

Glacier Bay Harbor Seal Overwinter Movement Update

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From September 11-15, 2007, satellite tags (Spot 5, Wildlife Computers) were attached to fifteen subadult female harbor seals in Johns Hopkins Inlet to assess habitat use during the non-breeding season and supplement information for proposed stock structure. The satellite tags were glued to the head and programmed to transmit location data and haulout statistics (% of each day spent hauled out) every other day. Locations from each seal are received via System Argos, downloaded, and processed using the Douglas Argos-Filter Algorithm which ingests satellite tracking data and flags improbable locations based on user-defined distance and velocity thresholds (Dave Douglas, USGS Alaska Science Center).

As of November 4, 2007, the satellite tags have been deployed for ~7 weeks and have transmitted ~5,215 locations from all 15 seals. In the course of the last month, various movement strategies are beginning to emerge. Several seals have traveled out of the Glacier Bay/Icy Strait area to the outer coast and Gulf of Alaska. Others have made trips into northern Lynn Canal and upper Chatham Strait. Some seals have remained primarily in the Glacier Bay area (Figure 1).

A few of the seals have made extensive movements out of Glacier Bay during the course of the last month. For example, seal #PV07GB48 departed Glacier Bay around September 21st and ventured out into the Gulf of Alaska making at least 2 forays to the continental shelf margin before returning to the nearshore areas along the outer coast. By October 29th, she had moved to the area near Cape Suckling in the vicinity of Kayak Island, and as of November 2nd, had moved into western Prince William Sound near Port Nellie Juan (Figure 2). The minimum straight-line travel distance from Johns Hopkins Inlet to Prince William Sound is ~900 km and represents one of the most extensive movements documented in harbor seals. Most studies have suggested that harbor seals are relatively sedentary and do not make extensive movements, although seals have been shown to move up to 520 km to overwintering areas from the St. Lawrence estuary (Lesage et al. 2004).

In addition, seal #PV07GB10 traveled to the outer coast after capture and was located in Lituya Bay on September 23rd. After leaving Lituya Bay, she traveled up the coast to Dry Bay and Icy Bay, another glacial fiord where large concentrations of harbor seals are found. She spent at least one day in Icy Bay and then traveled to Yakutat and Disenchantment Bay, another important glacial

ice haulout area for harbor seals in northern SEAK. She remained in the Yakutat and Disenchantment Bay area from ~October 3-25th and then transited back to Lituya Bay and was most recently located near Palma Bay on the outer coast on November 4 (Figure 3).

Three harbor seals (PV07GB15, PV07GB41, and PV07GB49) have traveled into the Lynn Canal area from Glacier Bay. After capture, PV07GB15 traveled to Icy Strait to the Whitestone Harbor area by September 17th. She moved into Lynn Canal in the vicinity of St. James Bay by September 25th and by October 1st she was located near Haines at the intersection of northern Lynn Canal and Taiya Inlet. She remained in the area for a couple of weeks and by October 15th began to travel back down Lynn Canal spending time in the Lincoln Island and North Pass areas and eventually moving back to the Whitestone Harbor area as of November 4th (Figure 4).

Seal #PV07GB49 traveled out to Icy Strait and Dundas Bay during the week of September 21st-29th and then made a quick foray out along the outer coast to Palma Bay around October 1st. She traveled back into Icy Strait spending time in the Mud Bay and Icy Passage areas between October 13th-23rd. On October 25th she traveled around Couverden and was found in Berner's Bay by October 29th. She eventually traveled from Berner's Bay to South Sullivan Island and most recently was located in Berners Bay area near Point Bridget (Figure 4). A third harbor seal (PV07GB41) also traveled into Lynn Canal and upper Chatham Strait in late September and early October; however, she returned to lower Glacier Bay for much of October and was most recently located in the Spider Reef area in the Beardslee Islands (Figure 4).

Finally, several seals have remained primarily within the Glacier Bay/Icy Strait region since capture (Figure 5). At least 3 of those seals have moved into the East Arm. In particular, PV07GB08 moved into Wachusett Inlet in mid-September and has made trips into McBride Inlet and was most recently located in upper Muir Inlet (Figure 5). Several of those seals have also spent time in Adams Inlet, the upper West Arm, and lower Glacier Bay (Figure 5). Currently, none of the tagged seals are located in Johns Hopkins Inlet, where they were captured in September.

