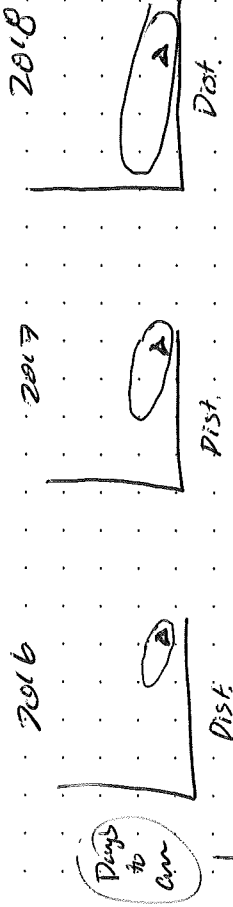


Acasuso-Rivero et al. 2019. Proc. B.

- adaptive plastic
breast canalization \rightarrow diff. genotypes w same traits

re) plants from diff pops (genotypes) eventually show (regime) same trait.

e.g., "more plastic" @/near optimum (P-MB-GC)
in 2018 > 2017 > 2016



x-axis expanding, y - not so much.

\rightarrow is more heritable, so movement off Δ in sub-
a. heritable trait has a large impact on w.

Manuscript fleshing out:

Sept 16/19

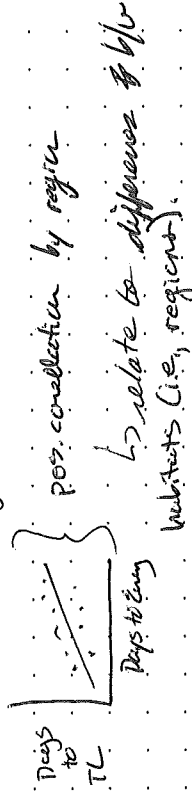
Discussion Points:

IP: Jimmy Bit.
Adaptive plasticity

- h^2 of timing in env. predictable extremes.
 \rightarrow plastic responses more common in unpredictable envs.

IP: \rightarrow genetic var in phenological + LH traits.
1) Copper plant + LH traits

Patterns of $h^2 \rightarrow$ early vs. late LH capacity
emergence \rightarrow W (etc...)



$GL > W$, "like better structure
renew to ref.
in a perennial
from
- correct in W (env.)

Fitness IP

p - slowest rate
at emergence

$y_1 \rightarrow$ very low W across all regions
 $y_2 \rightarrow GL > MB > P$
 $y_3 \rightarrow GL > MB > P$

possibly below
genetic + MB-alien
points + MB-alien

\rightarrow from Sills' dist. of genetic variation.

Fitness Landscape IP

- Earlier emergence (highly h^2) is closer
to w-optimum \rightarrow consistent all 3 yrs

- Landscape changes

1) alien + proximity to optimum \rightarrow relatively
- distance from C.G. does not flat landscape

winding path

2) Landscape is steeper + shape of optimum
is changing \rightarrow now includes MB-alien.

year 3 \rightarrow horizontal (x-axis) elongation of fitness optimum, now including ML above + pressure but not much increase over 9-105 (Days to Grow).
Days to Grow, being \sim many represent a general constraint that impacts fitness to the slope to the fitness optimum.

Conclusions

Geographic proximity does not necessarily predict in most early suitable lat. traits that determine the model on mismatched but later lat. traits and the environment. There is a better way to represent a constraint to traversing the landscape.
- climate change section
 \rightarrow more variable - less predictable env.
Changing selection / env - landscape may result in a mismatch. b/w degree of plasticity + env. predictability.

Introduction

- adaptive plasticity
what is it?
what is required for it?

Compensatory like hiskey

- importance of timing of LH stages + phenology.
eg) - flowering as pollinators } 1-2 examples.
- initiated before frost.
- fitness consequences of mismatch.
- Can plasticity compensate of genetically det. mismatched b/w env. and earlier LH trait - local maladaptation.
- Describe system - common garden.
- Specifically we ask:
1) Do earlier LH traits have higher \sim the better and are there w-consequences to this?
2) How does \sim of LH + phen. traits affect ability to traverse w-landscape, and proximity to w-optimum.