

Accessibility drives species exposure to recreation in the urbanized San Diego County reserve network



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Recreation is common in protected areas

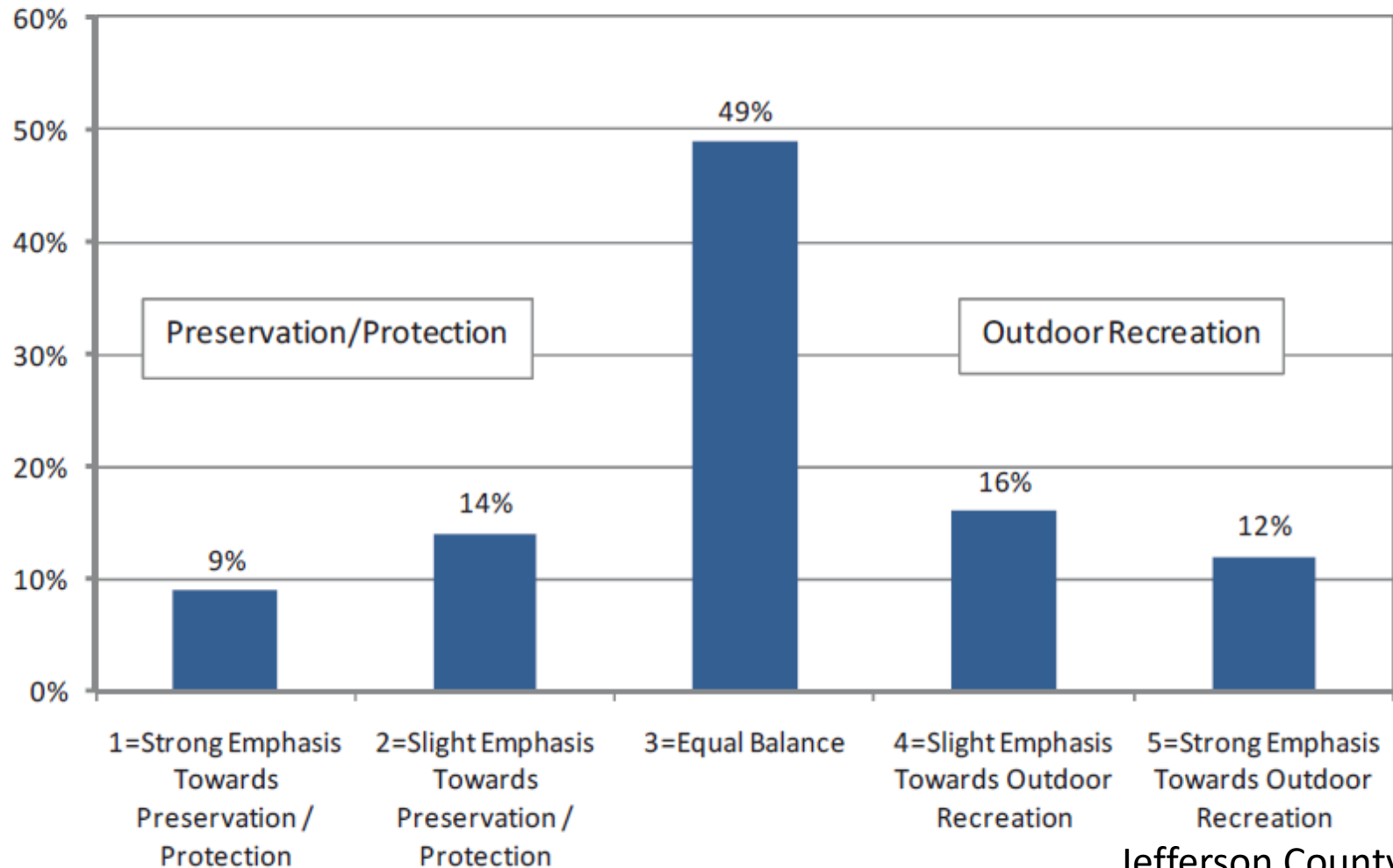


Permitted in 94+% of protected areas worldwide

~8 billion visits to protected areas per year, of which
80% are in Europe and North America

