

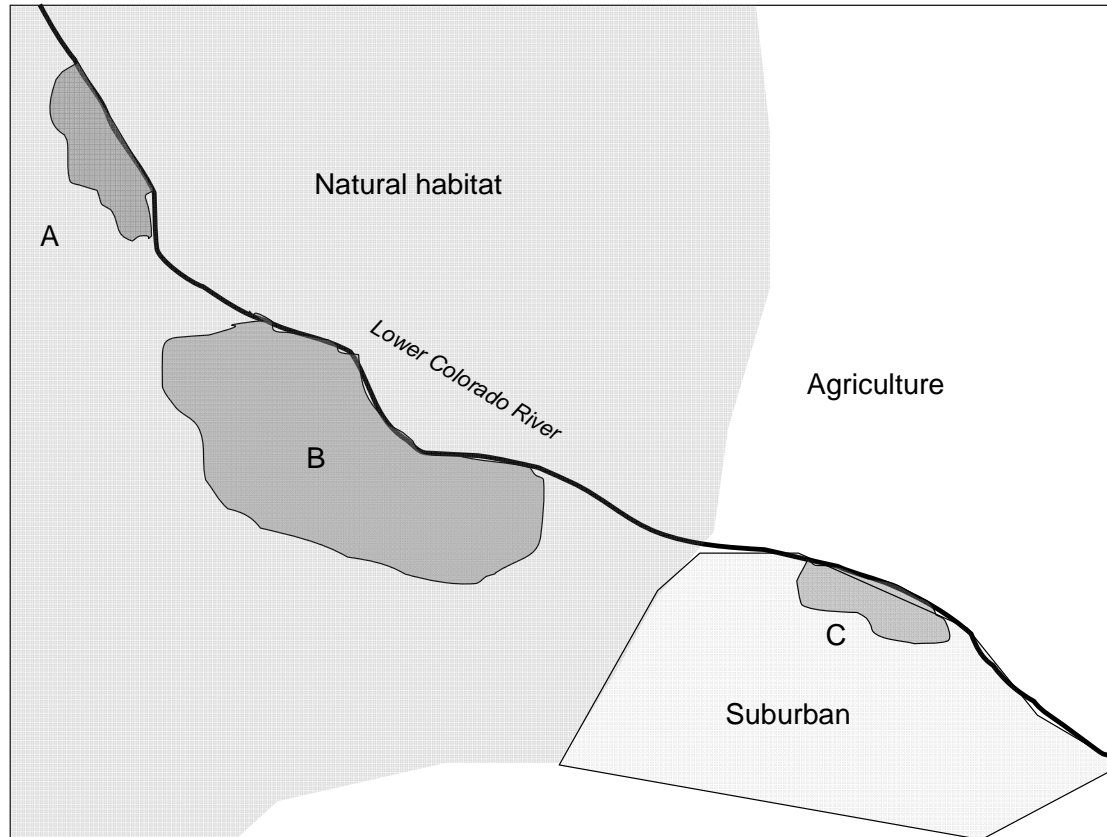
Real and Artificial Nest Predation at Four Sites Along the LCR

Tad Theimer, Katie Stumpf, Samantha Dorr
Mary Anne McLeod, Thomas Koronkiewicz



Rationale: Nest predation leading cause of nest failure for open-cup nesting passerines (Martin 1992, Budnik et al. 2005, Powell and Steidl 2000, Chase 2002)

Little known about nest predators along LCR or how patch size, composition or surrounding matrix could affect predation



Why artificial nests?

