

Evaluating Pack Stock Use Patterns to Inform Wilderness Stewardship Planning in the Sierra Nevada

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“...[pack stock] may be employed when it is an appropriate use to support backcountry transport of people and materials and will not result in unacceptable impacts.”—NPS Management Policies, 2006

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The Bakersfield Californian

Tuesday, May 01 2012 10:15 PM

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By Lois Henry

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Submitted by [Kurt Repanshek](#) on Apr

Los Angeles Times

CALIFORNIA | LOCAL

Judge Orders Packers to Reduce Wilderness Trips

November 21, 2001 | From Times Wire Reports

Fresno Bee

Senate passes Sierra horse-packing bill

By Michael Doyle - Bee Washington Bureau

Thursday, May 17, 2012 | 11:39 PM



Recent Pack Stock Studies by USGS Yosemite Field Station

- Review of the environmental effects in the Sierra Nevada (Ostoja et al. 2014)
- Field study of effects on meadow vegetation (Lee 2013, Lee et al. in review)
- Field study of associations with the threatened Yosemite toad (Matchett et al. 2015, Lee et al. in prep)
- Field study of interactions with the endangered Sierra Nevada bighorn sheep (Klinger et al. 2015)

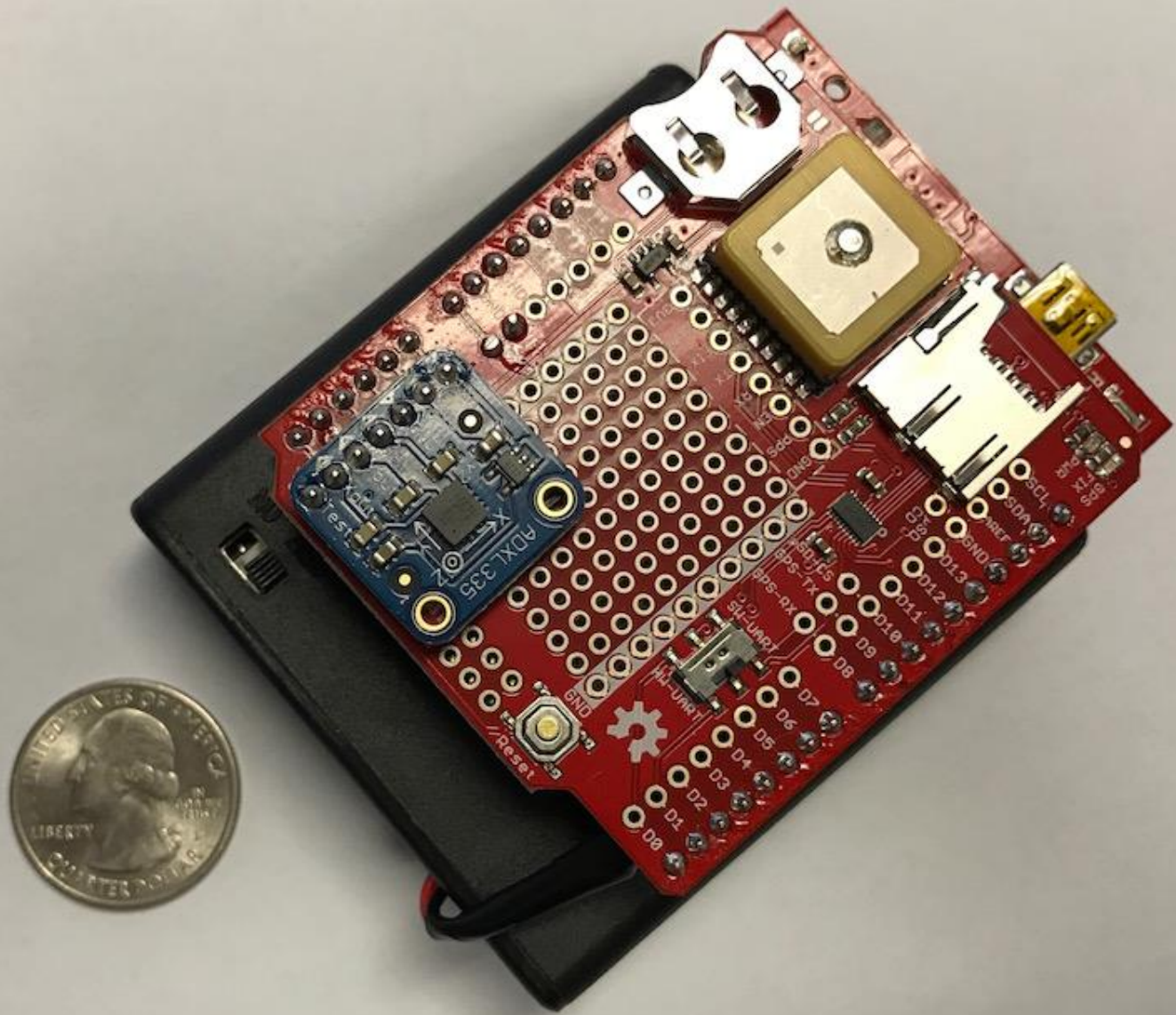
Study Objectives

- Describe pack stock use patterns during the night-time hours and how they relate to landscape scale metrics
 - How far from release points do animals travel?
 - What proportion of time is spent in various parts of the landscape?
 - Grazing, loafing, and moving-with-intent
- Determine how local scale metrics relate to use patterns
 - Do pack stock forage specific vegetation community types?
 - Do signs of disturbance vary by moisture or community types?

