

Streaked Horned Lark

Nest Survival and Productivity

How are they doing on JBLM?



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Center for Natural Lands Management



Conservation Objectives



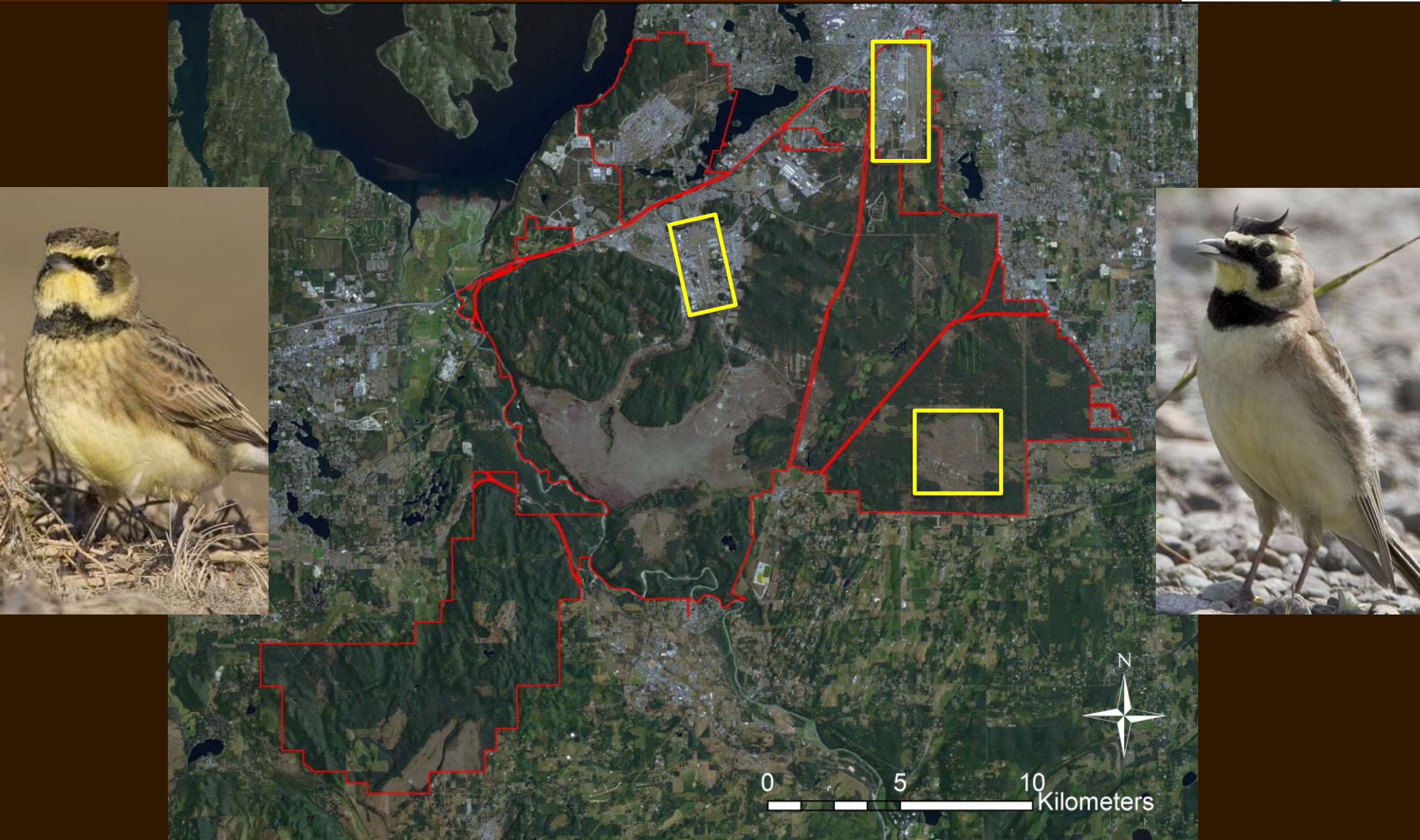
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- 
- Assist JBLM in lark recovery
 - Study reproduction to understand population dynamics
 - Clutch size
 - Hatch rates
 - # Fledglings per nest
 - Nest success
 - Use science to guide management decisions, minimize impacts, and maximize productivity