Replication

Assess areas with low bird densities

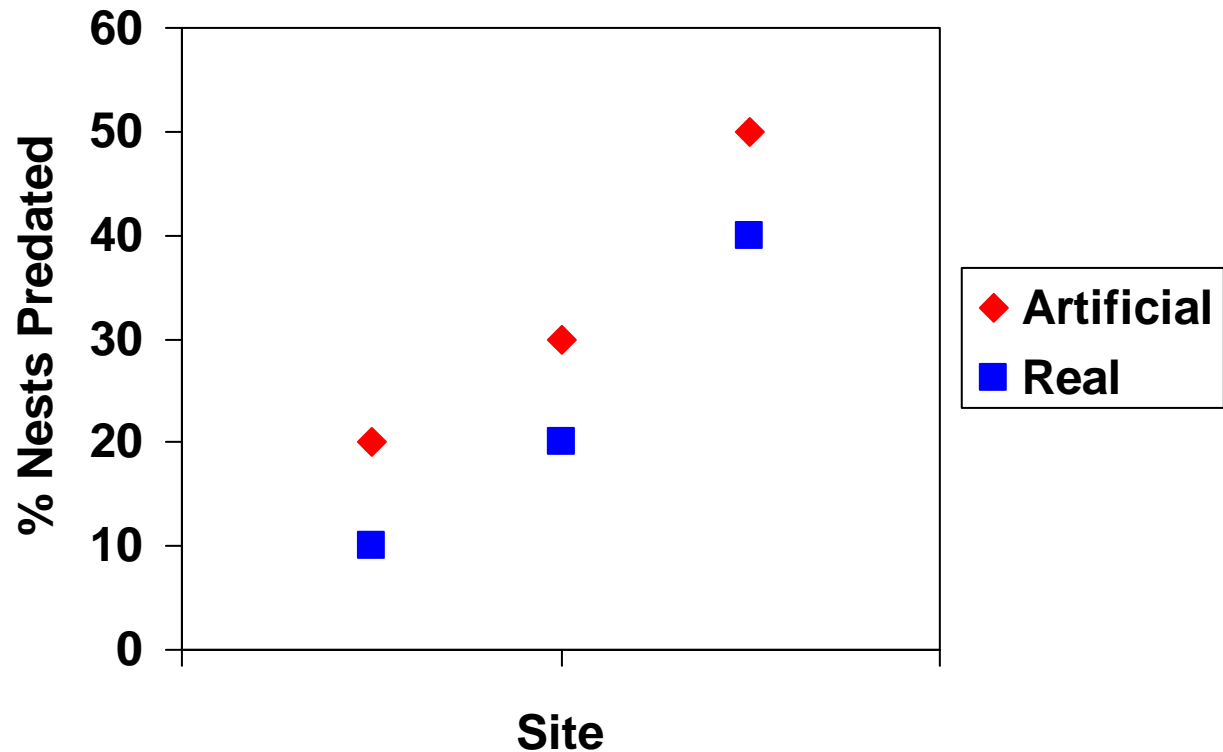
Identify egg predators



Expectation:

Artificial nests ~~≠~~ Real nests

Instead, relative indicator of predation pressure



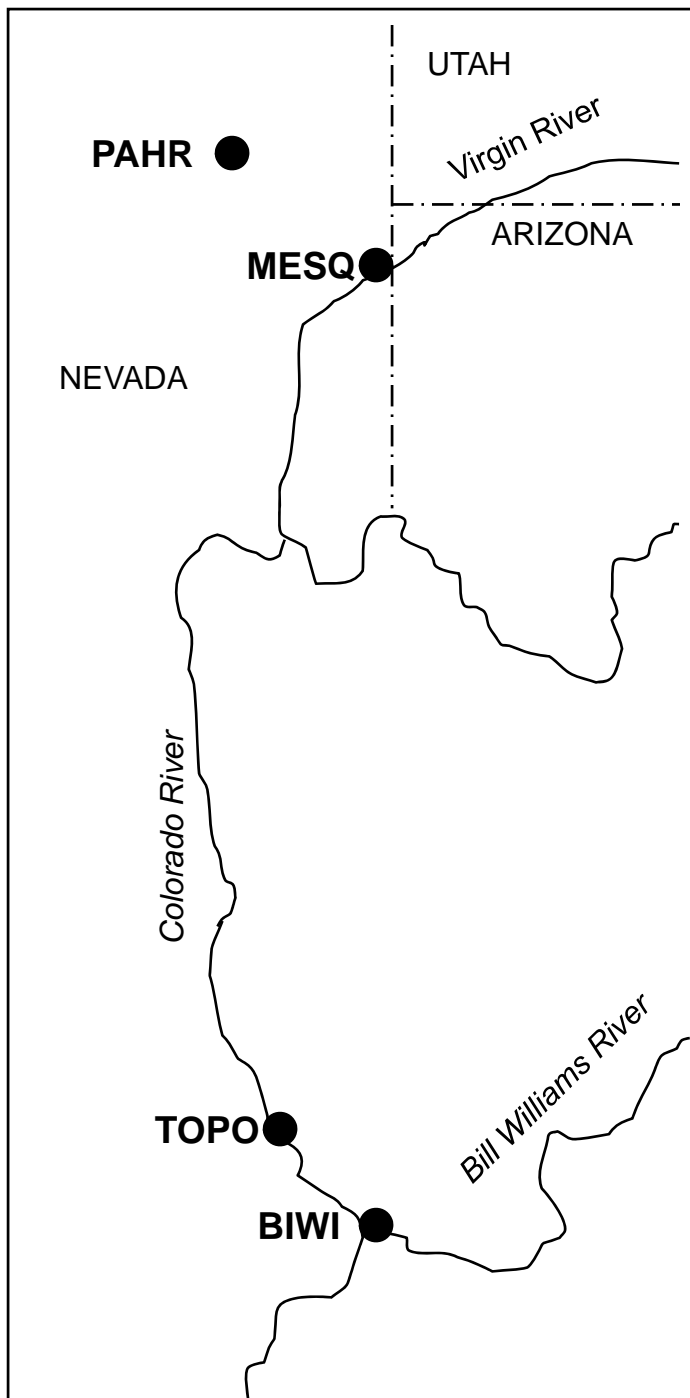
Real and Artificial Nests Monitored Using



