

# Genetic signatures of evolutionary rescue

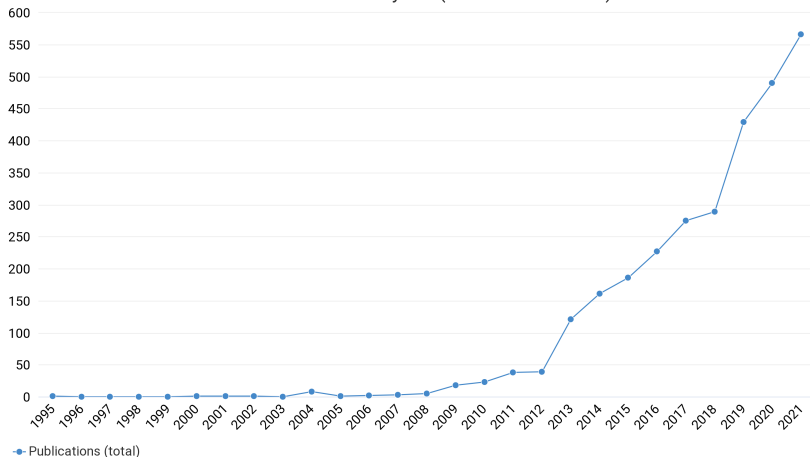
Matthew Osmond

Department of Ecology and Evolutionary Biology  
University of Toronto

September 13, 2022

# Evolutionary rescue

Publications in each year. (Criteria: see below)

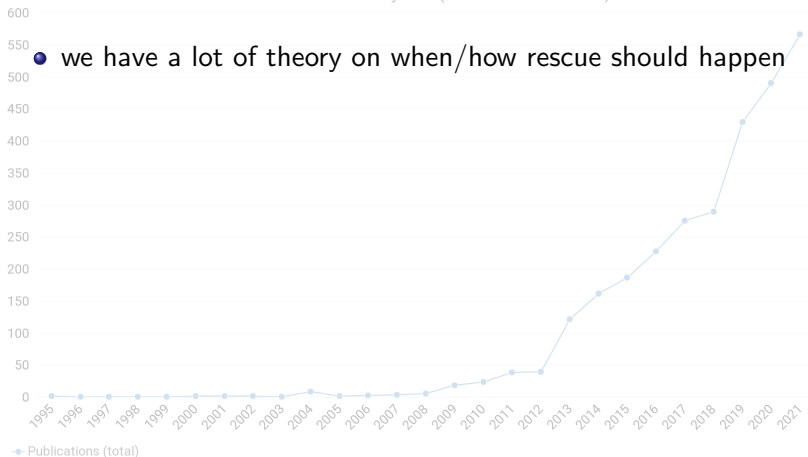


Source: <https://app.dimensions.ai>  
Exported: September 09, 2022  
Criteria: "evolutionary rescue" in full data.

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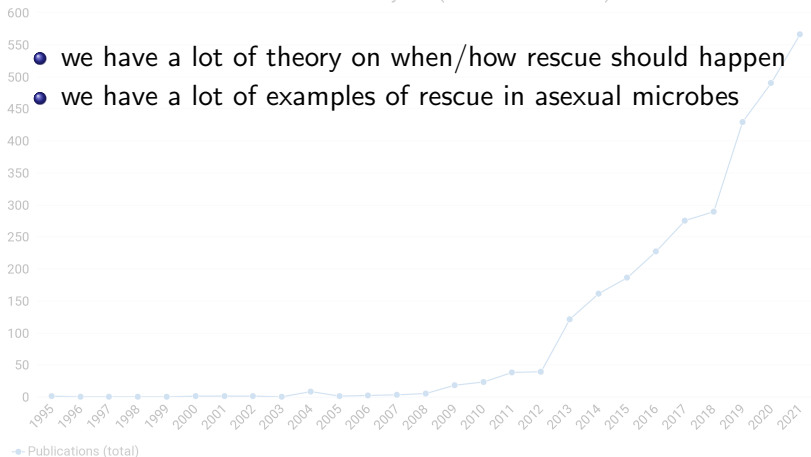