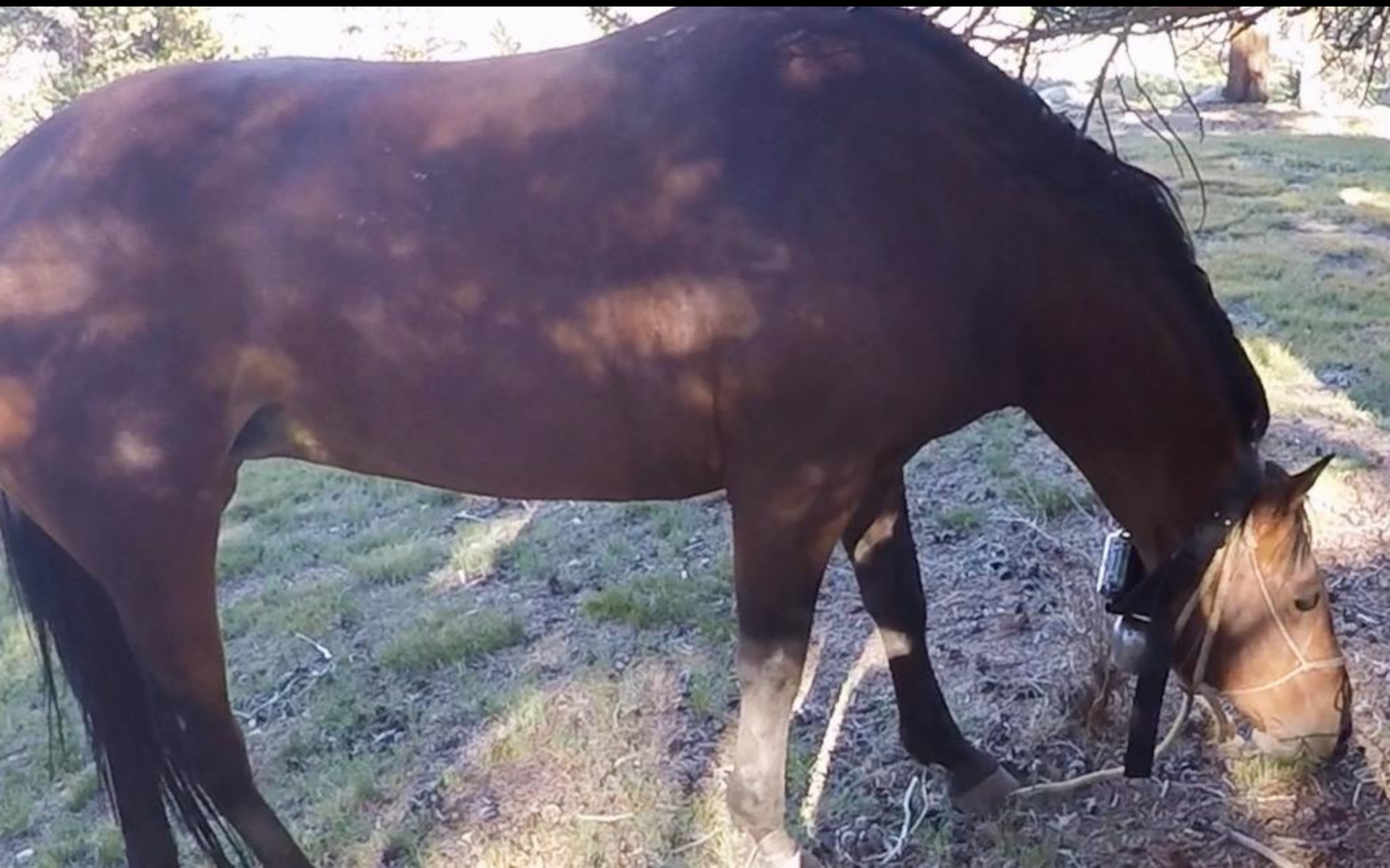
Methods

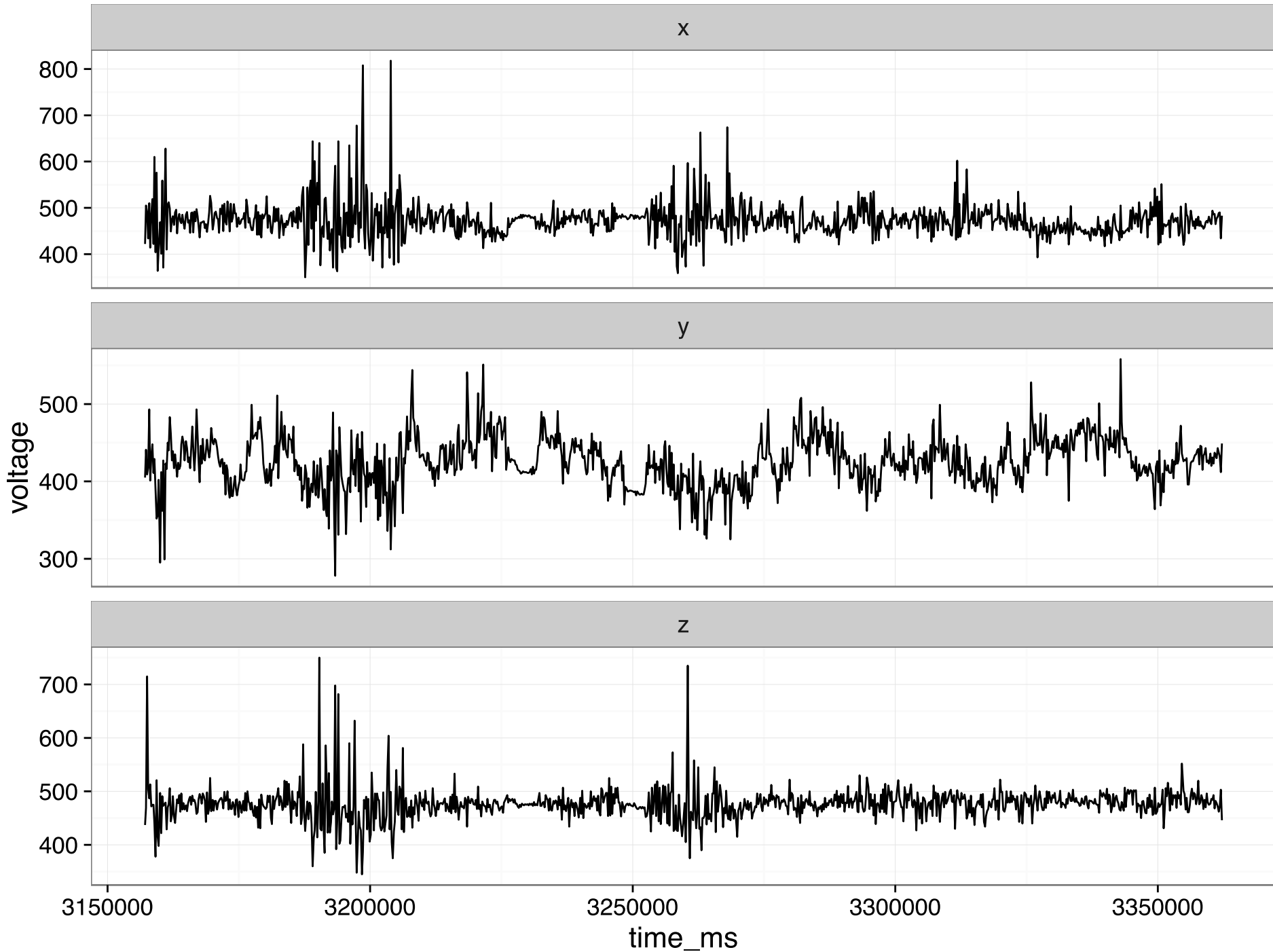
- Subalpine meadows in Yosemite and Sequoia–Kinds Canyon utilized by commercial pack stock
- Monitor animal movements and behaviors with data loggers
- Develop habitat use models utilizing:
 - Ground-based data vegetation type cover and soil moisture
 - Remotely-sensed based vegetation greenness, wetness, and community type
 - Other observed and modeled variables such as long-term precipitation and temperature, topography, etc.

