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The comparative effects of large carnivores on the acquisition of carrion by scavengers. — Source link

Maximilian L. Allen, L. Mark Elbroch, Christopher C. Wilmers, Heiko U. Wittmer

Institutions: Illinois Natural History Survey, Panthera Corporation, University of California, Santa Cruz, Victoria University of Wellington

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Topics: Carrion, Ursus and Population

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A close-up, front-facing portrait of a lioness. Her fur is a mix of light tan and brown, with some darker spots. Her eyes are a pale yellowish-green, and she has long, white whiskers extending from her muzzle. The background is blurred, suggesting a natural outdoor setting.

The comparative
effects of large carnivores
on the acquisition of
carrion by scavengers

Max Allen

Mark Elbroch - Chris Wilmers

Heiko Wittmer

Scavenging

- Widespread Behavior
- Transfer of Energy
- Ecosystem Services





Study Area

Mendocino National Forest

- 3696 square km
(18.2% of Slovenia)
- **Black-tailed Deer Hunting**
 - Effects of Mountain Lions
(also called pumas or cougars)



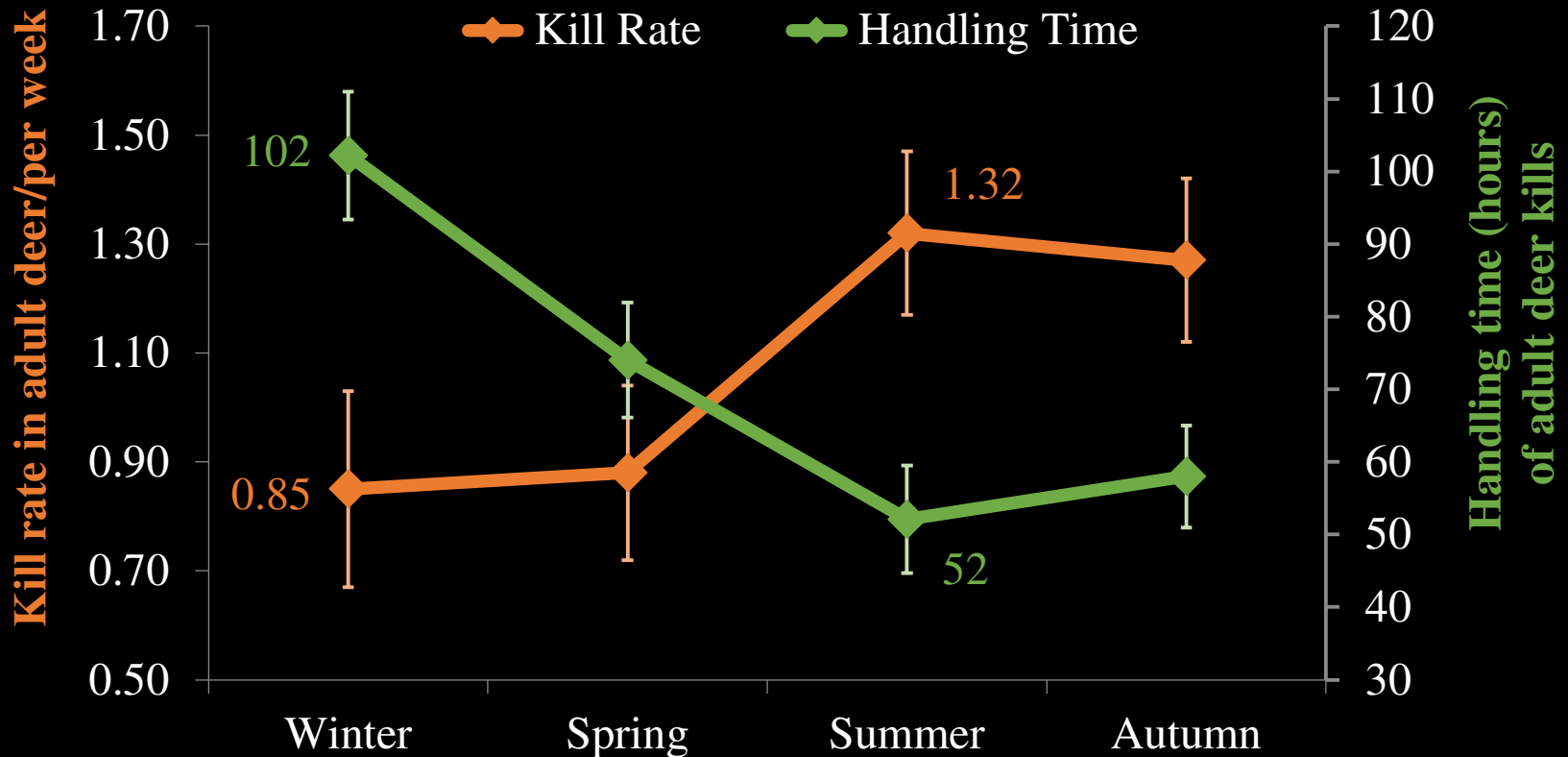
Background (Ph.D. Research)