These location data represent preliminary findings as more detailed statistical and spatial analyses will be conducted in the future. It is currently unknown to what degree various factors may influence the movements of harbor seals from Glacier Bay. Results from this study will substantially contribute to our knowledge of harbor seal ecology, particularly during winter, supplement stock structure information, and ultimately underscore the importance of Glacier Bay as an important breeding area for harbor seals throughout southeastern Alaska.

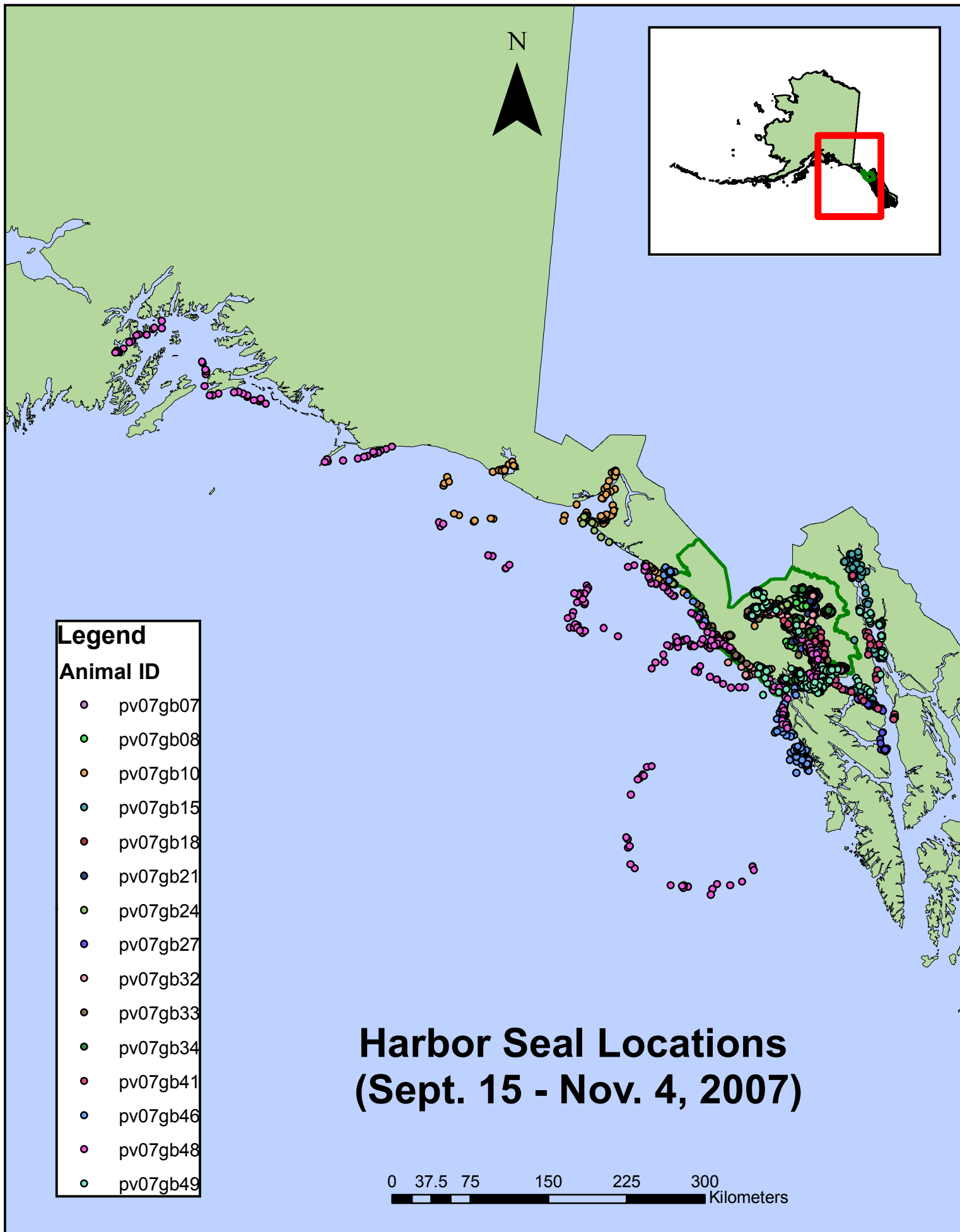


Figure 1. Satellite telemetry locations from harbor seals captured in Johns Hopkins Inlet in September 2007. Locations represent the time period from capture through November 4, 2007.

