

# Breeding ecology and habitat affinities of an imperiled species, the Rusty Blackbird: Preliminary results

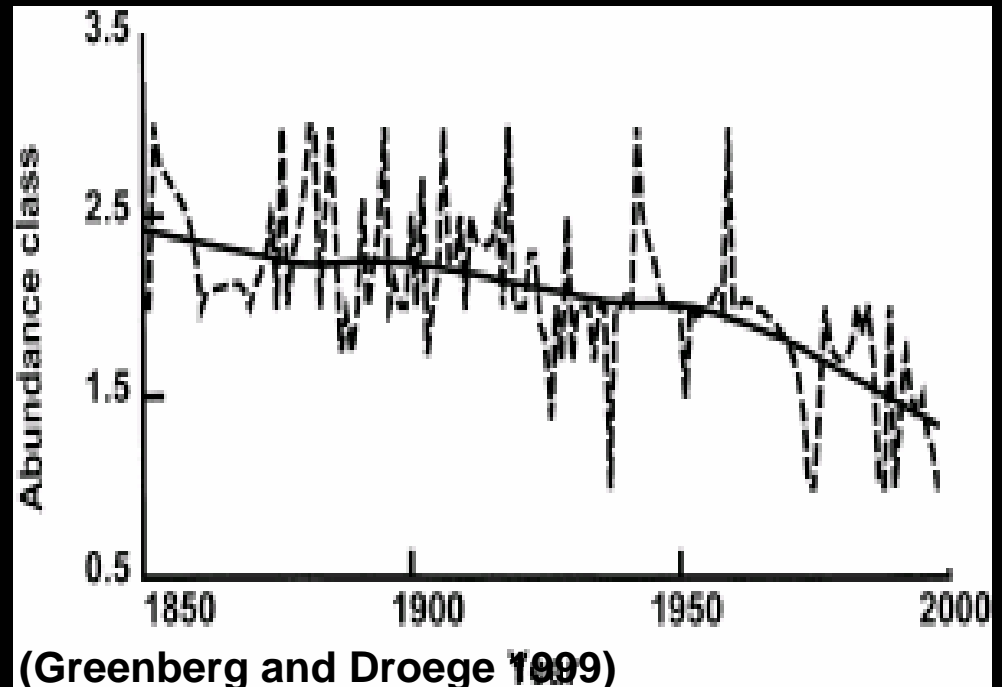


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# Rusty Blackbirds: Background

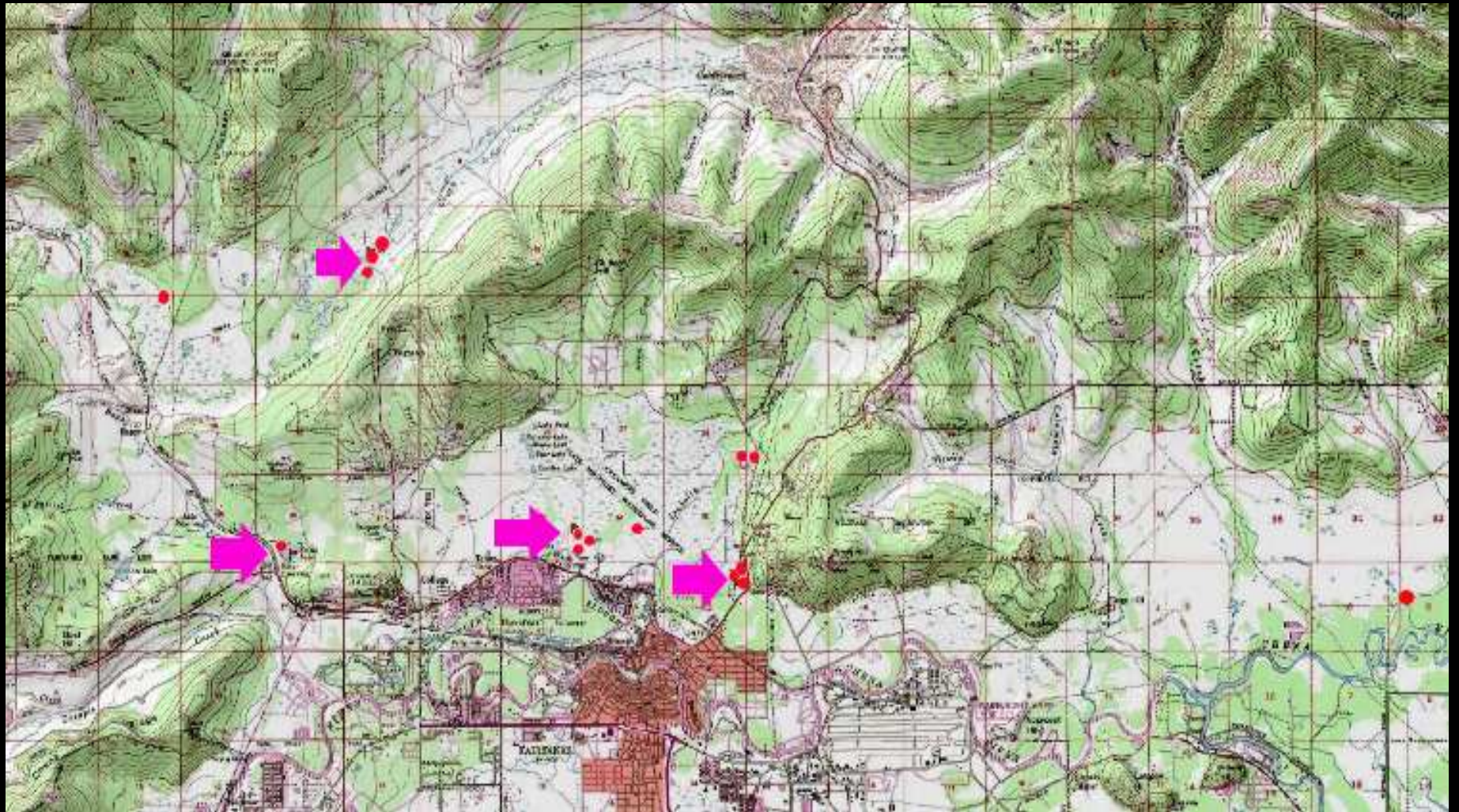
- Little studied.
- Mid-distance migrant.
- Winters in SE United States.
- Breeds exclusively in boreal wetlands.
- Declining severely.