GPS collars (598 GPS clusters, 352 kill sites)

- Deer = 98.6% of Prey Biomass
- High Kill Rates (1.39 animals/week)

Seasonal patterns

- Kill Rate vs. Handling Time
- Inverse Pattern ($R^2 = 0.98$)





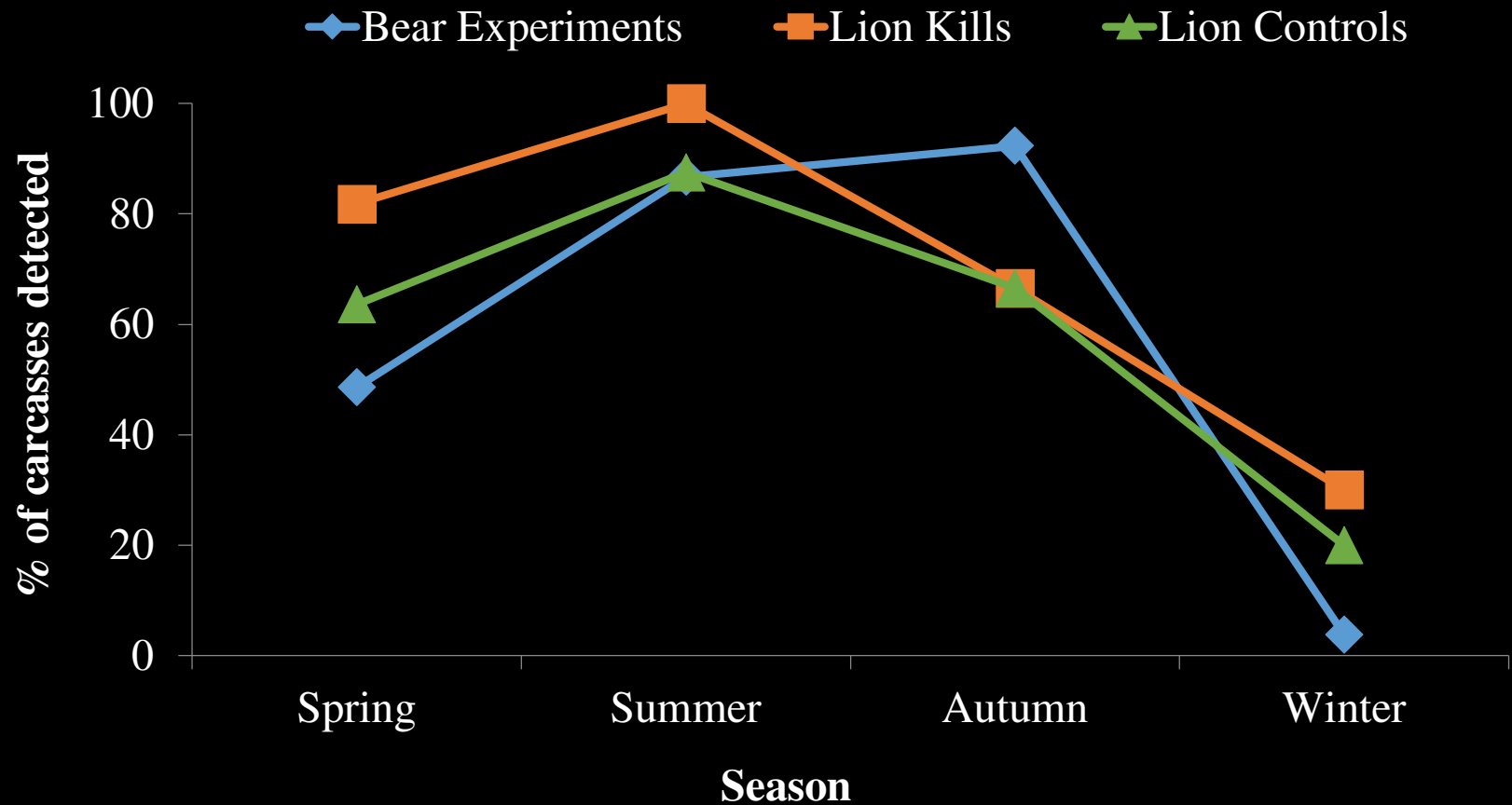
Experimental Design

- 59 Active Mountain Lion Kills
(compared to paired carcasses)
- 100 Experimental Bear Sites
(Present vs. Not)
- Variables
 - Presence/Absence
 - Mean Feeding Bout Duration
 - **Total Feeding Time**



Detection of Carcasses by Bears

- Seasonal Pattern
- Mean Detection = 48.5 hours



Black Bear Effects on Mountain Lions

- After Bear Arrival
 - Abandoned 72.4% of kills
 - Fed once at 13.8% of kills
 - 106.5 minutes before vs. 16.8 after
(Bear feeding time = 145.9 min)



Scavenger Richness & Total Feeding Time

Effect Sizes (Cohen's D Score):

