

Exclusion Fencing for Feral Hogs at White-tailed Deer Feeders

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Introduction

Feral hogs (*Sus scrofa*) and white-tailed deer (*Odocoileus virginianus*) coexist on millions of hectares throughout Texas (Adams et al. 2005). White-tailed deer management often includes the use of feeders to deliver supplemental feed or bait (Webb et al. 2008). However, most of the supplemental feed from feeders is consumed by non-target species (Lambert and Demarais 2001). Managers often use exclusion fences to keep out feral hogs from deer feeders. Fence designs have been found effective at reducing feral hog movements in various field application (Hone and Atkinson 2003; Reidy et al. 2008), but have not been evaluated at a focal resource, such as deer feeders. Our objectives were to compare 3 exclusion fence designs for their ability to restrict feral hog visitation and enable white-tailed deer visitation during the summer and winter. We hypothesized that our treatment 86 cm in height would restrict feral hog visitation to deer feeders.



Methods

We conducted our study during 2009 on the 3,157-ha Rob and Bessie Welder Wildlife Refuge in San Patricio County. We evaluated 3 exclusion fence designs at deer feeders from 29 June-28 July and from 5 November-21 December. Our fence designs used 6 4.9-m livestock panels constructed into a 9.4-m diameter perimeter circle around deer feeders with the aid of 12 t-posts. Our 3 fence designs were: 1) high fence: 86 cm (graduated hog panel), 2) medium fence: 76 cm (10 cm square utility panel cut in half longitudinally), 3) low fence: 51 cm (10 cm square utility panel cut in thirds longitudinally). Throughout our seasonal trials, we programmed deer feeders to release corn for 10 seconds daily at 0700 and 1700 hours. From day 1-14 of each trial we maintained and monitored deer feeders without construction of exclusion fencing. On day 15 of each trial we randomly chose exclusion fencing treatments and constructed exclusion fencing. Each trial was monitored with a camera 5 m from deer feeders. Cameras were set to capture 5 digital images every 5 seconds at a 2-minute trip interval.

Results

We examined and recorded data from 111,769 digital images during our summer trial and 75,360 digital images during our winter trial. Feral hog percent change in visitation index varied by treatment ($F_{2,11} = 3.92, P = 0.08$). Our low fence design (51 cm) restricted feral hog visitation to deer feeders less than the medium (76 cm) and high (86 cm) fence designs. After construction of the medium and high exclusion fence treatments, no feral hogs gained access to the deer feeders (Figure 1.)

White-tailed deer percent change in visitation index did not differ after construction of the high, medium, or low exclusion fencing (Figure 2). However, deer percent change in visitation index varied by season ($F_{1,11} = 6.89, P = 0.04$), with a greater percent change in visitation index occurring during the summer ($4 \pm 23\%$) than winter ($-74 \pm 9\%$).



Figure 1. Mean (\pm SE) maximum number of visits by feral swine per hour 14 days before and 14 days after construction of exclusion fencing at high (86 cm, $n = 3$), medium (76 cm, $n = 3$), and low (51 cm, $n = 3$) heights around deer feeders in San Patricio County, Texas during the summer (29 June–28 July) and winter (5 November–3 December) of 2009.