# Study Area

- Fairbanks and nearby surroundings.
- Concentrated effort in wetland areas where Rusty Blackbirds were known to occur.
- Primary areas: Goldstream Valley, Creamer's Field and surroundings, Smith Lake/Goldhill Area.

# Study Area



# Field Methods

- Nest searching and monitoring.
  - Nests checked every 3-4 days.
- Behavior
  - Incidental observations of foraging, courtship, and nest defense.
- Habitat sampling
  - Recorded after fledging.
  - 10m radius.
  - Nest plot and control plot for each nest site.

# Field Methods continued

- Banding
  - Color banding.
  - Target netted using playbacks and decoys.
  - Captured birds at CFMS .
- Migration
  - Community observations of migrant flocks reported to ABO.
- Water samples and analyses (CCAL labs)
  - Nitrogen, Phosphorus, Calcium, Alkalinity, PH, Conductivity.

# Statistical Methods

- Mayfield estimates of nest survival.
- Comparisons between nest and control plots using Mann-Whitney U tests.

# Results: Nest Success

- 15 nests monitored.
- 12 with known outcomes.
- 50% apparent success.
- Mayfield estimate = 39%.
- All failures attributed to predation.
- 83% of failures occurred during the nestling stage.





# Results: Habitat Affinities

- 13 of 15 nest patches (87%) were dominated by wet, seasonally flooded meadows with willows (*Salix sp.*), alders (*Alnus crispa*), and scattered white and black spruce (*Picea glauca* and *P. mariana*).
- 27% of nests were built directly over water.
- No significant differences between nest and control plots.
- Flooded grasses seem particularly important characteristics.

# Nest Characteristics

	<u>Mean</u>		<u>Standard Deviation</u>		<u>U</u>	<u>P</u>
	Succeed	Fail	Succee	Fail		
Tree height (m)	4.8	3.13	1.64	1.38	7.5	<b>0.09</b>
DBH (cm)	15	10.8	8.80	5.85	13.5	0.49
Nest heght (m)	1.8	0.86	1.67	0.51	10.5	0.24
% cover over nest	85	71.7	14.14	16.9	10	0.24
Visability below	1.7	35	4.08	33.3	7	<b>0.09</b>
Visability side	13	21.8	8.92	12	10	0.24

No clear relationships

# Results: Water Quality

Sample location	N (mg/L)	P (mg/L)	Ca (mg/L)	Alkal. (mg/L)	PH	Cond. (us/cm)
Creamer's Field	1.69	0.23	16.32	15.04	7.40	179.20
Goldstream	0.80	0.08	15.75	14.18	7.00	125.00
Smith Lake	0.82	0.05	5.27	7.63	7.20	93.30
Steese Pond	1.05	0.06	21.58	36.41	9.00	355.90

Despite variation no obvious correlation  
with nest success.

# Behavior

- Courtship: generally consistent with previously published descriptions.
  - Feeding/begging displays.
- Foraging
  - Foraged on ground.
  - Water's edge, shallows, up to 5cm deep.
  - Aquatic insect larvae were most common food item.
- Nest defense
  - Intense during nestling stage.
  - Often cooperative.

# Preliminary Study on Innoko Refuge 2006

- High nest density - 4 nests in 1 square km
- Cooperative nest defense
- Five nests located and monitored on one creek with 60% apparent nest survival
- All nests in willows along riparian stringers
- Plans to expand study in 2007



# Autumn Migration

- Reported flocks were observed between 24 July and 15 September in 2005.
- Largest flocks between 5 and 11 September
- Scattered locations.
- Short periods of time.



G. Hofmann

# Take Home Messages

- Wet grassy areas appear to be important features to Rusty Blackbirds.
- Nest sites are not apparently different from other parts of the territory.
- Possible semi-colonial nature raises interesting questions.
- Autumn migration counts difficult due to scattered and unpredictable movements.

# Research Recommendations

- Increase studies of breeding ecology across a broader geographic area.
- Determine factors in nest-site selection.
- Ascertain which predators are responsible for nest predation.
- Determine possible effects of climate change (wetland drying, acidification).
- Implement long-term wetland specific surveys to monitor Rusty Blackbirds and other boreal wetland obligates.
- Concentrate on collaborative efforts.



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