



Addendum to the 2006 Cook Inlet Vessel Traffic Study

Analysis of 12 Months of Vessel
Tracking Data Provided by the
Marine Exchange of Alaska



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Analysis of 12 Months of Cook Inlet Vessel Tracking Data Provided by the Marine Exchange of Alaska

The Marine Exchange of Alaska¹ has provided Cook Inlet RCAC with vessel tracking data from its seven Automatic Identification System (AIS)² receivers in Cook Inlet. As ships equipped with AIS transponders entered and departed Cook Inlet³, their position, destination, and other ship particulars were recorded, stored, and provided to CIRCAC for analysis. In addition to entry recordings, AIS positions were noted and stored as vessels came in range of one of the Marine Exchange AIS receivers while operating within Cook Inlet. In all, over 2000 AIS activations between 01 June 2007 and 31 May 2008 (365 days) were analyzed by Cape International, Inc. AIS data allowed counting and sorting of vessels by type and calculation of the days each vessel operated within Cook Inlet. The Cook Inlet vessel-resident days⁴ shown in Figure 2 and Table 1 will be useful for any subsequent formal risk analysis.

During the twelve months studied:

- 395 deep-draft vessel⁵ voyages (freight ship, tank ship, ferry) were recorded. This indicates a decrease in vessel traffic of approximately 6% when compared to 2005-2006 data. The decrease in activity is primarily due to the closure of the Agrium facility in Nikiski.
- Twenty-nine (29) freight ships made 222 voyages to Cook Inlet resulting in 585 cargo-ship resident days in Cook Inlet.

¹ The Marine Exchange of Alaska (MXAK) is a non-profit maritime organization that provides information, communications, and services for safe, efficient and environmentally responsible maritime operations. MXAK has developed a vessel tracking system that uses both AIS and satellite transponders to track the locations of vessels in Alaska and around the world.

² AIS was introduced by the International Maritime Organization to improve safety in the maritime traffic. All ships equipped with AIS transponders exchange their current movement data such as position, course and speed as well as other pertinent information via the VHF channels 87B and 88B. For vessels on international voyages and all passenger ships at or over 300 gross registered tons (GRT) AIS is mandatory. For vessels on national (domestic) voyages AIS installation is mandatory from 500 GRT.

³ An AIS "Watchdog" passage line is established at the entrance to Cook Inlet along a line drawn between 58° 56.7' N, 153° 25.3' W and 59° 15.0' N, 151° 57.0' W. See Figure 1.

⁴ Cook Inlet vessel resident-days refer to the number of days a particular vessel or type of vessel operated in Cook Inlet during the 12 months studied. Each fraction of a day within Cook Inlet (i.e. the day that the vessel entered or departed Cook Inlet) was counted as a resident-day.

⁵ 'Deep-draft vessel' is a somewhat arbitrary but descriptive term used to distinguish ocean-going large ships from fuel barges and other vessels that are more than 300 gross tons but not considered ships. A deep-draft vessel generally has a draft greater than 4 meters.

- Twenty-two (22) tank ships made 86 port calls at Cook Inlet, spending approximately 532 tank ship resident-days in Cook Inlet, either in transit, at berth, or moving between Nikiski and the Drift River Terminal.
- Ten vessels managed among five operators account for 87% of the deep-draft vessel voyages and 75% of the deep draft vessel-resident days in Cook Inlet. See Table 1. As noted in the 2006 study, monitoring and cooperative partnerships with only a few operators and ships will promote safe shipping for the vast majority of high consequence carriers.
- Twenty-one (21) different towing vessels made 89 tows to and from Cook Inlet. AIS reports do not indicate the types of barge or cargo under tow.
- Thirteen tugs (13) spent some part of the period working in Cook Inlet.

These numbers compare favorably with the estimates reported in the 2006 vessel traffic study when the Nikiski Agrium facility closure is considered.

