

Fitness Studies – SEAK Chum Salmon

Progress on genetic markers



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Alaska Hatchery Research Program

- 1) What is the genetic structure of pink and chum in PWS and SEAK?
- 2) What is the extent and annual variability of straying?
- 3) What is the impact on fitness (productivity) of natural pink and chum stocks due to straying hatchery pink and chum salmon?

Genetic marker needs

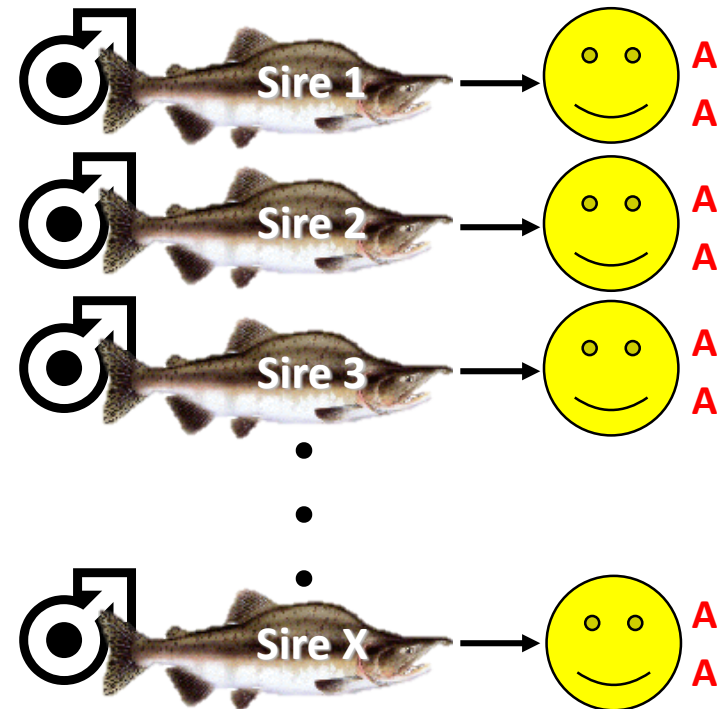
- Similar needs to pink salmon markers
- ~300 genetic markers
- High information content
 - > 0.3 average minor allele frequency (MAF)

Genetic markers for parentage analysis

Markers

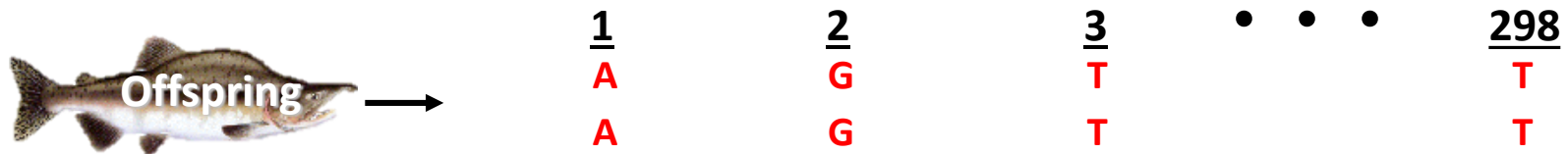


Potential sires (♂)