**Video – time lapse
Real Nests**



**Still IR triggered
Artificial Nests**



20 Artificial nests at each site

Density held constant across sites

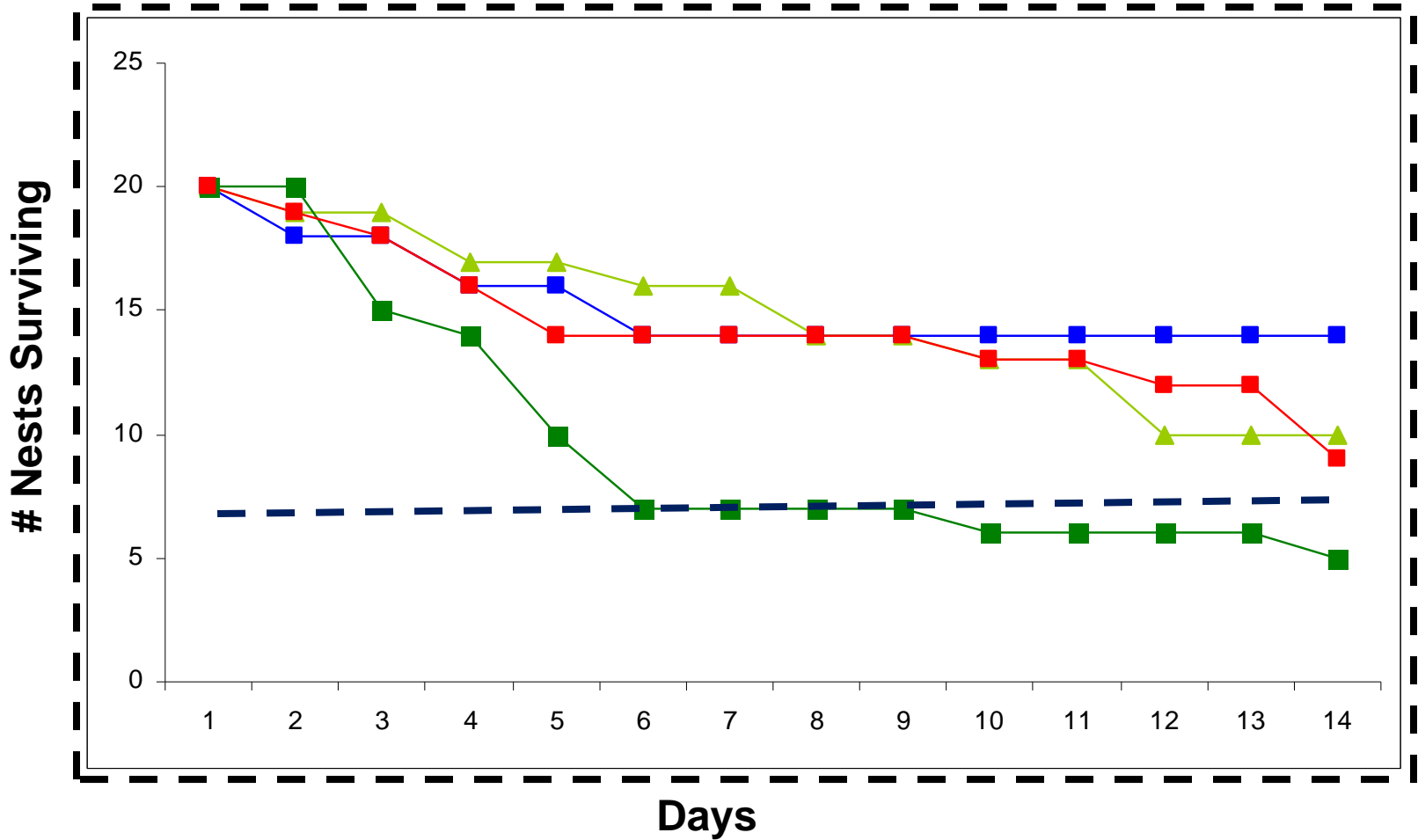
Timing similar across sites

**Each nest contained two clay eggs
and 1 real egg**

2 day acclimatization, 14 day monitor

Gloves, natural material, etc

Artificial Nest Survival Through Time



Mesq Topoc Pahr BIWI

Bigger patches had higher rates of nest loss, barely

	B	SE	WALD	df	Significance	Exp (B)
Nest Ht	-0.278	0.581	0.230	1	0.632	0.757
Canopy Ht	0.014	0.051	0.079	1	0.778	1.014
Canopy Cover	-0.014	0.011	1.505	1	0.220	0.987
Water	-1.040	0.995	1.092	1	0.337	0.629
Habitat	0.656	0.700	0.878	1	0.349	1.927
Matrix	-0.471	0.823	0.327	1	0.567	0.624
Size	-1.730	0.771	5.042	1	0.025	0.177

At all sites clay eggs in predated artificial nests recorded beak marks, no other sign present



