Alaska Department of Fish and Game

Division of Wildlife Conservation

Productivity and Survival of the Rusty Blackbird in Alaska: towards a synthetic analyses of statewide demographic data.

David F. Tessler, Steven M. Matsuoka, David Shaw, April Harding-Scurr, David Loomis, Erin Cooper, Katie Dugger, and James A. Johnson.

Alaska Department of Fish and Game: David Tessler

U.S. Fish and Wildlife Service: Steve Matsuoka; Jim Johnson

Alaska Bird Observatory: Dave Shaw

Humboldt State University: April Harding-Scurr

Oregon State University: Dave Loomis; Katie Dugger

U.S. Forest Service: Erin Cooper

Investigating the decline of the Rusty Blackbird in Alaska

Alaska Department of Fish and Game

Alaska Bird Observatory

U.S. Forest Service

U.S. Fish and Wildlife Service

Acadia University

Humboldt State University

Loyola University

Smithsonian Institution: National Zoo

Canadian Wildlife Service

Biodiversity Research Institute

Oregon State University

Rusty Blackbird in Alaska

The Rusty Blackbird has suffered one of the steepest declines of any bird in North America…

90–98% glo

5%–12% pe

5% decline

Breed exclusively in Boreal Forest Wetlands

Working with an international team to address hypotheses for the decline throughout the range and lifecycle.

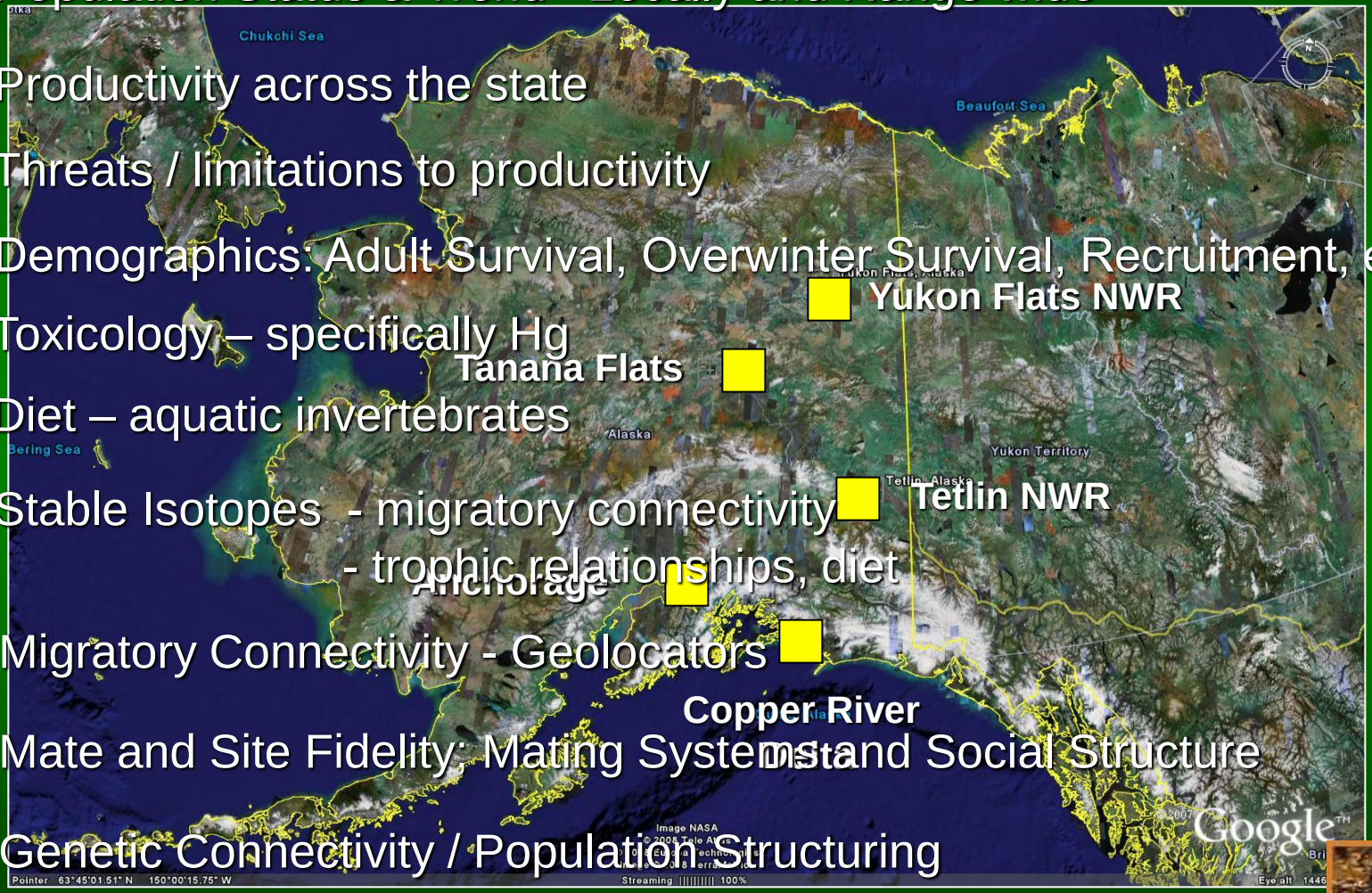
Rusty Blackbird in Alaska

What are we going to do about it?

Rusty Blackbird in Alaska

Coordinated research effort across Alaska

- Population Status & Trend - Locally and Range-wide
- Productivity across the state
- Threats / limitations to productivity
- Demographics: Adult Survival, Overwinter Survival, Recruitment, etc…
- Toxicology – specifically Hg
- Diet – aquatic invertebrates
- Stable Isotopes - migratory connectivity
  - trophic relationships, diet
- Migratory Connectivity - Geolocators
- Mate and Site Fidelity; Mating System and Social Structure
- Genetic Connectivity / Population Structuring



Methods

Su

Lo
Ru

Id
Sp

Fi

Methods

Productivity Monitoring

Determine or estimate onset of nest building, egg laying, incubation, hatch, fledge.

