Chum Salmon progress on genetic markers

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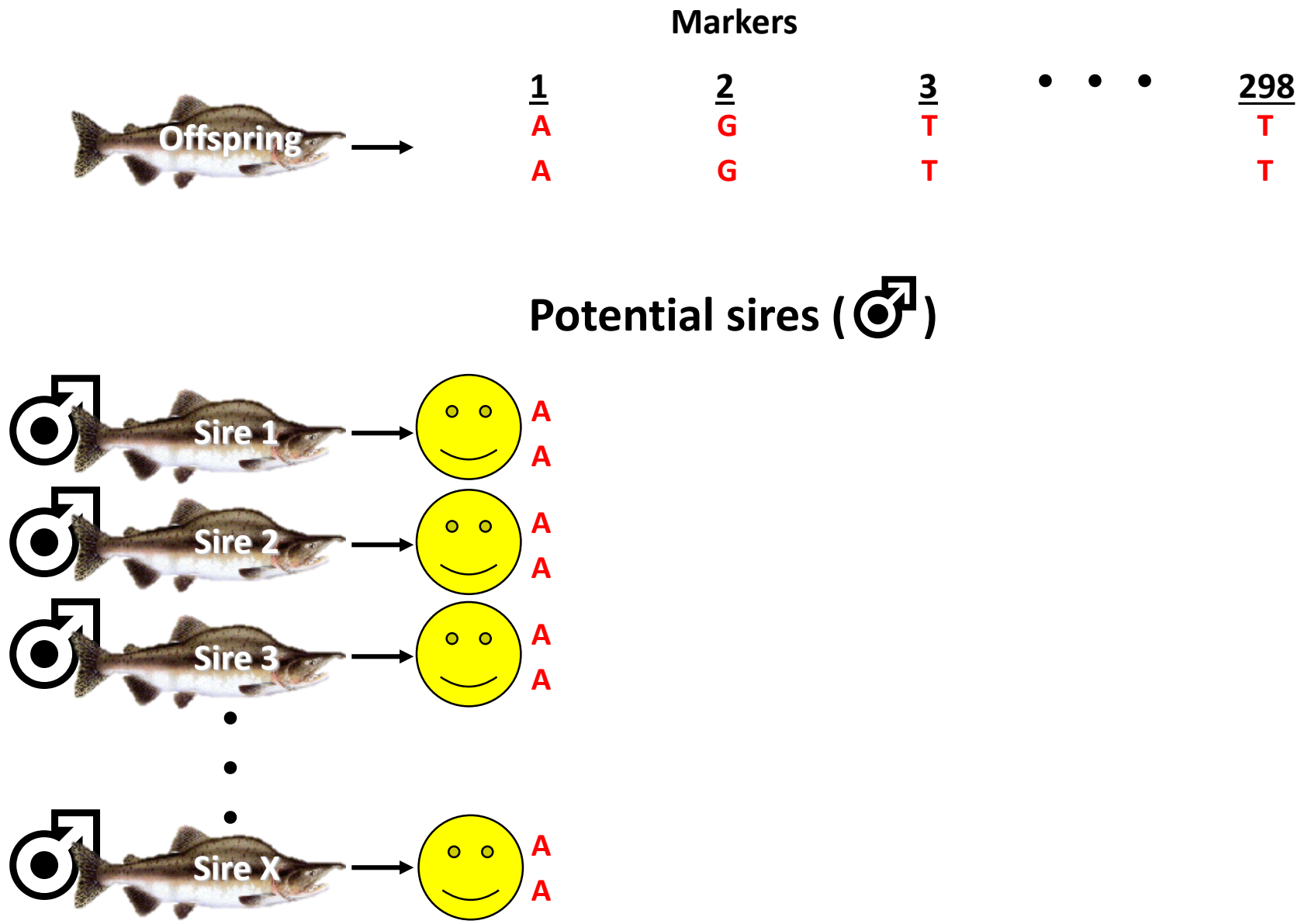
Alaska Hatchery Research Program

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?