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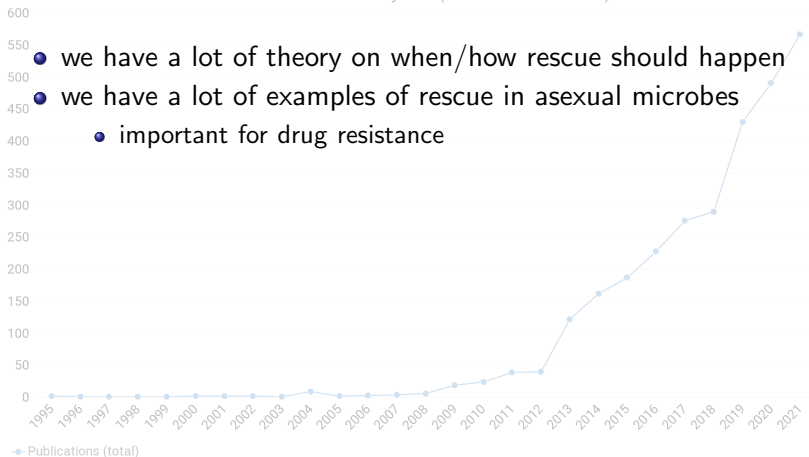


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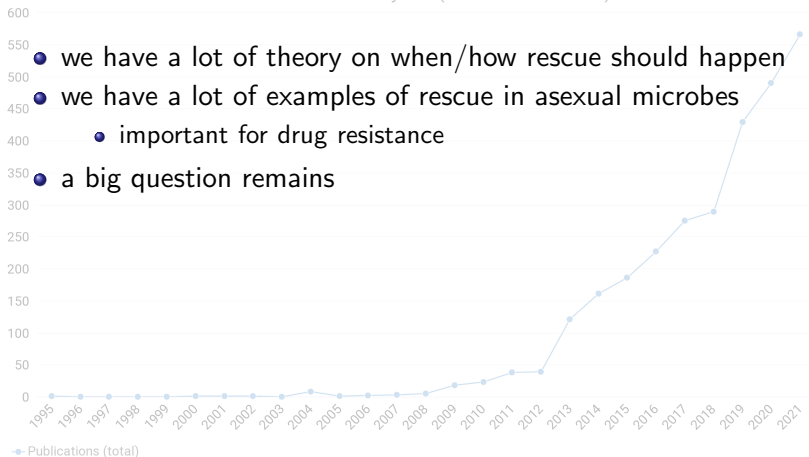


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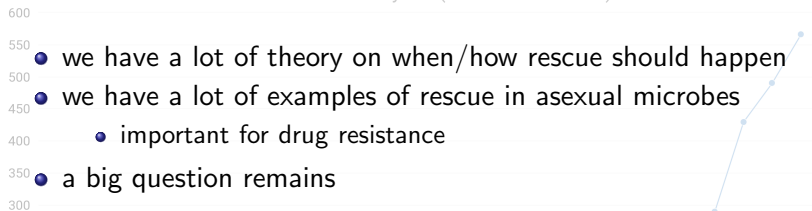


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- we have a lot of theory on when/how rescue should happen
- we have a lot of examples of rescue in asexual microbes
  - important for drug resistance
- a big question remains

Q

How common is rescue in wild sexual species?



