

Black stilt/kakī: a
brief history of
conservation genetic
management and
goals for genomic
research

Stephanie Galla

PhD Student

University of Canterbury

School of Biological Sciences



Kakī, or Black Stilt

(Himantopus novaezealandiae)

Contemporary
Distribution



Braided Rivers
Upper Waitaki Basin

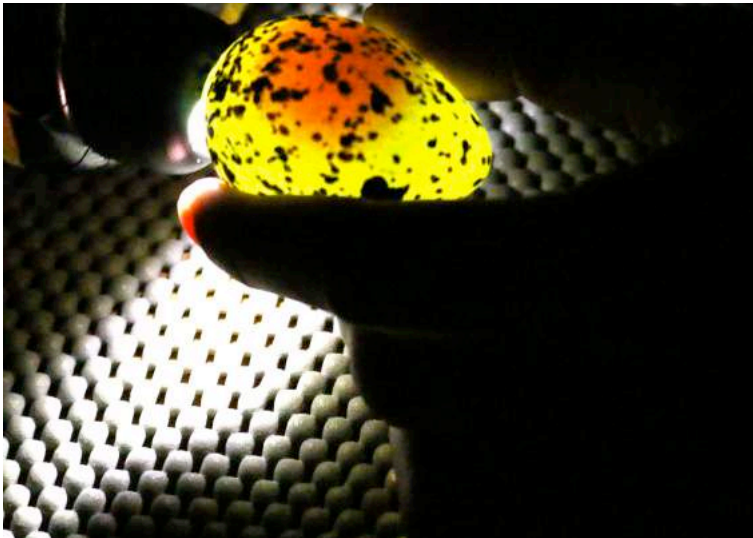


1981, 23 adults alive
2016, < 100 adults alive

Captive Breeding/Rearing for Translocation



Captive Breeding/Rearing for Translocation



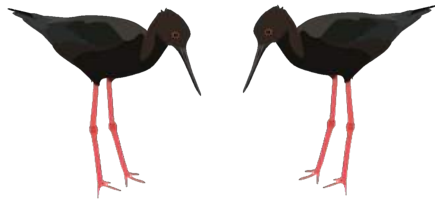
Captive Breeding/Rearing for Translocation



Captive Breeding/Rearing for Translocation



Why genetic management?

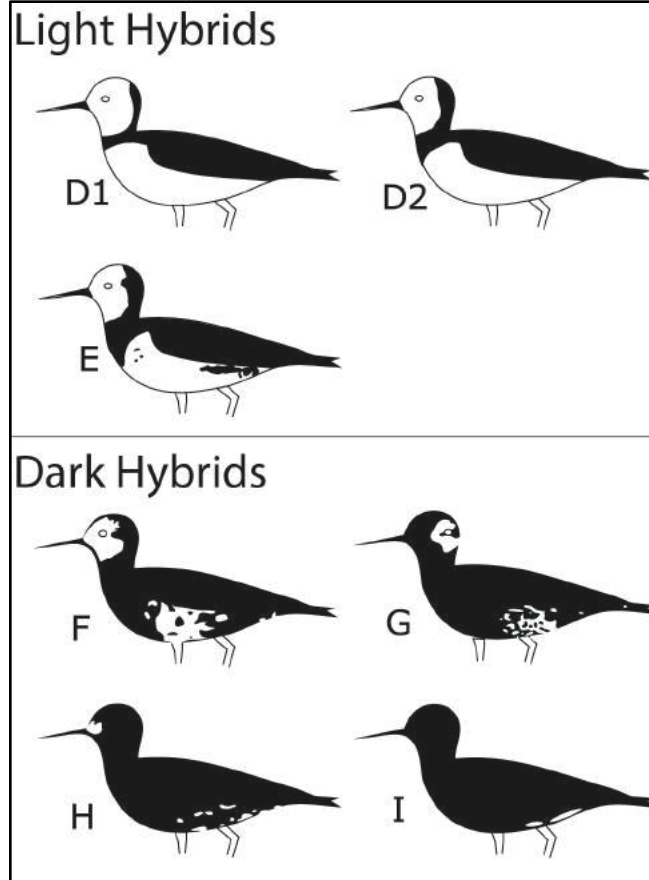


- **Minimize loss of genetic diversity**
 - Reduce inbreeding
 - Maximise evolutionary potential
- **Maintain genetic integrity**

Hybridisation between kakī and poaka



Kakī
(*Himantopus
novaeseelandiae*)



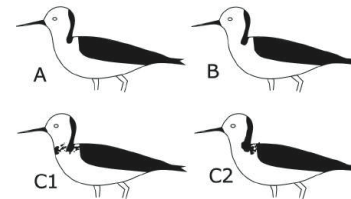
Poaka
(*Himantopus himantopus
leucocephalus*)

