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Unanga^x subsistence use of northern fur seals in Alaska: changing patterns over the past 2,000 years

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Unanga's Subsistence Use of Northern Fur Seals in Alaska: Changing Patterns Over the Past 2,000 Years

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INTRODUCTION

Northern fur seals (*Callorhinus ursinus*), hereafter referred to simply as fur seals, have been an important commercial resource in the North Pacific for hundreds of years (Roppel and Davey 1965; Roppel 1984; Veltre, this volume) and an important subsistence resource for thousands of years prior to that (Lyon 1937; Lippold 1966; Gustafson 1968; Yesner 1977, 1988; Clark 1986; Etnier 2002, 2007, 2011). The commercial harvest of fur seals began in the mid-eighteenth century (Busch 1985; Gentry 1998; Veltre, this volume), but did not start in earnest until the discovery in 1786 of the Pribilof Islands (St. Paul and St. George, Figure 16.1), the breeding grounds of an estimated original population of at least two million fur seals. The original population may have been as high as five million (Elliott 1882; Stejneger 1896), but most modern analyses accept the lower end of the range as more likely (Lander and Kajimura 1982). Under Russian rule, the commercial harvest was primarily (though not exclusively) land based; after the United States purchased Alaska in 1867, a mix of land-based and pelagic harvests continued until ratification of the North Pacific Fur Seal Treaty of 1911 (Roppel 1984).

The Pribilof fur seal population has been in steady decline since the 1950s, dropping from about two million animals in 1959 to an estimated 550,000 in 2015 (York and Hartley 1981; Lander and Kajimura 1982; Testa 2013; Muto et al. 2016; Veltre, this volume). This is the third major population crash since discovery of the islands. The first two—during 1786–1820 and 1868–1911—have been attributed to overharvesting, including the indiscriminate and wasteful killing of pregnant or nursing females, both on land and at sea (Roppel and Davey 1965; York and Hartley 1981; Roppel 1984). The present population crash, although 60 years in the making, has been partially but not fully explained (York and Hartley 1981; Testa 2013). Potential contributing factors include commercial overharvesting until 1983, when all hunting except for subsistence takes by Alaska Natives was prohibited under amendments to the federal Fur Seal Act of 1966 (Gentry 1998); changes in the base of the food chain (Trites 1992a); fisheries interactions (both as direct mortalities as

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