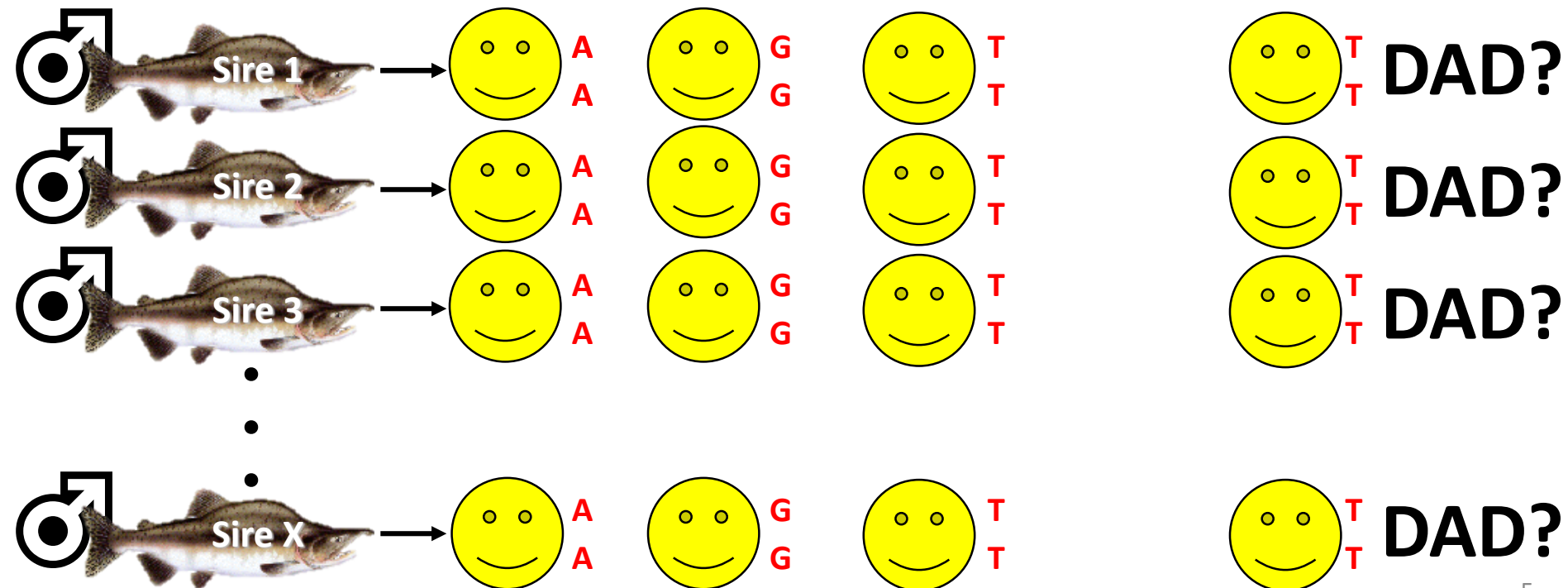


Genetic markers for parentage analysis

Markers

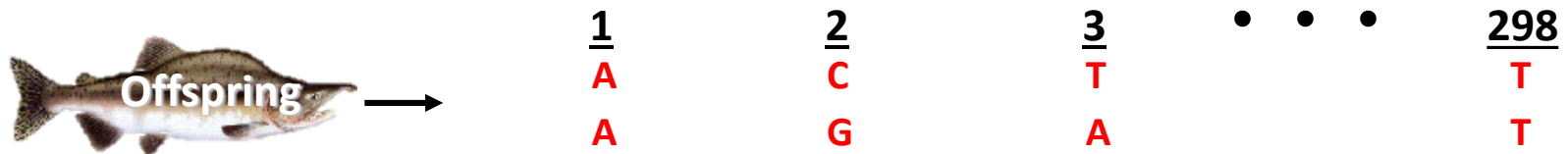


Potential sires (♂)

