

A decorative green vine with small leaves and a ladybug is positioned on the left side of the slide. The vine starts from the bottom left and curves upwards and to the right, ending in a circular loop. The ladybug is perched on the vine within this loop. The background is a light green, textured surface.

WCSC Presentation

**Time Budget of Red-crowned Cranes' Vigilance
and Foraging Behavior in Yellow River Delta**

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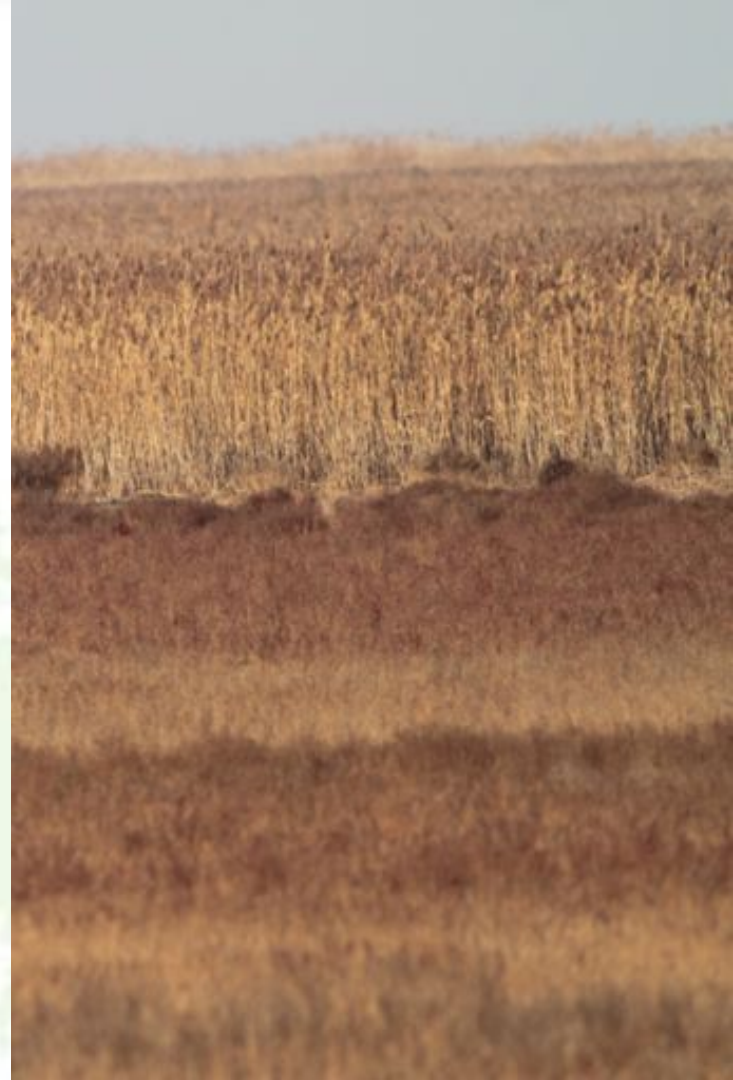
Introduction

- We compared the time budget of red-crowned cranes' vigilance and foraging behavior during wintering and spring migration in Yellow River Delta, and discussed the difference of red-crowned cranes' behavior strategies in different migration phases.
- Also, we comprehensively considered age, group size, environment, observation distance and time's effect on red-crowned cranes' vigilance and foraging behavior, hoping to offer reference for future conservation.



Research Area

- Yellow River Delta Nature Reserve
- 1530 km²
- Most Important Stopover Site For Red-crowned Cranes
- Wintering: 30—40 cranes
- Spring Migration: 200—300
- Wetlands ecosystem
- Dominant plant species:
Saline Seepweed (*Suaeda salsa*)
Reed (*Phragmites australis*)



Research Species – Red-crowned Cranes (*Grus japonensis*)



- One of endangered species in the world:
 - ★ CITES Appendix I
 - ★ IUCN Red List
- Population:
2750 individuals
(wintering population in China: 1000), decreasing

Behavior Observation



Ecological Factors

Ecological Factors	Group	Dividing Standard	Sample Size
Time	1	08: 00—10: 59	21
	2	11: 00—12: 59	47
	3	13: 00—	22
Distance	1	0—199	20
	2	200—299	25
	3	300—399	13
	4	400—	32
Environment	1	Low Sheltering Degree	62
	2	High Sheltering Degree	28
Group Size	1	1—4	36
	2	5—9	22
	3	10—	32
Age	1	Adult	52
	2	Juvenile	38

Result

- This study was conducted in totals 29 days, including 12 days during wintering and 17 days during spring migration.
- We observed 674 cranes in total, and got 90 samples with focus sampling.
- Samples are 751.5 minutes in all. The longest sample is 749.01s and the shortest is 93.63s.
- Including 52 adult samples and 38 juvenile samples.

