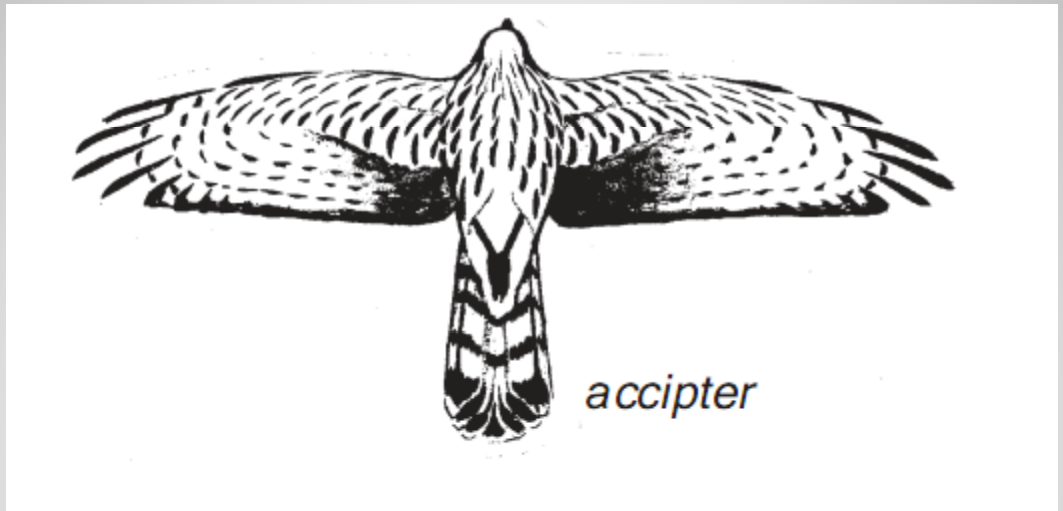
MPG Ranch 2010 Raptor Summary

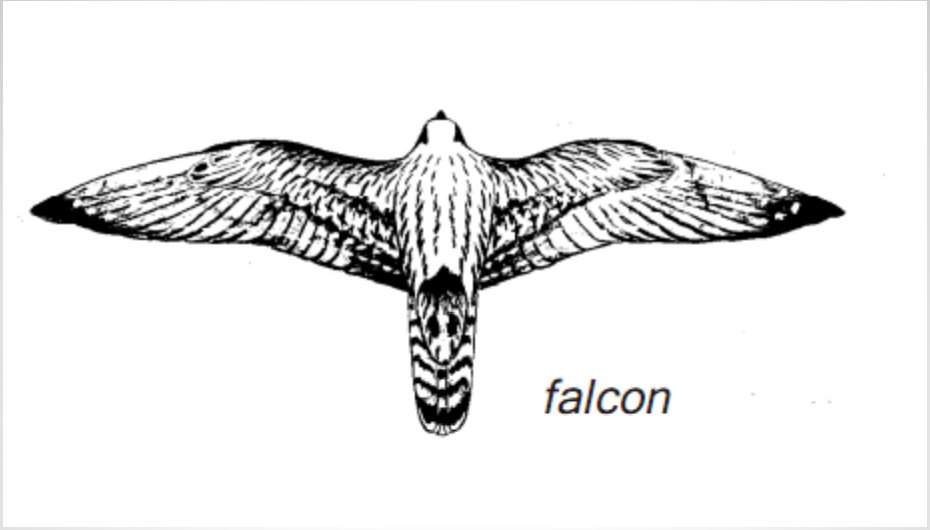
- Raptor background
  - Species
  - Migration
  - Observation sites in Montana
- Survey methods
- Results
- Conclusions

Accipiters



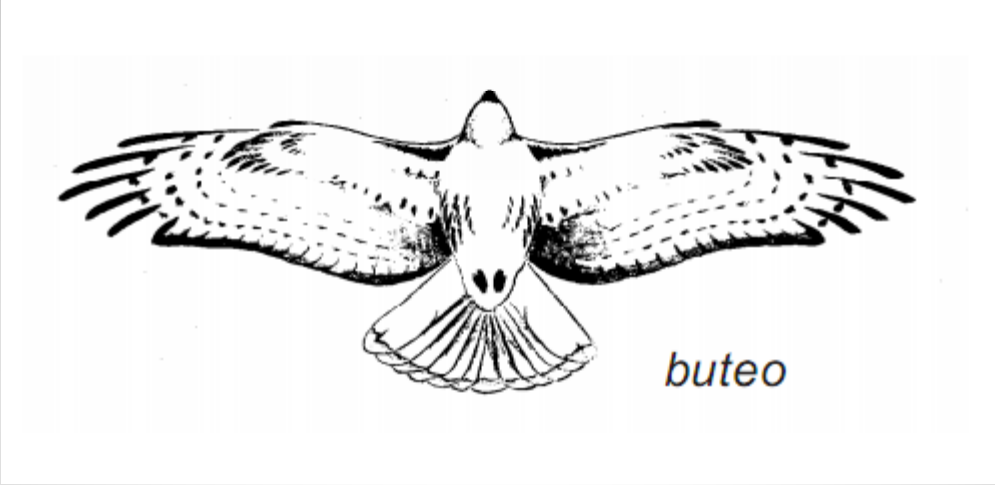
- Northern goshawk
- Cooper's hawk
- Sharp-shinned hawk

Falcons



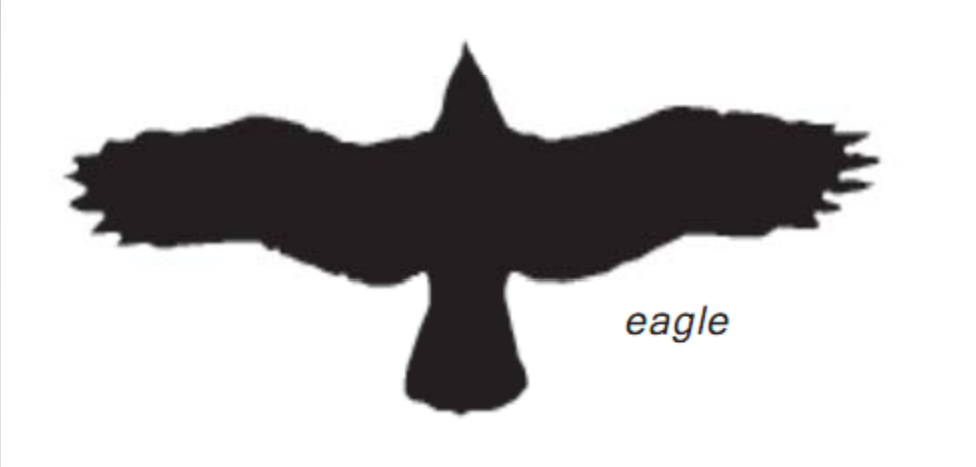
- American kestrel
- Merlin
- Prairie falcon
- Peregrine falcon

