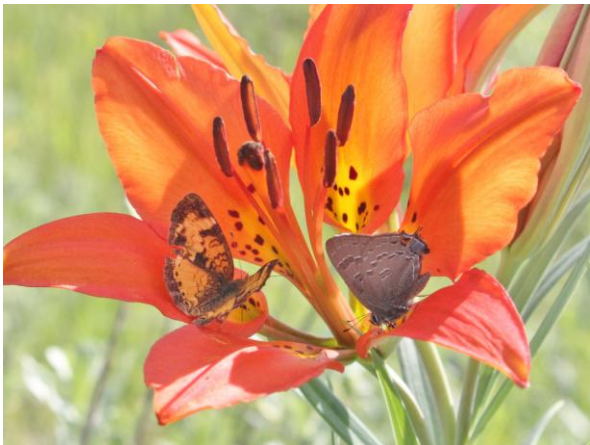


Status of Minnesota's Butterflies and Moths

Dr. Erik Runquist



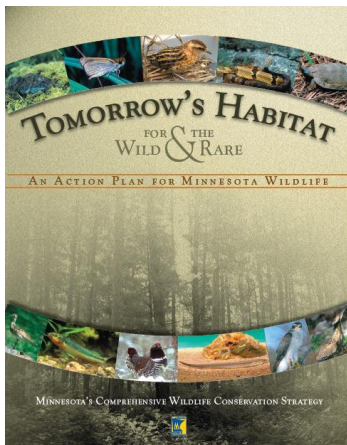
Minnesota:
146 Butterfly Species
2000-2500 Moth Species





Western Prairie Fringed Orchid:

MN Endangered
US Threatened
- Only pollinated by sphinx moths



Species of Greatest Conservation Need:

- 31 Butterflies & Moths

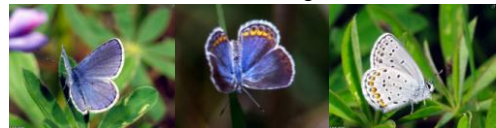
- 5 Bees

1) Habitat Loss

2) Lack of Data, especially moths

Federally Listed Species

Karner Blue: Endangered



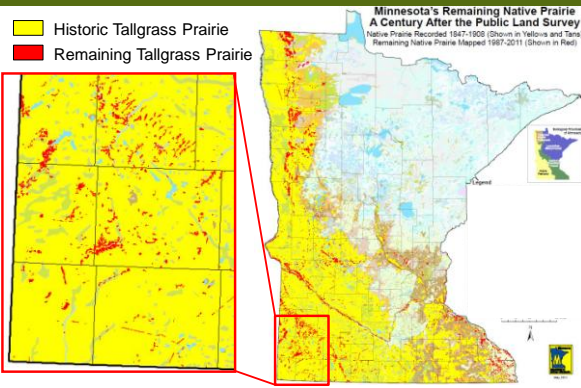
Poweshiek skipperling
Endangered (Proposed)



Dakota skipper
Threatened (Proposed)



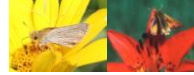
Minnesota's Lost Prairie



Imperiled Prairie Lepidoptera

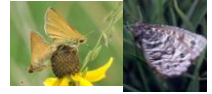
U.S. Candidates:

Poweshiek skipperling
Dakota skipper



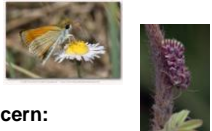
MN Endangered:

Ottoë skipper
Uncas skipper
Assiniboia skipper
Uhler's arctic



MN Threatened:

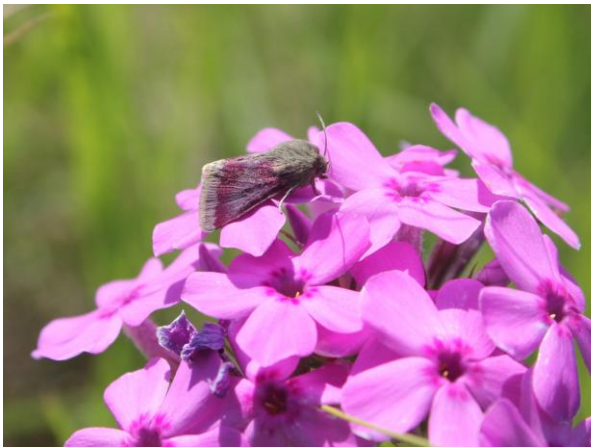
Garita skipperling



MN Special Concern:

Arogos skipper
Leonard's skipper
Regal fritillary

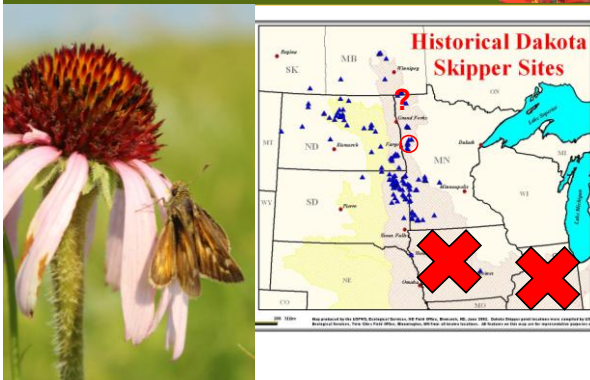
Leadplant flower moth
Phlox flower moth
Abbreviated underwing
Whitney's underwing