Time Budget of Vigilance and Foraging

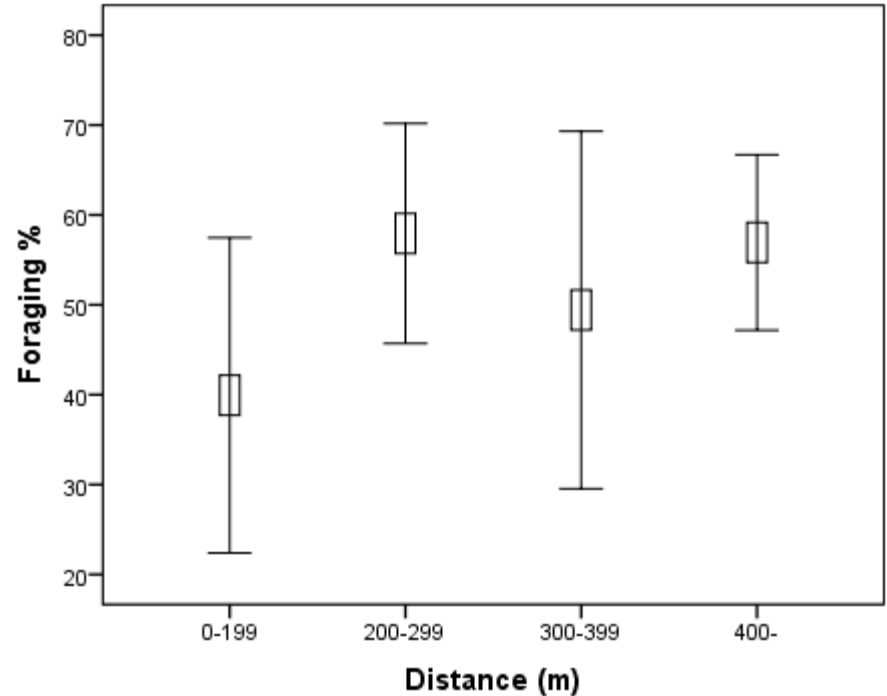
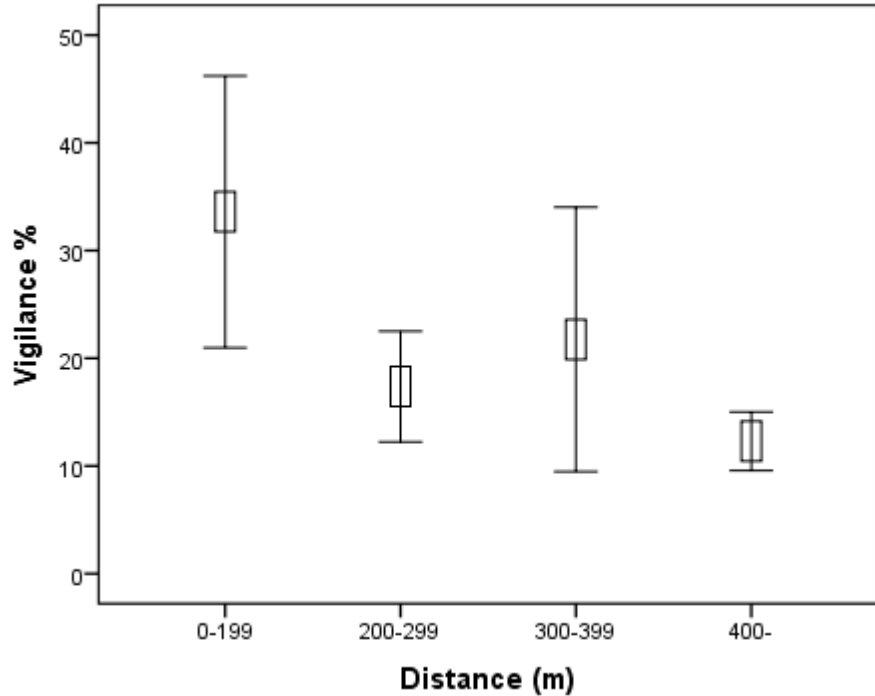
- Time Budget of Vigilance : 0.198 ± 0.184
Time Budget of Foraging : 0.523 ± 0.315
Total of vigilance and foraging is up to 72.1% of all cranes' behavior.

