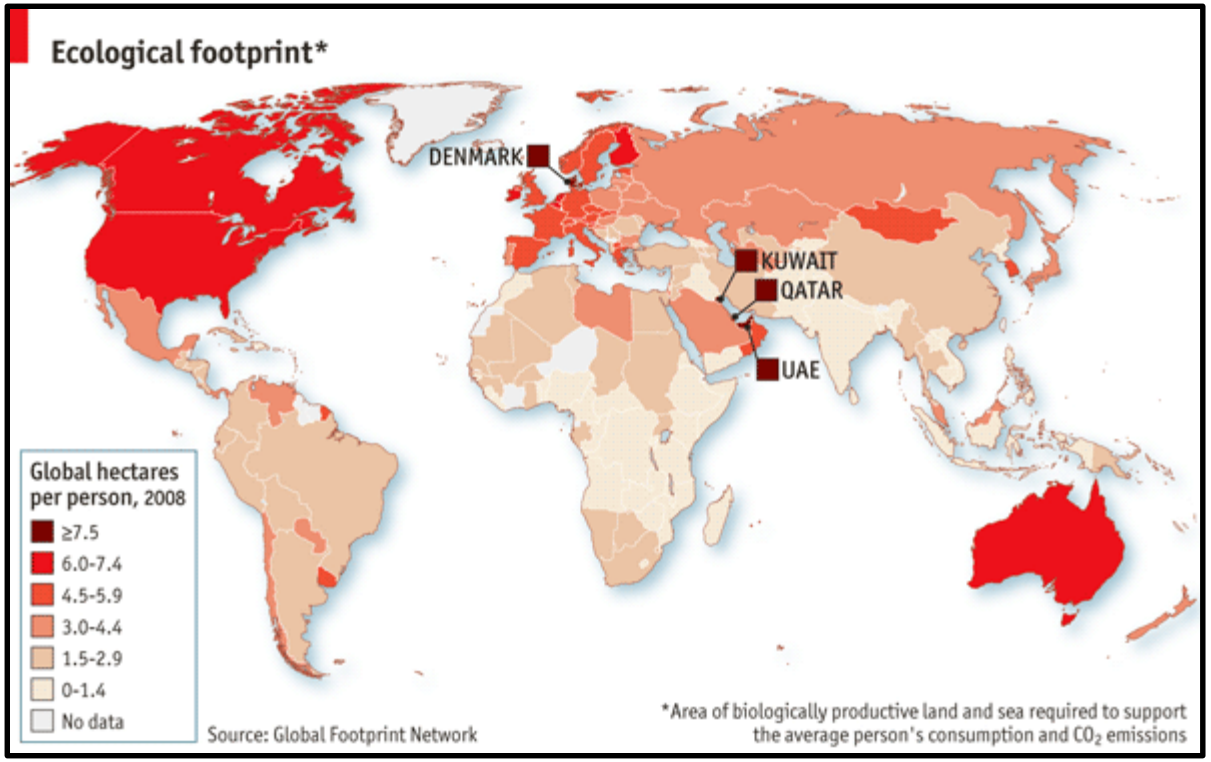
<u>Conservation biology</u> = the scientific field dedicated to understanding the causes and consequences of the biodiversity crisis.





Human population growth and resource consumption

- humankind consumes ~30% of NPP globally.
- industrialized nations account for 70-80% of this 30%.
- consumption of NPP and fossil fuels powers the global economy.



Human population growth and resource consumption

Table 1. Causes of endangerment for species classified as threatened or endangered by the U.S. Fish and Wildlife Service.

Cause	Number of species endangered by cause and rank of frequency*	Number of species endangered and rank of frequency†
Interactions with nonnative species	305 - 1	115 - 8
* Urbanization	275 - 2	247 - 1
* Agriculture	224 - 3	205 - 2
* Outdoor recreation and tourism development	186 - 4	148 - 4
* Domestic livestock and ranching activities	182 - 5	136 - 6
* Reservoirs and other running water diversions	161 - 6	160 - 3
Modified fire regimes and silviculture	144 - 7	83 - 10
Pollution of water, air, or soil	144 - 8	143 - 5
* Mineral, gas, oil, and geothermal extraction or exploration	140 - 9	134 - 7
Industrial, institutional, and military activities	131 - 10	81 - 12
* Harvest, intentional and incidental	120 - 11	101 - 9
* Logging	109 - 12	79 - 13
* Road presence, construction, and maintenance	94 - 13	83 - 11
Loss of genetic variability, inbreeding depression, or hybridization	92 - 14	33 - 16
Aquifer depletion, wetland draining or filling	77 - 15	73 - 15
Native species interactions, plant succession	77 - 16	74 - 14
Disease	19 - 17	7 - 18
Vandalism (destruction without harvest)	12 - 18	11 - 17

*Including Hawaiian and Puerto Rican species. †Not including Hawaiian and Puerto Rican species.