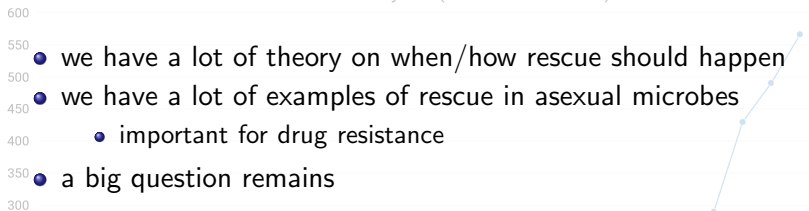
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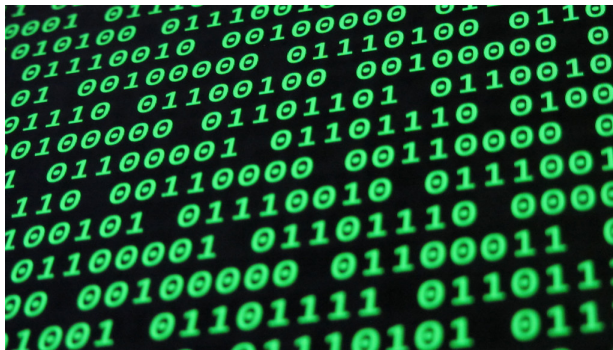
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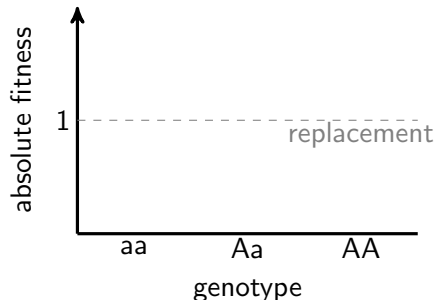
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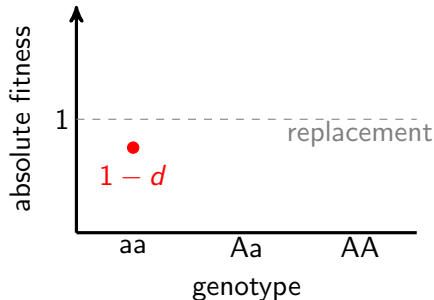
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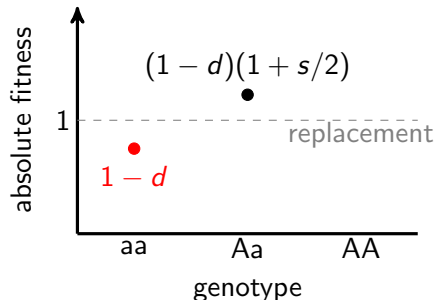
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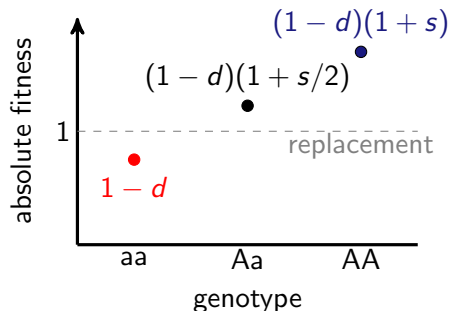
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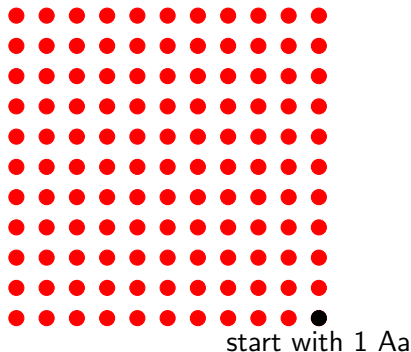
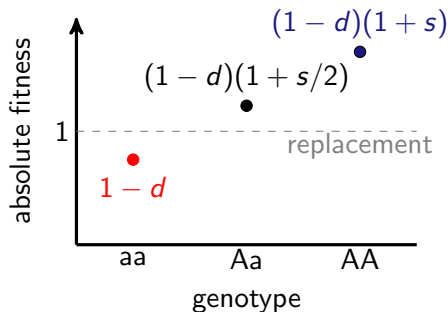
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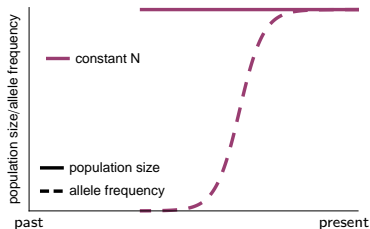
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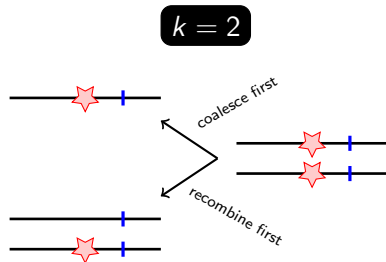
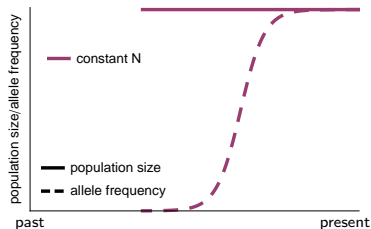
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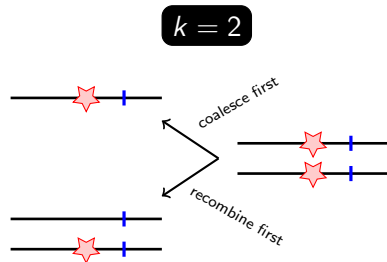
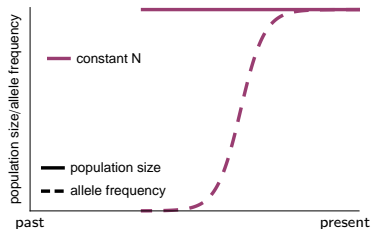
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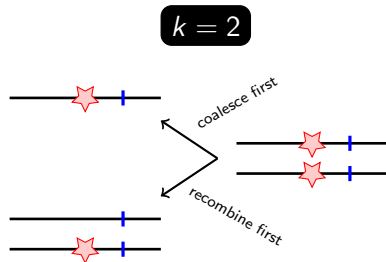
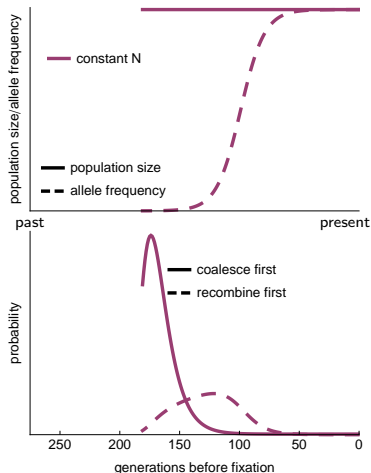