Season	Vigilance	Foraging
Wintering	15.16%	39.38%
Spring Migration	21.13%	56.05%
Significant Difference	No	Yes

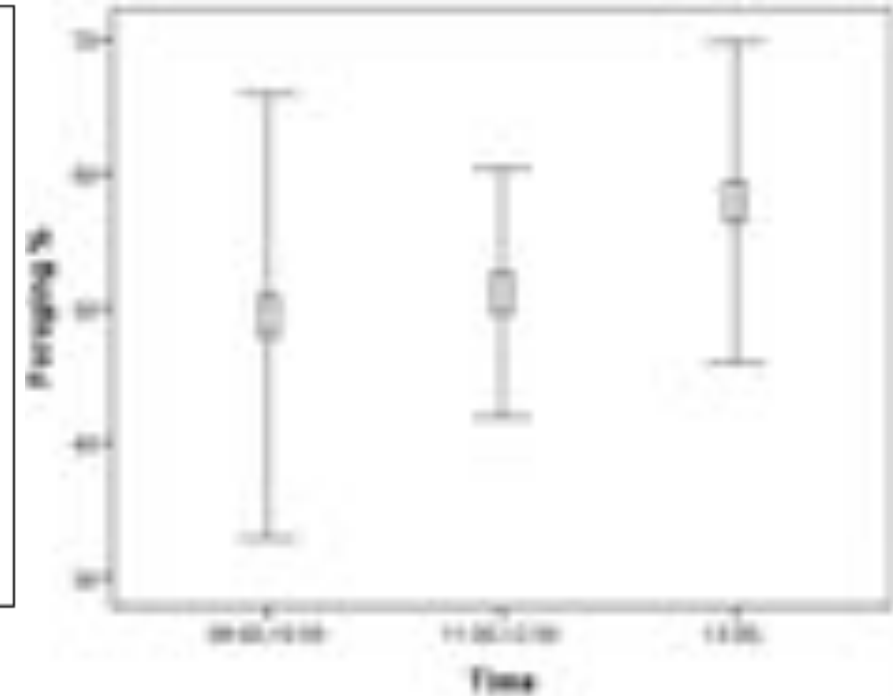
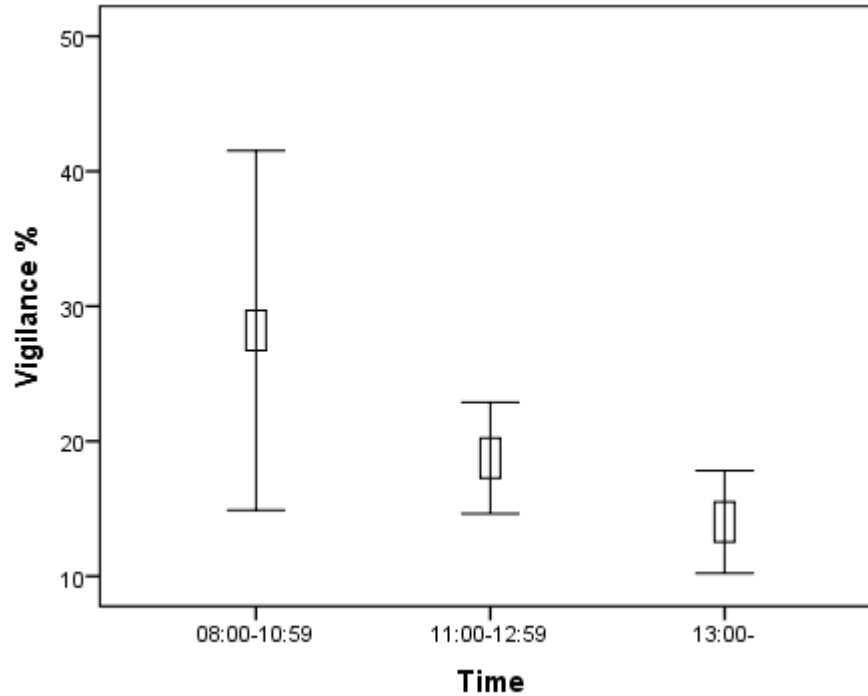
Relationship Between Vigilance, Foraging and Ecological Factors

