

Waterfowl

- Temperature/precip → wetland abundance and water levels → reproductive output & brood survival → primary drivers of population growth.
- Prairie pothole region: produces majority of NA ducks.



SO: Birds do it, butterflies do it, squirrels do it...



But invasives & diseases
tend to do it better...



Diseases are also
predisposed to prosper

Spread and increasing severity: LOTS!

... malaria, Lyme disease, yellow fever,
plague, shistoma, west nile...



Stomoxys flies during
Canine distemper outbreak...

Cane toads in Australia

Introduced 1935 to control insect pests.

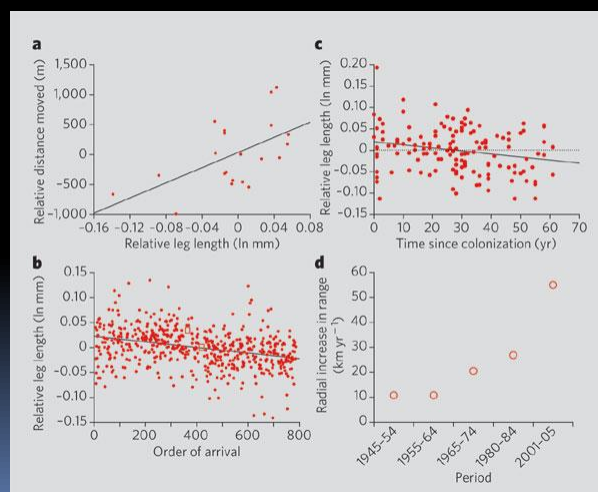
Now, 1 million km²,
Highly toxic,
Ravaging biodiversity



CANE TOADS:

Have evolved longer legs, which lets them:
Move faster, increase rate of colonization!

Phillips et al. 2006



AND Remember:

Climate change is occurring in the context of other human activities

Example: Hawksbill turtles

(Kamel and Mrosovsky 2006)

- Critically endangered
- TSD (warmer = mostly females)
- Mostly females in many places.

“Nesting beaches per se may still remain, giving the illusion of critical habitat, but systematic destruction of forested areas could be catastrophic for hawksbill demography and continued survival”.

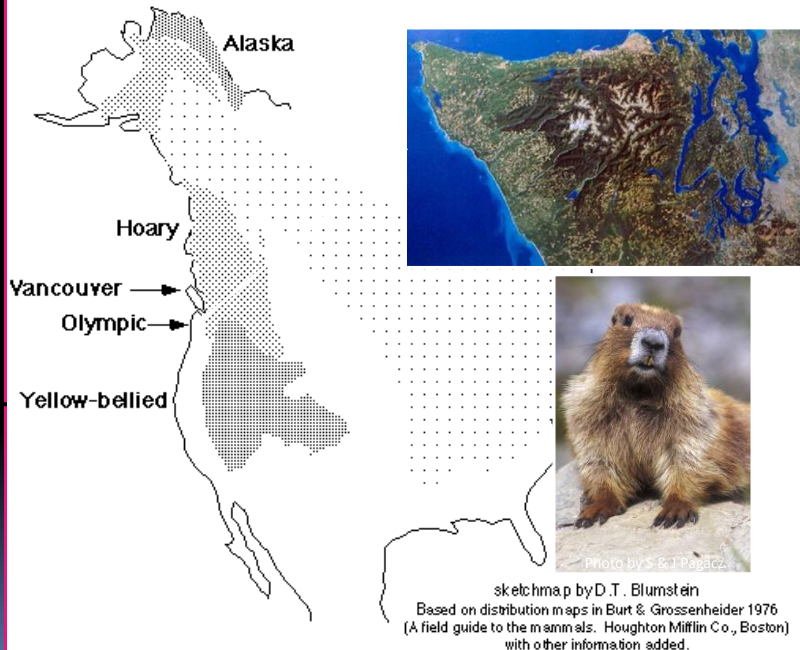


A story where climate change would be expected to drive wildlife, but hasn't yet, at least:

Olympic marmots

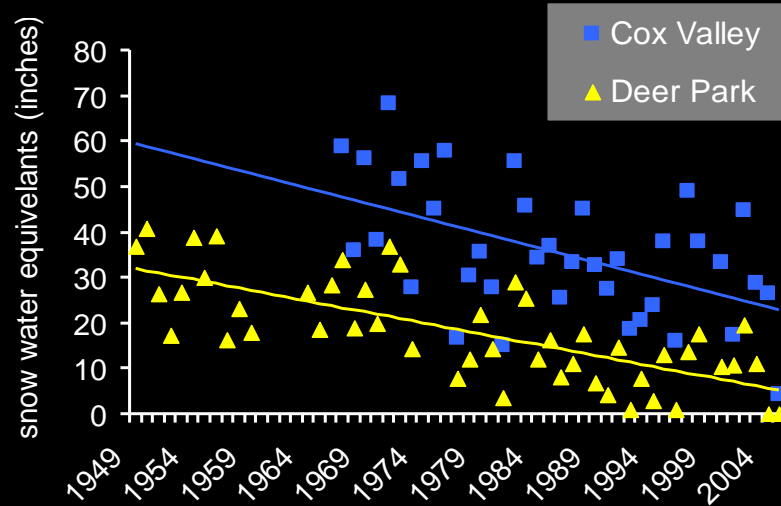


Ranges of North American marmots (approximate)



Climate Change Signal on Olympic Peninsula

May 1 snow-water equivalents in ONP



S & J Pagacz





Coyote range expansion



1900



1930

From Moore and Parker 1992, modified

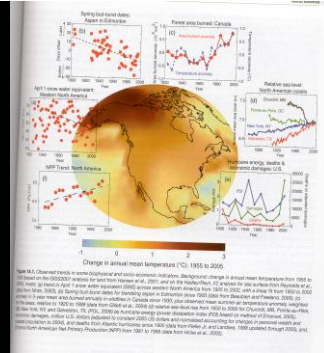
So, for declining Olympic marmots:

- Climate Change appears to have a relatively minor effect.
- Coyotes appear to cause this decline



Conclusions

- As certain as the winter is to turn to spring, climate is changing and is affecting wildlife.
- Wildlife responses do and will vary by species, which may adapt in place, move, or die.
- We have to consider climate change in the context of other human-caused stressors on wildlife (both a challenge and hopeful).



The Good News is:

- Recognition is the first thing (eg IPCC report being recognized for Nobel Prize).
- Climate Change is mobilizing humans on an unprecedented scale
 - Eg Western Governor's Association Recommendations.