We want our protected areas to do it all

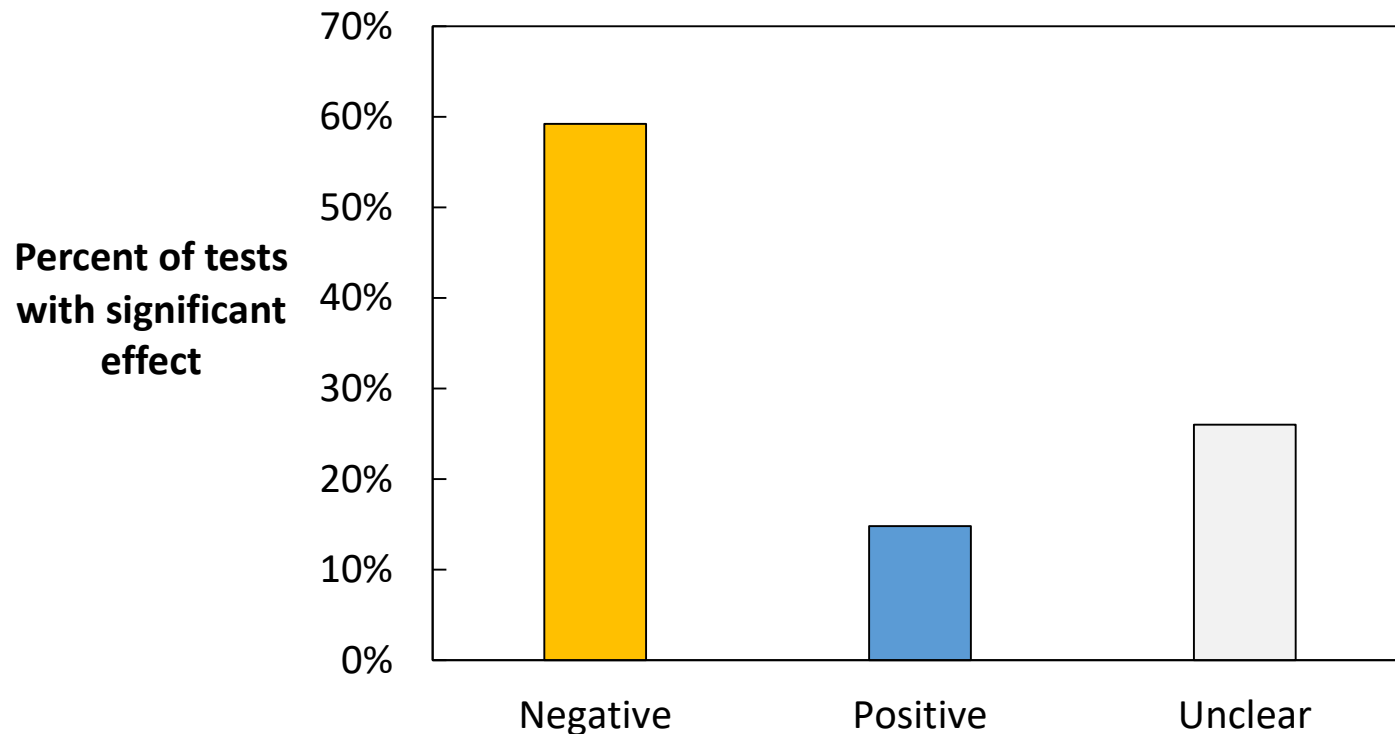
Q. Please circle the word choice that indicates what emphasis you would like to see Jefferson County Open Space pursue.



