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Spatial confirmation of vocal communication between a killer whale calf and its natal family

Scott Veirs^a, Val Veirs^b and Jason Wood^a

^aBeam Reach Marine Science and Sustainability School, 7044 17th Ave NE, Seattle, WA 98115, USA

^bColorado College, Department of Physics, Colorado Springs, CO 80903, USA

We recorded an interchange of vocal signaling between a four-year-old Southern Resident killer whale and its natal family members (mother and brother). This information was recorded on a 30-m-long linear array of hydrophones that was towed behind our electric motor powered research vessel. Over the course of about 1/2 hour we recorded signals from these isolated orcas about 500 m offshore of San Juan Island, WA. Surface locations of the orcas were documented with visual accounts, photographs, video, and - during the latter portion of the encounter - with a hand-bearing compass. During a six minute interval of the recording we have localized ~70 vocalizations that we can associate with the surface positions of either the juvenile or the mother-brother pair (they were close together). The central three minutes of this interval document an event in which the juvenile left the family group, swam toward our vessel, approached it within about 10m, turned abruptly away during a rapid call-response sequence with the mother and/or brother, and then rejoined the natal group. This rare event informs killer whale vocal development, repertoire, communication, and active space.