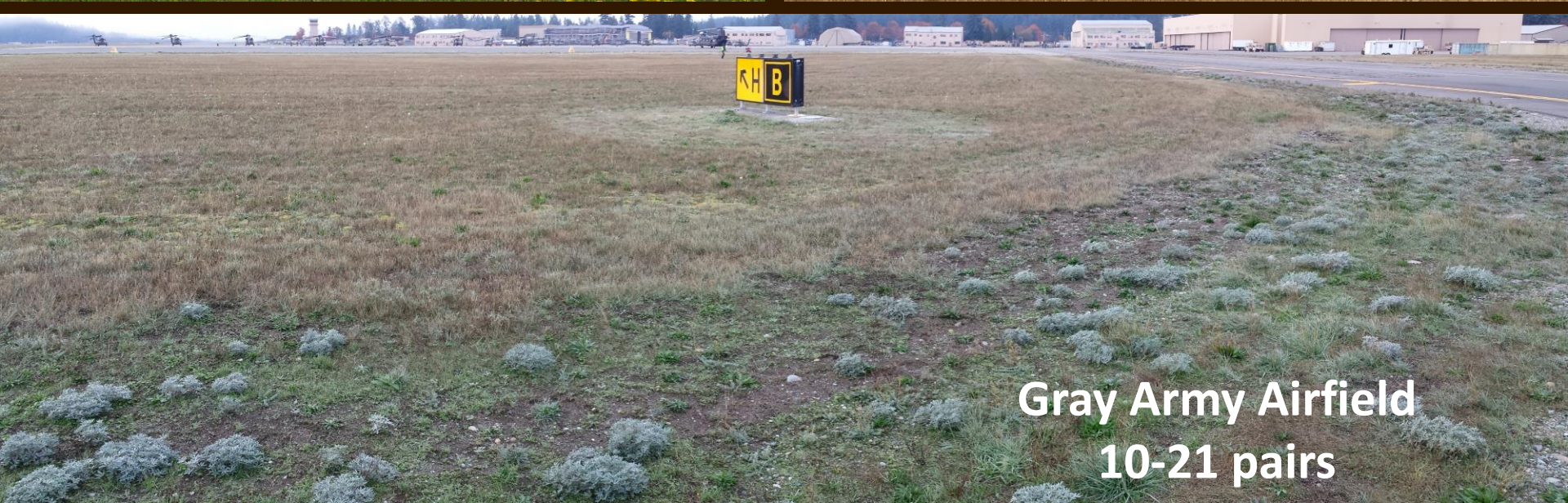
Joint Base Lewis-McChord



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JBLM Monitored Sites



Breeding Season

Mid-April through Mid-August



- Female built, NE nest plant
- 1-4 clutches/season, 2-5 eggs
- 12 days incubation
- 9 days to fledge



