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Effects of predator exclosures on nest survival of Red-necked Phalaropes

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analyses. We also excluded the nests of Semipalmated Sandpipers that were equipped with geolocators in 2013, as tags had a negative effect on nesting success (Weiser *et al.* 2016).

Data from 1994 were obtained from a previous study at the same site and using similar methods for nest searching, monitoring, and fate designation (see Sandercock 1997). No exclosures were deployed in that year. We used these data to describe nest success for Red-necked Phalaropes, Western, and Semipalmated Sandpipers.

For 2010–2014, we monitored unexclosed Western and Semipalmated Sandpiper nests in all four years. We monitored unexclosed Red-necked Phalarope nests in 2010 and 2013, and deployed predator exclosures on phalarope nests in 2011 and 2012. For nests found with four eggs, we installed exclosures 1–2 days after nest discovery, but we delayed deployment of the exclosure until the start of incubation for nests found during egg-laying, as birds

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and unexclosed nests, respectively). There was no significant difference between the likelihood of resighting a male that previously abandoned an exclosed nest and a male that previously abandoned an unexclosed nest.

survival of Western and Semipalmated Sandpipers varied). In both years with exclosures, this pattern was reversed; hatch success was highest overall for phalaropes. This result suggests that the high hatching success was the result of the exclosures preventing predators from depre- dating clutches, and not simply an effect of year.

Predators did not appear to learn to associate the exclosures with the presence of a nest. Nest exclosures at another location in western Alaska were detrimental due to Long-tailed Jaegers learning to use their presence to locate nests and preying on adults as they left the exclosures (Niehaus *et al.* 2004). At our site, a jaeger was seen sitting on a predator exclosure only once; and in that case the adult successfully escaped, although it later abandoned the nest. Although we regularly saw Parasitic and Long-

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