Revisit Nests ~ 3 days

Record egg #, chick #, and any change in status

Methods

Demography

Coordinated Resighting Efforts – Banding

- 3-4 repeated surveys / yr
- May 10 – June 10
- "Robust Method"

Adults –
Individual and
Study area ID

Chicks –
Study area ID
and cohort

Results

Productivity

Nests Monitored

	2006	2007	2008	2009	2010	2011	Total
Anchorage		18	22	19	15	8	82
Copper River Delta	14			20	24		58
Tetlin NWR			8		31	47	86
Tanana Flats		28	26	23	15		92
Fort Wainwright		30	27	21			78
Yukon Flats NWR				30	26	27	83
							479

Results

Productivity

Clutch Size

	2006	2007	2008	2009	2010	2011	Average
Anchorage		5.24	5.39	5.44	5.15	5.20	5.28
Copper River Delta	4.64			5.41	5.59		5.21
Tetlin NWR			5.33		4.5	4.5	4.78
Tanana Flats		5.25	5.23	5.26	5.24		5.25
Fort Wainwright		5.19	5.36	5.22			5.26
Yukon Flats NWR				4.87	5.26	4.68	4.94

Results

Productivity

Hatching Success

	2006	2007	2008	2009	2010	2011	Average
Anchorage		84%	88%	76%	86%	75%	82%
Copper River Delta				76%	85%		81%
Tetlin NWR					77%	86%	82%
Tanana Flats			84%	88%	70%		86%
Yukon Flats NWR				46%	70%	76%	64%

Results

Productivity

Nest Success

	2006	2007	2008	2009	2010	2011	Average
Anchorage		78%	64%	63%	67%	63%	67%
Copper River Delta	43%			75%	79%		66%
Tetlin NWR			38%		77%	51%	55%
Tanana Flats		63%	61%	72%	73%		67%
Fort Wainwright		63%	70%	81%			72%
Yukon Flats NWR				58%	58%	52%	56%

Results

Productivity

Standard Productivity

	2006	2007	2008	2009	2010	2011	Average
Anchorage		3.08	2.85	3.01	3.16	3.34	3.09
Copper River Delta				2.85	4.17		3.51
Tetlin NWR					2.64	3.44	3.04
Tanana Flats		2.57	3.54	3.48			3.20

Results

Productivity

Nests	n = 479	
Clutch Size	5.14	±0.31
Hatching Success	78%	±0.11
Apparent Nest Success	64%	±0.12
Productivity	3.18	±0.44

Results

Demography

Chicks Seen Again

	Chicks Banded	Seen Again	%
Anchorage	115	3	2.6%
Copper River Delta	54	0	0.0%
Tetlin NWR	104	3	2.9%
Yukon Flats NWR	98	3	3.1%

Results

Demography

Re-sighting

Anchorage			
	BANDED	SEEN	%
Total Adults	59	22	37.3%
Total Chicks	159	6	3.8%
Total Banded	218	28	12.8%

Copper River Delta			
	BANDED	SEEN	%
Total Adults	9	3	33.3%
Total Chicks	54	0	0.0%
Total Banded	63	3	4.8%

Tetlin NWR			
	BANDED	SEEN	%
Total Adults	76	13	17.1%
Total Chicks	104	3	2.9%
Total Banded	180	16	8.9%

Yukon Flats NWR			
	BANDED	SEEN	%
Total Adults	53	13	24.5%
Total Chicks	98	2	2.0%
Total Banded	151	15	9.9%

Results

Demography

Annual Adult Survival ?

Re-sighting Rate in Anchorage = 1; Therefore Return Rate ~ Annual Survival

Total number of marked adults				
2007	2008	2009	2010	2011
20	27	34	17	20
Birds returning				
2008	2009	2010	2011	
7	15	7	7	
Return rate				Mean
2008	2009	2010	2011	2008-2011
35.0%	**55.6%**	**20.6%**	**41.2%**	**36.7%**

Results

Demography

Annual Adult Survival ?

Tetlin NWR

Total number of marked adults		
2010	2011	2012
41	43	20
Birds returning		
2011	2012	
7	15	
Return rate		Mean
2011	2012	2011-2012
17.1%	**34.9%**	**26.2%**

Results

Demography

Annual Adult Survival ?

Copper River Delta

Total number of marked adults		
2009	2010	2011
6	18	20
Birds returning		
2010	2011	
3	0	
Return rate		Mean
2010	2011	2009-2011
50.0%	**0.0%**	**12.5%**

Results

Demography

Annual Adult Survival ?

Yukon Flats National Wildlife Refuge

Total number of marked adults		
2009	2010	2011
26	31	20
Birds returning		
2010	2011	
3	9	
Return rate		Mean
2010	2011	2009-2011
11.5%	**29.0%**	**21.1%**

Thanks for your attention!

Rusty Blackbird in Alaska

Coordinated research effort across Alaska

What can you do to help?

- **Watch for banded RUBL**
- **Report all RUBL observations**
  - **Concentrations of nesting RUBL**
  - **Age ratios of migrating RUBL**
  - **Over-wintering RUBL**

Rusty Blackbird in Alaska

Identifying Age Class and Sex of Migrating RUBL

Females

Gray: rump and belly – lighter overall

Face Mask: Grayer

Males

Glossy Black: wings, tail, rump, and belly

Face Mask: Black

Hatch Year Birds

Dark Eyes

Broken Light Eyering

Rusty Blackbird in Alaska

Quiz