Monitoring Methods



Locate nests

Revisits

Measures of
Productivity

- Clutch size
- # Nestlings
- # Fledged
- Nest fate

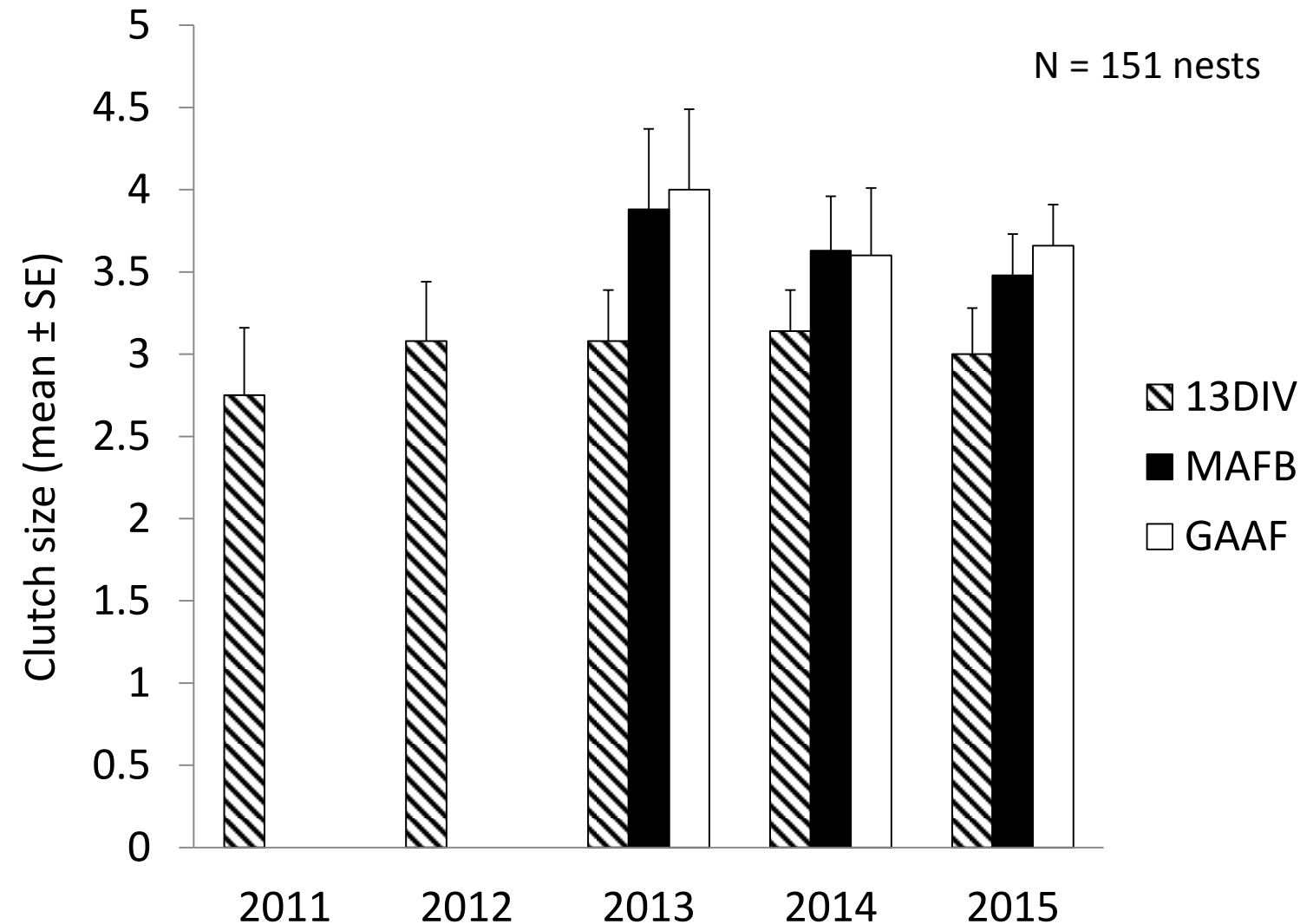


Nests with known fates

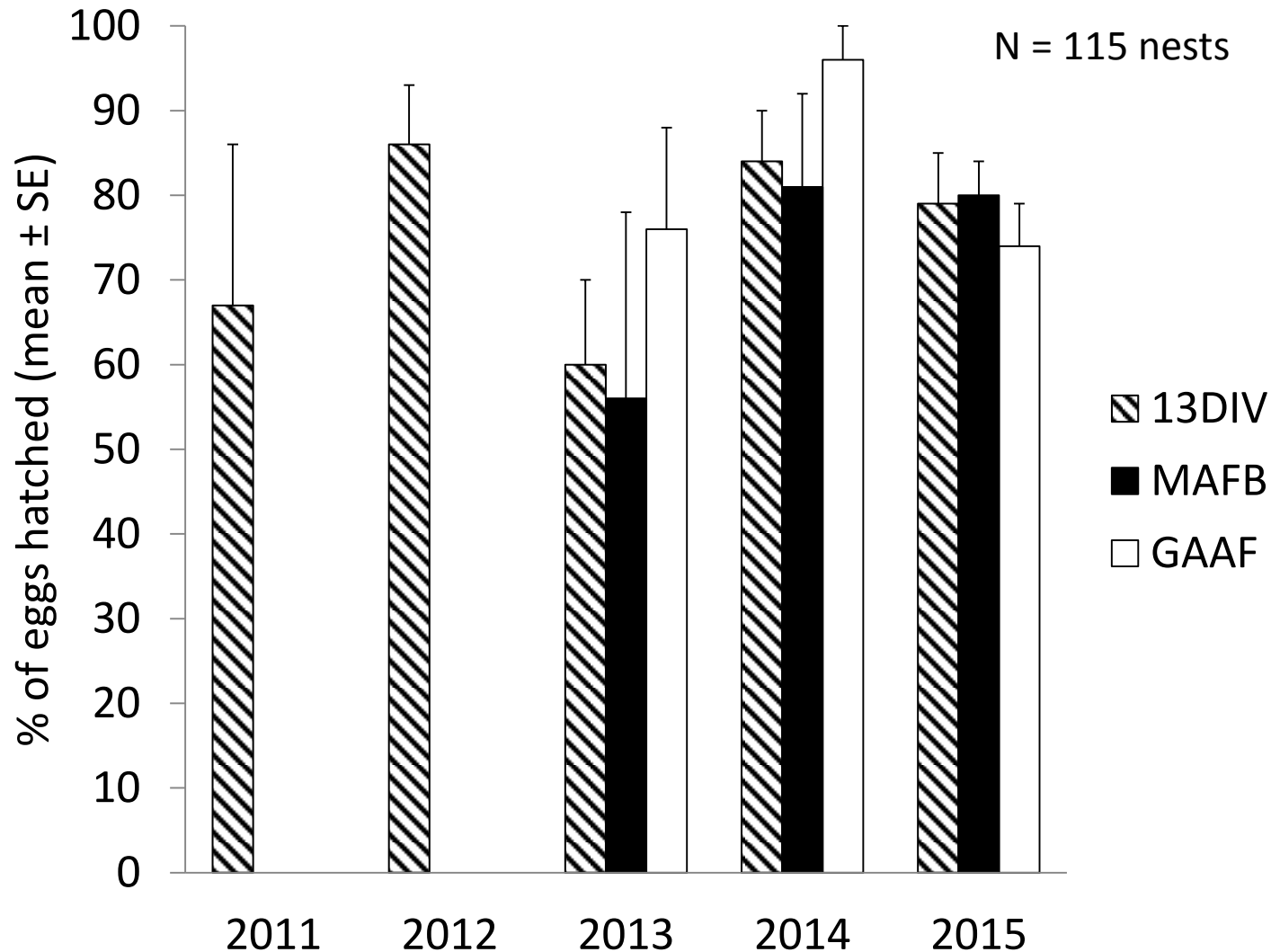


Site	2011	2012	2013	2014	2015	Total
13 th Div.	11	16	22	19	23	91
Gray Army	---	---	16	16	36	68
McChord	---	---	11	13	34	58
Total	11	16	49	48	93	217