Buteos



- Red-tailed hawk
- Swainson's hawk
- Rough-legged hawk
- Ferruginous hawk
- Broad-winged hawk

Eagles



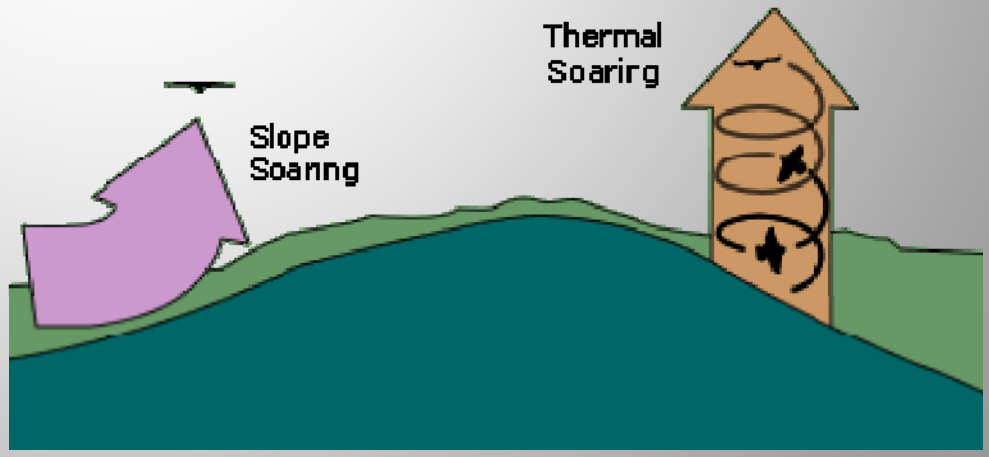
- Bald eagle
- Golden eagle

Other

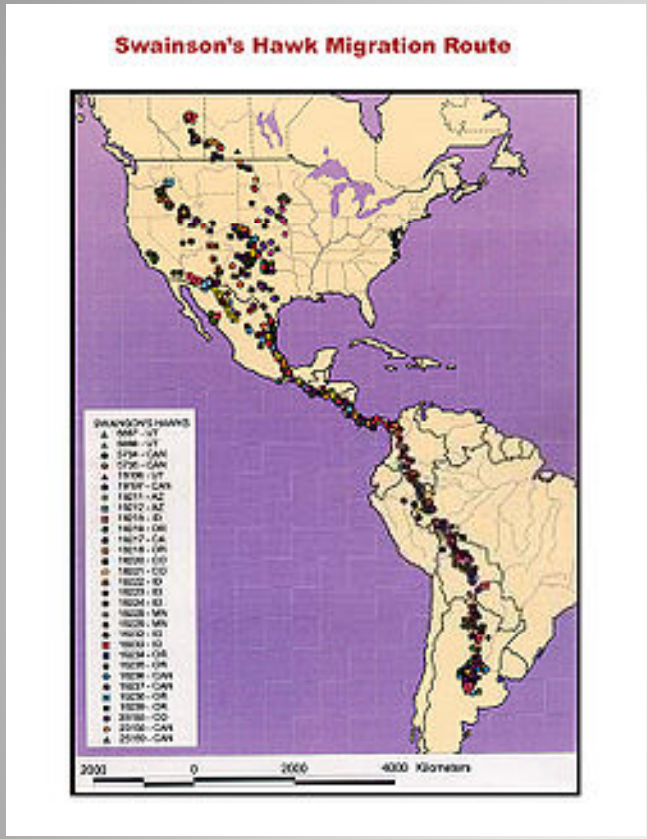
Raptor migration

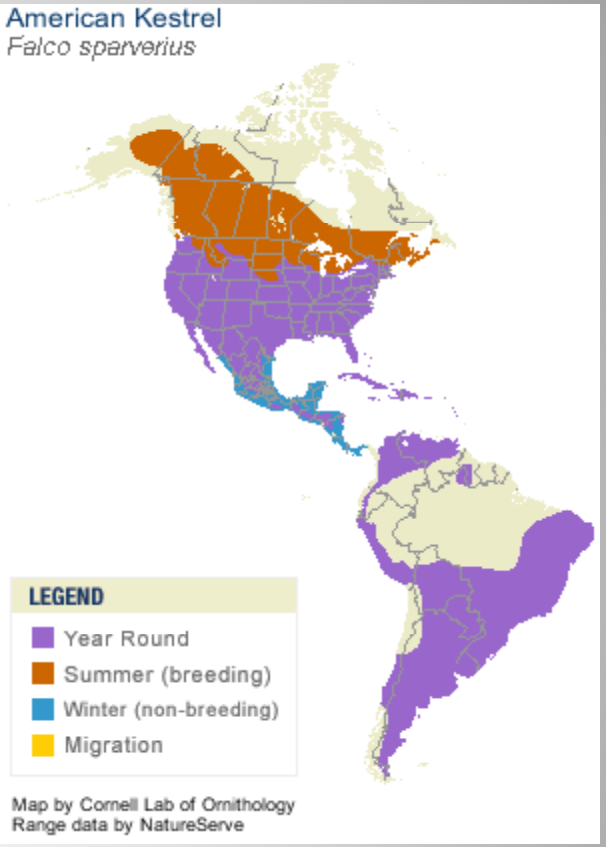
•Raptors use winds generated from topographic features to move north in the spring and south in the fall

•Weather conditions (e.g., wind direction, changes in pressure) also influence migration behavior



Long- vs. short-distance dispersal





Swainson's hawks may travel 14,000 miles and take 2 months to migrate

Most American kestrels breeding in the Pacific Northwest travel to western Mexico (Henny and Brady 1994)

Migrating in groups vs. solitary migration

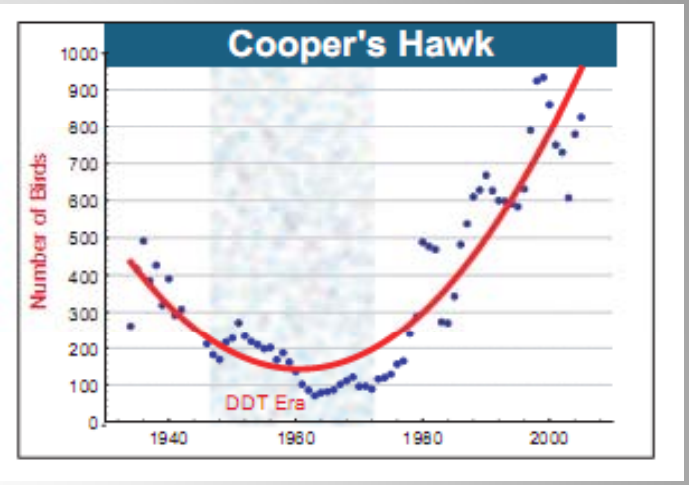
Broad-winged hawk kettle

Solitary Cooper's hawk

Migration strategy has implications for the reliance of migrants on quality habitat over their migration route

What can raptor counts tell us?