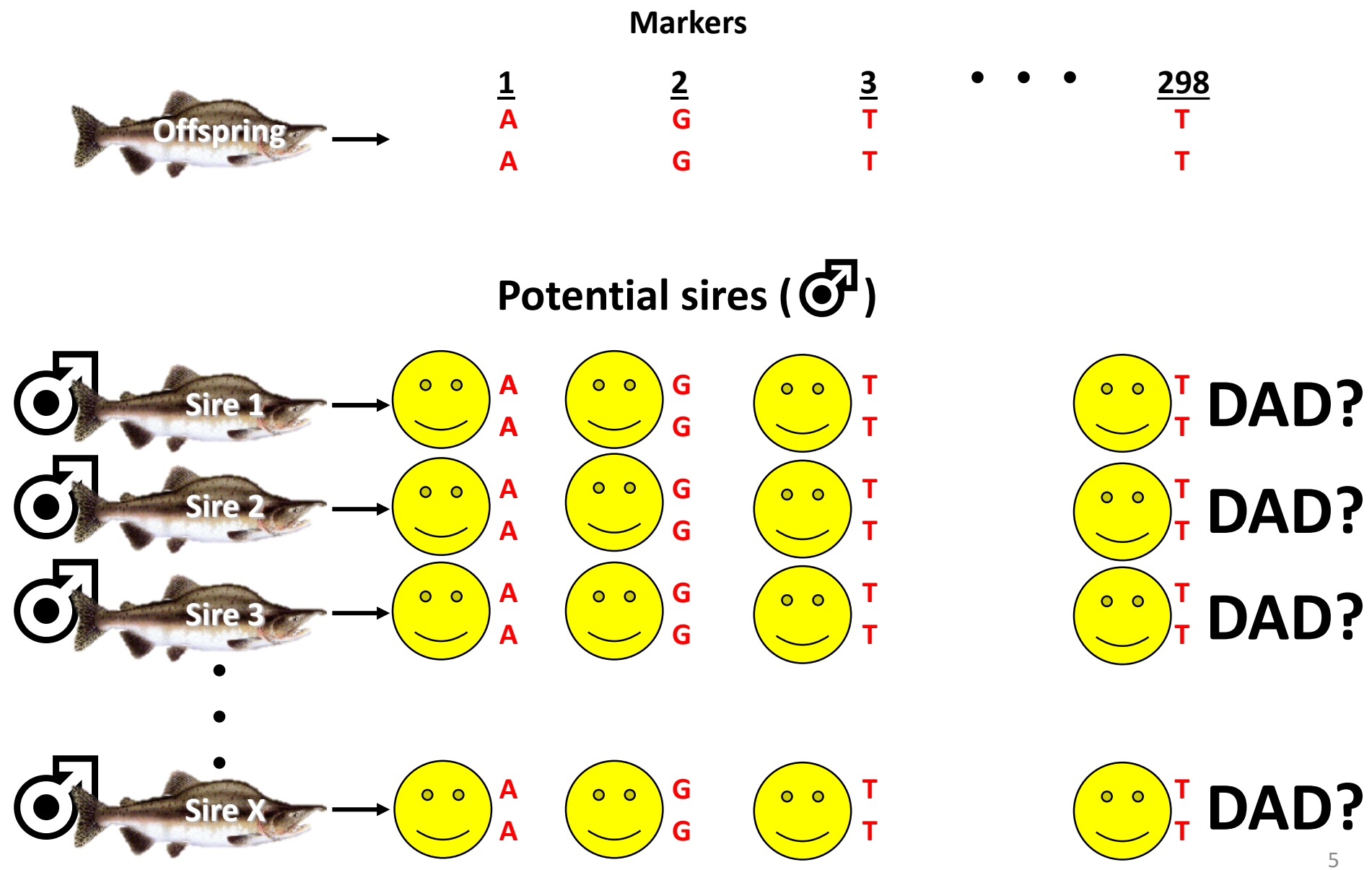
Genetic marker needs

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

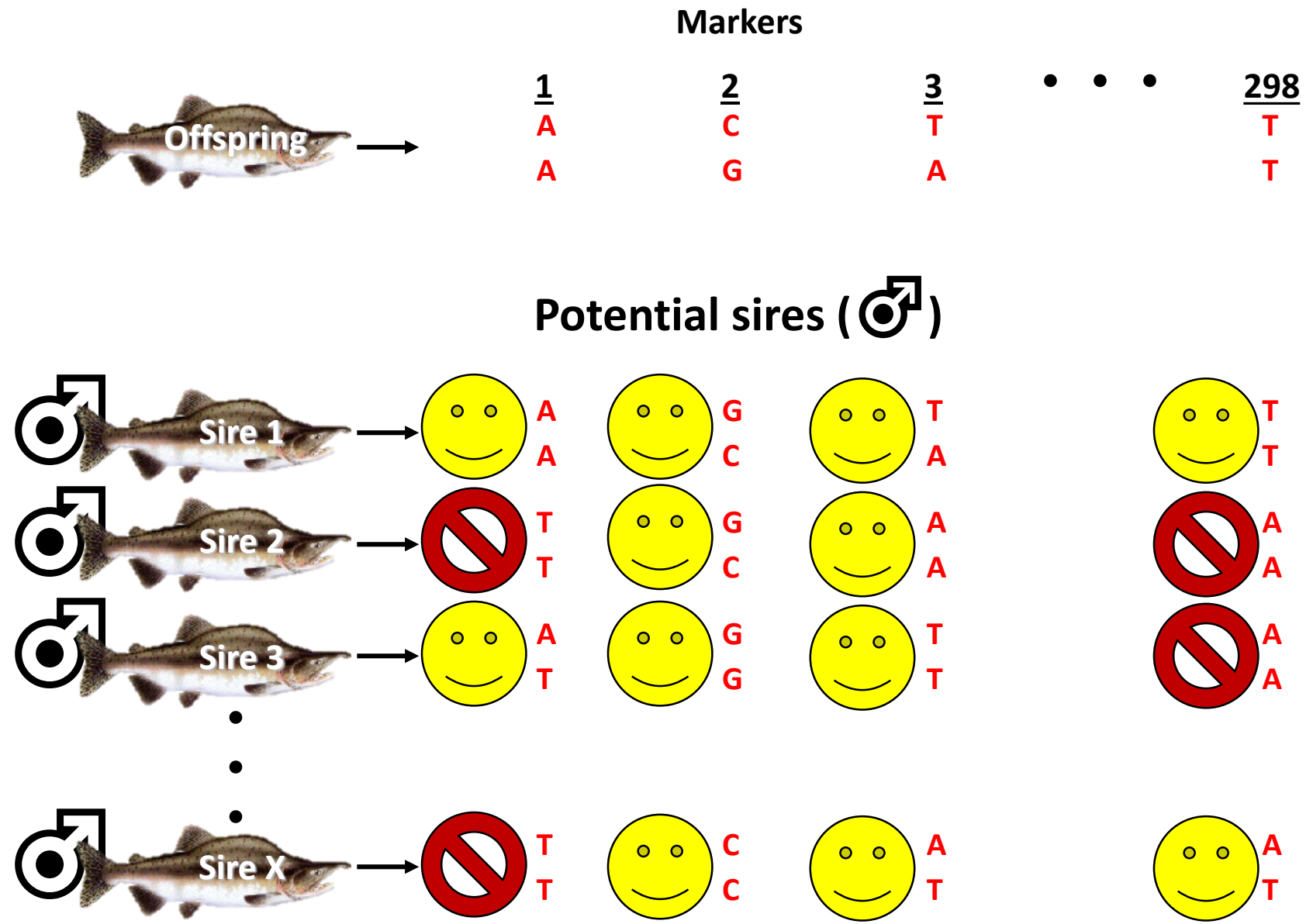