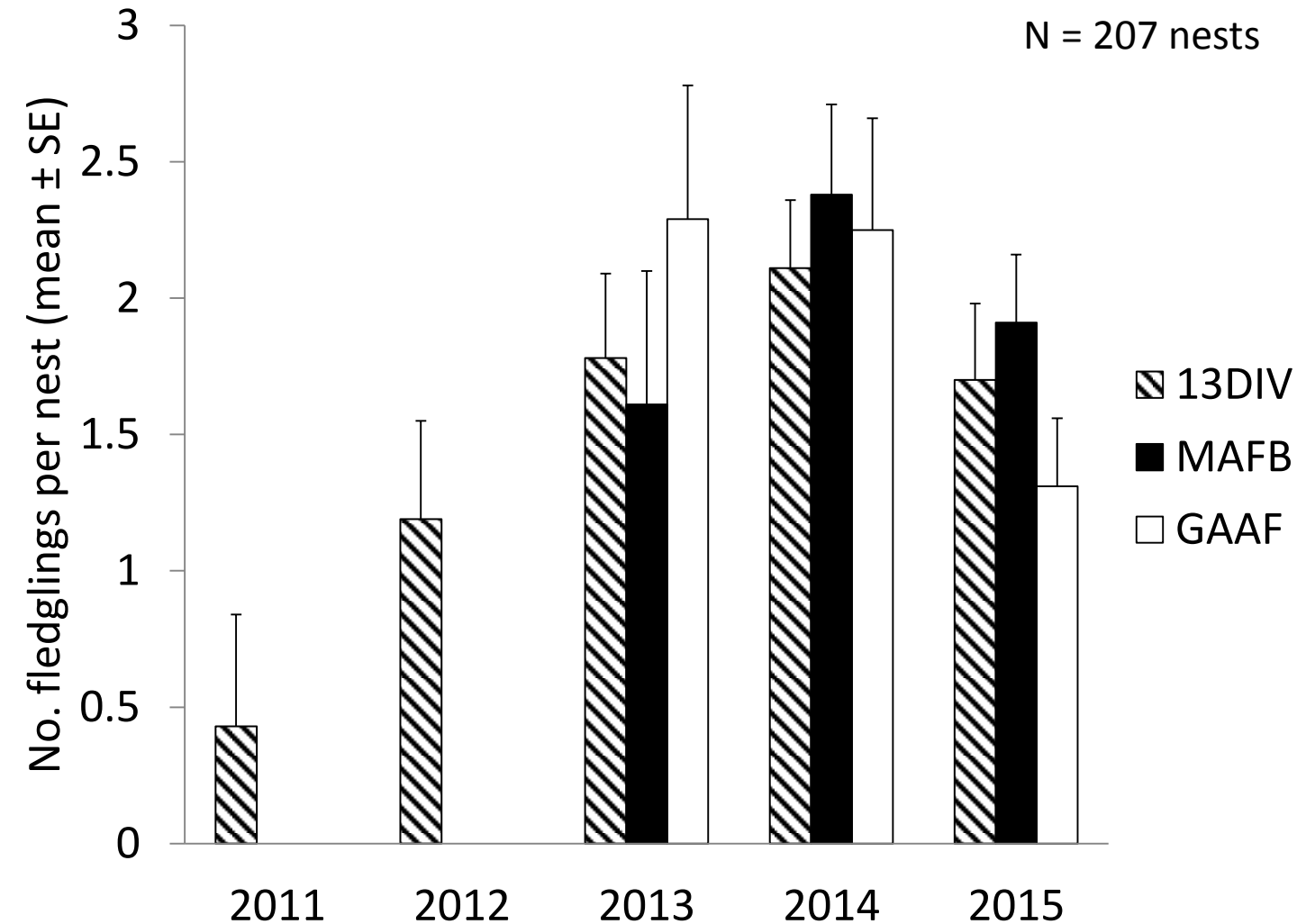
Normal Clutch Size



Low Hatch Rates of 78%



1.7 Fledglings per Nest



Daily Nest Survival Analysis

Models and Factors

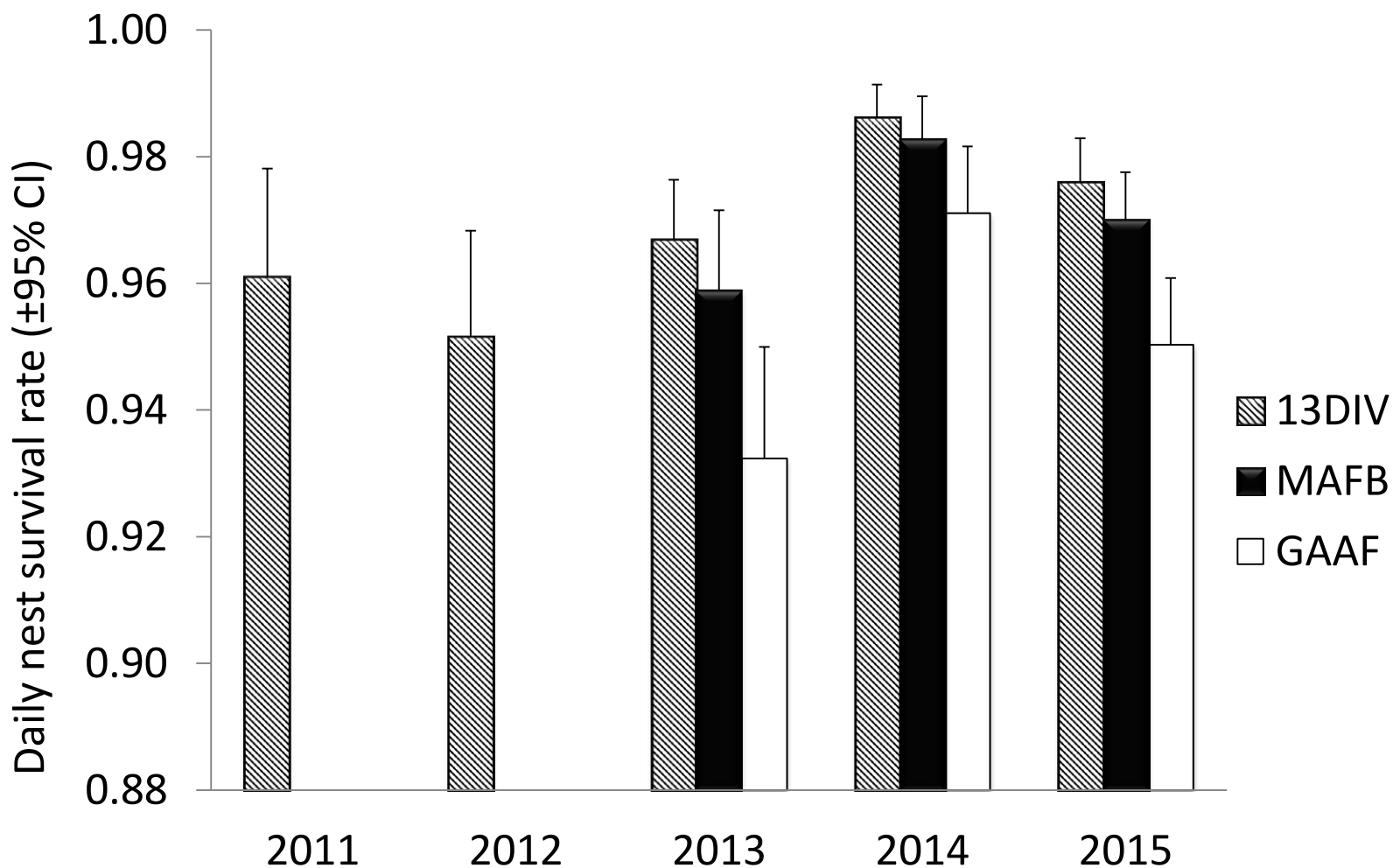


Model	Delta AICc	AICc Weights	# Param.	Deviance
SITE +YEAR	0.00	0.26	7	507.35
SITE	0.23	0.24	3	515.62
CONSTANT	0.85	0.17	1	520.25
DATE + SITE	1.19	0.15	4	514.57
DATE	2.06	0.09	2	519.46
YEAR	2.20	0.09	5	513.57