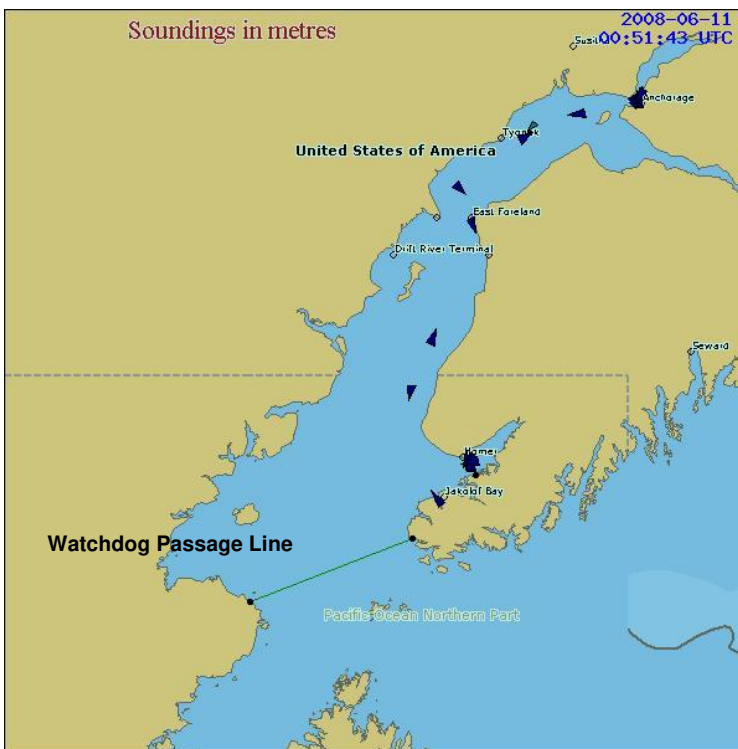


Figure 1: AIS vessel tracking ‘snapshot’ maintained by Marine Exchange of Alaska. As vessels pass the Cook Inlet entrance watchdog passage line the vessel type and destination is recorded and stored for analysis.

Limitations regarding this data

1. AIS is designed to track the position of individual vessels. It is not designed for analysis of traffic patterns. The Marine Exchange was, however, able to provide much information in a spreadsheet format that was helpful in preparing this report.
2. The Marine Exchange notes that domestic fishing vessels with installed AIS transponders are on the increase. However, there were not enough fishing vessels in Cook Inlet using AIS transponders to characterize fishing vessel traffic.
3. AIS activations probably under-report vessel activity in Cook Inlet by about 5% due to vessel operator input errors and occasional transmission outages.
4. As noted earlier, AIS data does not report the barge type or cargo under tow by a tug or towboat.

Figure 2: Cook Inlet Deep Draft Vessel Resident-Days

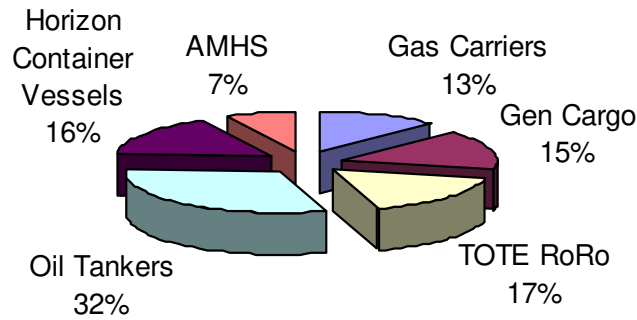


Table 1: Vessels Frequently Trading in Cook Inlet (1 June 2007 - 31 May 2008)

From Published Schedules and AIS Notifications

Name	Annual Calls	Calling at	Cook Inlet Vessel Resident Days	Type	Year Built	Length (Meters)	Gross Tons	Bunker or Cargo Capacity (Barrels)	Owner or Operator
Tustumena	80	Homer/Seldovia	80	Ferry	1973	81.8	2174	1598 Diesel	Alaska Marine Highway
North Star	52	Anchorage	104	Ro-Ro	2003	258	35825	12589 IFO	TOTE
Midnight Sun	52	Anchorage	104	Ro-Ro	2003	258	35825	12589 IFO	TOTE
Horizon Tacoma	30	Anchorage	60	Container	1987	216.4	20965	21870 IFO	Horizon Lines
Horizon Anchorage	31	Anchorage	67	Container	1987	216.4	20965	21870 IFO	Horizon Lines
Horizon Kodiak	31	Anchorage	62	Container	1987	216.4	20965	21870 IFO	Horizon Lines
Seabulk Arctic	22	Nikiski & Drift River/ Tesoro	132	Tankship	1998	183	30415	342042 Cargo Oil	Lightship Tankers
Seabulk Pride	20	Nikiski & Drift River/ Tesoro	142	Tankship	1998	183	30415	342000 Cargo Oil	Lightship Tankers
Arctic Spirit (Sun) ⁶	14	Nikiski/ Conoco Phillips	80	Gas Ship	1993	239	29188	22340 IFO 88k m ³ gas	Teekay Corp
Polar Spirit (Eagle) ⁶	13	Nikiski/ Conoco Phillips	65	Gas Ship	1993	239	66174	22379 IFO 88k m ³ gas	Teekay Corp
		Voyages	Resident Days						
Frequent Vessels		345	896						
All deep draft vessels		395	1204						
All tank ships		86	532						
All freight ships		222	585						
All ferries		87	87						

Note: IFO is intermediate (persistent) fuel oil.

⁶ Formerly the Polar Eagle and Arctic Sun, the Polar Spirit and Arctic Spirit were purchased by Teekay Corp in December 2007 from Conoco-Phillips/Marathon Oil and then chartered back to the sellers until April 2009 with options exercisable by the charterers to extend up to an additional seven years. (www.money.aol.com/news March 18, 2008)