Photos at 10 of 42 depredated artificial nests

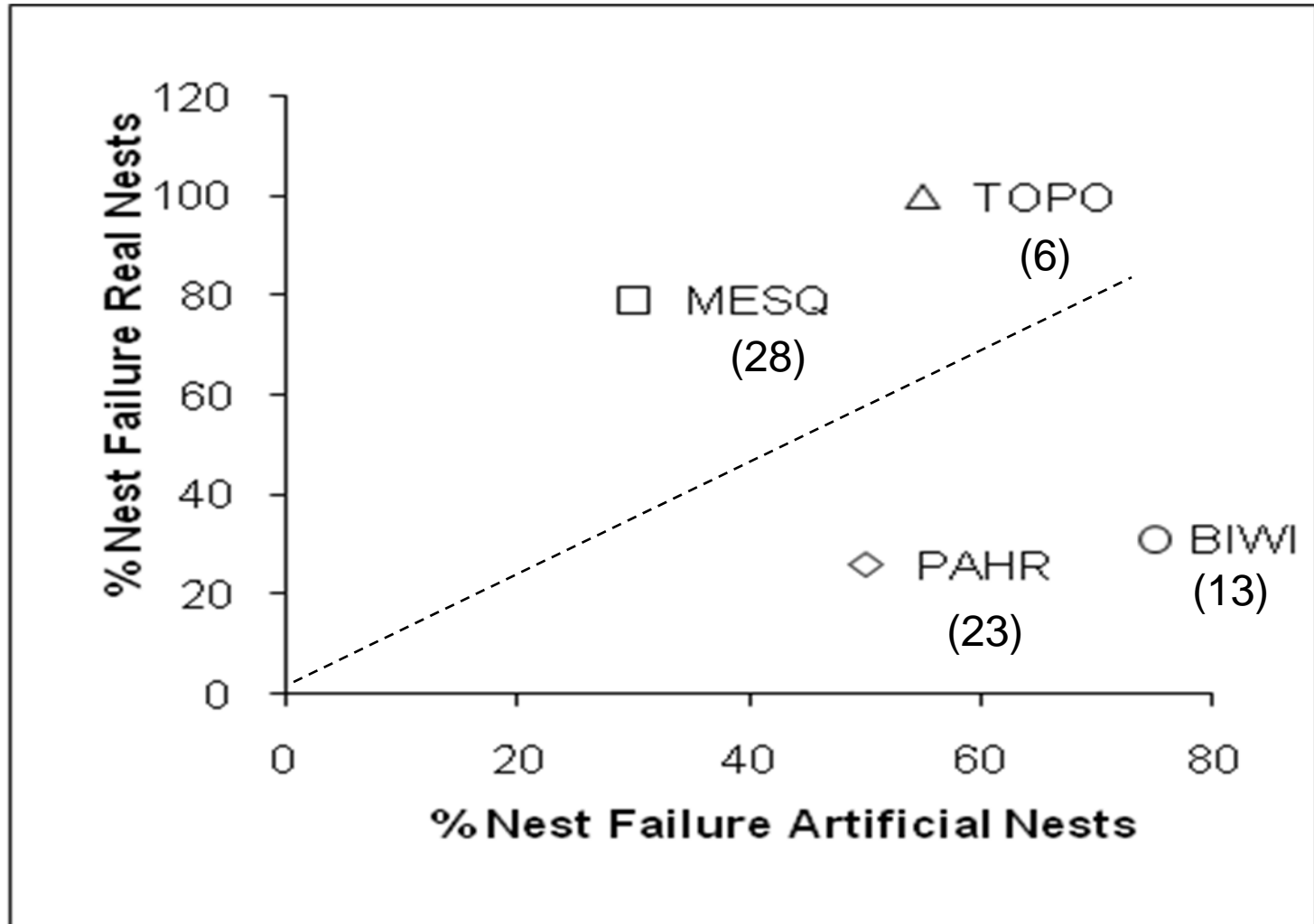
2 cowbirds
2 sites



8 chats
All 4 sites



Nest Predation at Real Nests (n=67) Was