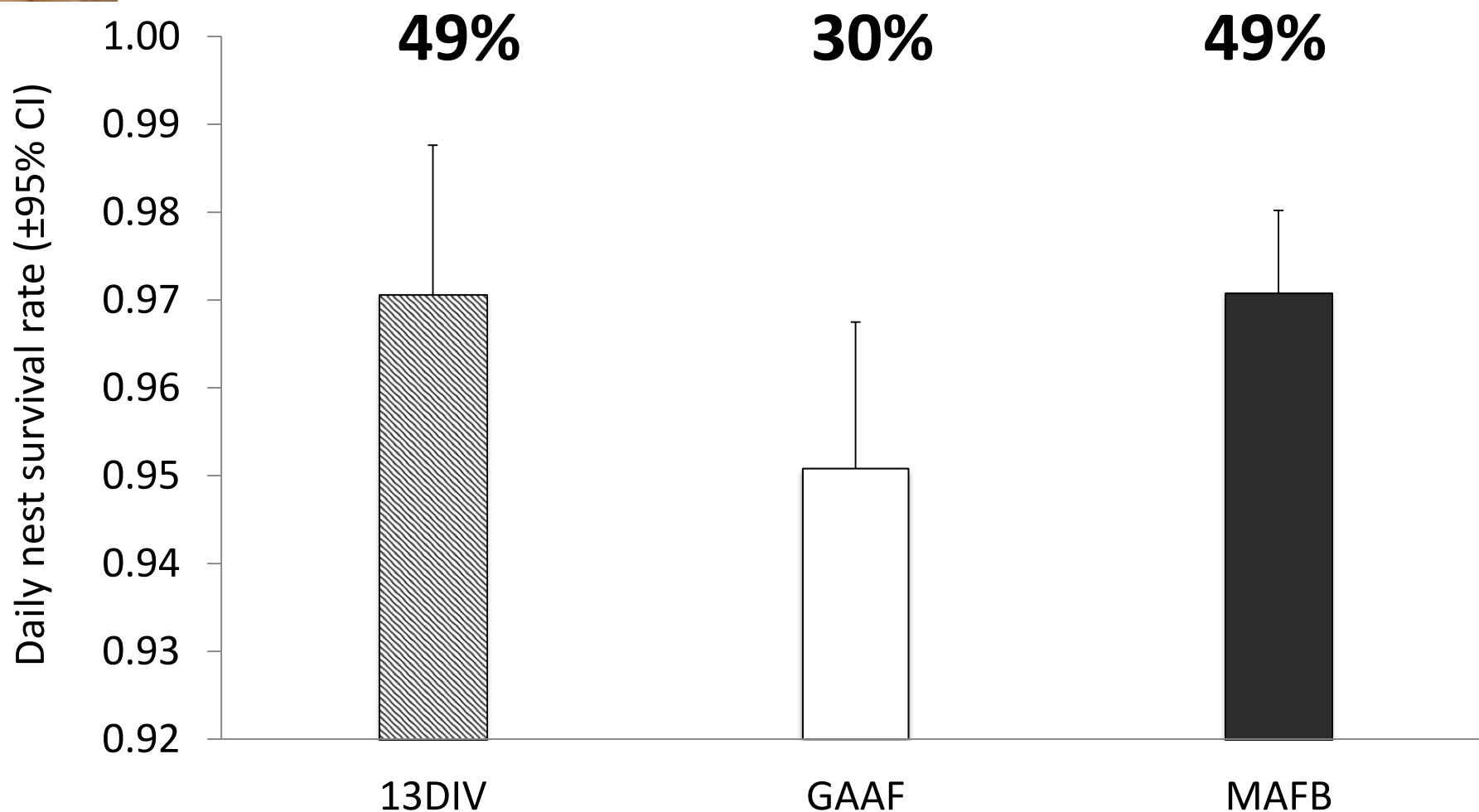
DSR Top Model

Site and Year