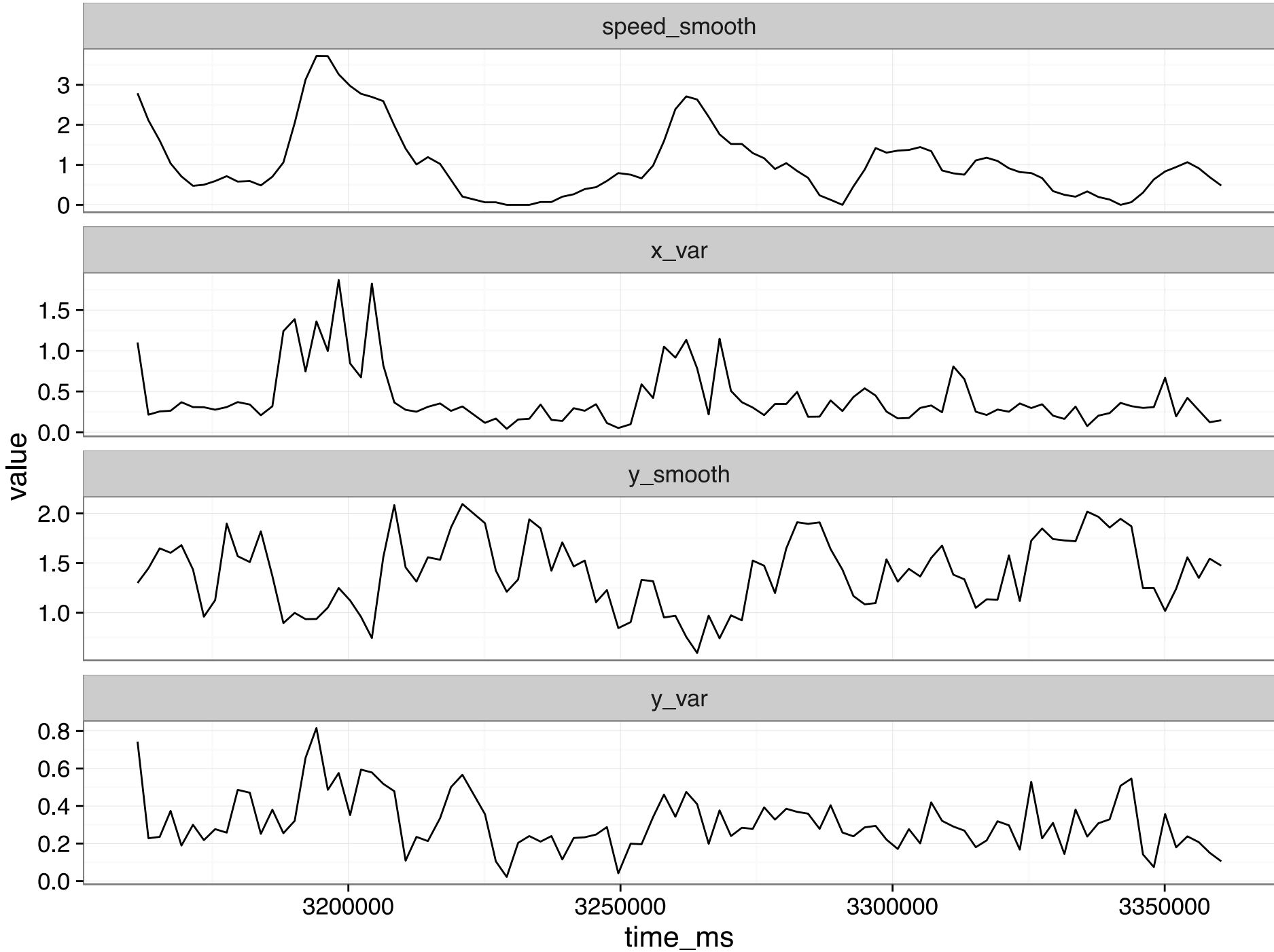


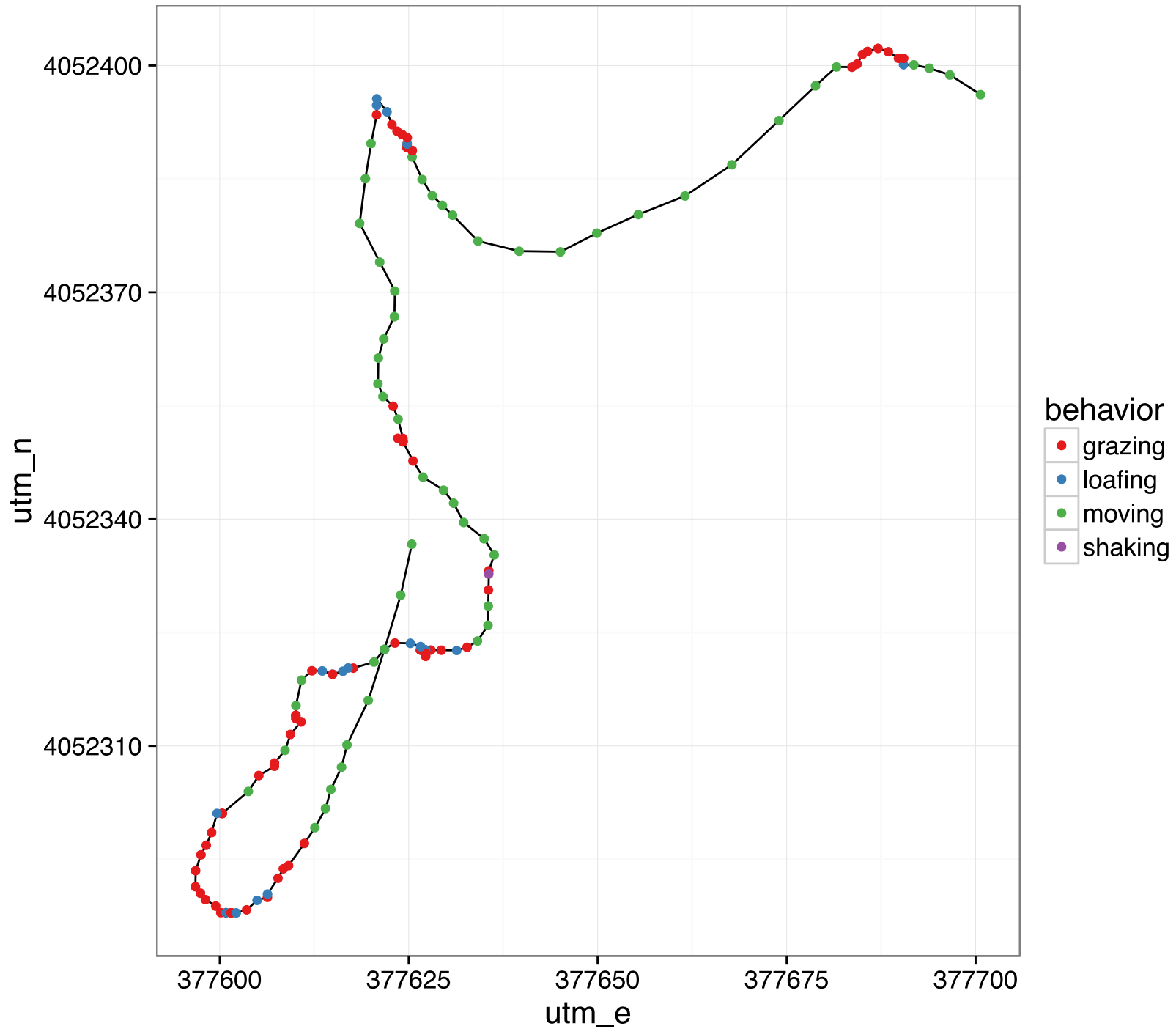