Czech and Krausman 1997

How does conservation biology differ from wildlife management (or does it)?

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How does conservation biology differ from other sciences in general (or does it)?

1) Focus on evolutionary time scales
2) Value-laden: subjective; sometimes advocacy occurs (but try to minimize this!)
3) Inexact: individualistic/local and <u>stochastic</u>

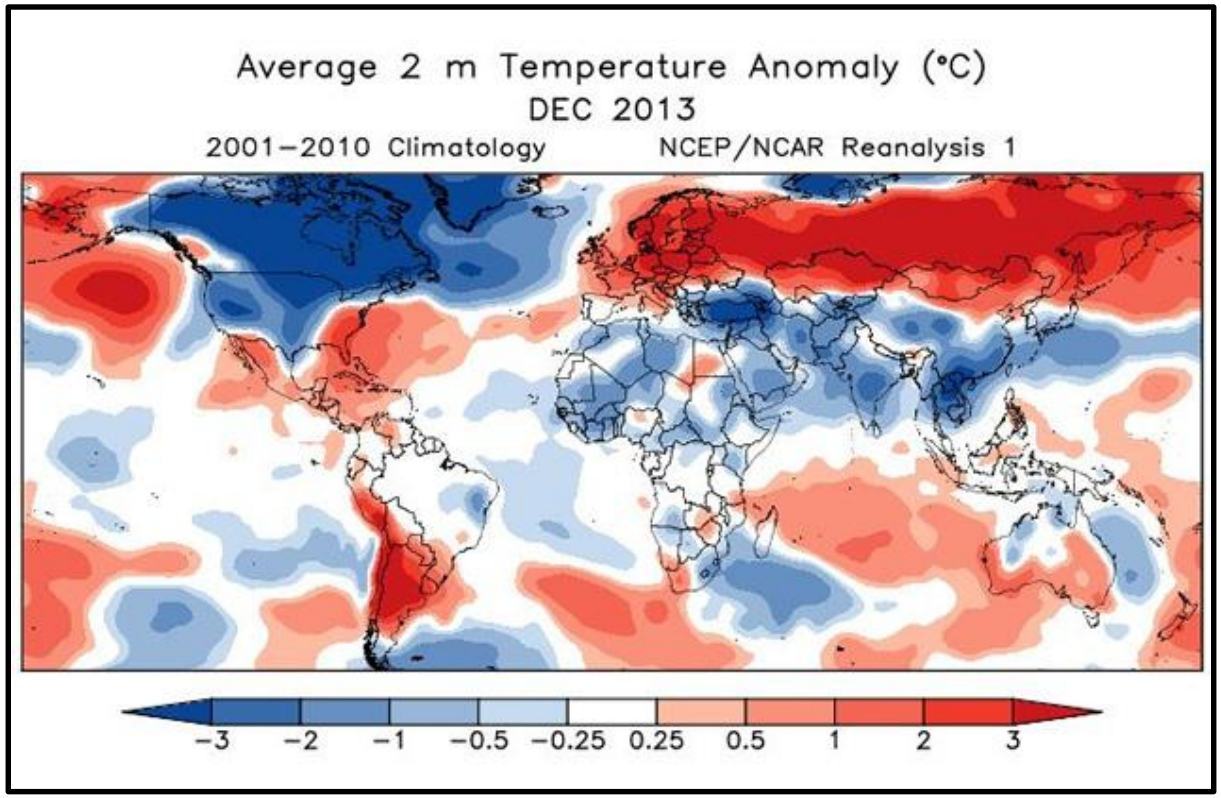
<u>stochastic</u> = random, particularly regarding restricted or a small number of events.