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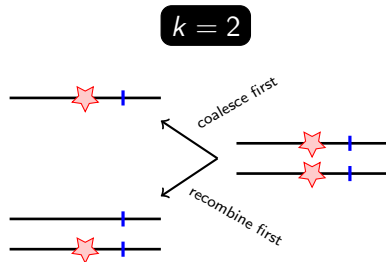
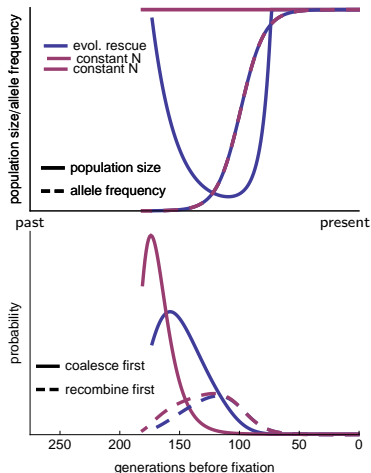


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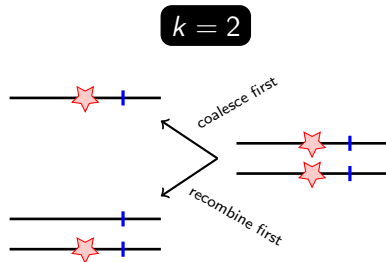
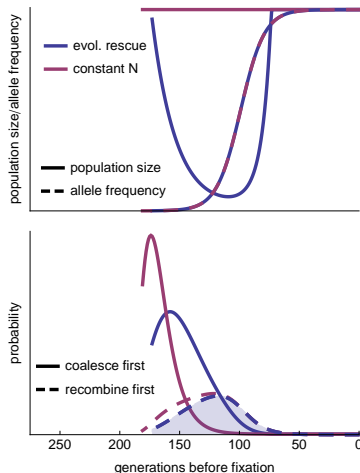


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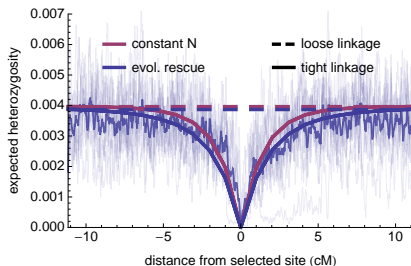