- Help determine migration routes
  - What species might use the property
- Migration timing
  - Differences by species, age groups, sex
- Long-term population trends



Hawk Mountain data

- All of these data are more useful when considered in conjunction with other sites
  - Compare results for individual days, years, and for species
    - Populations trends local or regional?
  - Potential for banding, resighting, and recapture

USGS photo

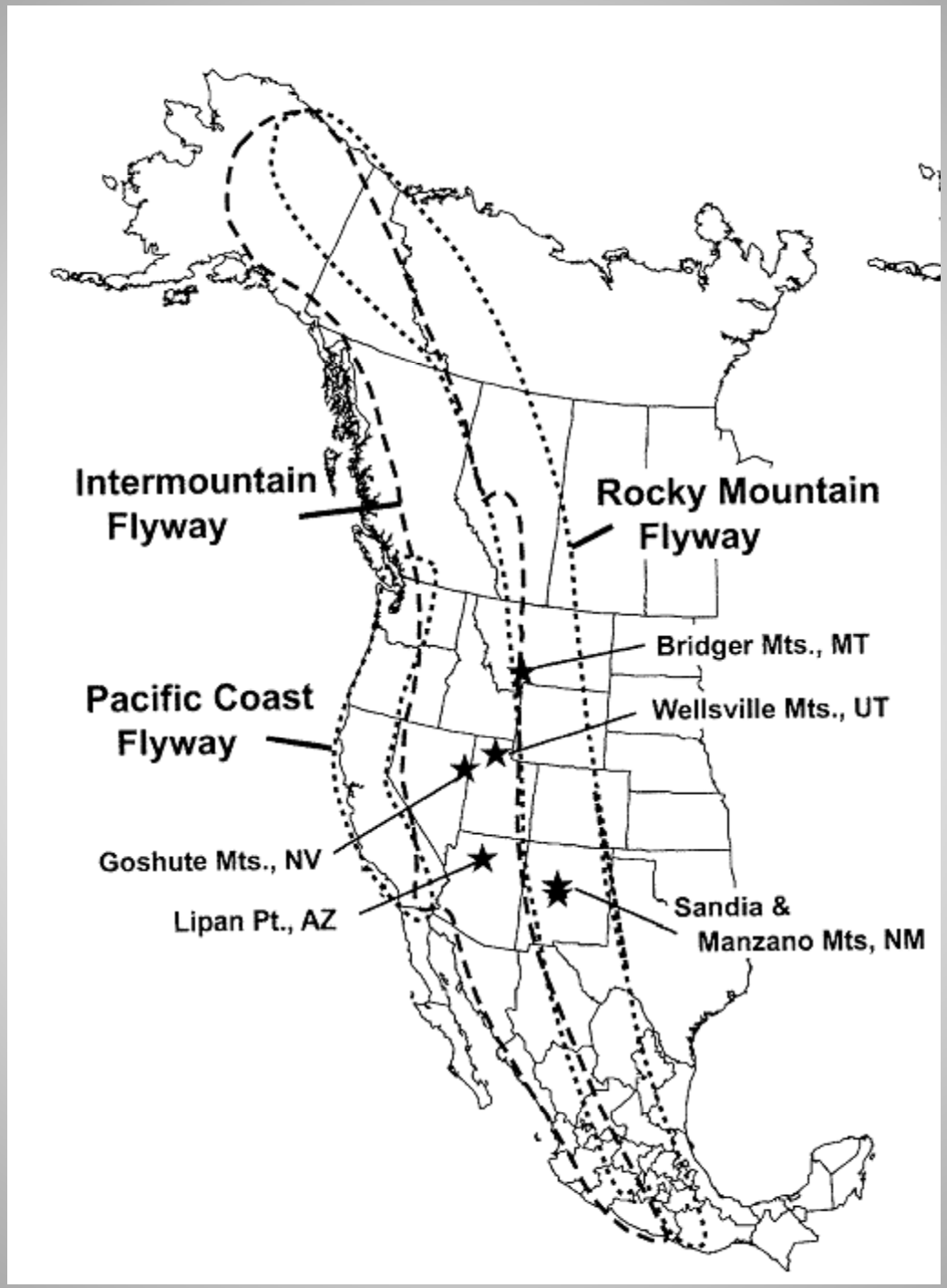


Figure from
Hoffman and Smith 2003

Raptor observation sites in Montana

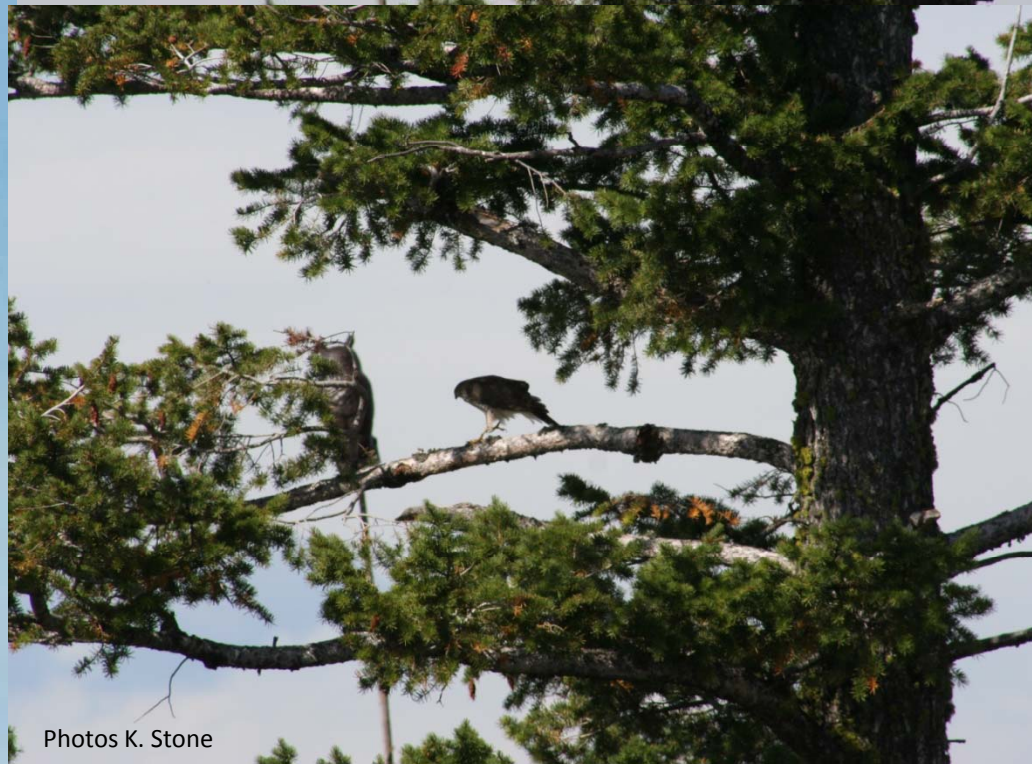
The raptors flying over the MPG Ranch are different from those flying over all other observation sites in Montana

Raptor observation sites on the MPG Ranch

Considered a “foothills” observation site

Owl decoy lures raptors in

Photo K. Davis



Photos K. Stone

Photo N. Stone


Photo K. Stone

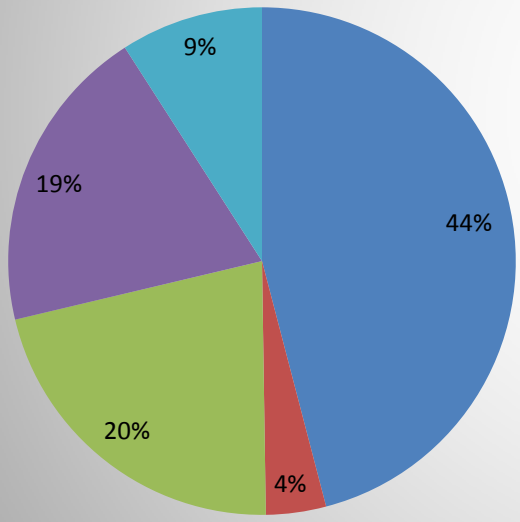
Raptor species detected on the MPG Ranch spring and fall 2010

Species	Spring (11 days)	Fall (18 days)
Sharp-shinned Hawk	35	80
Cooper's Hawk	26	42
Northern Goshawk	6	6
Unidentified Accipiter	29	21
American Kestrel	5	76
Merlin	1	11
Prairie Falcon	2	3