Not Correlated with Nest Predation at Artificial Nests (n = 80)



Why?

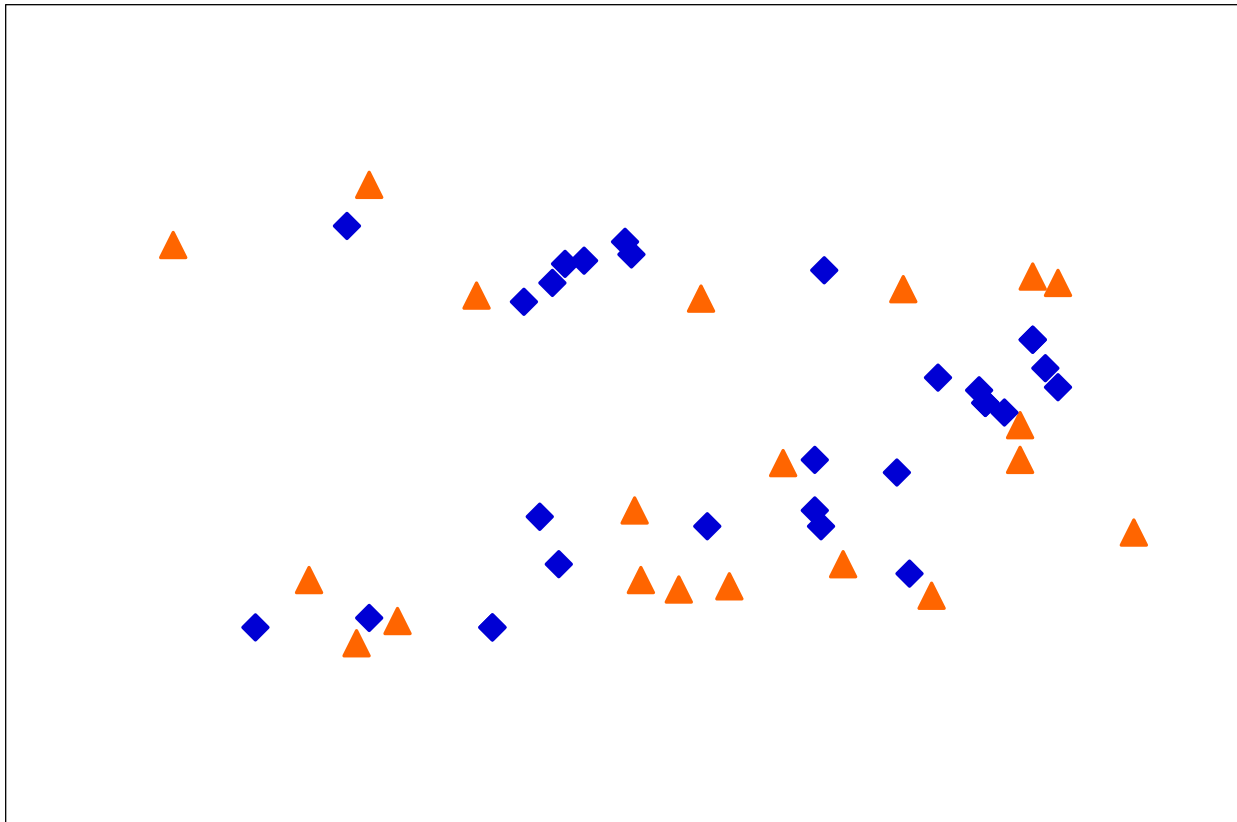
Different placement of artificial and real nests?

