Timely notification of the return of destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and terms of an APO is a violation which is subject to sanction.

We are publishing these final results and notice in accordance with sections 751(c), 752(c), and 777(i)(1) of the Act.

Dated: March 17, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2016–07186 Filed 3–29–16; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XE442

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Subsea Cable-Laying Operations in the Bering, Chukchi, and Beaufort Seas

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received an application from Quintillion Subsea Operations, LLC (Quintillion) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to a subsea cable-laying operation in the state and federal waters of the Bering, Chukchi, and Beaufort seas, Alaska, during the open-water season of 2016. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an IHA to Quintillion to incidentally take, by Level B Harassments, marine mammals during the specified activity.

DATES: Comments and information must be received no later than April 29, 2016.

ADDRESSES: Comments on the application should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is *itp.guan@noaa.gov.* Comments sent via email, including all attachments, must not exceed a 25-megabyte file size. NMFS is not responsible for comments sent to addresses other than those provided here.

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

An electronic copy of the application may be obtained by writing to the address specified above, telephoning the contact listed below (see **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm.* The following associated documents are also available at the same Internet address: Plan of Cooperation. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

NMFS is also preparing a draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) and will consider comments submitted in response to this notice as part of that process. The draft EA will be posted at the foregoing internet site.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such takings are set forth. NMFS has defined ''negligible impact'' in 50 CFR 216.103 as ''an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.''

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Summary of Request

On October 29, 2015, NMFS received an IHA application and marine mammal mitigation and monitoring plan (4MP) from Quintillion for the taking of marine mammals incidental to conducting subsea cable laying activities in the U.S. Bering, Chukchi, and Beaufort seas. After receiving NMFS comments on the initial application, Quintillion made revisions and updated its IHA application and 4MP on February 3, 2016. NMFS determined that the application and the 4MP were adequate and complete on February 5, 2016.

Quintillion proposes to install a subsea fiber optic network cable along the northern and western coasts of Alaska in the U.S. Bering, Chukchi, and Beaufort seas during the 2016 Arctic open-water season. The proposed activity would occur between June 1 and October 31, 2016. Noise generated from cable vessel's dynamic positioning thruster could impact marine mammals in the vicinity of the activities. Take, by Level B harassments, of individuals of 8 species of marine mammals is proposed to be authorized from the specified activity.

Description of the Specified Activity

Overview

On October 29, 2015, NMFS received an application from Quintillion requesting an authorization for the harassment of small numbers of marine mammals incidental to subsea cable-laying operations in the Bering, Chukchi, and Beaufort seas off Alaska. After addressing comments from NMFS, Quintillion modified its application and submitted revised applications and 4MP on February 3, 2016. Quintillion's proposed activities discussed here are

based on its February 3, 2016, IHA application and 4MP.

Dates and Duration

The proposed subsea cable-laying operation is planned for the 2016 open-water season (June 1 to October 31). All associated activities, including mobilization, pre-lay grapnel run (PLGR), cable-laying, post lay inspection and burial (PLIB), and demobilization of survey and support crews, would occur inclusive of the above seasonal dates. It is expected that the operations may last all season (approximately 150 days).

Specified Geographic Region

The planned fiber optic cable-laying project will occur in the offshore waters of the Bering, Chukchi, and Beaufort seas between Nome and Oliktok Point (the latter located 260 km [162 mi] southeast of Barrow). The specific area is provided in Figure 1 of Quintillion's IHA application.

Detailed Description of Activities

I. Cable Network

The proposed subsea cable network is shown in Figure 1 of the IHA application. The cable network includes the main trunk line and six branch lines. The main trunk line is 1,317 km (818 mi) in length, and will run from the tail of the Nome branch line to the tail of the Oliktok Point branch line (Table 1). The branch lines range between 27 km (17 mi) and 233 km (145 mi) long. The branch lines connect to the main trunk line at the branching unit (BU), which is a piece of hardware that allows the interconnection of the branch cable from the main trunk line to the shore end facility. The cable is also ''repeatered'' in that approximately every 60 km (37 mi) a repeater is attached to the cable that amplifies the signal. Collectively, the cable, BUs, and repeaters make up the ''submerged plant.'' Depending on bottom substrate, water depth, and distance from shore, the cable would either lay on the ocean floor or will be buried using a plough or a remote operating vehicle (ROV) equipped for burial jetting.