Hybridisation between kakī and poaka

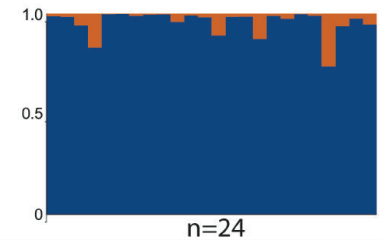
No evidence of cryptic hybrids, except for 1 bird

A. Plumage

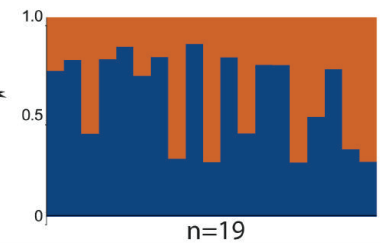
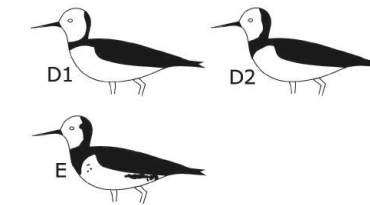
Poaka



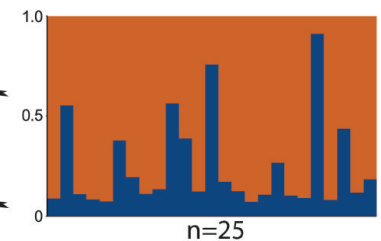
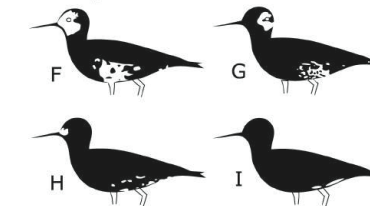
B. Genetic Markers



