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Memorandum To: Thomas Gelatt, Marine Mammal Laboratory, Alaska Ecosystem Program
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Subject: Results of breeding season Steller sea lion pup surveys in Russia, 2011-2016

Surveys of Steller sea lion pups in Russian waters have been conducted regularly since the early 2000s. Here, I report counts of live pups made during visits to rookeries (N=10) in Russia during the breeding season (June-July) in 2011 through 2016 (Table 1). Several methods were used to count pups depending on the number of sea lions on land, the topography of the site, the surrounding landscape, and whether there was a field camp on the island (Commander Islands each year and Tuleny Island in 2016). Methods included panoramic photographs taken from the research vessel, visual counts by observers from land-based overlooks (using binoculars), photographs from land-based overlooks, and aerial imagery obtained using an unmanned aircraft (2015 and 2016 only at selected sites).

In 2011, a complete survey of the entire breeding range in Russia was conducted aboard the RV *Afina* from 25 June-17 July. In 2012, the rookery at Tuleny Island (Sakhalin) was monitored from 9 June-8 August and the eastern Kamchatka coast (rookery at Kozlova Cape) and the Commander Islands (Yugo-Vostochny Cape, Medny I.) were surveyed aboard the RV *Afina* from 30 June-4 July. In 2013, a survey was conducted aboard the RV *Afina* from 17-31 July in the northern Sea of Okhotsk (rookeries at Yamsky and Iony Islands) and on Sakhalin Island and field camp at Medny operated from 9 May-7 September. In 2015, a survey was conducted aboard the RV *Afina* from 21 June-17 July in the western Bering Sea (no rookeries), along the eastern Kamchatka coast, and in the Commander and the Kuril Islands (all major rookeries on Raykoke, Brat Chirpoev, Srednego, Lovushki, and Antsiferov Islands). In 2016, a survey was conducted aboard the RV *Afina* from 29 June-10 July in the Kuril Islands as well as along Sakhalin Island in the southern Sea of Okhotsk.

The best estimate of the total count of live Steller sea lion pups at ten major rookeries in 2016 in Russia is 5,218. This estimate is made by summing the 2016 counts from Sakhalin (1,175), the Kuril Islands (2,207), and the Commander Islands (160) with the most recent counts from Kamchatka (2015 count of 83) and northern Sea of Okhotsk (2013 count of 1,593). The most recent year in which pups were counted at rookeries in all Russian regions was 2011, when a total of 5,491 live pups were counted. Overall, pup counts declined 5% in Russia between 2011 and 2016 (best estimate). During that period, pup counts on Sakhalin increased (+52% and +400 pups), but declined in most other regions, particularly in the Kuril Islands (-21% and -580 pups).

In Russia, the vast majority (>95%) of all pups are born at rookeries. Pup counts at all haulouts along Asian coast would not be expected to exceed 100 per year. As such, rookery live pup counts over time are useful to show trends, but are under-estimates of total pup production.

Table 1. Counts of live Steller sea lion pups on major rookeries in Russia, by region, 2011-2016.

Year	Region				
	N Sea of Okhotsk ¹	Sakhalin I. ²	Kuril Is. ³	Kamchatka ⁴	Commander Is. ⁵
2011	1,676	775	2,787	84	169
2012		881		95	182
2013	1,593	1,001			164
2014					158
2015			2,264	83	142
2016		1,175	2,207		160

¹ Matykil I. and Iony I.

² Tuleny I

³ Antsiferov, Lovushki, Raykoke, Srednego, and Brat Chirpoev

⁴ Cape Kozlova

⁵ Medny I. Yugo-Vostochny Cape only