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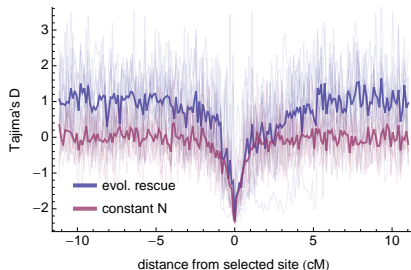
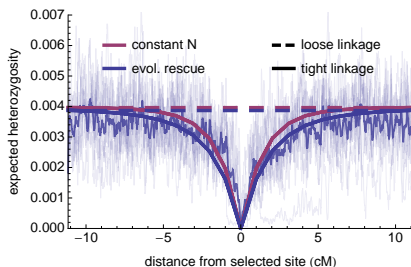
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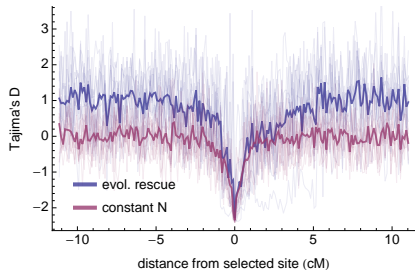
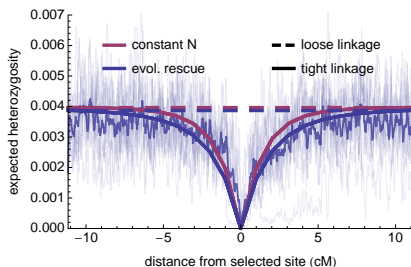
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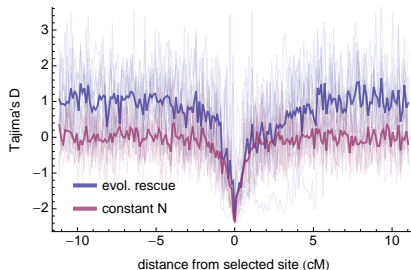
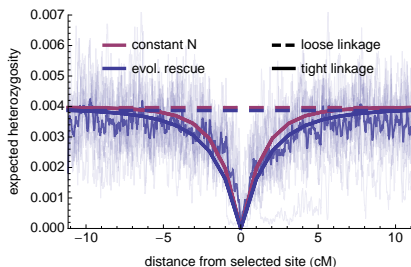


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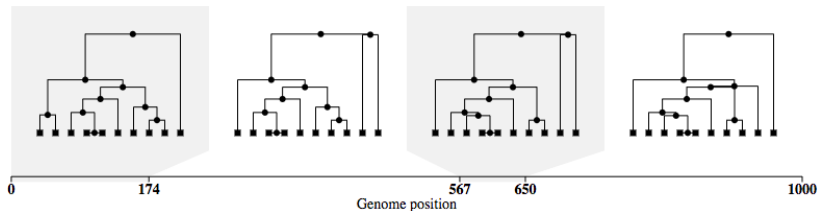
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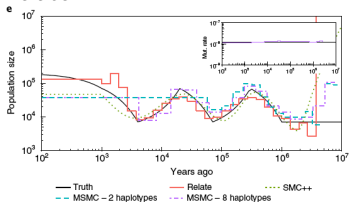
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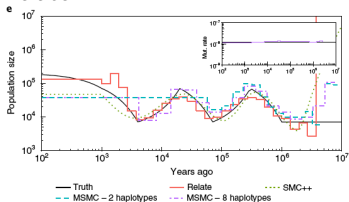




