

Lect. 13. Speciation Mechanisms (cont.), Hybridization

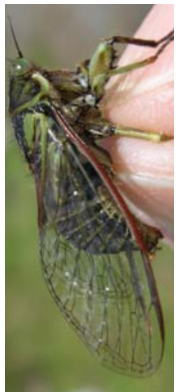
22 Mar 11, EEB 2245, C. Simon

Begin with Slide 39 from posted Lect. 12 powerpoint

- After slide 64, return to these few slides

Punakaiki Contact Zone

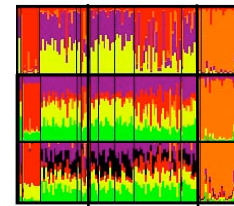
Kikihia "northwestlandica"



Introgression of alleles across a NZ cicada hybrid zone
Beth Wade, PhD thesis



6 Microsatellite Markers

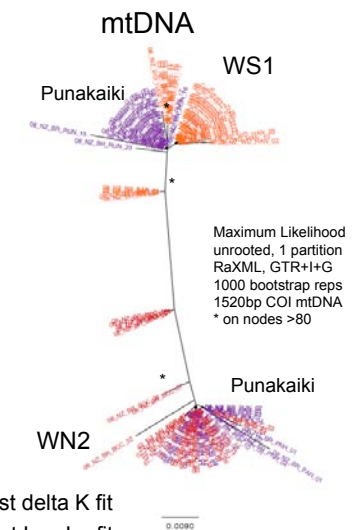


NW 12 | Punakaiki 88 | SW 26

Poplns from North to South

Bayesian population clustering Structure, admixture model; 50,000 BI/100,000 iterations 10 runs for K2 to 10; 6 microsatellite markers

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* Best delta K fit
* Best Log Ln fit

Hybrid sunflowers

Loren Rieseberg, UBC

Helianthus annuus



H. petiolaris



— X —
|



H. anomalus

Hybrid sunflowers in nature

Loren Rieseberg, UBC

Helianthus annuus × *H. petiolaris*

Both parents $2N = 17$ but gene arrangements differ on 10 of the chromosome pairs (7 transl., 3 inver.)

Hybrids [*H. anomalus*] mostly sterile but some reproduced by self fertilization

F1 pollen viability 10%, seed set < 1%

F5 pollen viability >90%

Hybrid sunflowers recreated experimentally

H. annuus × *H. petiolaris* → *H. anomalus*

Made 3 lines w/ different patterns of sib matings.

Independently ended up w/ same allele arrangements

Conferred high fitness on the hybrids

Experimental allele arrangements identical to field collected hybrids that arose > 100,000 yrs ago!

Co-adapted allele combinations