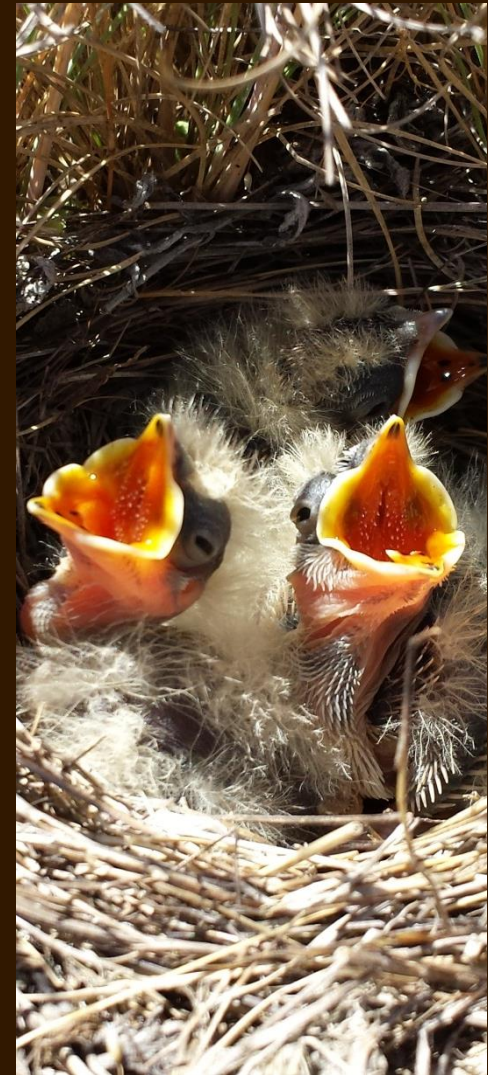
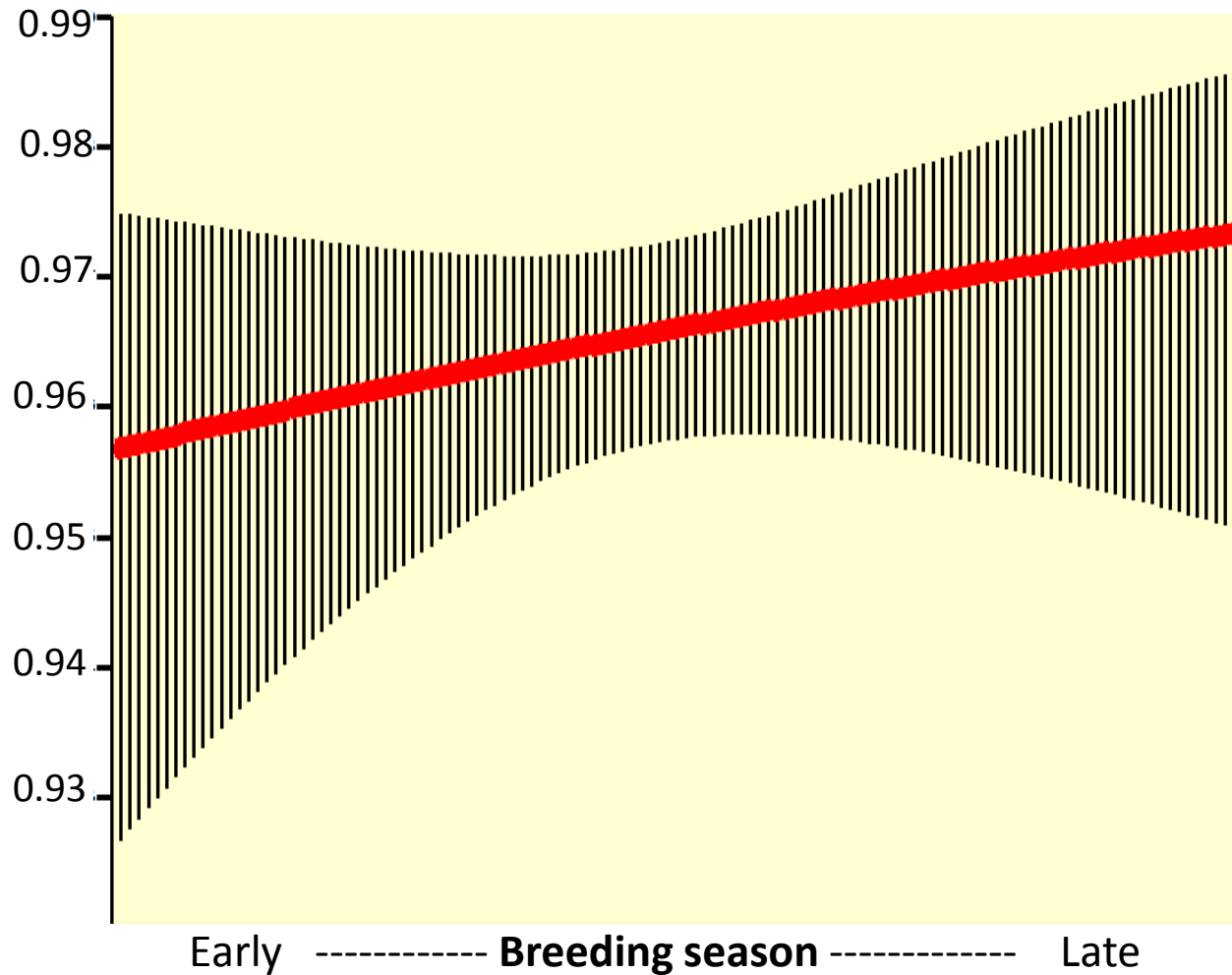