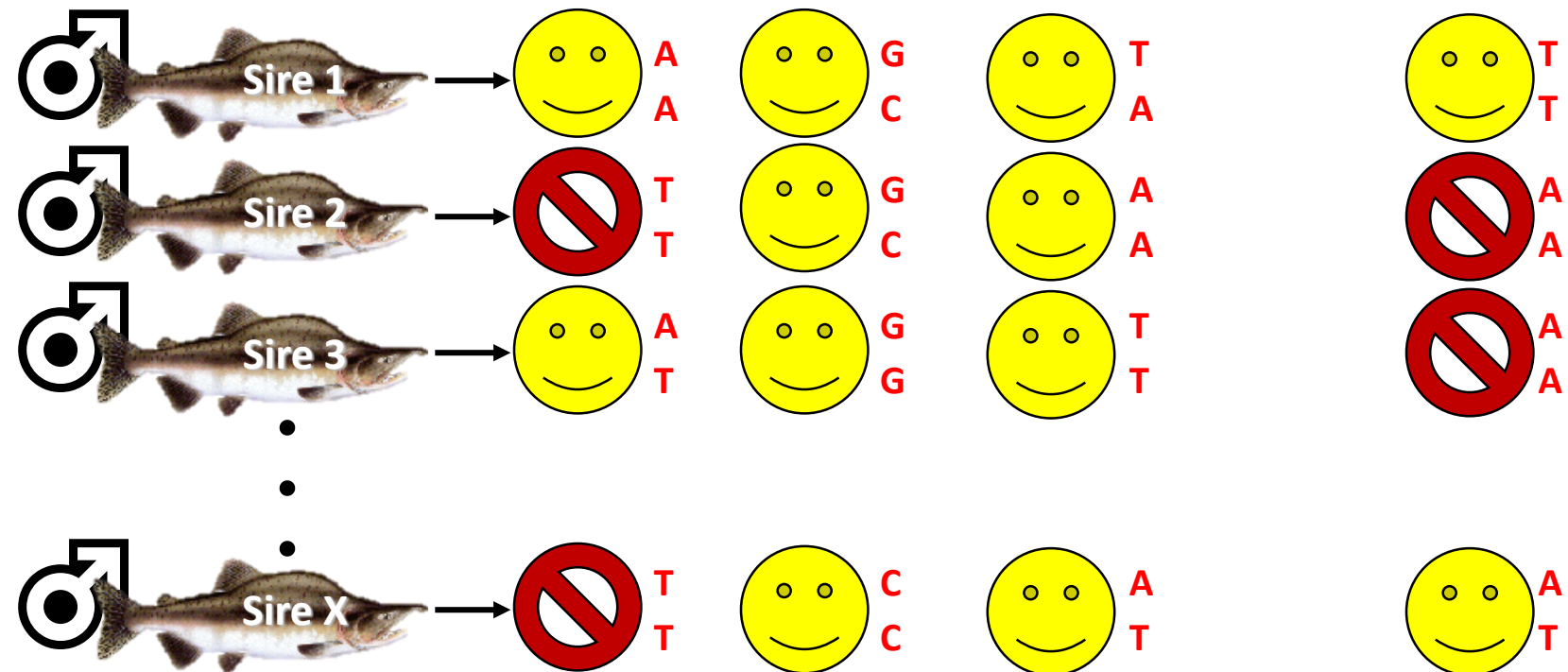


Genetic markers for parentage analysis

Markers

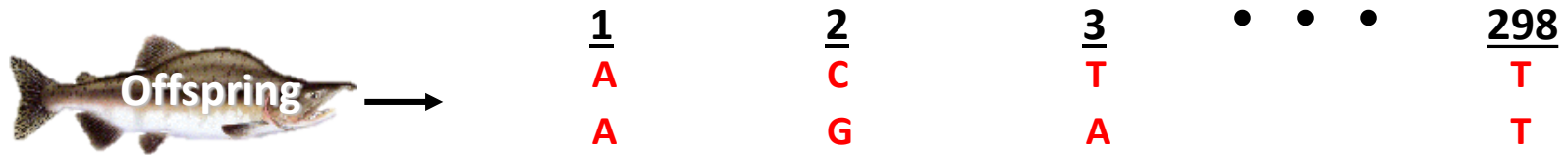


Potential sires (♂)

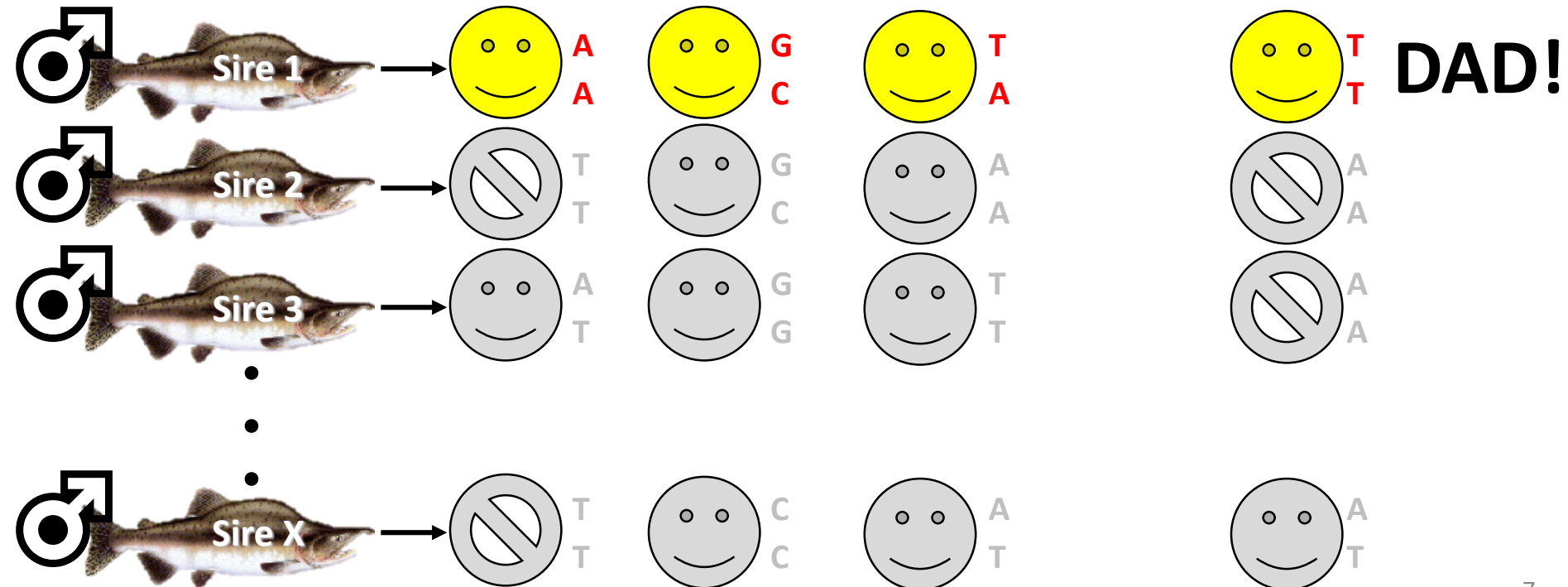


Genetic markers for parentage analysis

Markers



Potential sires (♂)