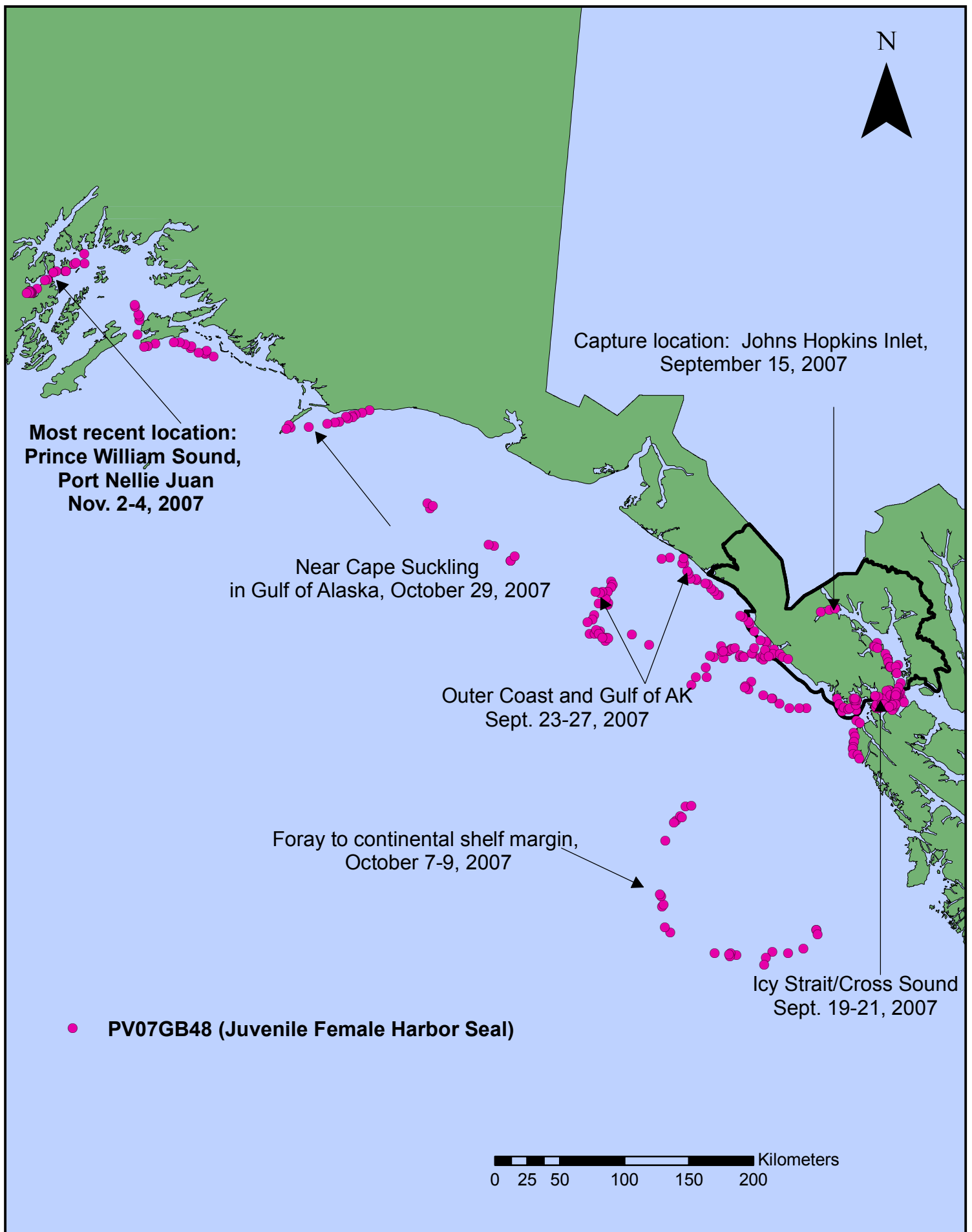


Figure 2. Satellite telemetry locations from harbor seal PV07GB48 from September 15 - November 4, 2007. Satellite tags (Spot 5, Wildlife Computers) were programmed to transmit every other day.

