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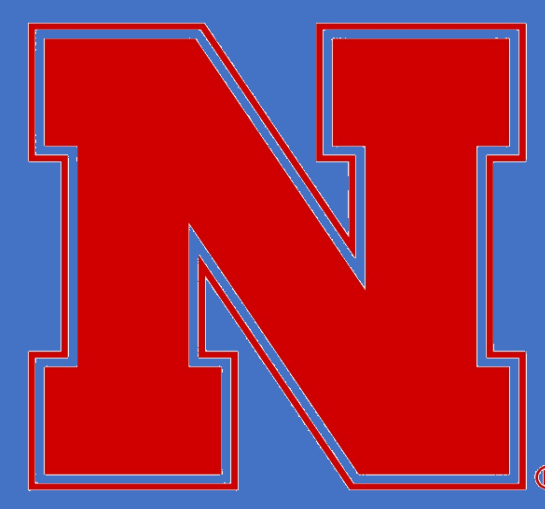


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Spider Prey of Mud-Dauber Wasps in Southeastern Nebraska

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Introduction

- Studying mud-dauber and spider predator-prey interactions provide insight into the life histories of both groups.¹
- Mud-daubers provision spiders for their offspring but are selective which further reflects foraging behaviors.²
- **We explored the diversity and abundance of spider prey in agricultural lands and forest corridors in southeastern Nebraska.**

Significance

- Looking at mud-dauber nests provides a look into their foraging behaviors and brings understanding into the type of spiders they utilize for their offspring.

Methods

- We collected and dissected mud dauber wasp nests of *Sceliphron caementarium* and *Chalybion californicum* from agricultural land (Martell, NE) and forest corridor sites (Lincoln, NE).

Table 1. Frequency of mud-dauber wasp nests containing identifiable spiders, developing wasps, and nest parasites, from multiple sites within two regions in SE Nebraska – a forest corridor (Wilderness Park, Lincoln, Nebraska, USA) and agricultural lands (Wittstruck Road, Martell, Nebraska, USA). *S. ca* = *Sceliphron caementarium*, *C. ch* = *Chalybion californicum*.

Region	Collection Site	# Nests	# Nests with Identifiable spiders	# Nests with Developing Wasps	# Nests with Parasites	# Nests/Species (<i>S. ca</i> / <i>C. ch</i>)
Collection Year: 2018						
Forest Corridor	A	4	2	2	0	0 / 3
	B	13	5	8	4	0 / 3
	C	29	2	6	0	1 / 2
Agricultural land	D	10	1	2	0	0 / 0
	E	14	8	8	0	1 / 3
Total		70	19	28	5	2 / 11
Collection Year: 2019						
Agricultural Land	C	6	1	3	4	1 / 0
	E	11	5	6	5	2 / 1
Total		17	6	9	9	3 / 1

Table 2. Total number of spiders identified to the family level from mud-dauber wasp nests across collection regions, and collection sites within those regions. *n* = number of nests inventoried.

Region	Site	Araneidae	Linyphiidae	Oxyopidae	Philodromidae	Salticidae	Theridiidae	Thomisidae	Unknown	Total
Forest corridor (n=9)	A (n=3)	7	0	0	0	0	78	1	2	88
	B (n=6)	31	1	0	0	0	34	0	0	66
	C (n=2)	71	0	0	0	0	73	1	0	145
Agricultural land (n=15)	D (n=2)	6	0	0	1	2	78	5	0	92
	E (n=11)	96	83	1	0	4	142	33	11	370
Total (n=25)		211	84	1	1	6	405	40	13	761