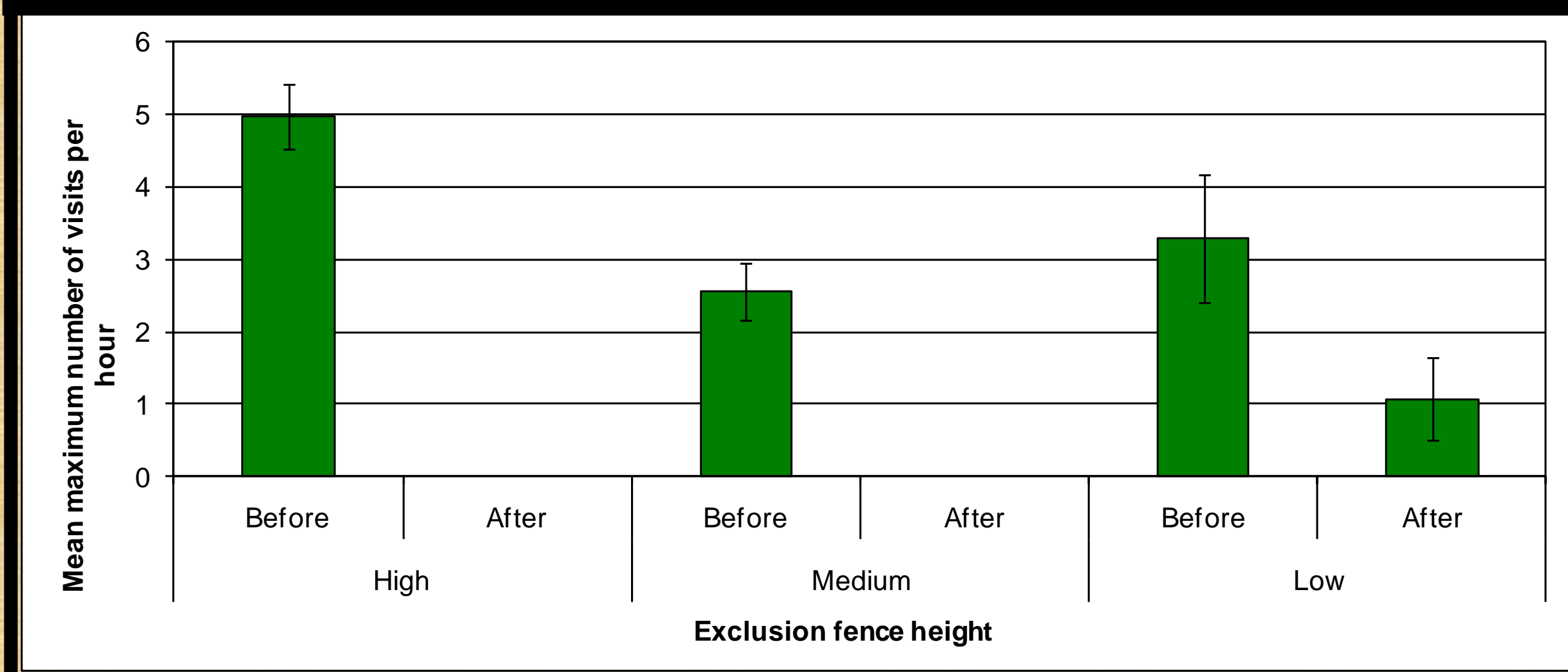
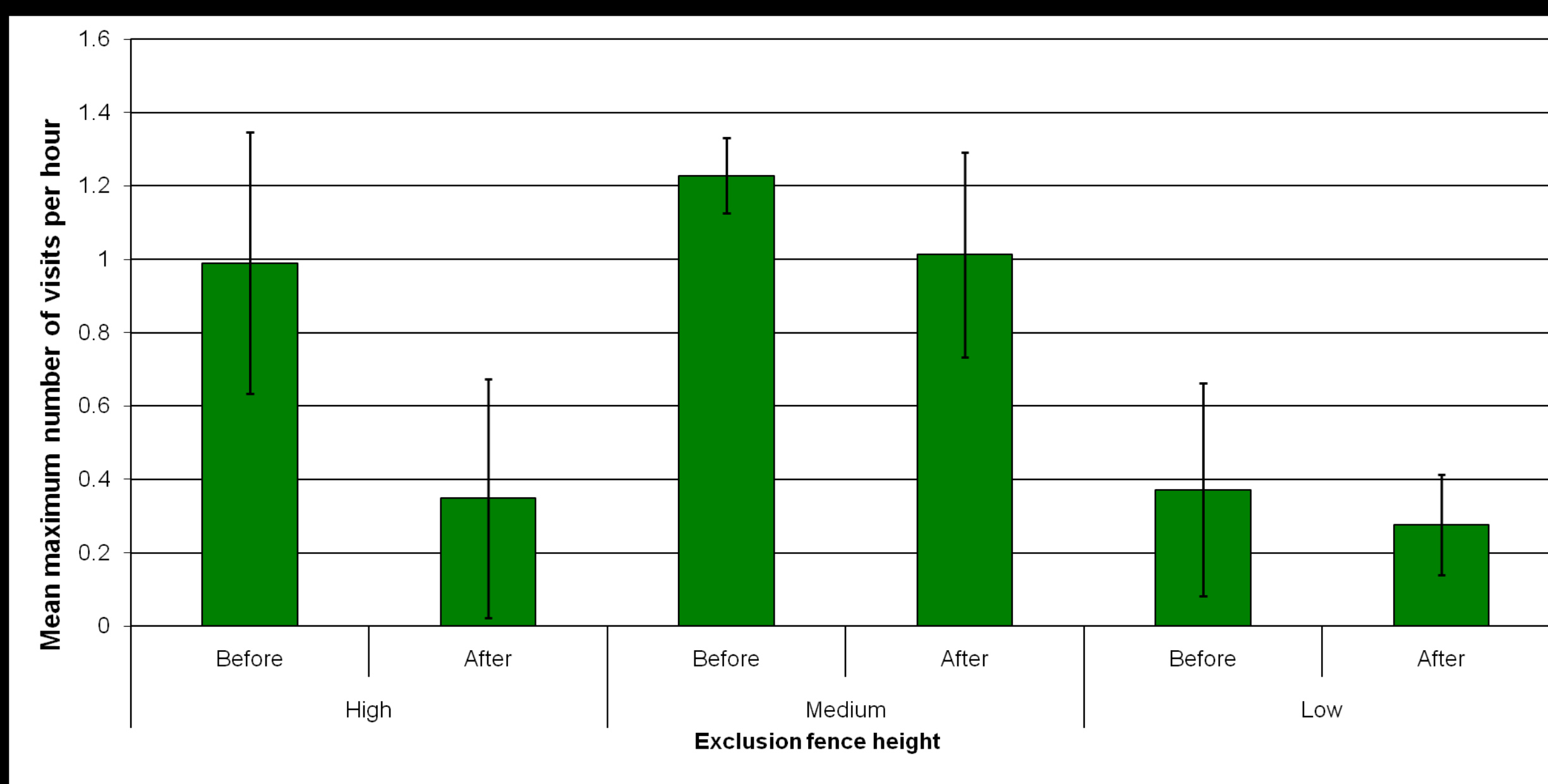