Peregrine Falcon	0	2
Unidentified Falcon	0	0
Red-tailed Hawk	26	70
Broad-winged Hawk	0	2
Ferruginous Hawk	0	0
Swainson's Hawk	0	0
Rough-legged Hawk	10	0
Unidentified Buteo	9	6
Northern Harrier	15	18
Golden Eagle	33	27
Bald Eagle	6	2
Unidentified Eagle	2	0
Osprey	0	4
Turkey Vulture	4	4
Unidentified Hawk	11	11
Total:	**220**	**385**

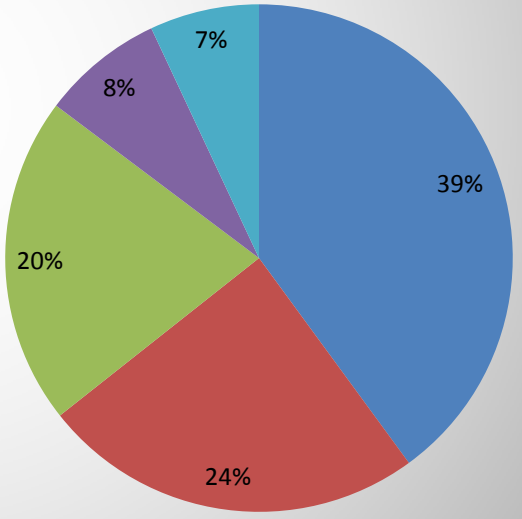
Comparison of spring and fall counts

- High spring numbers (64 bird day)!!
- High eagles in spring
- High falcons in fall
- High buteos in both seasons

Spring (n=220)



Fall (n=385)



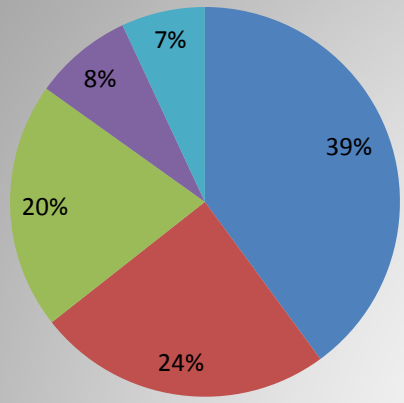
Accipiters Falcons Buteos Eagles Other (NOHA, OSPR, TUVU)

FALL SURVEYS	**MPG Ranch**	**Jewel Basin**	**Bridger Mountains**	**Nora Ridge**
Date range of surveys	9/4-10/23	8/28-10/23	8/28-10/23	9/7-10/22
Total days surveyed	18	40	48	44
Total observer hours	85	242	340	302
Number of species detected	14	16	17	16
Total birds surveyed	385	2742	2293	2027
Birds/hour of sampling effort	4.53	11.33	6.74	6.71
High day total	71	367	229	141
Top bird	SSHA (80) AMKE (76)	SSHA (1541) GOEA (390)	GOEA (1127) SSHA (334)	GOEA (847) SSHA (456)

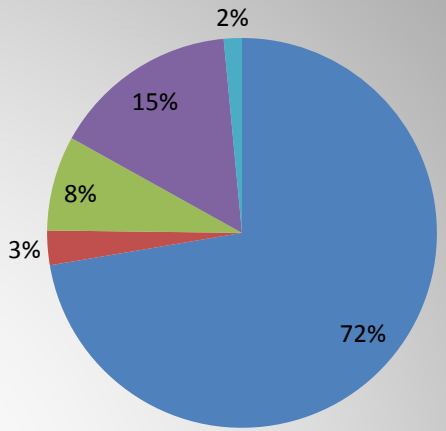
Limitations of comparing these data…….