Different predators at different sites?

Habitat x predator search interaction?

Spatial Placement of Real and Artificial Nests Similar

Mesq



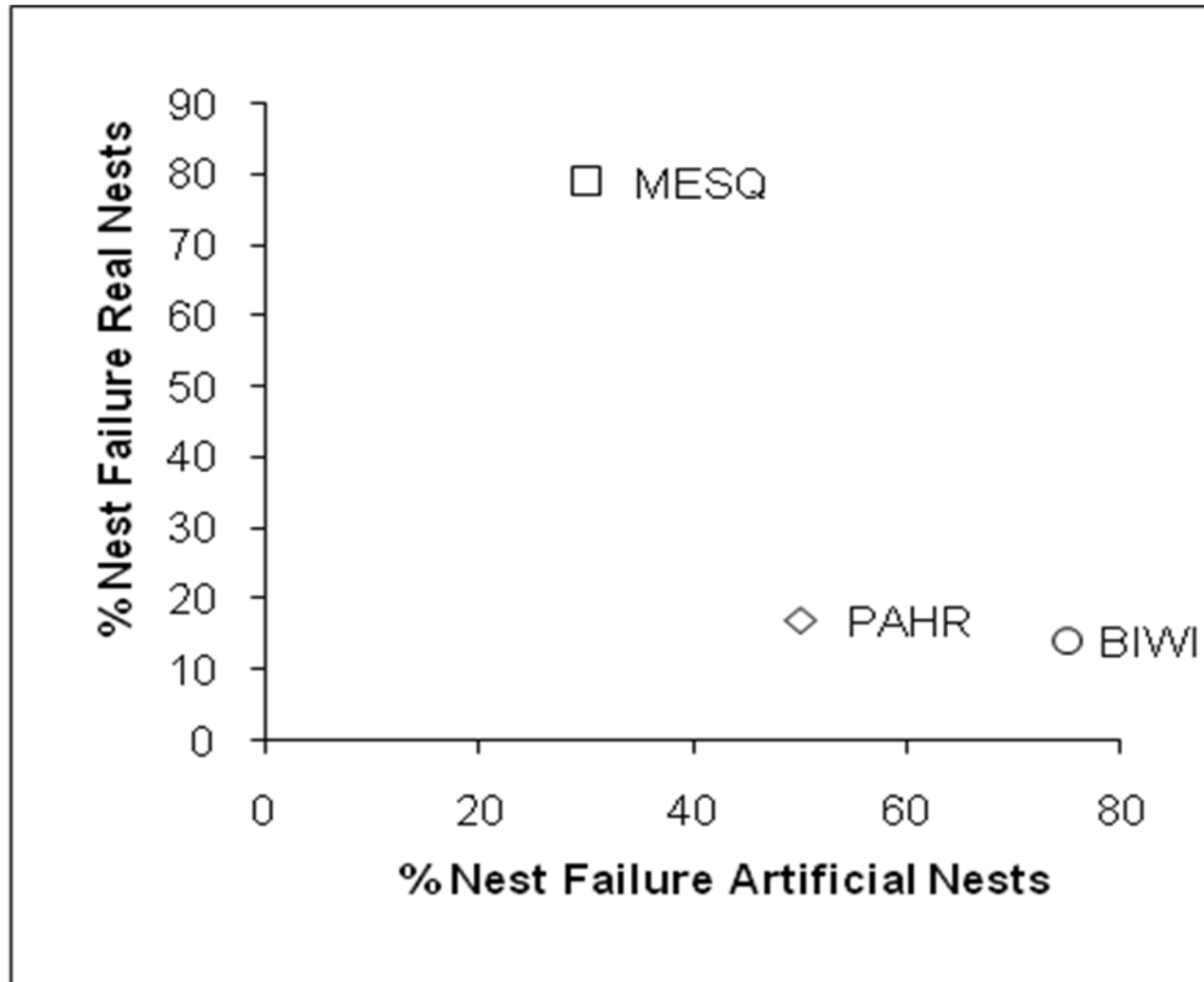
Artificial

Real

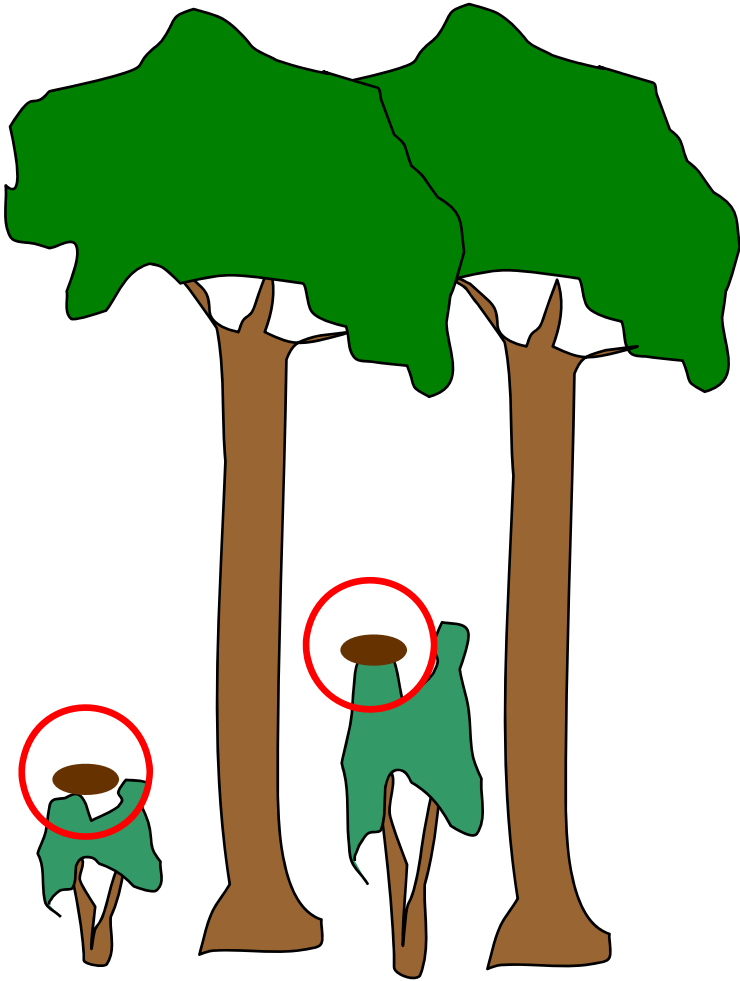
Nest height of Artificial Nests Lower

<u>SITE</u>	<u>Attribute</u>	<u>Artificial</u>	<u>Real</u>	<u>T-Statistic</u>	<u>P</u>
PAHR	Nest Ht	1.8	4.0	4.4	< 0.005
	Canopy Ht	9.8	10.2	0.3	n.s.
	Canopy Cover	66.8	70.0	0.5	n.s.
	Edge Distance	22	32.1	1.8	n.s.
MESQ	Nest Ht	1.6	2.5	4.0	< 0.005
	Canopy Ht	5.0	4.9	0.2	n.s.
	Canopy Cover	57.8	61.6	0.8	n.s.
	Edge Distance	32.1	28	0.8	n.s.
TOPO	Nest Ht	1.6	3.8	10.5	< 0.005
	Canopy Ht	6.4	6.3	0.1	n.s.
	Canopy Cover	79.3	63.6	0.3	n.s.
	Edge Distance	57.9	36.4	1.8	n.s.
BIWI	Nest Ht	1.8	2.2	1.56	n.s.
	Canopy Ht	13.5	9.4	2.7	< 0.05
	Canopy Cover	84	85.8	0.4	n.s.
	Edge Distance	160	123.5	1.6	n.s.