Figure 2. Mean (\pm SE) maximum number of visits by white-tailed deer per hour 14 days before and 14 days after construction of exclusion fencing at high (86 cm, $n = 3$), medium (76 cm, $n = 3$), and low (51 cm, $n = 3$) heights around deer feeders in San Patricio County, Texas during the summer (29 June–28 July) and winter (5 November–3 December) seasons of 2009.



Discussion

Our data suggest that feral hog exclusion fencing at deer feeders should be >51 cm and that fencing 76 cm and 86 cm were equally effective at excluding feral hogs. Including t-posts and t-post clips, our high, medium, and low exclusion fence material costs were \$190, \$187, \$142 per deer feeder, respectively. Our observation of greater deer visitation during the summer compared to the winter trial may be due to severe drought conditions observed during the summer. Near average normal monthly precipitation occurred from September–December 2009 on our study site, which increased available forage during our winter trial. Another explanation for this observation is that deer in our winter trial may have been more interested in breeding activities than foraging activities and visited feeders at a lesser rate. A final explanation is that during our winter trial heavy rainfall occurred after exclusion fence construction. This may have further reduced deer activity and visitation to feeders. However, we caution that our data and recommendations are from short-term seasonal trials and may not apply to situations in which year round supplemental feeding is practiced. With time, over longer durations, and depending upon other available forages, feral hogs will likely challenge even the 86 cm high exclusion fencing. Additional study is needed to formulate appropriate management recommendations in these situations.

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