II. Vessels

The cable-laying operations will be conducted from two ships, the *Ile de Brehat and the Ile de Sein,* and a large cable-laying barge. Both ships are 140 m (460 ft) in length, 23 m (77 ft) in breadth, with berths for a crew of 70. The ships are propelled by two 4,000 kW fixed-pitch propellers. Dynamic positioning is maintained by two 1,500 kW bow thrusters, two 1,500 kW aft thrusters, and one 1,500 kW fore thruster.

Support vessels include a tug and barge that will remain in the vicinity of the main lay vessel. During cable laying activities occurring in nearshore waters too shallow of the *Ile de Brehat,* the tug and barge (using a dive team) will lay the final shore ends of the cable.

The branch line segment between Oliktok Point and BU Oliktok crosses a hard seafloor that poses a more unique challenge to burying the cable in the ice scour zone. For this segment the *CB Networker,* a 60-m (197-ft) powered cable-lay barge, will be used because it includes a vertical injector powerful enough to cut a cable trench through the hard sediments found off Oliktok Point. The *CB Networker* is also large enough to operate offshore and will lay the full 75 km cable length between Oliktok Point and BU Oliktok.

TABLE 1—CABLE NETWORK ROUTE LENGTHS FOR EACH SEGMENT

	Segment (km)						Total
	Main	Branch lines					
		Oliktok Barrow		Wainwright	Point Hope	Kotzebue	Nome	
Route Length	1,317	74	27	31	27	233	195	1,904

III. Pre-Lay Grapnel Run

Before cable is laid, a pre-lay grapnel run (PLGR) will be carried out along the proposed cable route where burial is required. The objective of the PLGR operation is the identification and clearance of any seabed debris, for example wires, hawsers, wrecks, or fishing gear, which may have been deposited along the route. Any debris recovered during these operations would be discharged ashore on completion of the operations and disposed of in accordance with local regulations. If any debris cannot be recovered, then a local reroute would be planned to avoid the debris. The PLGR operation would be to industry standards employing towed grapnels; the type of grapnel being determined by the nature of the seabed. The PLGR operation would be conducted by a local tug boat ahead of the cable-laying.

IV. Cable-Laying

The objective of the surface laying operation is to install the cable as close as possible to the planned route with the correct amount of cable slack to enable the cable to conform to the contours of the seabed without loops or suspensions. A slack plan would be developed that uses direct bathymetric data and a catenary modeling system to control the ship and the cable pay out speeds to ensure the cable is accurately placed in its planned physical position.

Where the BAS has determined that cable burial is possible, the cable would be buried using various methods. In water depths greater than about 12 m (about 40 ft), the cable would be buried using an SMD Heavy Duty HD3 Plough. The plough has a submerged weight of 25 tonnes (27.6 tons). The plough is pulled by the tow wire and the cable fed through a cable depressor that pushes it into the trench. Burial depth is controlled by adjusting the front skids. The normal tow speed is approximately 600 m/hr (approximately 0.37 mph).

In water depths less than 12 m (40 ft), burial would be by jet burial using a towed sled, tracked ROV, or by diver jet burial, subject to seabed conditions in the area. The ROV would be used in areas accessible to the main lay vessel. The planned ROV, the ROVJET 400 series, is 5.8 m (19.0 ft) long and 3.4 m (11.2 ft) wide and weighs 9.1 tonnes (10 tons) in air, and has both a main and forward jet tool cable of trenching to 2 m (6.6 ft) depth.

Nearer to shore, where seasonal ice scouring occurs, the cable with be floated on the surface and then pulled through an existing horizontal directional drilling (HDD) bore pipe to the beach man hole (BMH) where it would be anchor-clamped and spliced to the terrestrial cable. The floated cable portion is then lowered to the seabed by divers and buried (using a post-lay burial method as described above) from the HDD Bore pipe seaward.

V. Post Lay Inspection and Burial

While it is expected that the cable trench would fill back in by natural current processes, it is important to ensure that cable splices and BUs are

fully buried, and that there are no unnecessary plough skips at locations where burial is critical. To ensure proper burial, a post lay inspection and burial (PLIB) would be conducted using the ROVJET 400 series mentioned above. It is expected that PLIB would be necessary for no more than about 10 km (6.2 mi) of the cumulative planned burial routes.

Description of Marine Mammals in the Area of the Specified Activity

The Bering, Chukchi, and Beaufort seas support a diverse assemblage of marine mammals. Table 2 lists the 12 marine mammal species under NMFS jurisdiction with confirmed or possible occurrence in the proposed project area.