Genetic markers for parentage analysis



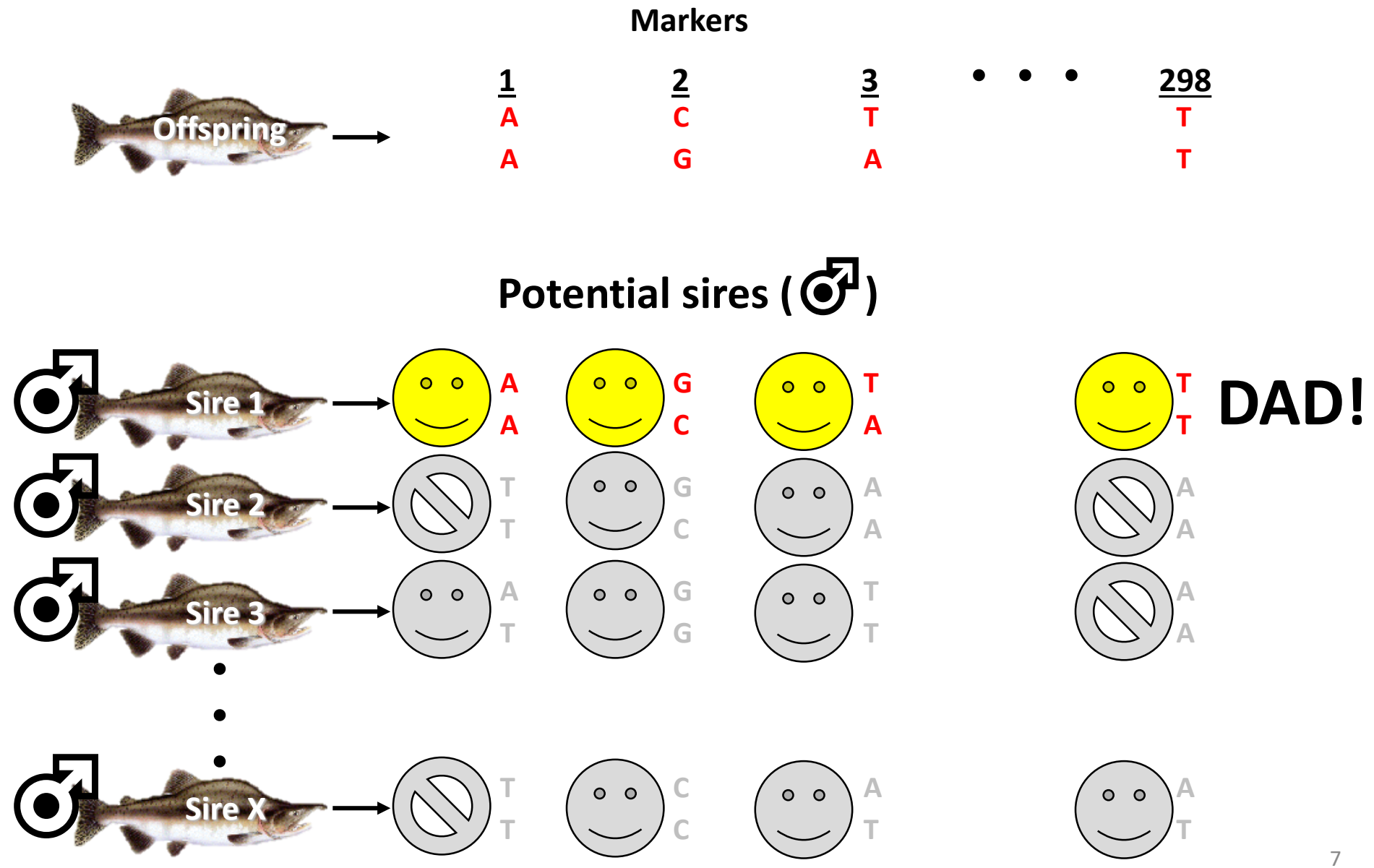
Genetic markers for parentage analysis



Genetic markers for parentage analysis