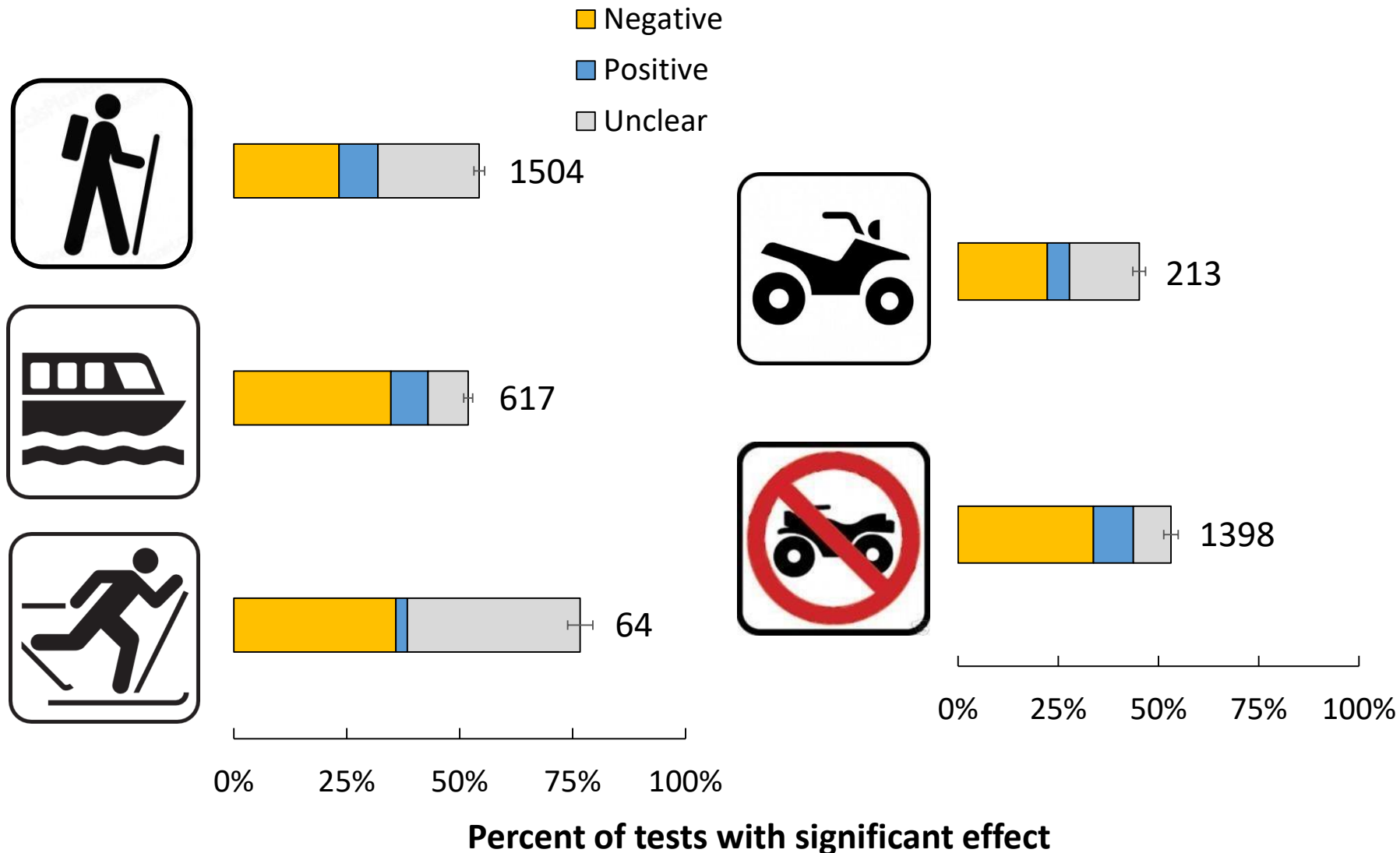
Jefferson County 2011

Evidence for effects of recreation

At least one significant effect in **93%** of articles of recreation effects on wildlife



Recreation activities differ in impact



What we know	What we need to know
<p>Most studies focus on birds (39%) or mammals (37%)</p>	<p>Which species are most sensitive to disturbance by recreation?</p>

Research questions




- How does recreational use vary across a network of reserves?
- What factors drive recreational use?
 - Accessibility
 - Attributes
 - Landscape context
- Which species are exposed to more recreation?

Study sites

Field study sites
Prediction sites
Freeways

0 10 20 KM

Sources: Esri, DeLorme, NAVTEQ, GEBCO, USGS, FAO, NPS, NRC, Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, and the Geo User