TABLE 2—MARINE MAMMAL SPECIES WITH CONFIRMED OR POSSIBLE OCCURRENCE IN THE PROPOSED ACTION AREA

Common name	Scientific name	Status	Occurrence	Seasonality	Range	Abundance
Odontocetes:						
Beluga whale (Beaufort Sea stock).	*Delphinapterus leucas*	.....	Common	Mostly spring and fall with some in summer.	Mostly Beaufort Sea ..	39,258
Beluga whale (eastern Chukchi Sea stock).	.....	.....	Common	Mostly spring and fall with some in summer.	Mostly Chukchi Sea ...	3,710
Beluga whale (eastern Bering Sea stock).	.....	.....	Common	Year round	Bering Sea	19,186
Killer whale (Alaska resident stock).	*Orcinus orca*	.....	Occasional/Extralimital	Mostly summer and early fall.	California to Alaska	2,347
Harbor porpoise (Bering Sea stock).	*Phocoena phocoena* ..	.....	Occasional/Extralimital	Mostly summer and early fall.	California to Alaska	48,215
Mysticetes:						
* Bowhead whale (W. Arctic stock).	*Balaena mysticetus*	Endangered; Depleted	Common	Mostly spring and fall with some in summer.	Russia to Canada	19,534
Gray whale (E. North Pacific stock).	*Eschrichtius robustus*	.....	Somewhat common ...	Mostly summer	Mexico to the U.S. Arctic Ocean.	20,990
* Fin whale (N. East Pacific).	*Balaenoptera physalus*.	Endangered; Depleted	Rare	Mostly summer	N.E. Pacific Ocean	1,650
* Humpback whale (Central North Pacific stock).	*Megaptera novaeangliae*.	Endangered; Depleted	Rare	Mostly summer	North Pacific Ocean ...	10,103
* Humpback whale (western North Pacific stock).	*Megaptera novaeangliae*.	Endangered; Depleted	Rare	Mostly summer	North Pacific Ocean ...	1,107
Pinnipeds:						
* Bearded seal (Alaska stock).	*Erigathus barbatus*	Threatened; Depleted	Common	Spring and summer ...	Bering, Chukchi, and Beaufort Seas.	155,000
* Ringed seal (Alaska stock).	*Phoca hispida*	Threatened; Depleted	Common	Year round	Bering, Chukchi, and Beaufort Seas.	249,000
Spotted seal (Alaska stock).	*Phoca largha*	.....	Common	Summer	Japan to U.S. Arctic Ocean.	460,268
Ribbon seal (Alaska stock).	*Histriophoca fasciata*	.....	Occasional	Summer	Russia to U.S. Arctic Ocean.	49,000

* Endangered, threatened, or species of concern under the Endangered Species Act (ESA); Depleted under the MMPA.

Among these species, bowhead, humpback, and fin whales, and ringed and bearded are listed as endangered or threatened species under the Endangered Species Act (ESA). In addition, walrus and the polar bear could also occur in the Bering, Chukchi, and Beaufort seas; however, these species are managed by the U.S. Fish and Wildlife Service (USFWS) and are not considered in this Notice of Proposed IHA.

Of all these species, bowhead and beluga whales and ringed, bearded, and spotted seals are the species most frequently sighted in the proposed activity area. The proposed action area in the Bering, Chukchi, and Beaufort seas also includes areas that have been identified as important for bowhead whale reproduction during summer and fall and for beluga whale feeding and reproduction in summer.

Most bowheads fall migrate through the Alaskan Beaufort in water depths between 15 and 200 m (50 and 656 ft) deep (Miller et al. 2002), with annual variability depending on ice conditions. Hauser et al. (2008) conducted surveys for bowhead whales near the Colville River Delta (near Oliktok Point) during August and September 2008, and found most bowheads between 25 and 30 km (15.5 and 18.6 mi) north of the barrier islands (Jones Islands), with the nearest in 18 m (60 ft) of water about 25 km (16 mi) north of the Colville River Delta. No bowheads were observed inside the 18-m (60-ft) isobath. Most of the cable-lay activity planned for the Beaufort Sea will occur in water deeper than 15 m (50 ft) where migrating bowhead whales could most likely be encountered.

