

Background

The great plains hybrid zone is home to many hybridizing passerine and passerine adjacent species. (Billerman et. Al, 2019, Baker and Johnson, 1998)

Climate change is driving movement of hybrid zones. (Buggs, 2007)

Hybridization can cause speciation but hybrids may also be too unfit in their environment. (Arnold and Martin, 2010)

Hypothesis

Hybrid populations will display significant morphological differences from allopatric populations.

Differences in Morphology between Allopatric and Hybrid Bird Populations in the Great Plains Hybrid Zone.

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Methods

Historic red-breasted and red-naped sapsucker specimens in the UWYVM originally sampled from the Great Plains hybrid zone were first assigned hybrid index scores. These scores were given based on physical appearance and species-specific scoring charts. Then, both tarsi and wing chords were measured with a pair of electronic calipers, as was bill length, bill width, bill depth, and growth bars. The mass at time of collection as marked on the specimen tag was also recorded.

These measurements were contested against each other. The averages of each characteristic are shown.

	Red-naped sapsuckers	Red-breasted sapsuckers	Hybrids
Mass (g)	49.77	45.93	47.28
Wing chord (mm)	120.78	122.28	120.31
WC asymmetry (mm)	1.515	1.54	1.224
Weight to WC	0.4123	0.3775	0.393
Tarsus (mm)	20.85	20.15	21.34
Tarsus asymmetry (mm)	0.77	0.478	0.9776
Bill length (mm)	20.55	20.67	20.37
Bill width (mm)	7.679	7.778	7.737
Bill depth (mm)	6.791	6.62	6.725
Growth bar (mm)	2.459	2.742	2.622

Results

Hybrid individuals were found to have some discrepancies in their morphology.

There were significant ($p > 0.05$) differences between hybrids only in mass and weight to wing chord ratio between hybrids and red-naped sapsuckers.*

*Red-naped sapsuckers were sampled at a much higher rate than the other populations.

Hybrids were ultimately not shown to be significantly morphologically different from either parent population.

References

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