Genetic markers for parentage analysis

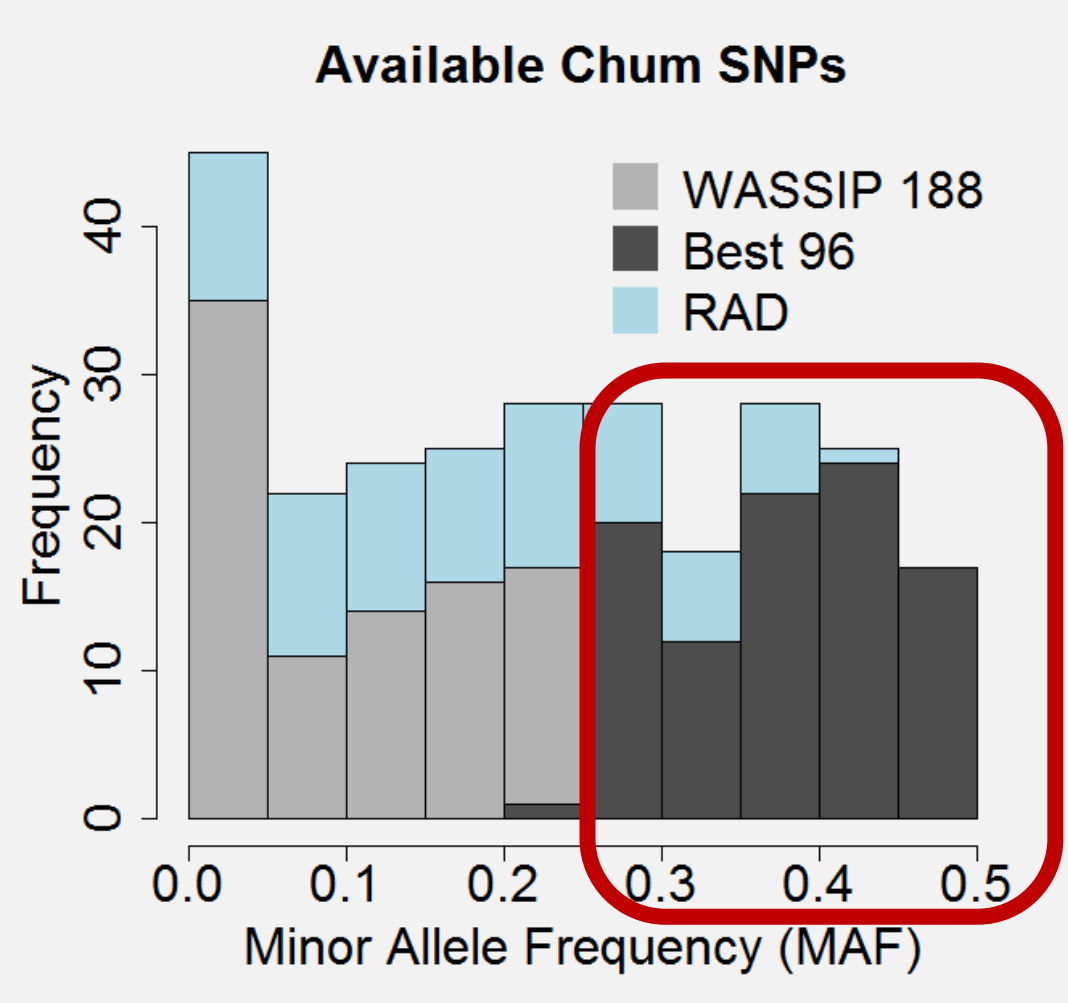


Genetic marker needs

- 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 GT-seq panel
  - ~300 markers
  - MAF > 0.3
- Try 350 SNP GT-seq panel developed in Washington
  - Send SEAK samples, find out MAF
- Genetics technology changes
- Waiting saves $$$

Questions?