Three stocks of beluga whale inhabit the waters where cable-lay is planned to occur: Beaufort Sea, Eastern Chukchi Sea, and Eastern Bering Sea (O'Corry-Crowe et al. 1997). All three stocks winter in the open leads and polynyas of the Bering Sea (Hazard 1988). In spring, the Beaufort Sea stock migrates through coastal leads more than 2,000 km (1,200 mi) to their summering grounds in the Mackenzie River delta where they molt, feed, and calve in the warmer estuarine waters (Braham et al. 1977). In late summer, these belugas move into offshore northern waters to feed (Davis and Evans 1982, Harwood et al. 1996, Richard et al. 2001). In the fall, they begin their migration back to their wintering grounds generally following an offshore route as they pass through the western Beaufort Sea (Richard et al. 2001).

The Beaufort Sea stock beluga whales take a more coastal route during their fall migration, but compared to the vanguard of population and the survey

effort expended, nearshore travel appears to be relatively rare. Most belugas recorded during aerial surveys conducted in the Alaskan Beaufort Sea in the last two decades were found more than 65 km (40 mi) from shore (Miller et al. 1999, Funk et al. 2008, Christie et al. 2010, Clarke and Ferguson 2010, Brandon et al. 2011). For the most part, beluga whales from this stock are expected to occur well north of the proposed cable route through the Beaufort Sea at the time of cable-lay activity.

The Eastern Chukchi Sea beluga whale stock summers in Kotzebue Sound and Kasegaluk Lagoon where they breed and molt, and then in late summer and fall they also move in the Beaufort Sea (Suydam et al. 2005). Suydam et al. (2005) satellite-tagged 23 beluga whales in Kasegaluk Lagoon and found nearly all the whales move into the deeper waters of the Beaufort Sea post-tagging. However, virtually none of the whales were found in continental shelf waters (<200 m deep) of the Beaufort Sea, and all were in waters at least 65 km (40 mi) north of the northern Alaska coastline. The most recent stock estimate is 3,710 animals (Allen and Angliss 2015). The planned cable-lay activity is most likely to encounter this stock whale laying the Kotzebue and Wainwright branch lines, but the routes do avoid the Kasegaluk Lagoon breeding and molting area.

There is little information on movements of the East Bering stock of beluga whales, although two whales were satellite tagged in 2012 near Nome wintered in Bristol Bay (Allen and Angliss 2015). These whales might be encountered while laying the Nome branch line.

In addition, a few gray whales are expected to be encountered along the main trunk line route through the north Bering and Chukchi seas. However, they are expected to be commonly observed along the nearshore segments of the branch lines, especially the Wainwright branch where they are commonly found in large feeding groups.

Three of the ice seal species—ringed, bearded, and spotted seals—are fairly common in the proposed subsea cable laying areas. However, there are no pinnipeds haulouts in the vicinity of the action area.

Further information on the biology and local distribution of these species can be found in Quintillion's application (see **ADDRESSES**) and the NMFS Marine Mammal Stock Assessment Reports, which are available online at: *http://www.nmfs.noaa.gov/pr/sars/species.htm.*

Potential Effects of the Specified Activity on Marine Mammals

This section includes a summary and discussion of the ways that the types of stressors associated with the specified activity (*e.g.,* operation of dynamic positioning thrusters) have been observed to or are thought to impact marine mammals. This section may include a discussion of known effects that do not rise to the level of an MMPA take (for example, with acoustics, we may include a discussion of studies that showed animals not reacting at all to sound or exhibiting barely measurable avoidance). The discussion may also include reactions that we consider to rise to the level of a take and those that we do not consider to rise to the level of a take. This section is intended as a background of potential effects and does not consider either the specific manner in which this activity will be carried out or the mitigation that will be implemented or how either of those will shape the anticipated impacts from this specific activity. The ''Estimated Take by Incidental Harassment'' section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The ''Negligible Impact Analysis'' section will include the analysis of how this specific activity will impact marine mammals and will consider the content of this section, the ''Estimated Take by Incidental Harassment'' section, the ''Proposed Mitigation'' section, and the ''Anticipated Effects on Marine Mammal Habitat'' section to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

When considering the influence of various kinds of sound on the marine environment, it is necessary to understand that different kinds of marine life are sensitive to different frequencies of sound. Based on available behavioral data, audiograms have been derived using auditory evoked potentials, anatomical modeling, and other data. Southall *et al.* (2007) designate ''functional hearing groups'' for marine mammals and estimate the lower and upper frequencies of functional hearing of the groups. The functional groups and the associated frequencies are indicated below (though animals are less sensitive to sounds at the outer edge of their functional range and most sensitive to sounds of frequencies within a smaller range somewhere in the middle of their functional hearing range):