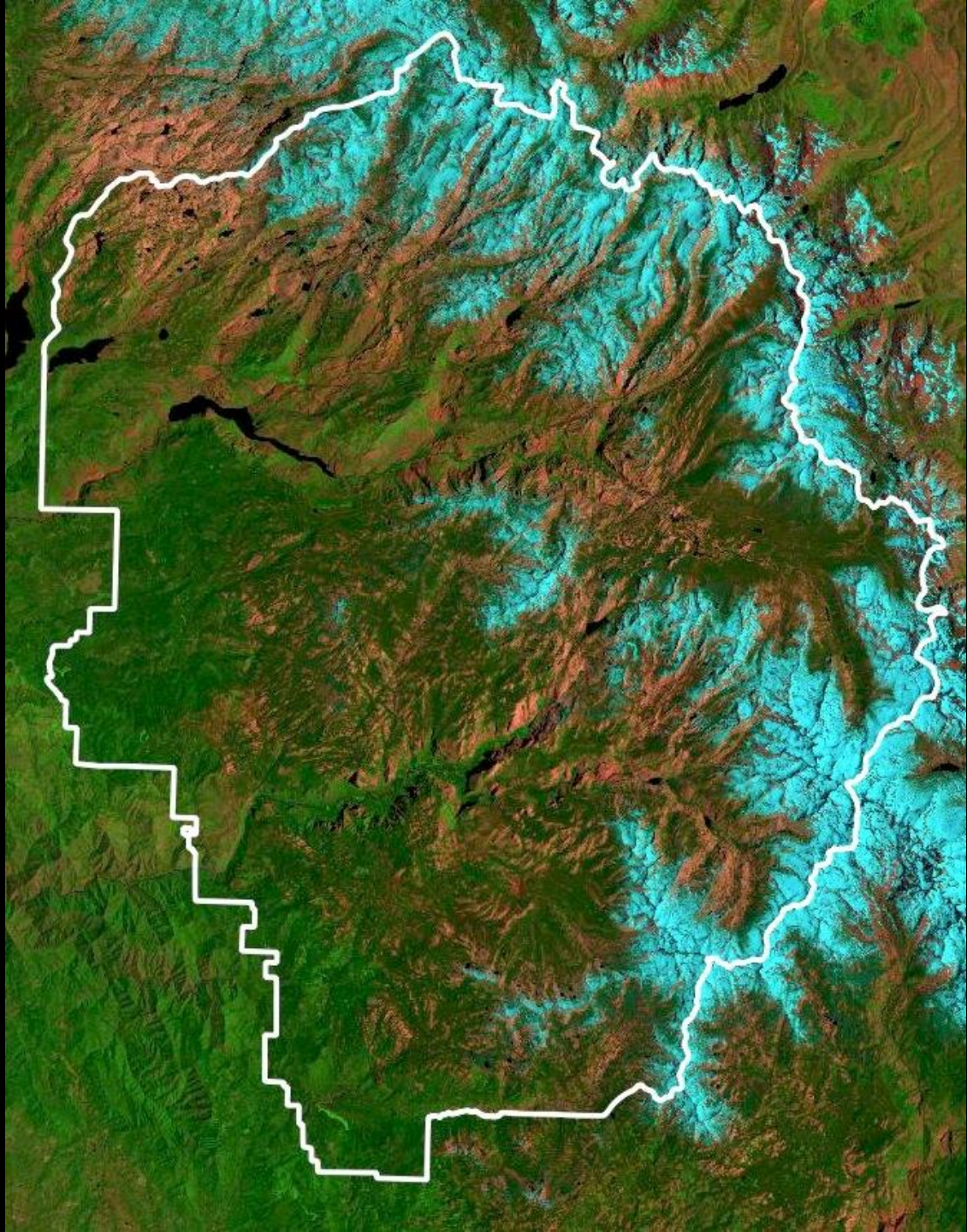


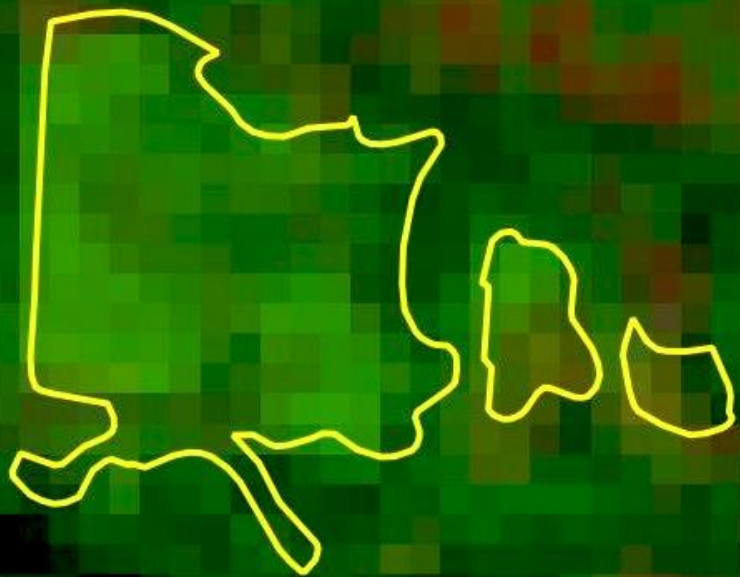


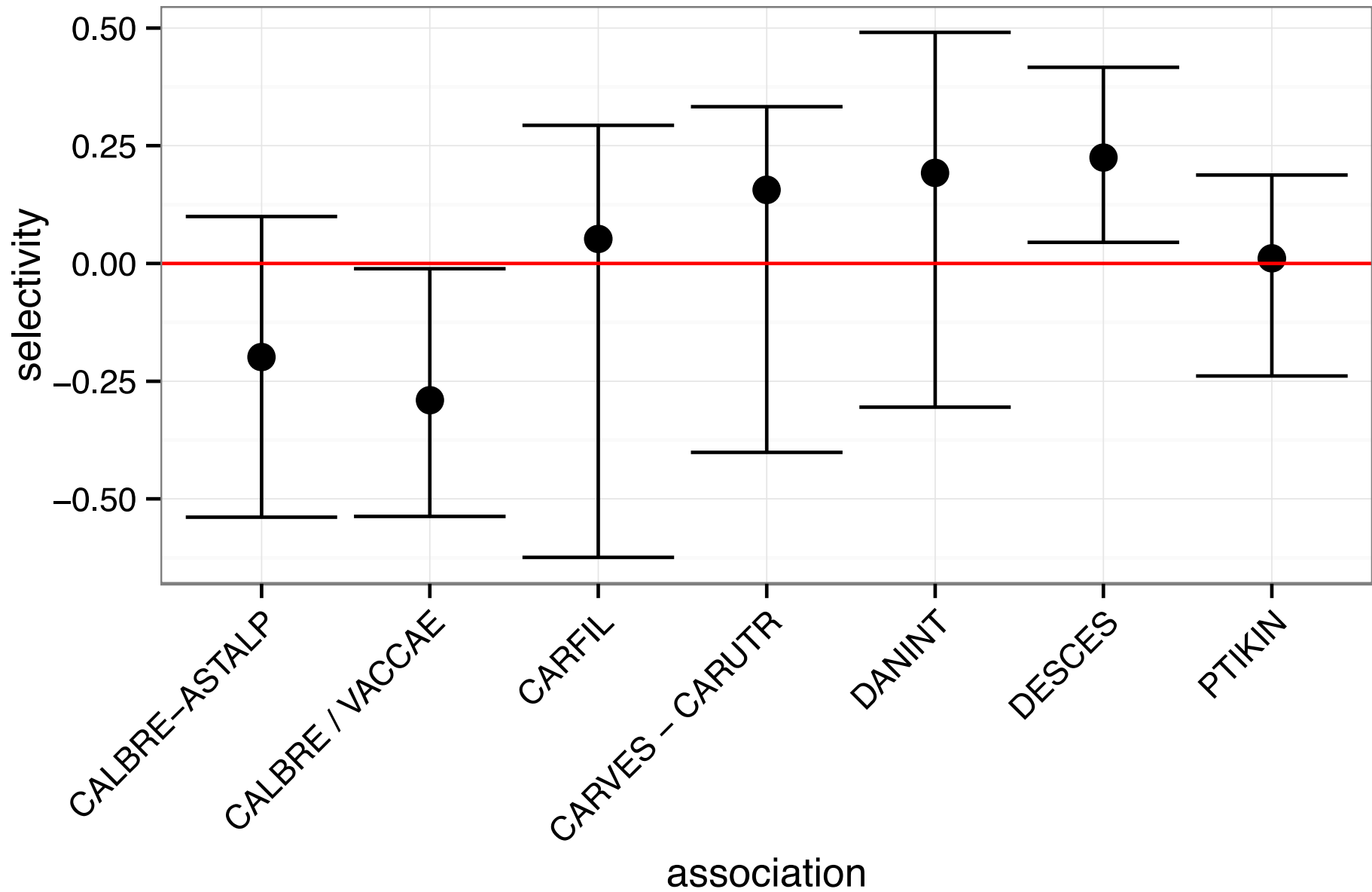












Project Timeline

- 2016
 - Collected animal behavior and ground-based data during 4 pack trips
- 2017
 - Continued collection of animal behavior and ground-based data
 - Compile remotely-sensed data
- 2018
 - Development of habitat use models
 - Produce reports and manuscripts
 - Public data release