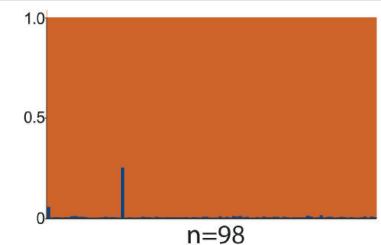
Light Hybrids



Dark Hybrids

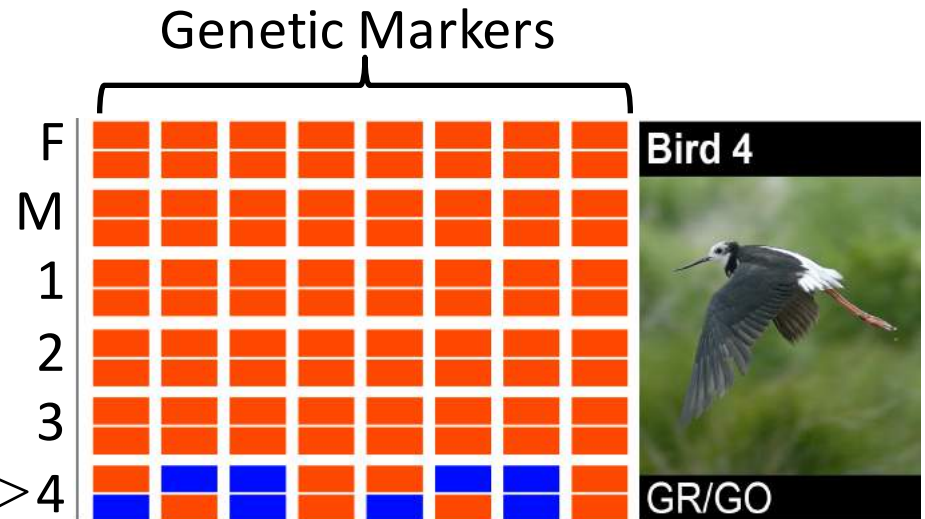


Kakī



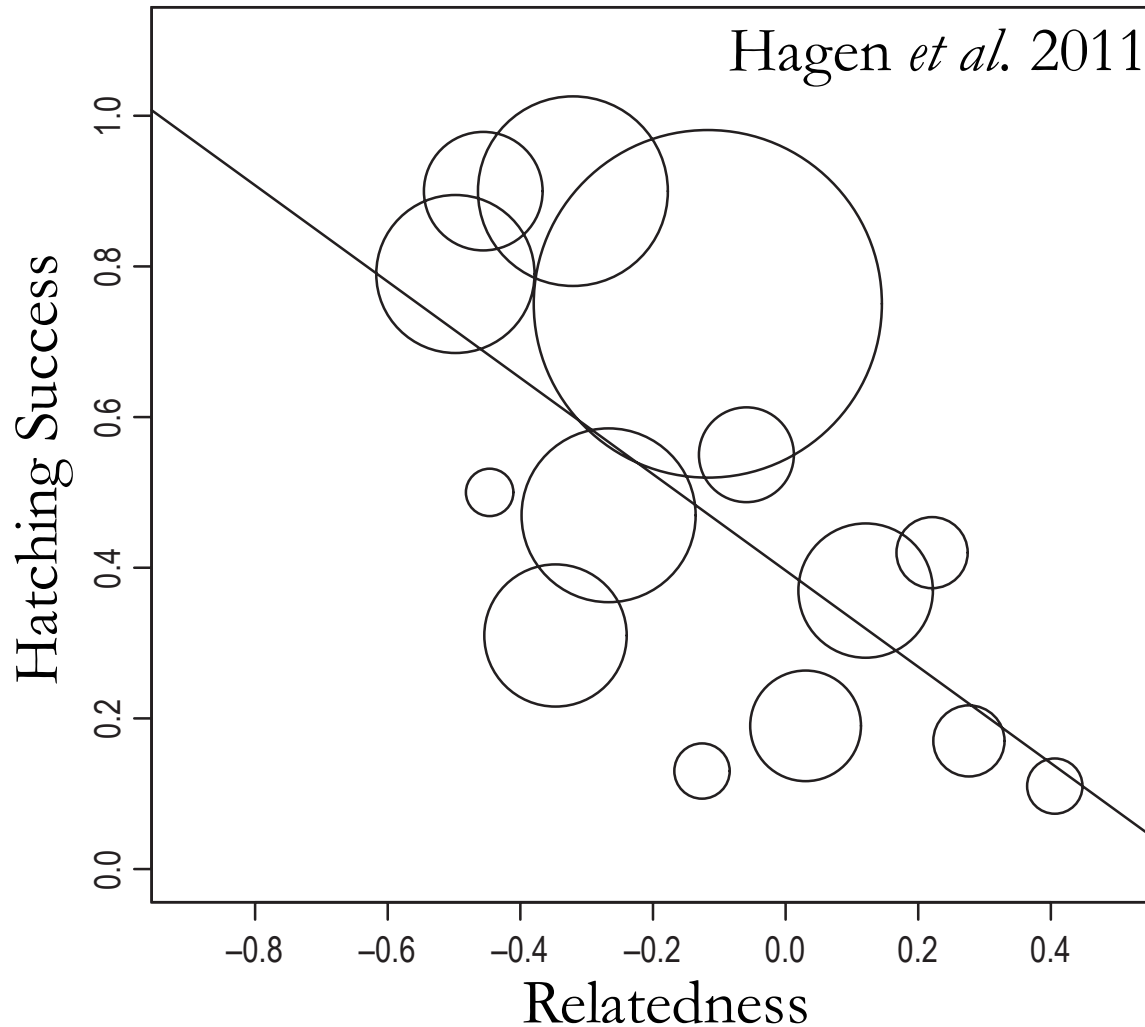
Egg dumping in kakī

Wild bird with atypical plumage had DNA that could not be attributed to either kakī parent



Overbeek *et al.* *In Review*

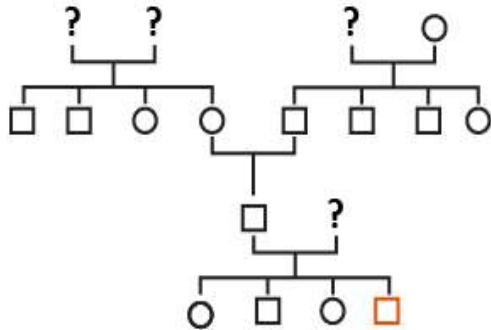
Inbreeding in kakī



Significant
negative
relationship
between
hatching success
and genetic
relatedness

Estimating relatedness in kakī

Pedigree



Genetic Markers

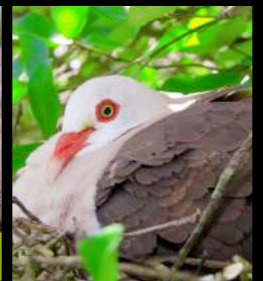
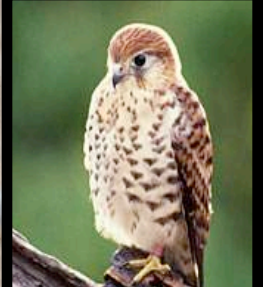
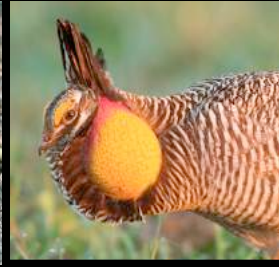


Genomic Markers



Compare all methods to find most effective method for estimating relatedness.

Conservation Implications



Acknowledgements

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