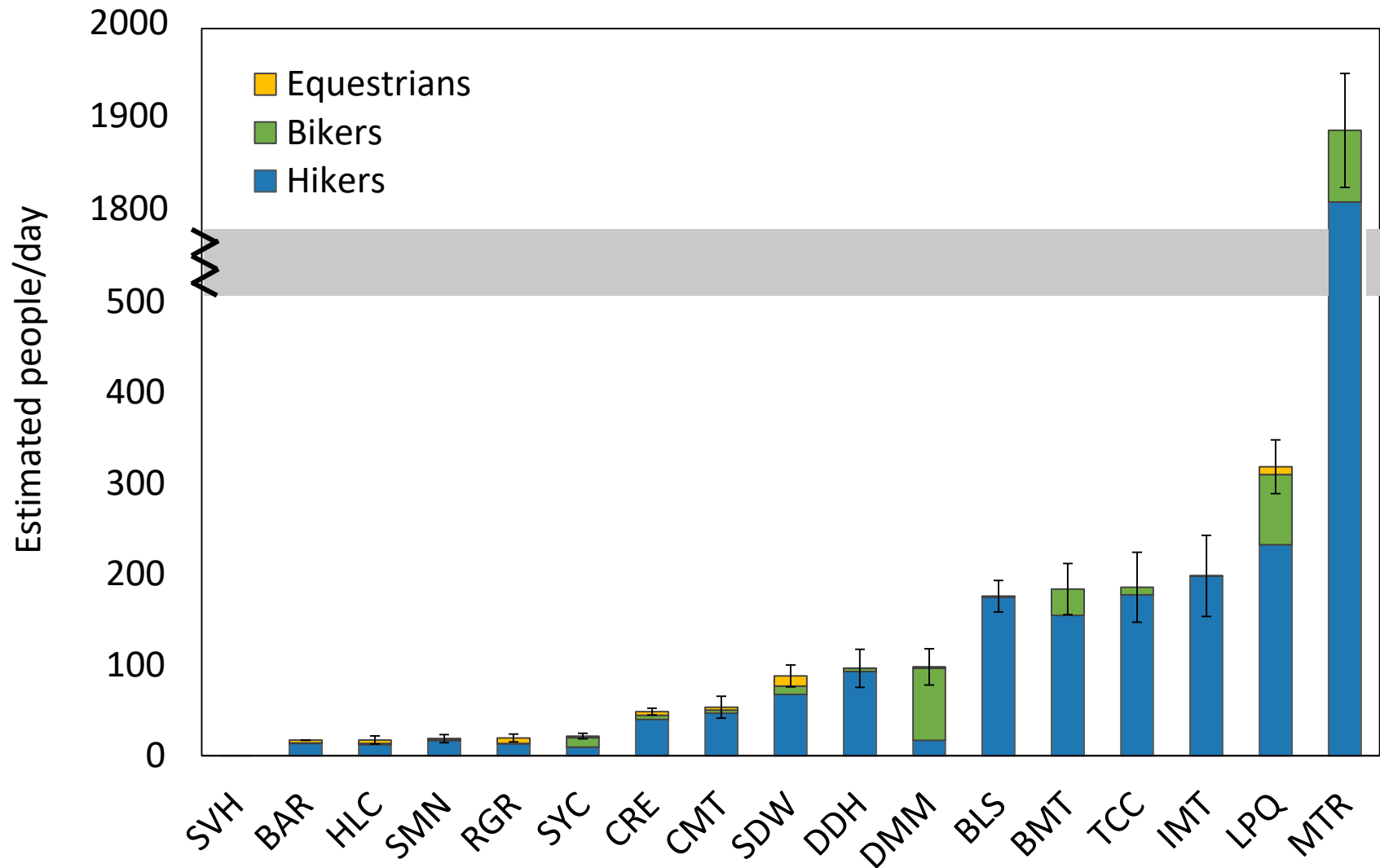
 Field study sites
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Methods for estimating recreation