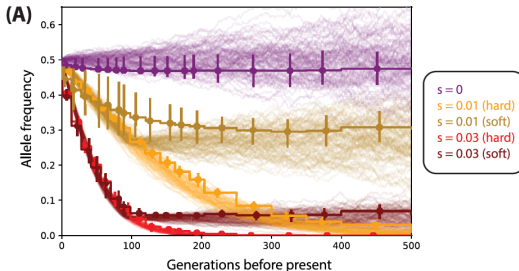
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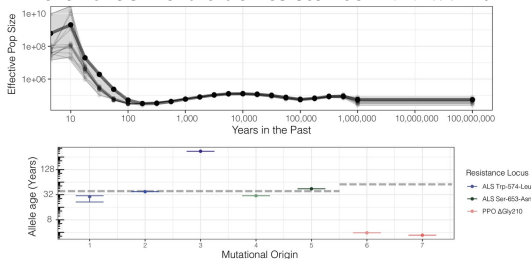


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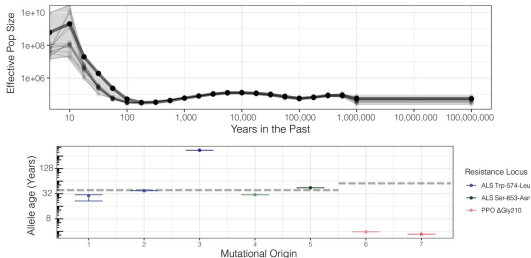
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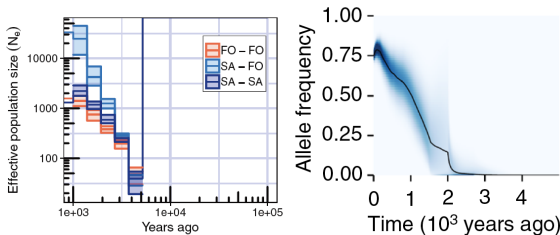
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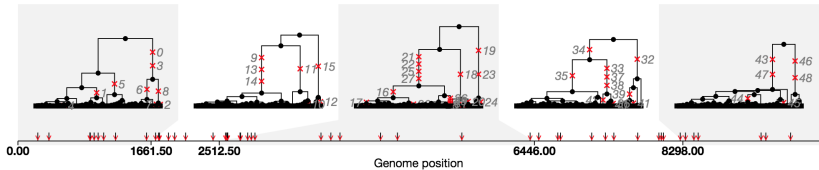
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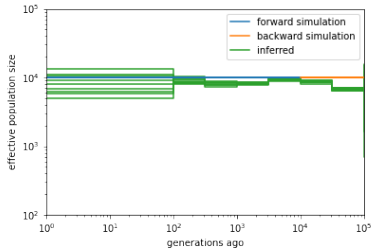
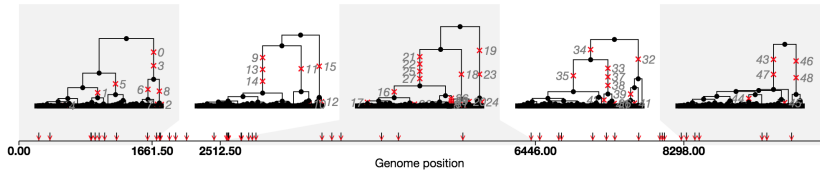
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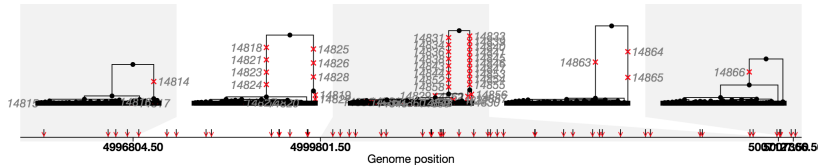
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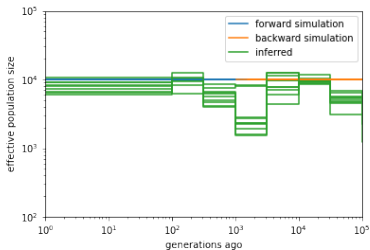