P. Manning, Super Bowl XLVIII vs Seattle

TD	INT	Long	QB Rating
1	2	23	73.5

P. Manning, Super Bowl XLVIII vs Seattle, 2013

TD	INT	Long	QB Rating
1	2	23	73.5



P. Manning, Super Bowl XLVIII vs Seattle, 2013

TD	INT	Long	QB Rating
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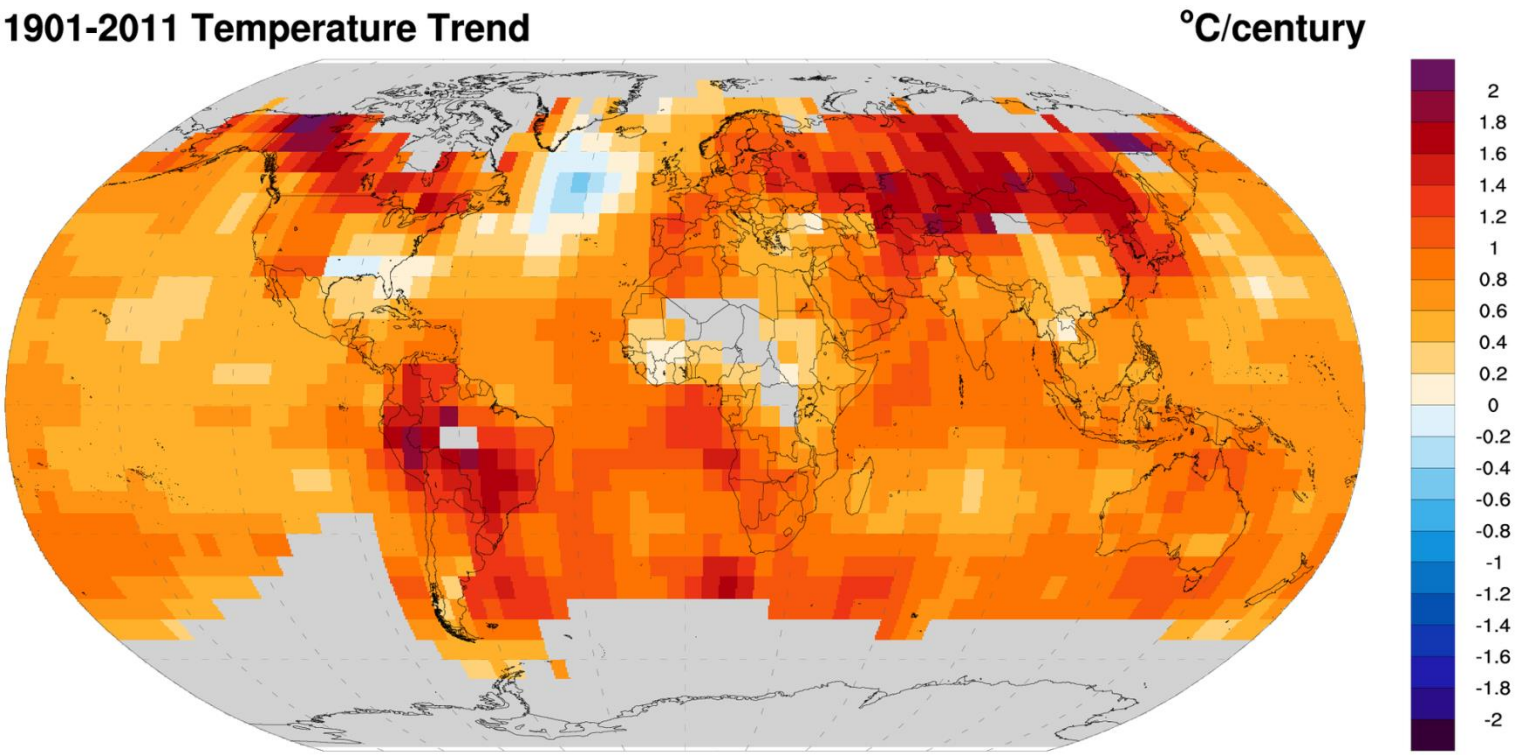
P. Manning, 2013 Season Averages

TD	INT	Long	QB Rating
3.67 ± 1.46	0.67 ± 0.88	54.73 ± 10.01	121.20 ± 23



GLOBAL WARMING IS A HOAX
BECAUSE IT IS COLD. TODAY.
WHERE I LIVE.