- Camera traps at reserve entrances
- Expert opinion survey

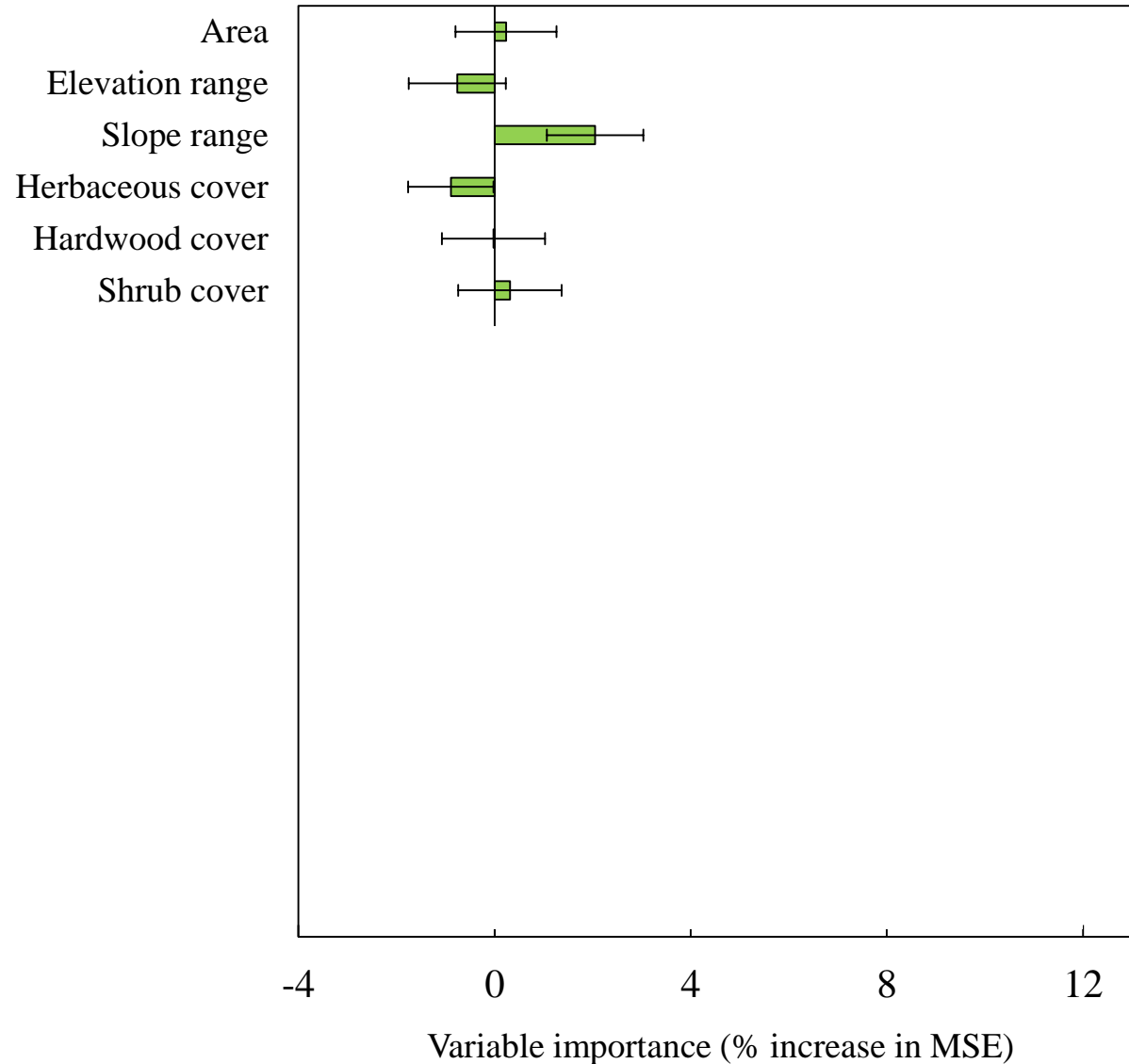


Level of recreation was variable



What factors drive recreational use?

