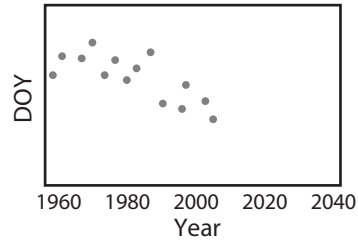


# Accounting for photoperiod to improves forecasts of biological responses to climate change

## 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

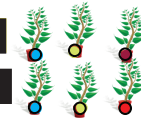
LD



## + experimental data across populations

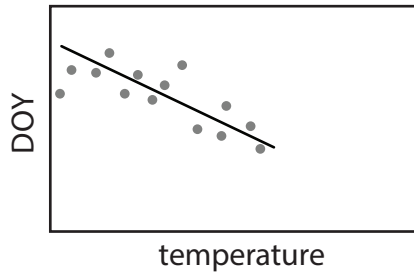
SD

LD

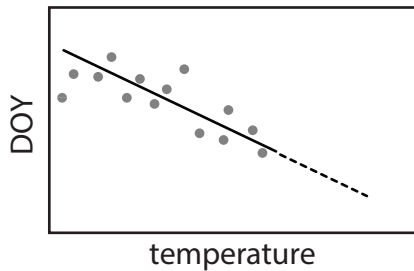


## standard approach

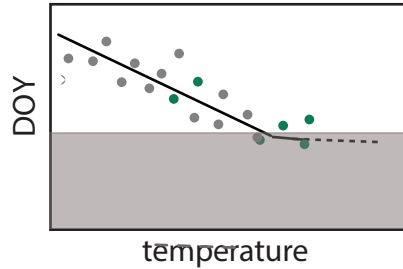
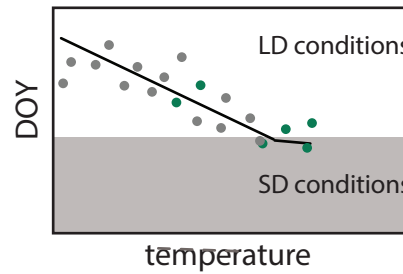
model



forecast



## add basic photoperiod



## add photoperiod across populations