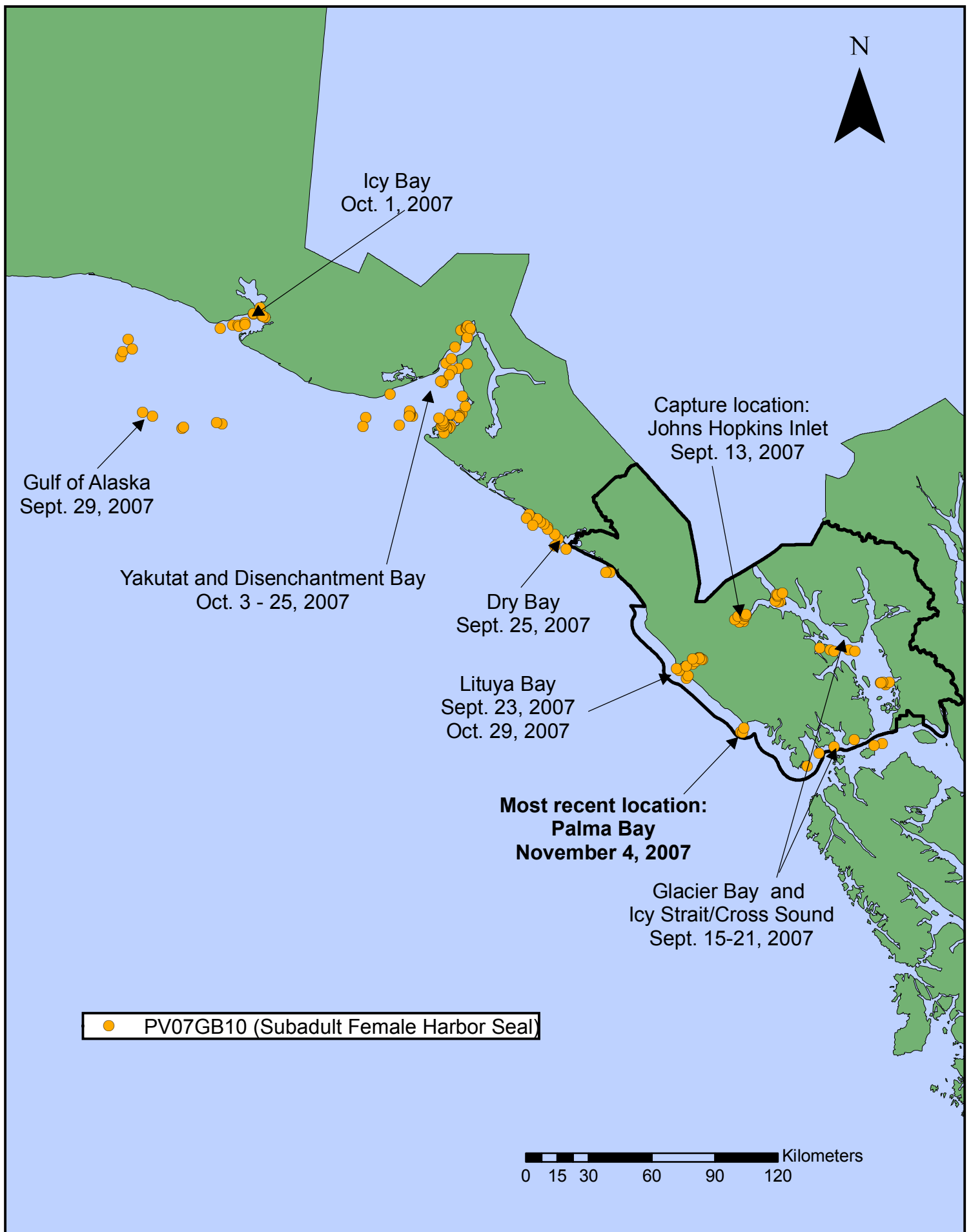


Figure 3. Satellite telemetry locations from harbor seal PV07GB10 from September 13 - November 4, 2007. Satellite tags (Spot 5, Wildlife Computers) were programmed to transmit every other day.