Results

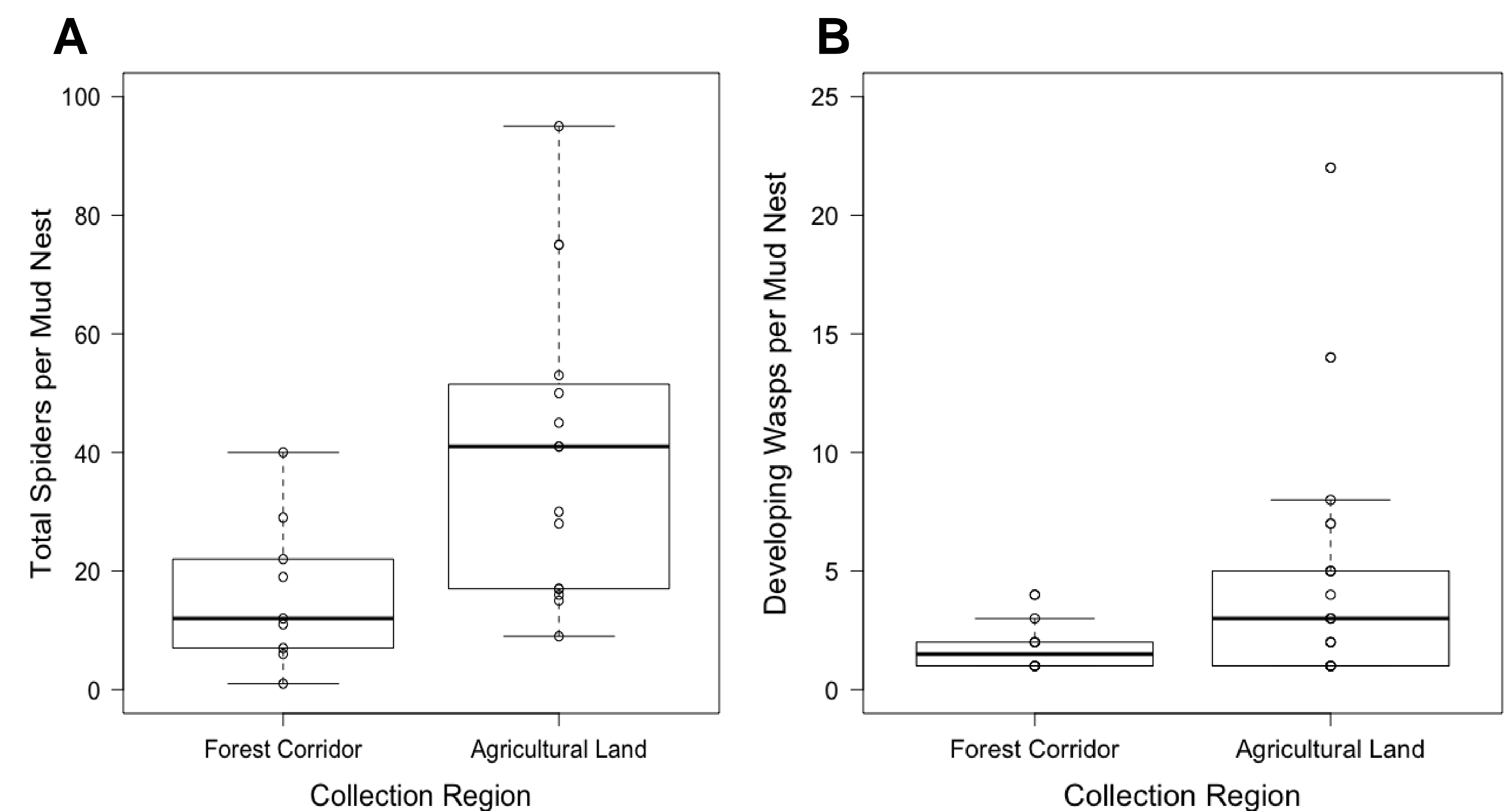


Fig. 1 (A) Significantly fewer identifiable spiders were found in individual mud-dauber wasp nests collected from the forest corridor than those from agricultural lands (Wilcoxon rank sum test; $W = 25$, $P = 0.01$). **(B)** Fewer developing wasps were found in individual nests from the forest corridor than those from agricultural lands, although this difference was not significant (Wilcoxon rank sum test; $W = 25$, $P = 0.08$).

Conclusion

- More spiders were found in agricultural mud-dauber nests whilst having more developing wasps (**Fig. 1**).
- Forest corridor mud dauber nests have lesser total spiders and developing wasps per nest (**Fig. 1**).

Acknowledgements

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References

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- [2] Powell, E.C. and L.A. Taylor. 2017. Specialists and generalists coexist within a population of spider-hunting mud dauber wasps. *Behav. Ecol.* 28(3):890-898. doi: 10.1093/beheco/arx050