- Unequal sampling effort
- All hours and days not equal

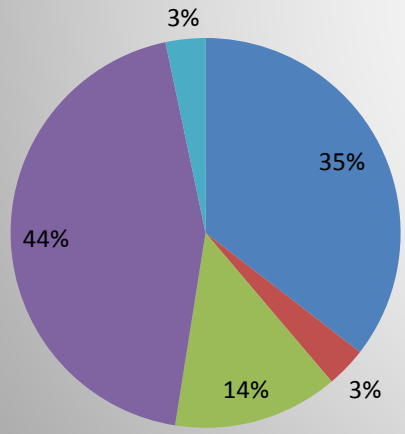
MPG Ranch



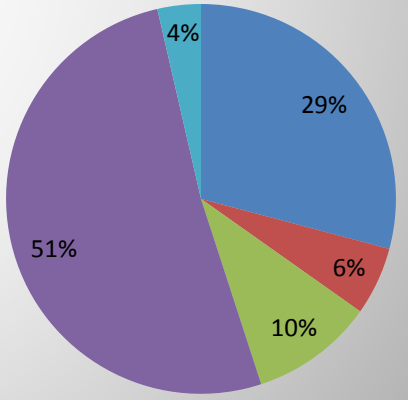
Jewel Basin



Nora Ridge



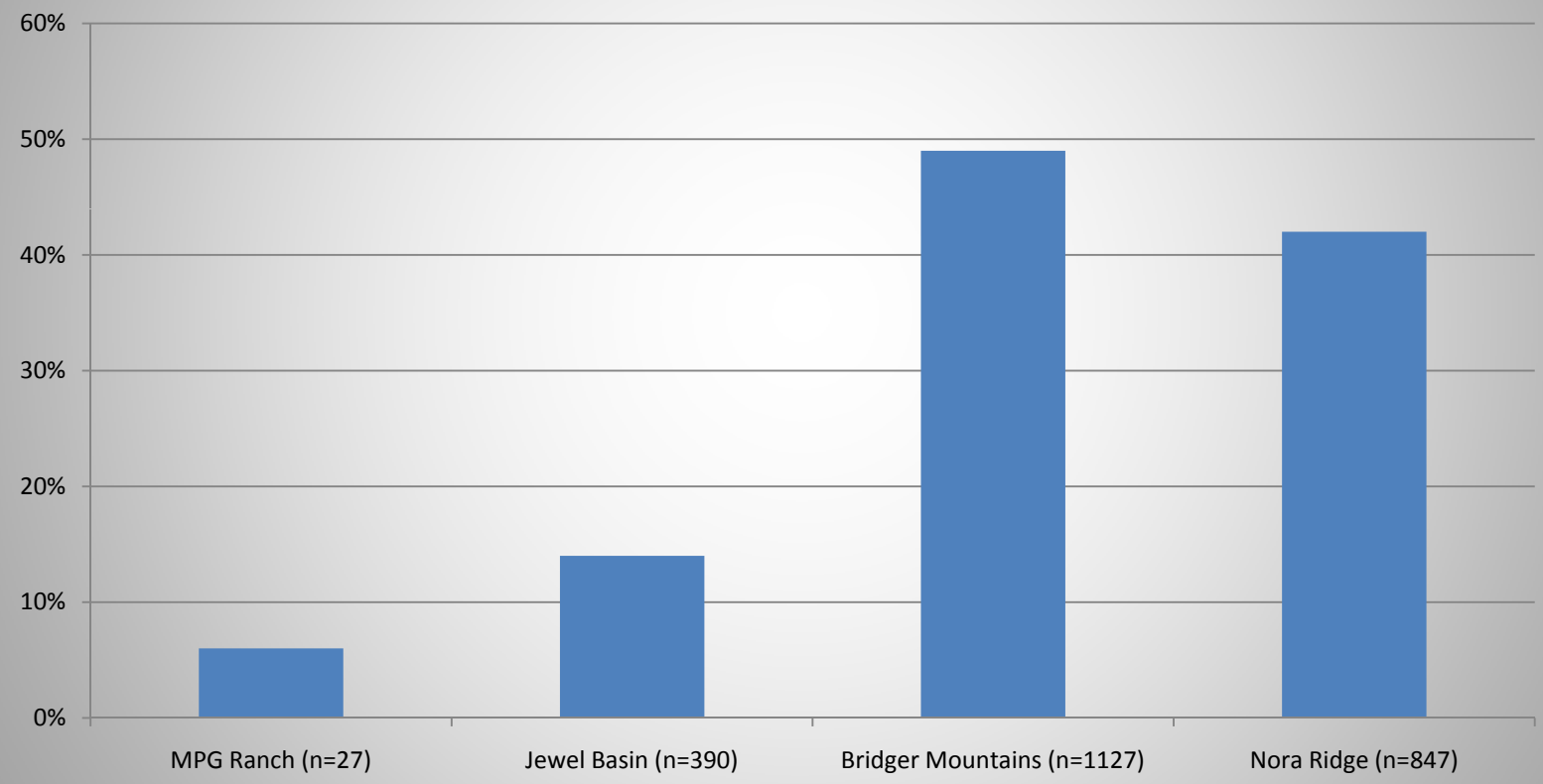
Bridger Mountains



Accipiters Falcons Buteos Eagles Other (NOHA, OSPR, TUVU)