<0.20 = Small Effect <0.50 = Medium Effect <0.80 = Large Effect

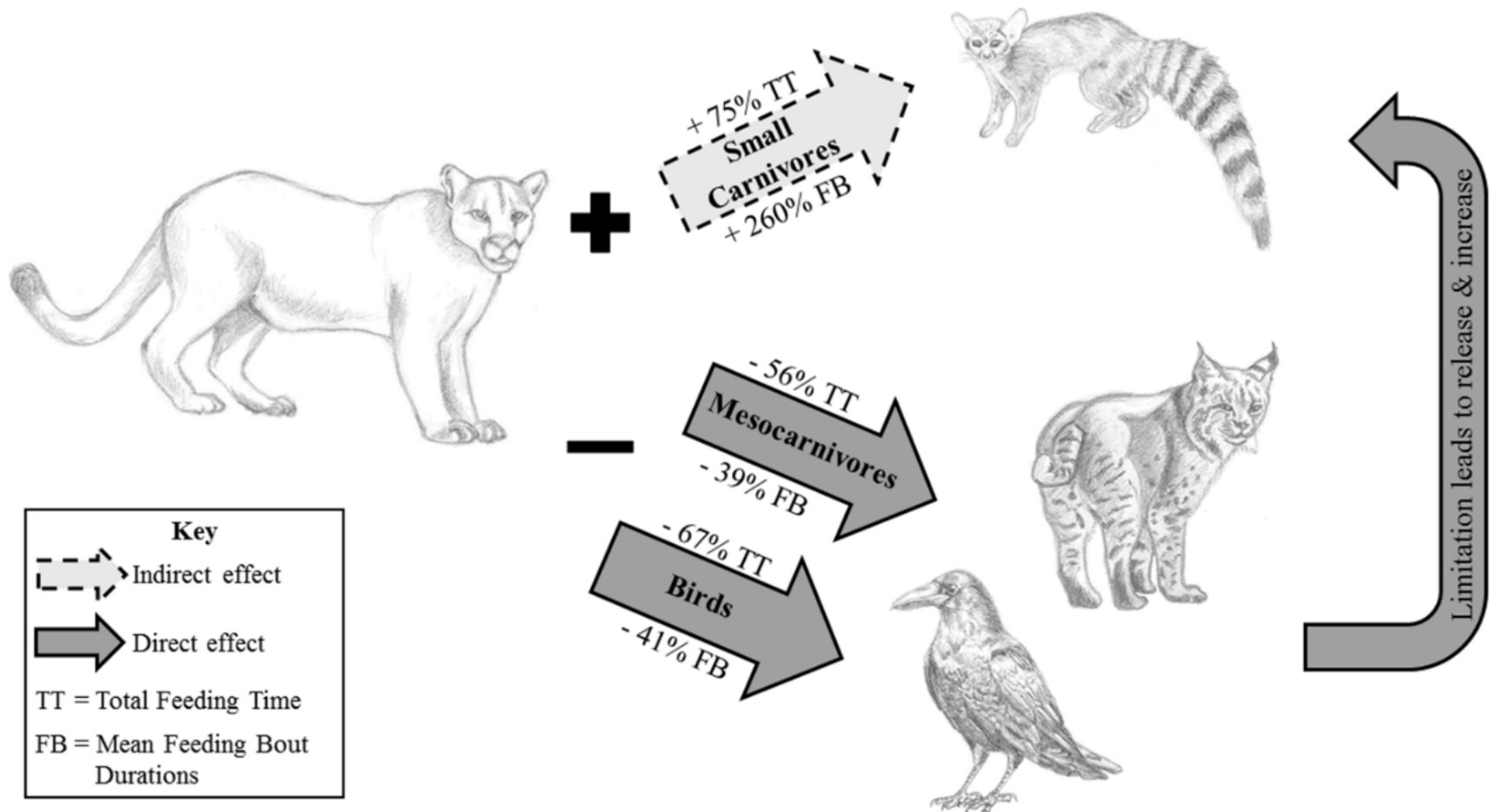
Scavenger Variable	Lion Kill	Lion Control	Effect Size
Species Richness	3.07 Species (2.60-3.54 95% CI)	3.52 Species (3.13 - 3.90 95% CI)	-0.27
Total Feeding Time	165.7 min (124.1 - 207.3 95% CI)	246.3 min (187.3 - 305.3 95% CI)	-0.41

Scavenger Variable	Bear Present	Bear Absent	Effect Size
Species Richness	1.79 (1.30 - 2.28 95% CI)	3.09 (2.65 - 3.53 95% CI)	-0.87