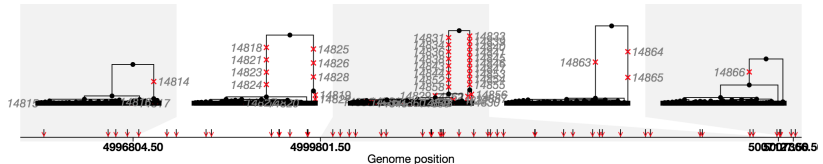
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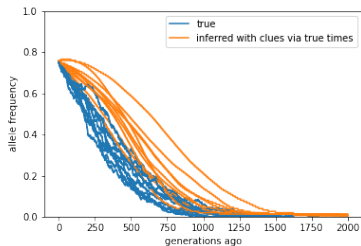
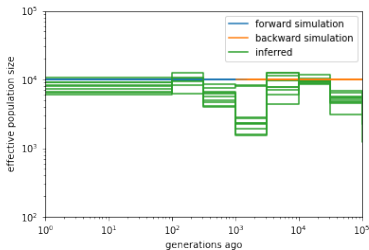
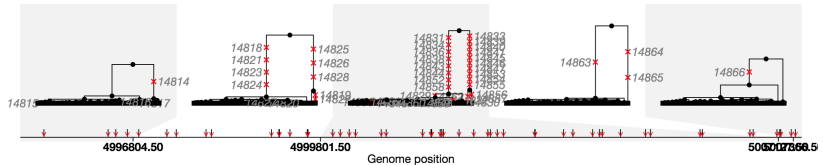
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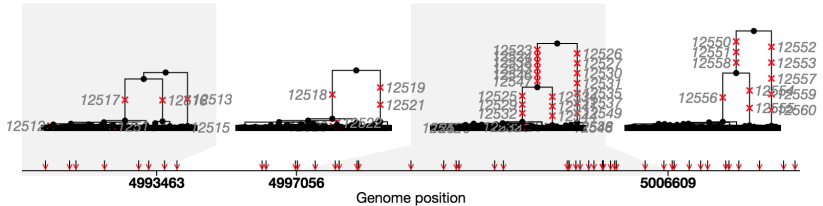
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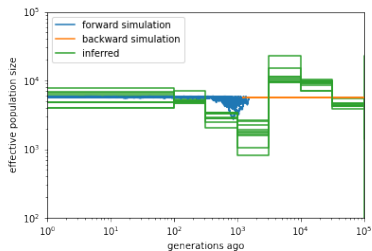
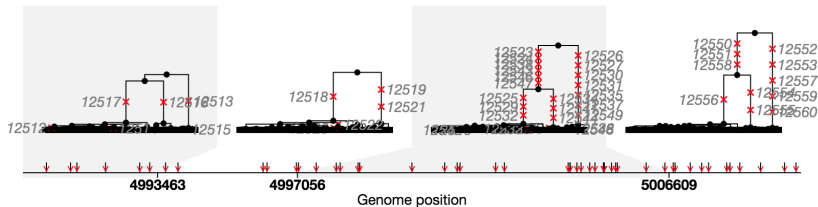
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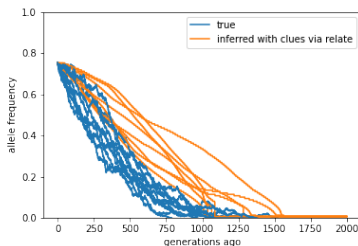
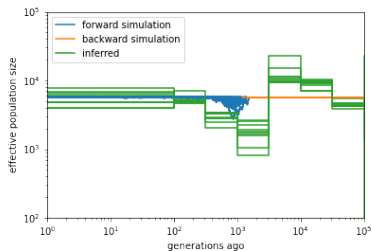
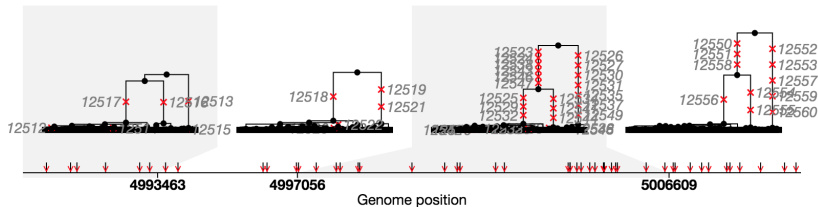
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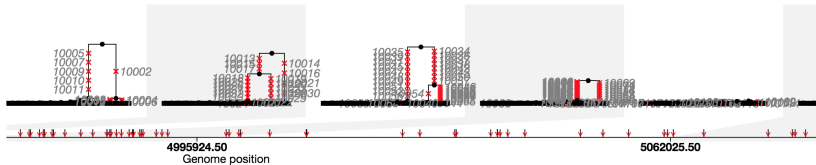