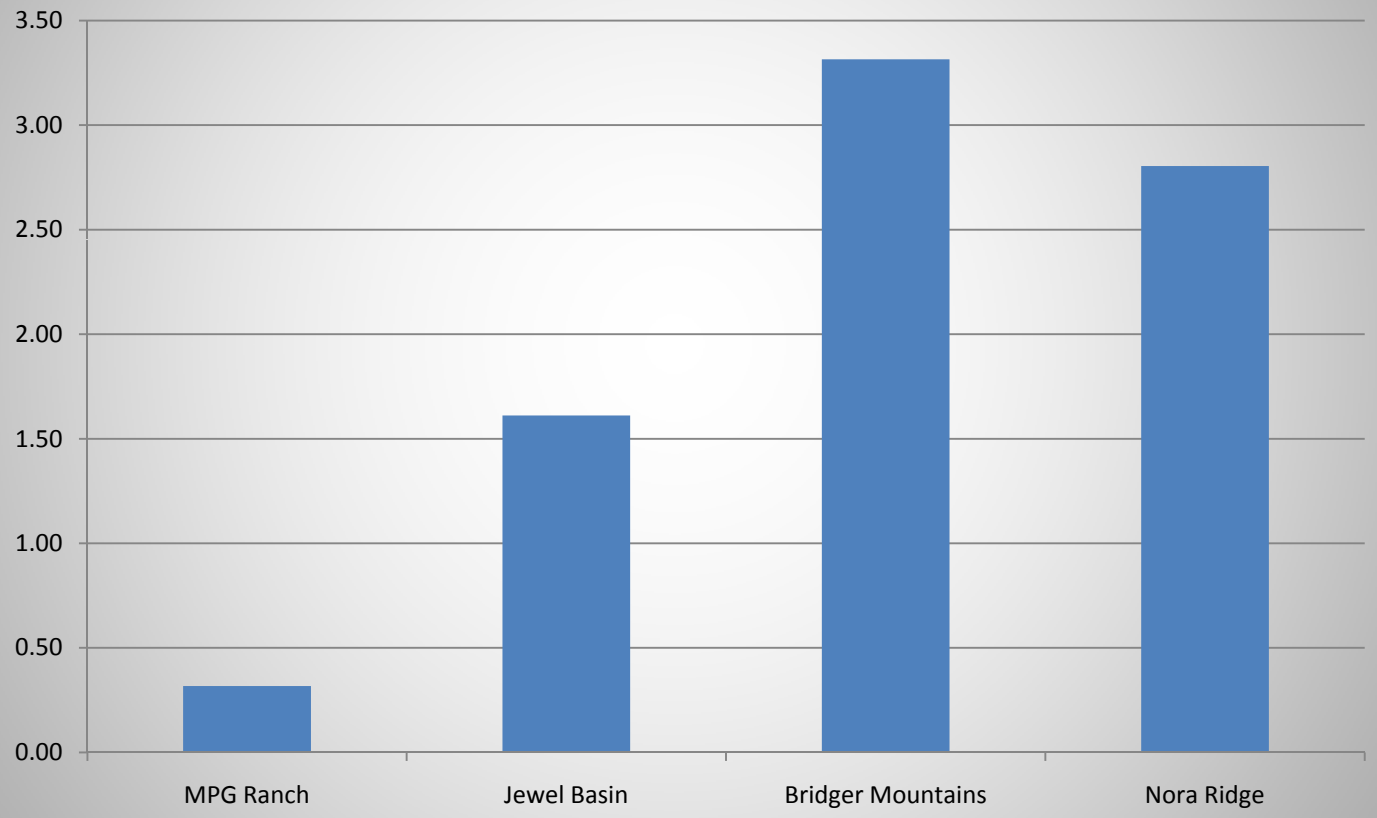
Golden eagle

Percent of total site detections



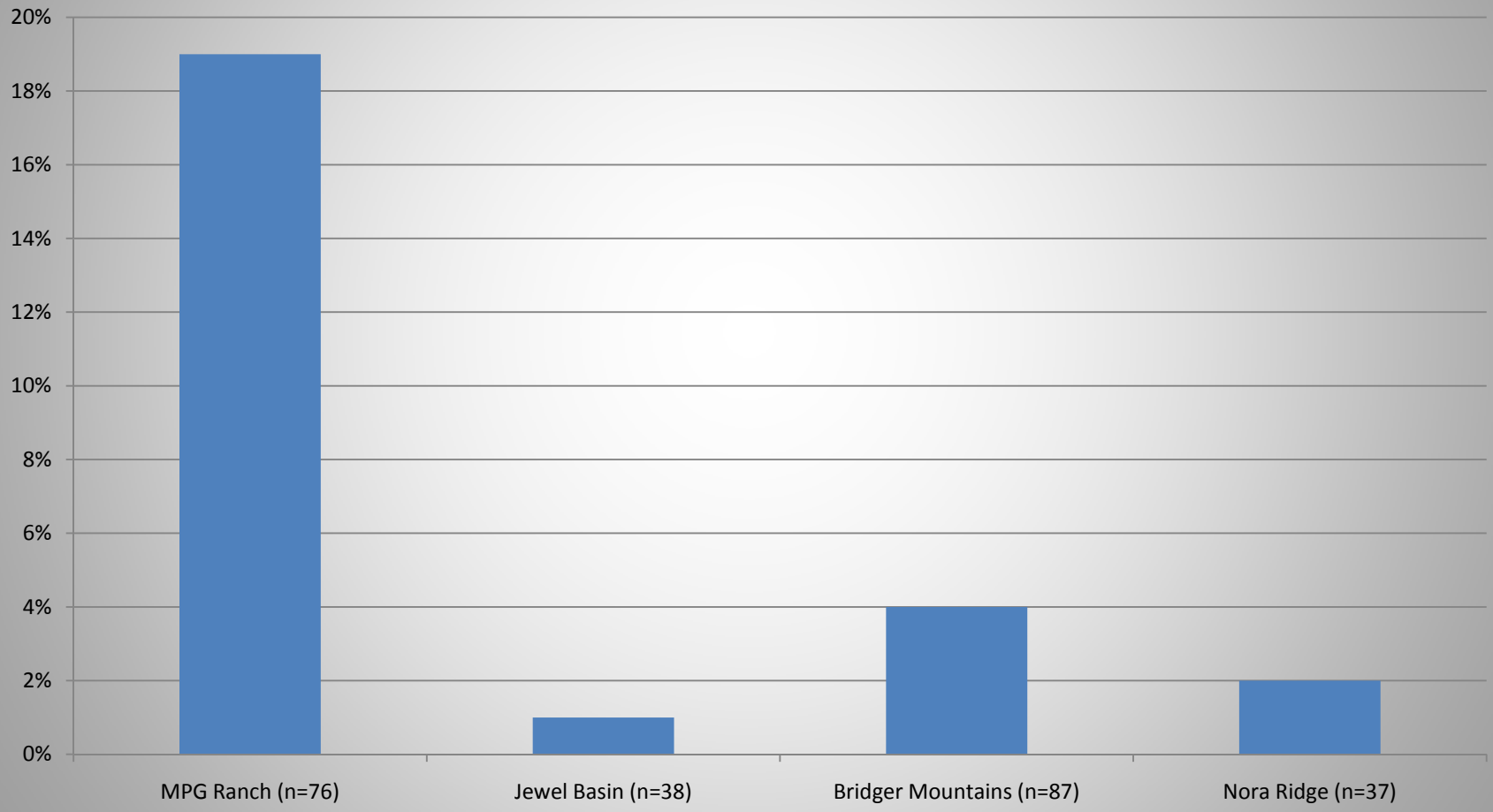
Golden eagle

Number detected per sampling hour



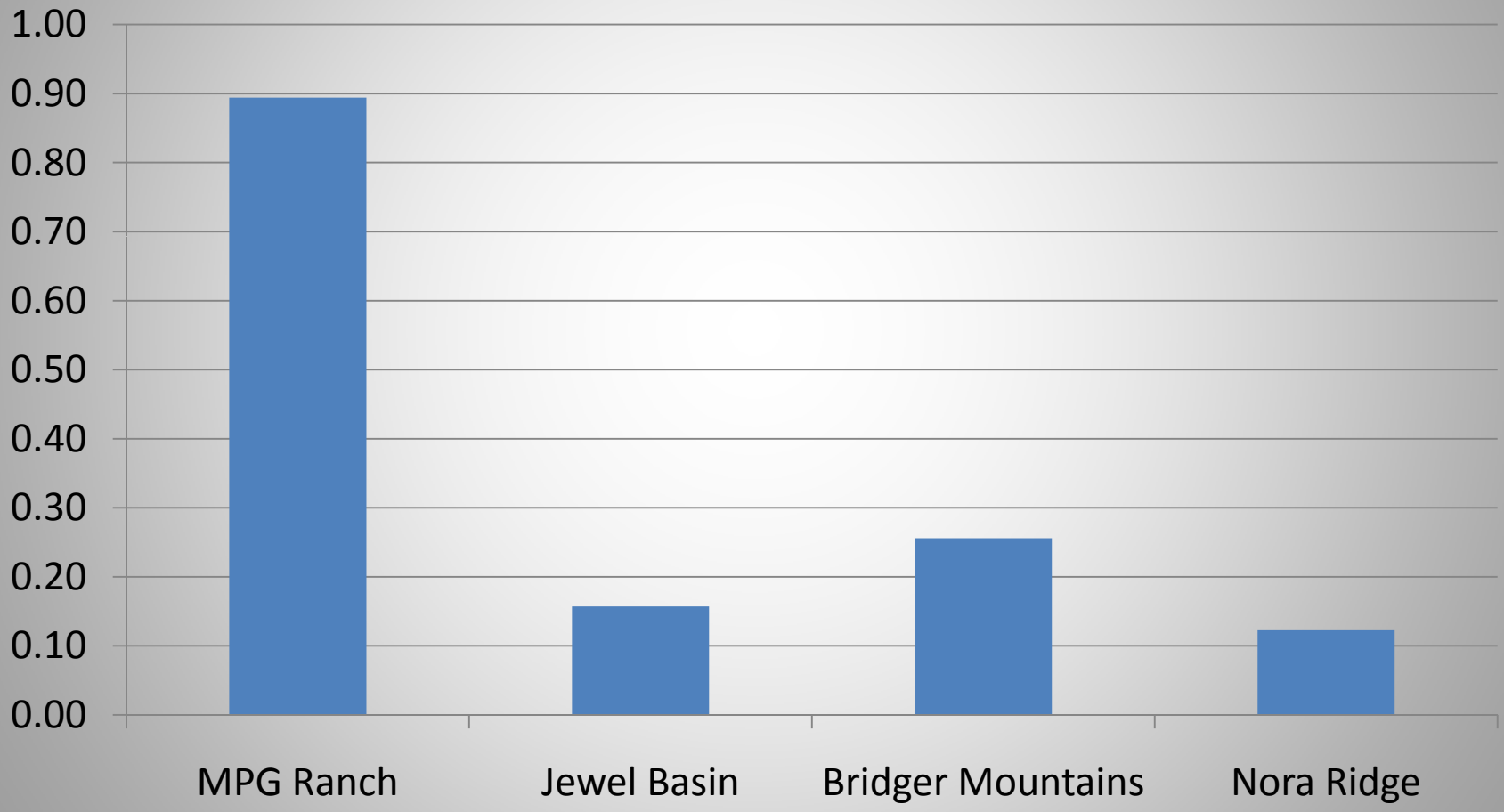
American kestrel

Percent of total site detections



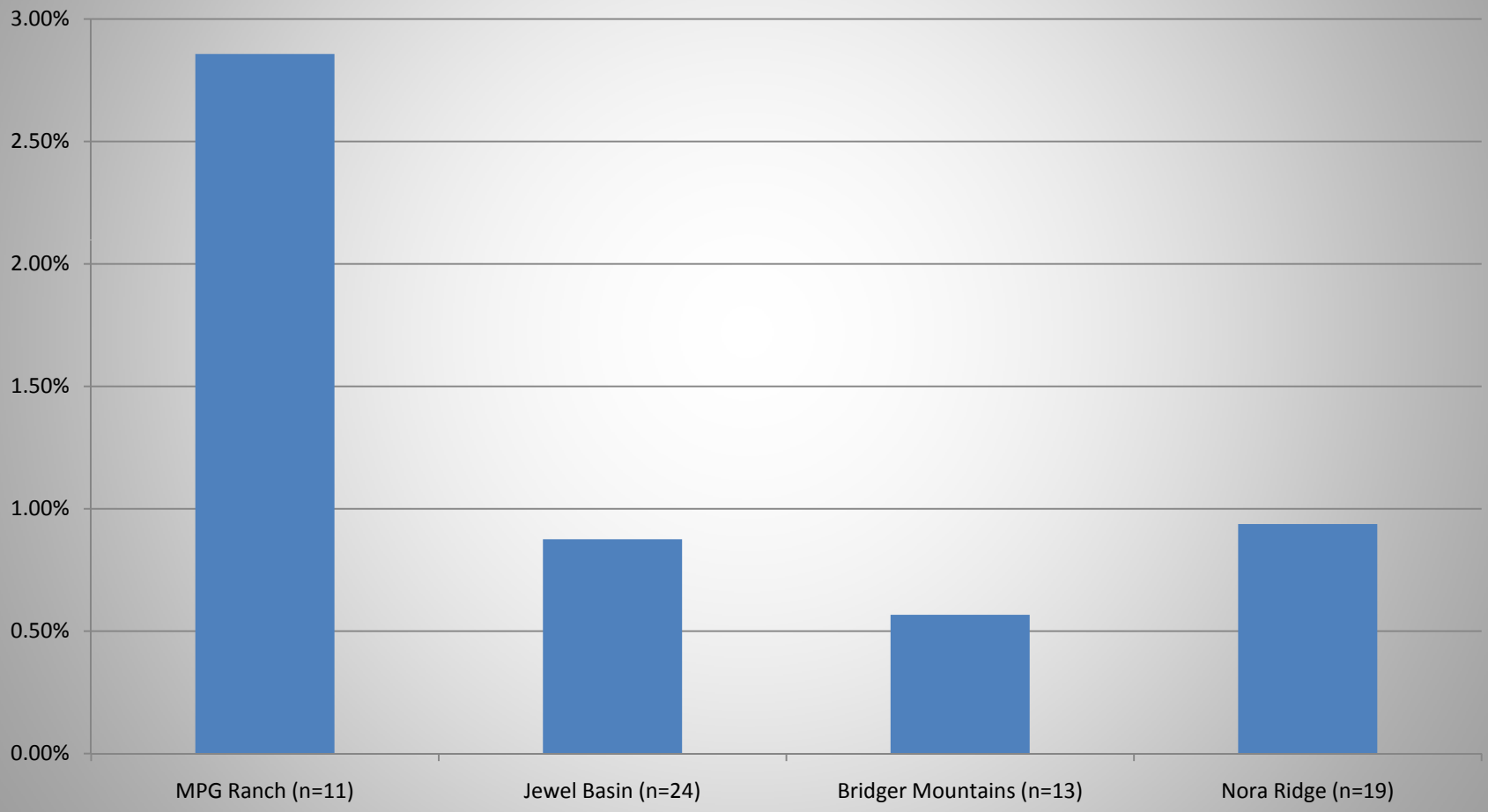
American kestrel

Number detected per sampling hour



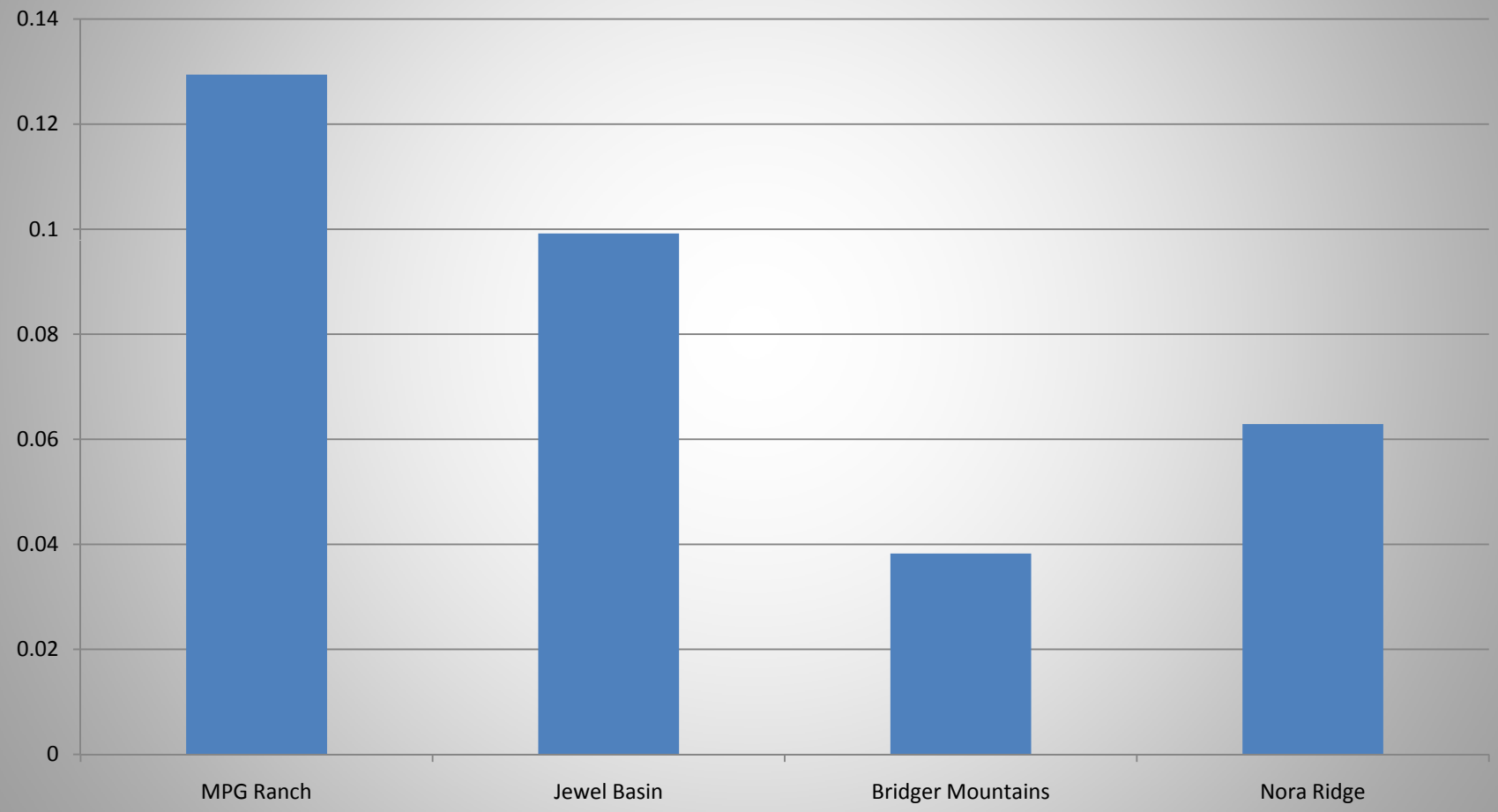
Merlin

Percent of total site detections



Merlin

Number detected per sampling hour



Conclusions

- **Good spring numbers!**
  - Few spring raptor observations sites in the West, and even fewer sites that are good both spring and fall
- **Species differ seasonally**
- **We are observing a different flyway from other Montana sites**
- **Great potential as a "foothills" site**
  - Raptors like falcons and buteos fly low and aren't often detected from higher elevation sites
- **American kestrels rock-**
  - "May be the highest numbers seen anywhere in the West" (S. Hoffman)
  - Thought to be in decline in the West

Photo K. Stone

In the future……

- Consistent daily monitoring needed
  - Miss “big” days or masses of 1 species moving through
  - Especially important in spring
  - Allow better comparisons between sites
- The more observers, the better
  - Good citizen science program
  - Observe multiple locations at once

Photo A. Ramsey