

Understanding the role of Western Bluebirds & Tree Swallows in Winegrape Vineyards



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Collaborating Vineyards:

Grgich Hills	Chappallet	To Kalon
Tres Sabores	Raymond	Ingenook
Hess Persson	Spring Mountain	Cain
Joseph Phelps	Matthiasson	Napa Valley Reserve
Honig	Hyde	Hall
Wappo Hills	Schramsberg	Raymond
Rutherford River Ranch		



Bluebirds preferred nest boxes that:

- Had predator guards
- Had intermediate hole sizes (40-45 mm)
- With little riparian & other woodland nearby



Swallows preferred nest boxes that:

- Had predator guards
- Were mounted on their own poles @ end of rows
- Were close to farm roads
- With little riparian nearby

1st Question

Which nest box attributes & local habitat conditions do bluebirds & swallows select?

Both species prefer "open country" and appeared to select boxes to minimize predation risk.

Ash-throated Flycatcher

House Finch

House Sparrow

House Wren

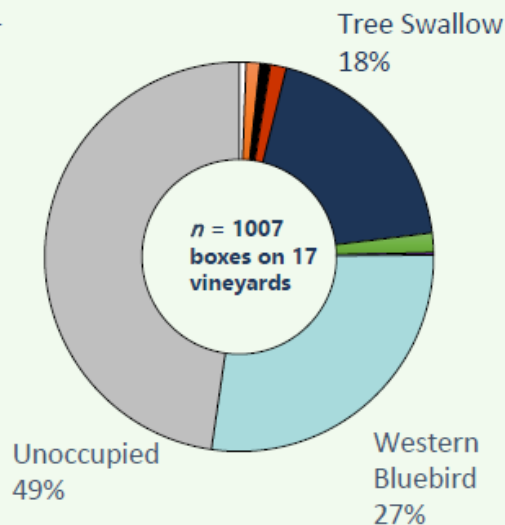
Tree swallow

Unknown swallow

Violet-green swallow

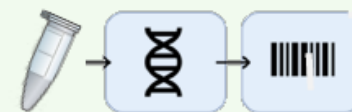
Western bluebird

Unoccupied

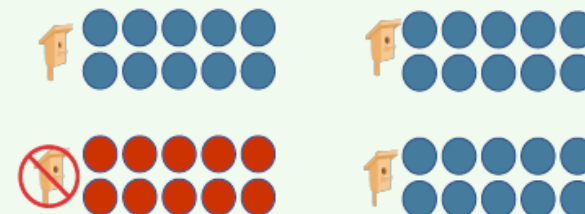


Next Questions

Genetic work



Before-after experiment



2023

2024

Avian “point counts”

- 16 min, 50 m radius bird counts across 179 sites and 20 farms
 - Repeated four times (May, June, July, and August)
- 10,271 bird detections across 120 species
- Future analyses...
 - Effects of farm diversification
 - Effects of nest box addition



What we did

This grape damage survey aims to investigate whether the presence of surrounding vegetation, perches or songbird nestboxes influence the amount of damage to grapes. We surveyed in..

Six Vineyards

- Grgich Hills AMC
- Grgich Hills GHC
- Honig
- Inglenook
- Joseph Phelps
- Wappo Hill

Three varieties

- Cabernet Sauvignon
- Chardonnay
- Sauvignon Blanc



Picture 1 Example: Damage assessment on a grapebunch. In green all undamaged grapes (68 %), in blue all pecked grapes (32 %) and in yellow all plucked grapes (0 %).

What we have found (so far)

1

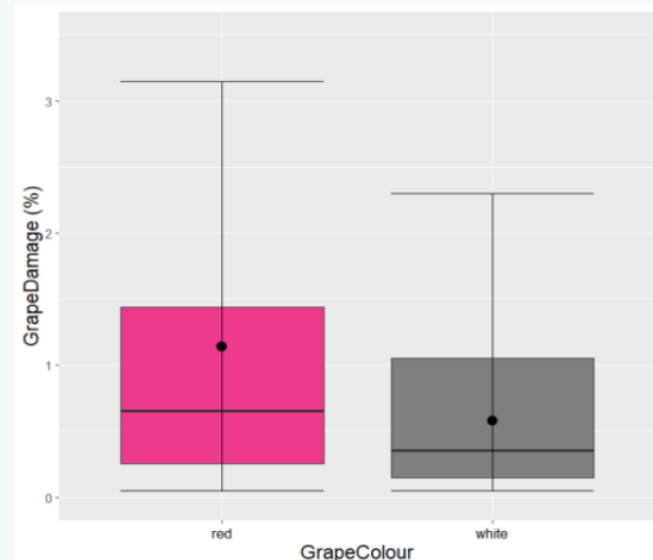
The overall mean grape damage per sample plot (n=510) was low (<1%), with:

- Grape Damage: 0.83 % \pm 0.07
- Peck Grape Damage: 0.61 % \pm 0.05
- Pluck Grape Damage: 0.22 % \pm 0.05



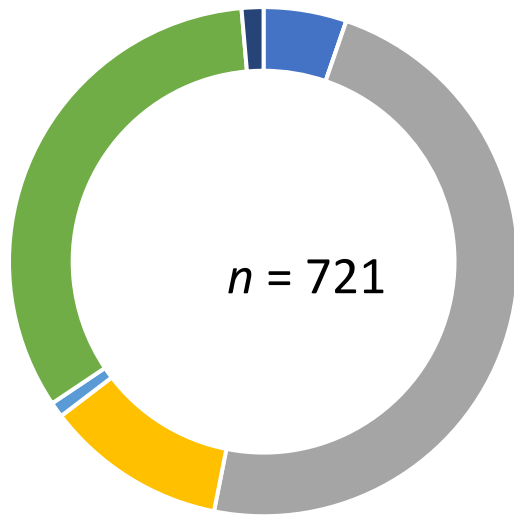
Katharina Adler

Red grapes (CS) suffered more percent damage than white grapes (CH, SB):



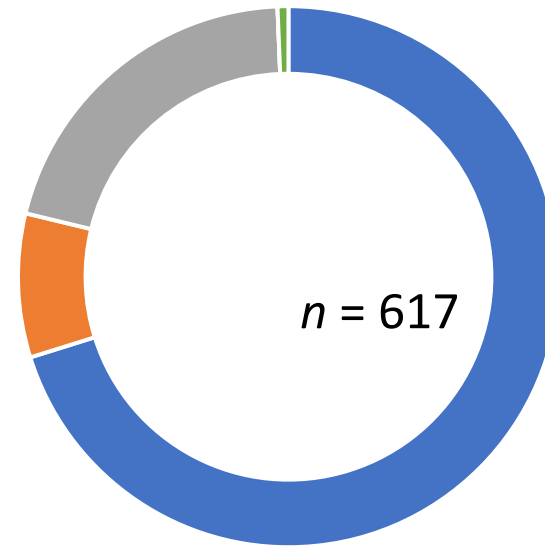
Sticky card results so far ~ 1/3 processed

Beneficials



- Anagrus sp.
- Cryptolaemus montrouzieri
- Anagrus spp.
- Chrysoperla - grn lacewing
- Hemerobius - brn lacewing
- Araneae - small spiders
- Araneae - large spiders

Pests



- Western Grape LH
- Virginia Creeper LH
- Variegated LH
- Blue-green Sharpshooter
- Three-cornered Alfalfa Hopper