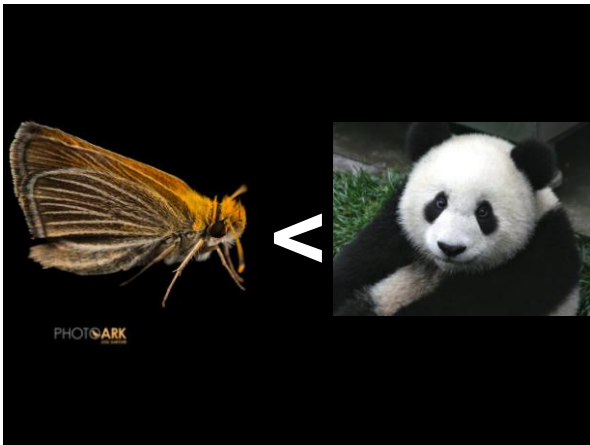
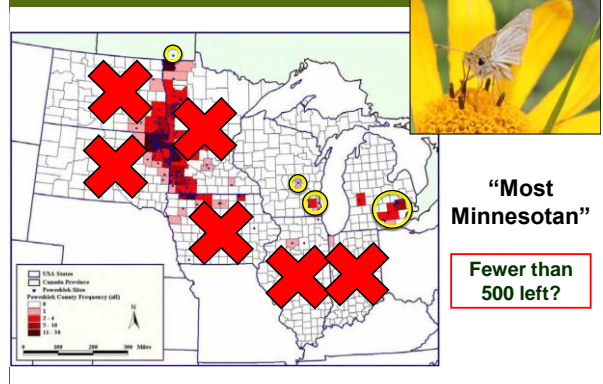
Regal fritillary

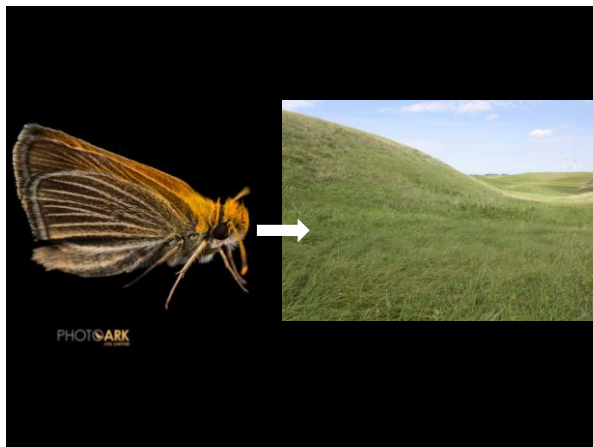
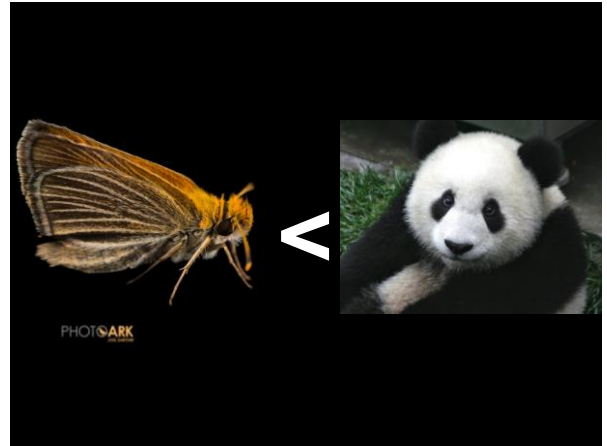


Dakota skipper



Poweshiek skipperling





Pollinators



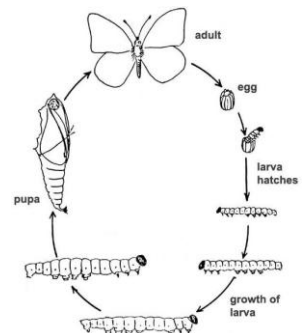
Energy Converters



Food



Indicators




Indicators

Science News

from universities, journals, and other research organizations

Butterflies Reeling from Impacts of Climate and Development

ScienceDaily (Jan. 12, 2010) — California butterflies are reeling from a one-two punch of climate change and land development, says an unprecedented analysis led by UC Davis butterfly expert Arthur Shapiro.




This butterfly, *Cloudia Parnassian*, is more common at higher elevations or Castle Peak than in the past. (Credit: Heather Dwyer/UC Davis photo)

Science News

from universities, journals, and other research organizations

Some Butterfly Species Particularly Vulnerable to Climate Change

ScienceDaily (June 1, 2012) — A recent study of the impact of climate change on butterflies suggests that some species might adapt much better than others, with implications for the pollination and herbivory associated with these and other insect species.



The research, published in *Ecological Entomology*, examined changes in the life cycles of butterflies at different elevations of a mountain range in central Spain. They served as a model for some of the other warming mountain.

Butterflies Respond to Climate Change by Moving North

Part-time butterfly watchers in Massachusetts have taken more than 19,000 expeditions over the past two decades. The result of their work: northern butterflies are becoming increasingly rare, even as southern species take their place. The likely cause: warming temperatures.

TIME Science & Space

Indicators

Science News

from universities, journals, and other research organizations

Research: Butterflies mutated, ecology damaged by Fukushima N-leak, but humans relatively safe

Article by ELAINE KURTENBACH, Associated Press | Updated: August 16, 2012 - 1:44 AM | **StarTribune**