		Vigilance		Foraging	
Factors	df	F	p	F	p
Time	2	5.541	0.006	2.926	0.059
Distance	3	8.411	<0.001	4.753	0.004
Age	1	3.728	0.057	1.284	0.260
Group Size	2	1.856	0.163	4.967	0.009
Environment	1	5.860	0.018	10.185	0.002

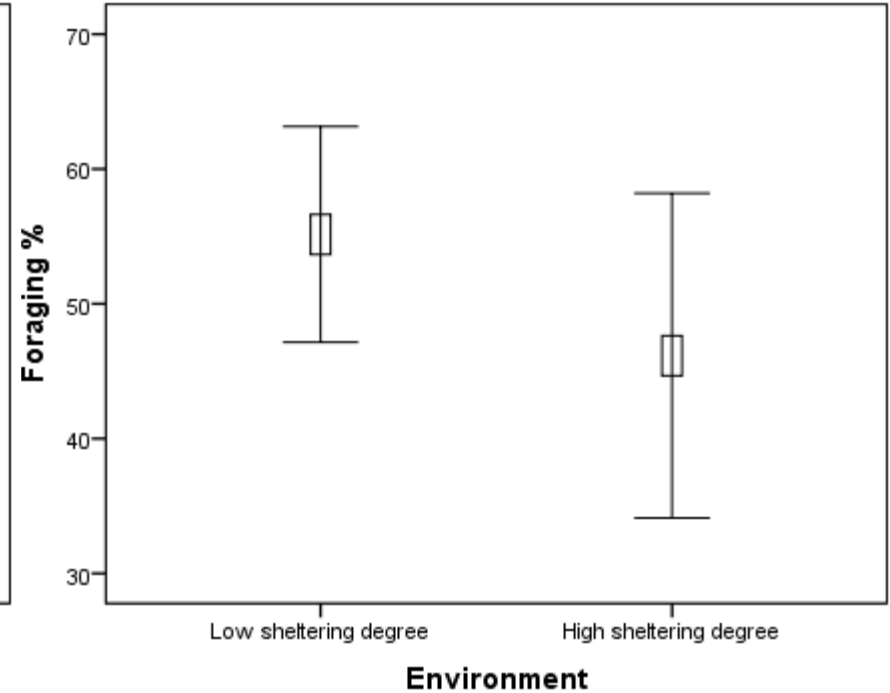
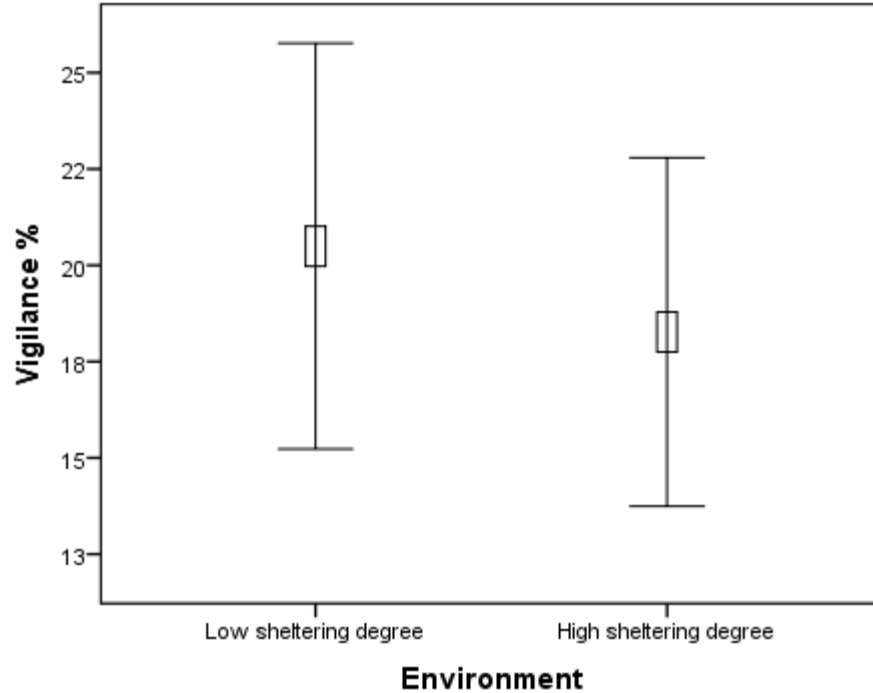
Relationship Between Vigilance, Foraging and Observation Distance



Relationship Between Vigilance, Foraging and Time



Relationship Between Vigilance, Foraging and Environment



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