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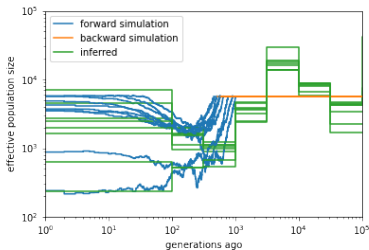
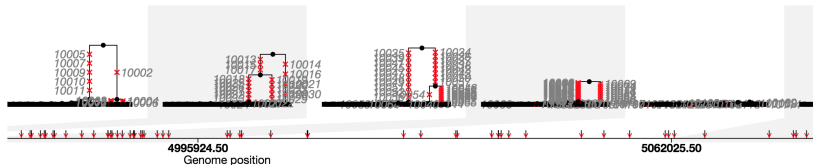
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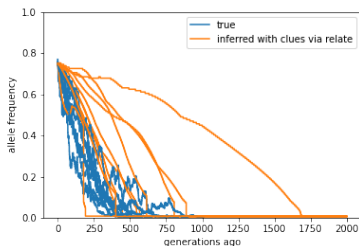
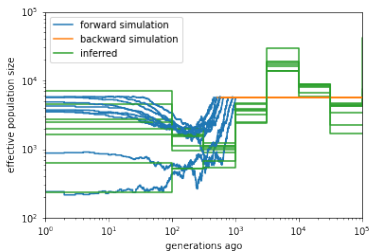
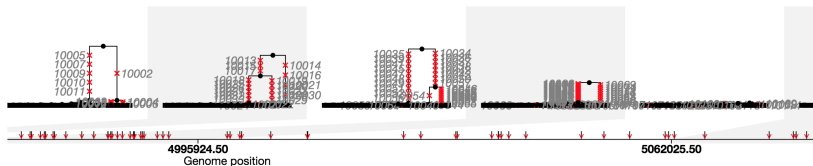
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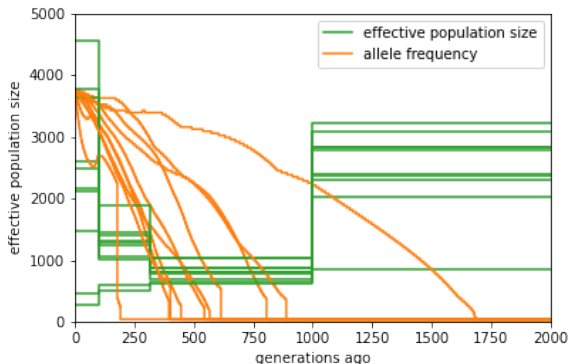


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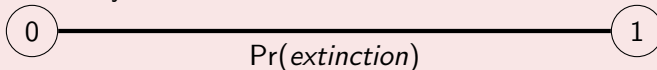
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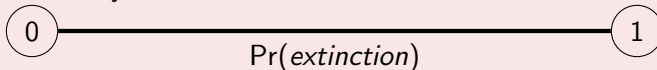
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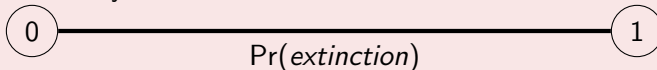
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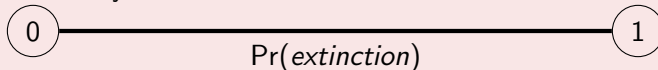
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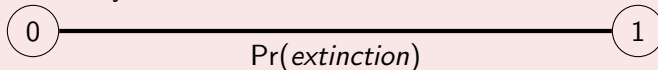
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- would be nice to estimate  $\text{Pr}(\text{extinction})$

- can extend to polygenic traits Edge and Coop 2019, Stern et al 2021

# Thank-you



 [github.com/mmosmond/tsrescue](https://github.com/mmosmond/tsrescue)