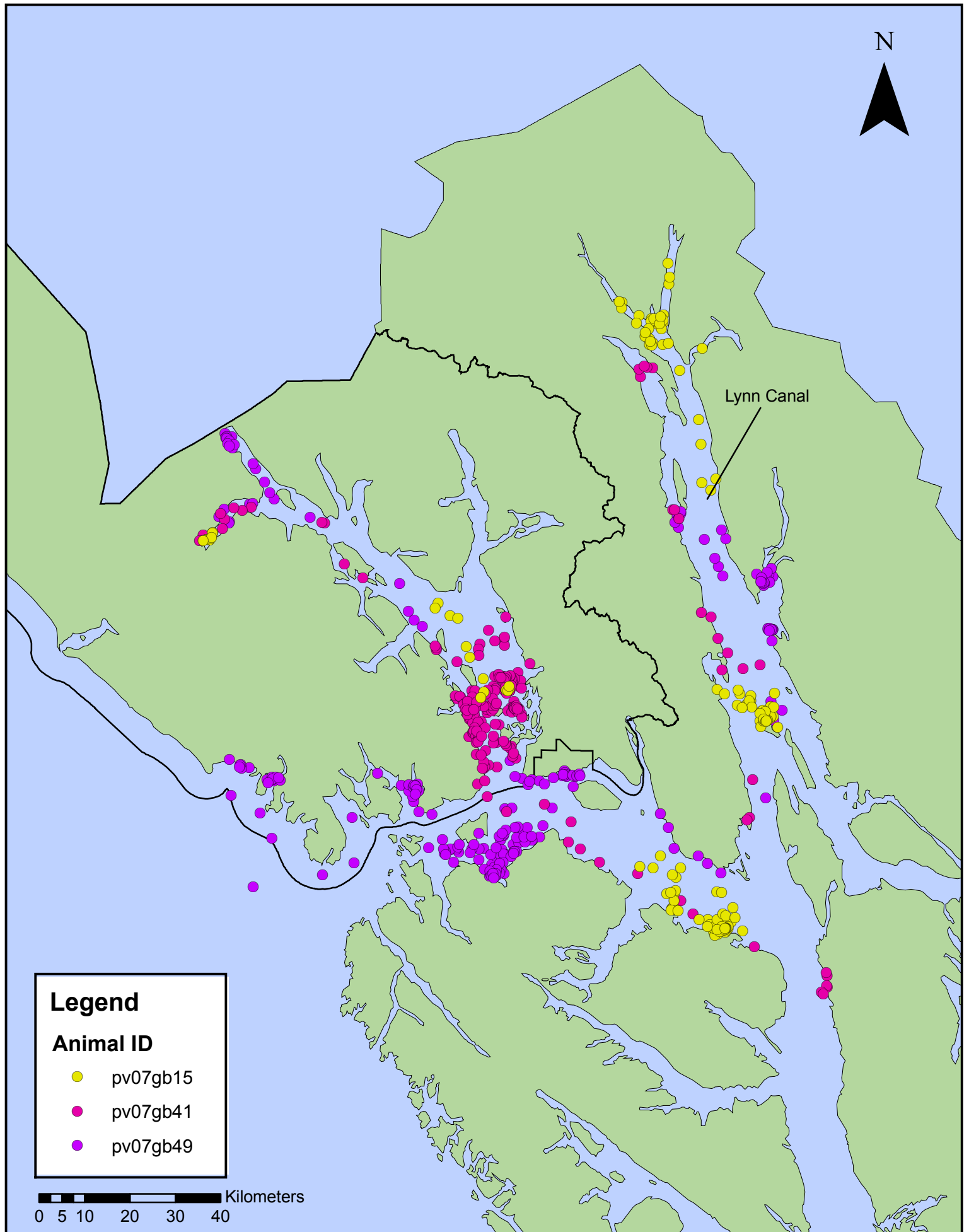


Figure 4. Satellite telemetry locations from harbor seals that traveled into Lynn Canal. Seals were captured in Johns Hopkins Inlet in September 2007. Locations represent the time period from capture through November 4, 2007.