Attributes

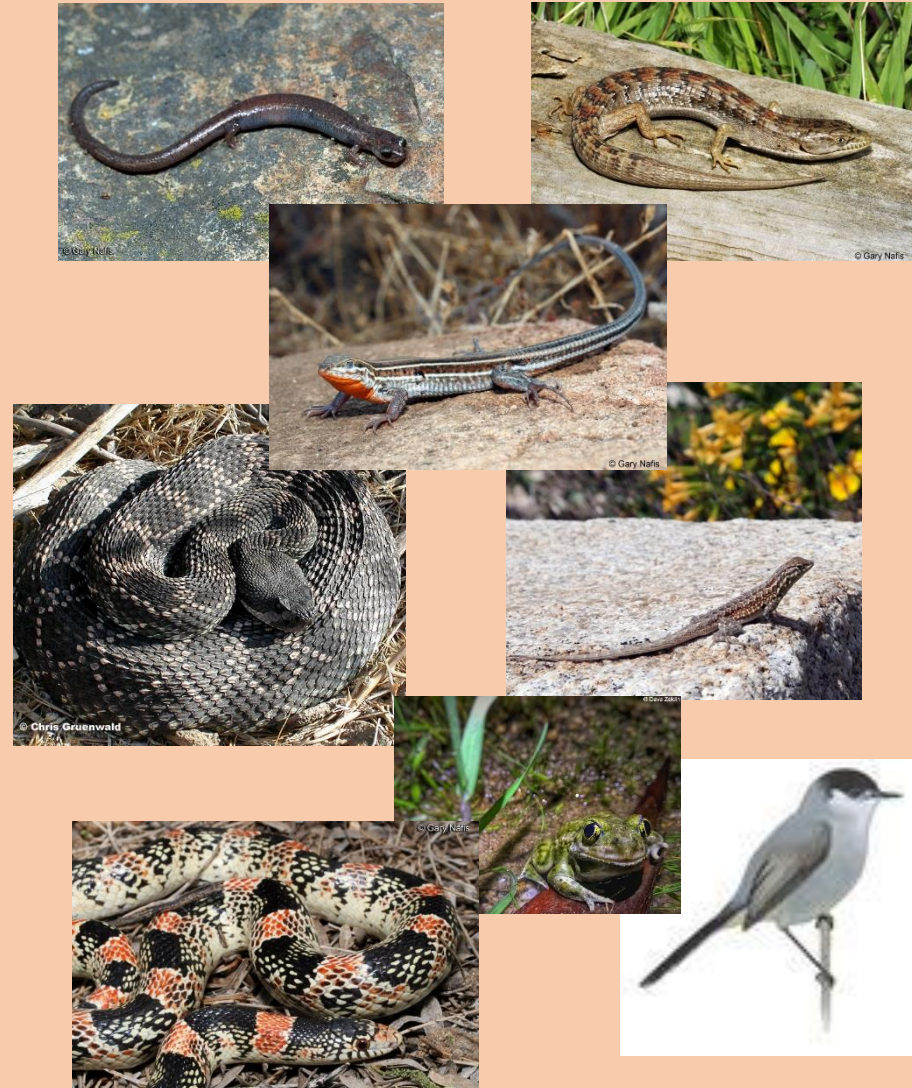


Species exposure to recreation

Less exposed

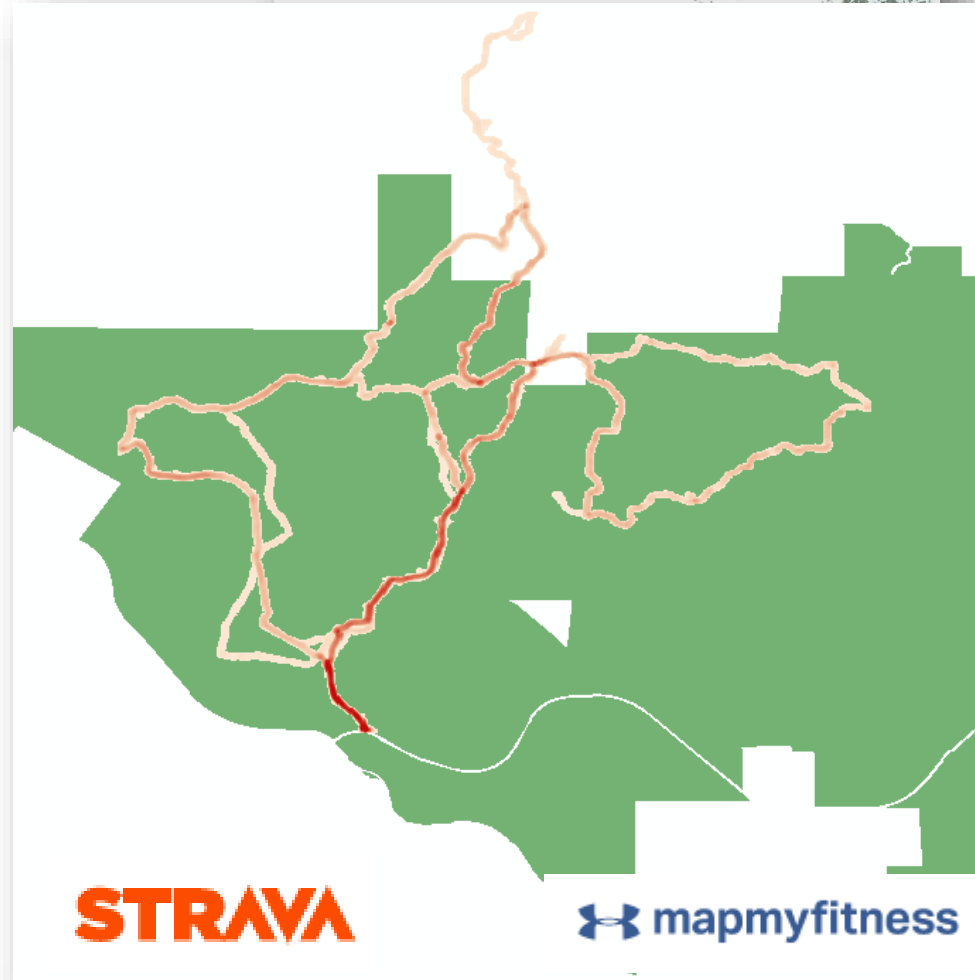


More exposed



Ongoing research questions

- How do mammals and reptiles respond to recreation?
- How does recreation compare to other factors?
- How much human activity is too much?
- Spatial patterns of recreation



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Survey and camera estimates were similar