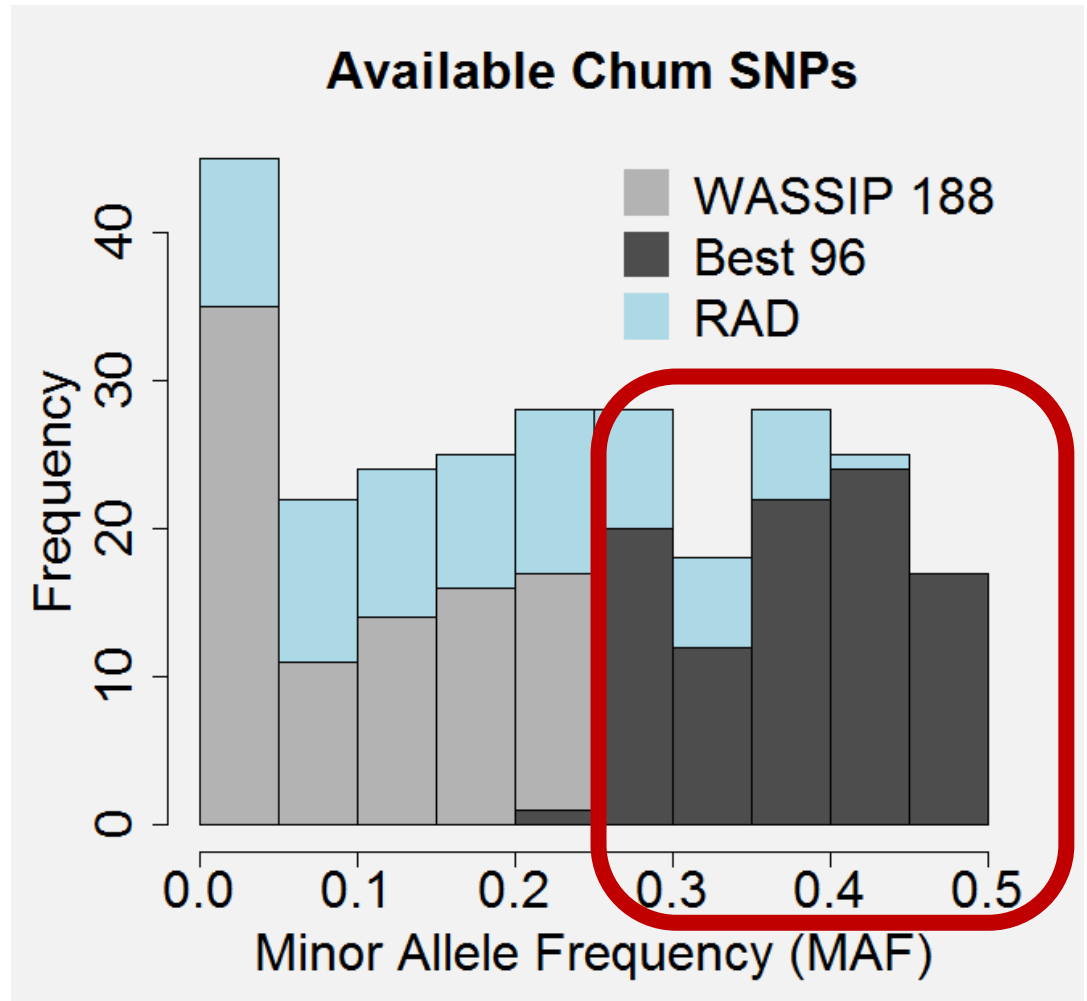


Genetic marker needs

- Similar to pink salmon
- ~300 genetic markers
- High information content
 - > 0.3 average minor allele frequency (MAF)
- New, high throughput chemistry
 - GTseq panel

Genetic markers currently available

- Old chemistry
 - “WASSIP 188”
 - “RAD 72”
 - UW



Future work

- Current markers are not adequate
- Find or develop chum GTseq panel
 - ~300 markers
 - $MAF > 0.3$
- Harvest existing RAD data from Western Alaska project
- Genetics technology changes
- Waiting saves \$\$\$

Questions?



