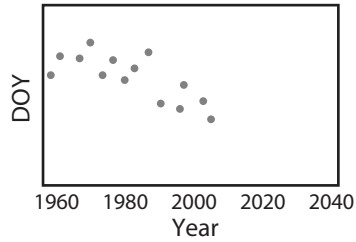


Accounting for photoperiod to improves forecasts of biological responses to climate change

raw data

year	temperature	day of year
1901	12	90
1902	13.5	95
1903	11.8	88
1904	14	100
...



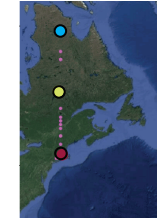
+ experimental data on photoperiod

SD

LD



+ experimental data across populations



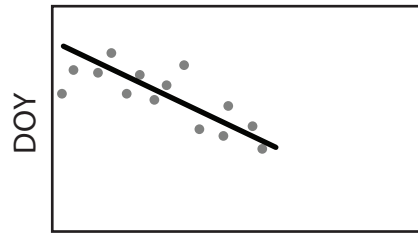
SD

LD



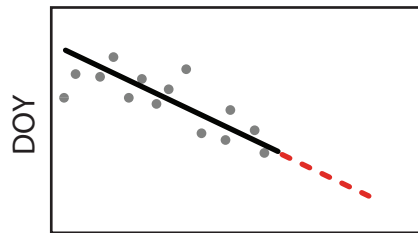
standard approach

model



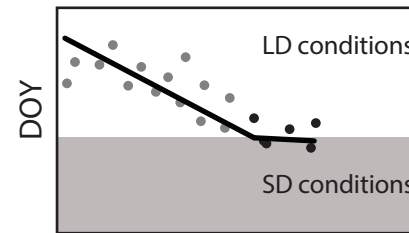
temperature

forecast

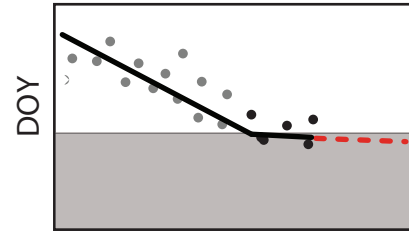


temperature

add basic photoperiod

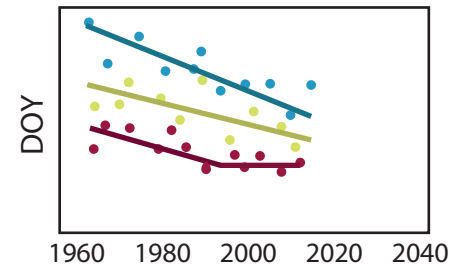


temperature

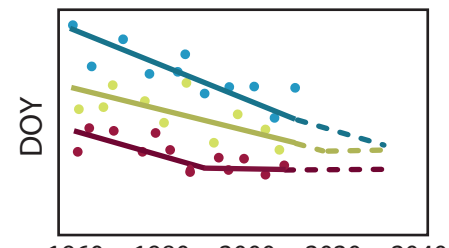


temperature

add photoperiod across populations



Year



Year

Feedback