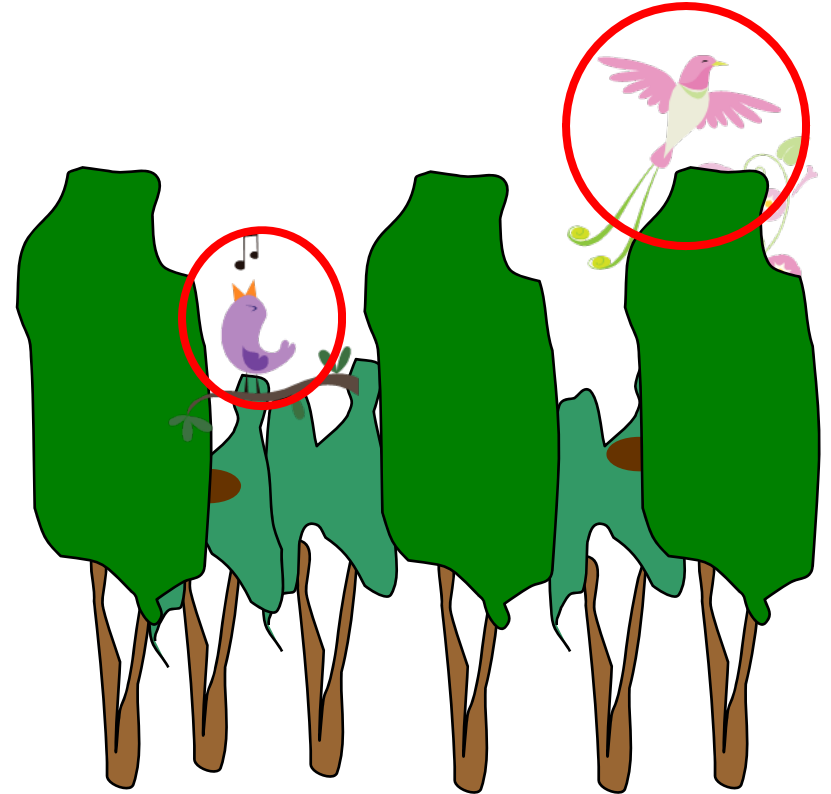
Only nests < 2 m high



Habitat x Predator Search Interaction?



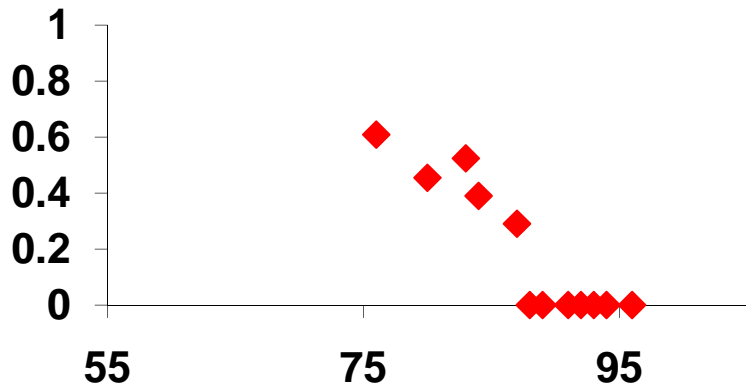
Visual Search for Nest
High Artificial Nest Pred



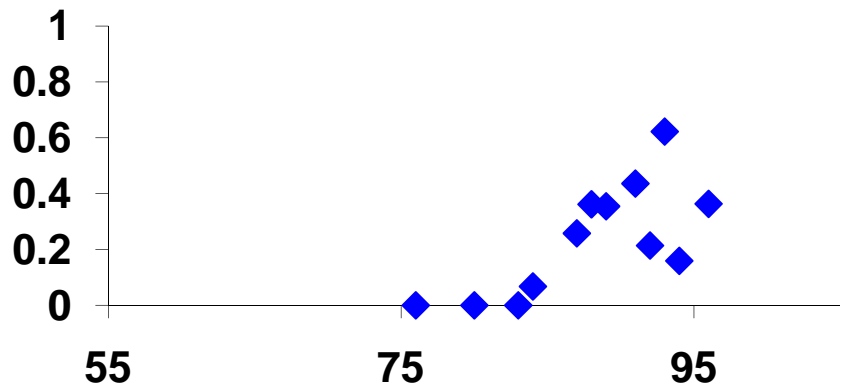
Non-nest Cues
Low Artificial Nest Pred



Temp vs Incubation



Temp vs Covering



Summary

**Predators at all artificial nests were birds,
cowbirds and chats only ones caught on film**

**Large, native site had highest rate of artificial nest predation
No detectable effect of patch size and context (yet)**

**Early colonizers of restoration sites may escape
nest predation**

**Differences between real and artificial nests may
reflect differences in how predators search for nests
in different habitats**

This Year:

Repeat Mesquite & Pahrnanagat

Restoration Sites:

Cibola Nature Trail, CVCA

Sites in Agricultural Matrix:

Gila River Site 2, Gila Confluence

Sites in more Natural Matrix:

Martinez Lake, Mittry West

Acknowledgements:

Field Techs: Myong Bok Lee

Wanda Bruhns

Chris Aldridge

SWCA SWIFL Crews

Agency/Land Managers

(e.g. Kathleen Blair, John Earl, Jack Allen)

BOR, Theresa, Chris and Joe

Anyone else I have forgotten