DSR and Nest Success Site Model



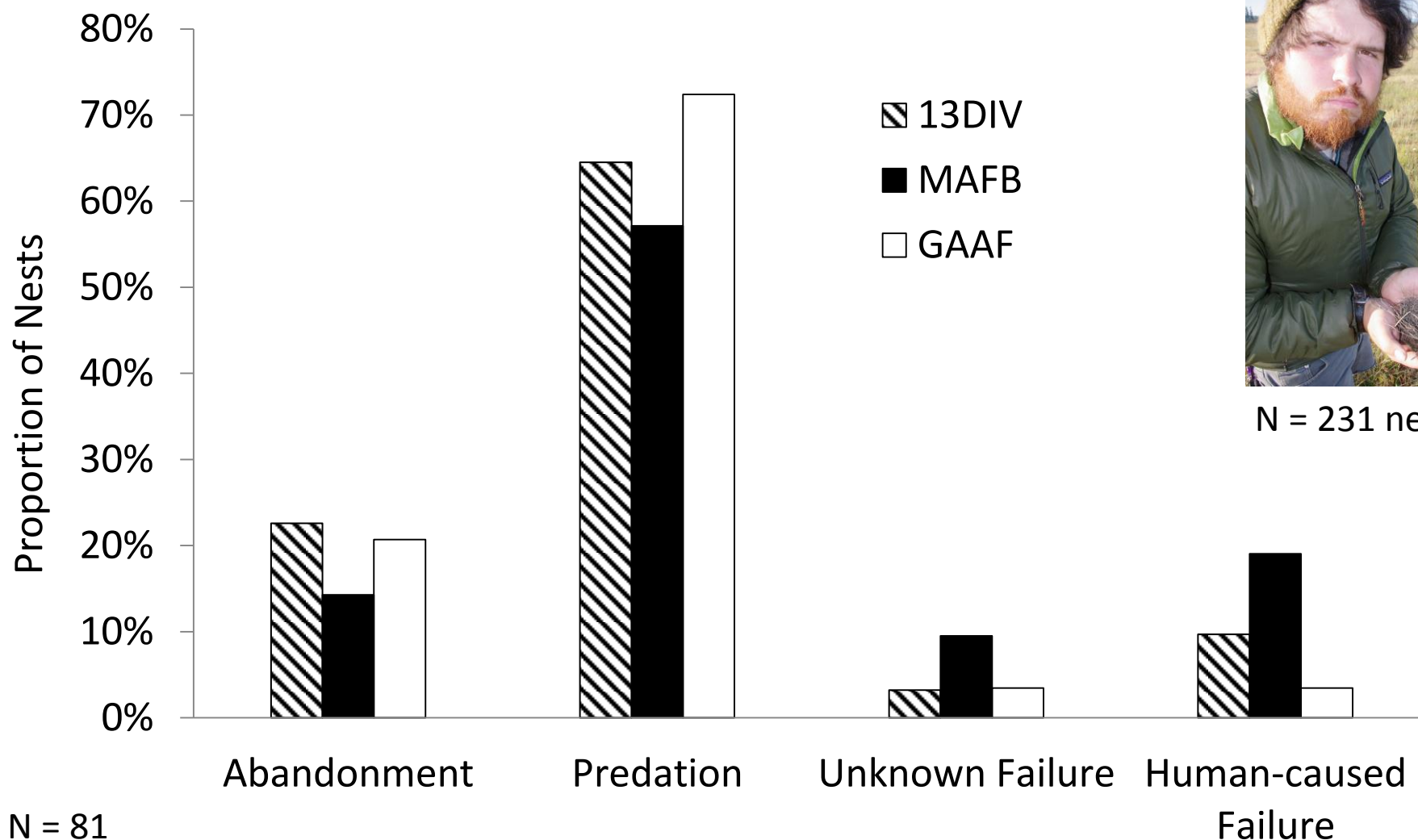
Daily Nest Survival increased with season





Nest Failure

Top Cause is Predation



Conclusions

Understanding Reproduction

- Clutch size (3.4) is similar
 - Pearson (2003) = 3.1; Beason (1995) = 2.4
- Hatch rate (78%) is low, but >40%
- Mean #of fledglings per nest = 1.7
- Daily nest survival rates across years show similar trends - highest at 13th Division & MAFB
- Predation is top cause of nest failure



Plans for 2016 and beyond

- Monitor JBLM population
- Work with site managers to minimize impact
- Include additional covariates to understand factors influencing nest success
 - weather, nest age, predator control, vegetation composition, predator loads



Thanks to our Funder and Field Staff



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