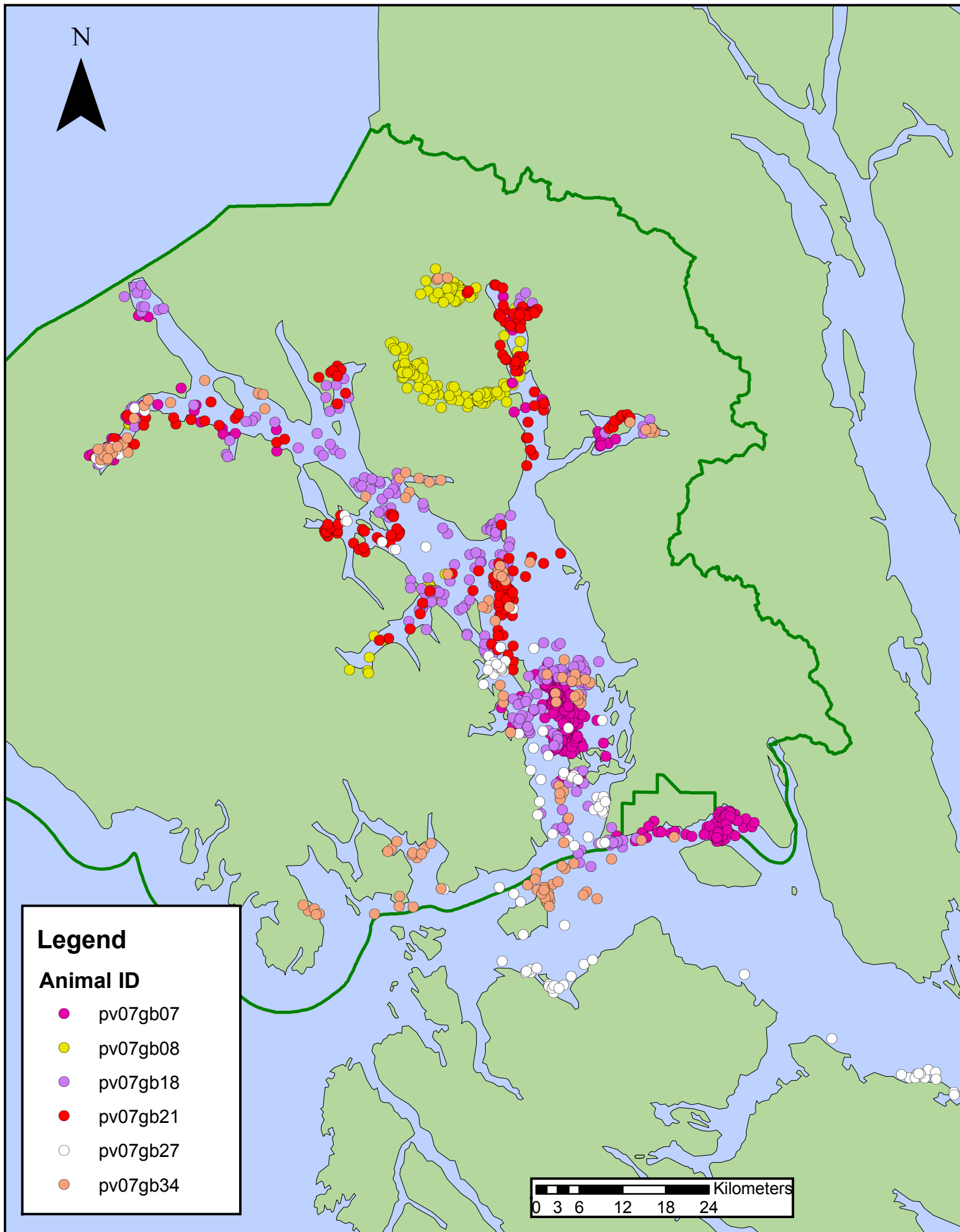


Figure 5. Satellite telemetry locations from harbor seals that have remained primarily in the Glacier Bay and Icy Strait/Cross Sound region since capture in September 2007.