Total Feeding Time	42.5 min (21.7 - 63.3 95% CI)	359.5 min (261.2 - 457.8 95% CI)	-1.20

Mountain Lion Effects on Scavenger Classes

- Varied effects by class
- Promotes structuring

= Trophic Facilitation

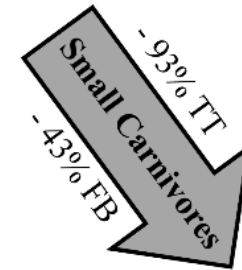
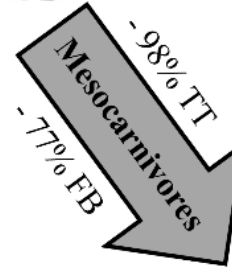
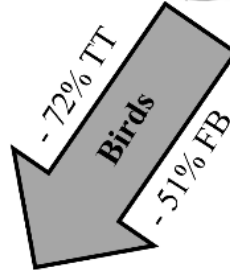
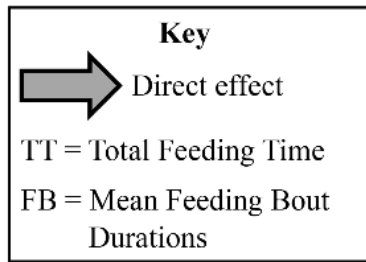


Bear Effects on Scavenger Classes

- Negative Effects

- All Scavenger Classes
- All Variables

= Trophic Limitation







Thank
You!