- Low frequency cetaceans (13 species of mysticetes): Functional hearing is estimated to occur between approximately 7 Hz and 25 kHz;
- Mid-frequency cetaceans (32 species of dolphins, six species of larger toothed whales, and 19 species of beaked and bottlenose whales): Functional hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High frequency cetaceans (eight species of true porpoises, six species of river dolphins, *Kogia,* the franciscana, and four species of cephalorhynchids): Functional hearing is estimated to occur between approximately 200 Hz and 180 kHz;
- Phocid pinnipeds (true seals): Functional hearing is estimated between 75 Hz to 100 kHz; and
- Otariid pinnipeds (sea lions and fur seals): Functional hearing is estimated between 100 Hz to 48 kHz.

Species found in the vicinity of Quintillion subsea cable-laying operation area include four low-frequency cetacean species (Bowhead whale, gray whale, humpback whale, and fin whale), two mid-frequency cetacean species (beluga whale and killer whale), one high-frequency cetacean species (harbor porpoise), and four pinniped species (ringed seal, spotted seal, bearded seal, and ribbon seal).

The proposed Quintillion subsea cable-laying operation could adversely affect marine mammal species and stocks by exposing them to elevated noise levels in the vicinity of the activity area.

Exposure to high intensity sound for a sufficient duration may result in auditory effects such as a noise-induced threshold shift—an increase in the auditory threshold after exposure to noise (Finneran *et al.,* 2005). Factors that influence the amount of threshold shift include the amplitude, duration, frequency content, temporal pattern, and energy distribution of noise exposure. The magnitude of hearing threshold shift normally decreases over time following cessation of the noise exposure. The amount of threshold shift just after exposure is the initial threshold shift. If the threshold shift eventually returns to zero (*i.e.,* the threshold returns to the pre-exposure value), it is a temporary threshold shift (Southall *et al.,* 2007).

Threshold Shift (noise-induced loss of hearing)—When animals exhibit reduced hearing sensitivity (*i.e.,* sounds must be louder for an animal to detect them) following exposure to an intense sound or sound for long duration, it is referred to as a noise-induced threshold

shift (TS). An animal can experience temporary threshold shift (TTS) or permanent threshold shift (PTS). TTS can last from minutes or hours to days (*i.e.,* there is complete recovery), can occur in specific frequency ranges (*i.e.,* an animal might only have a temporary loss of hearing sensitivity between the frequencies of 1 and 10 kHz), and can be of varying amounts (for example, an animal's hearing sensitivity might be reduced initially by only 6 dB or reduced by 30 dB). PTS is permanent, but some recovery is possible. PTS can also occur in a specific frequency range and amount as mentioned above for TTS.

The following physiological mechanisms are thought to play a role in inducing auditory TS: Effects to sensory hair cells in the inner ear that reduce their sensitivity, modification of the chemical environment within the sensory cells, residual muscular activity in the middle ear, displacement of certain inner ear membranes, increased blood flow, and post-stimulatory reduction in both efferent and sensory neural output (Southall *et al.,* 2007). The amplitude, duration, frequency, temporal pattern, and energy distribution of sound exposure all can affect the amount of associated TS and the frequency range in which it occurs. As amplitude and duration of sound exposure increase, so, generally, does the amount of TS, along with the recovery time. For intermittent sounds, less TS could occur than compared to a continuous exposure with the same energy (some recovery could occur between intermittent exposures depending on the duty cycle between sounds) (Kryter *et al.,* 1966; Ward, 1997). For example, one short but loud (higher SPL) sound exposure may induce the same impairment as one longer but softer sound, which in turn may cause more impairment than a series of several intermittent softer sounds with the same total energy (Ward, 1997). Additionally, though TTS is temporary, prolonged exposure to sounds strong enough to elicit TTS, or shorter-term exposure to sound levels well above the TTS threshold, can cause PTS, at least in terrestrial mammals (Kryter, 1985). Although in the case of Quintillion's subsea cable laying operation, NMFS does not expect that animals would experience levels high enough or durations long enough to result in TS given that the noise levels from the operation are very low.

For marine mammals, published data are limited to the captive bottlenose dolphin, beluga, harbor porpoise, and Yangtze finless porpoise (Finneran *et al.,* 2000, 2002, 2003, 2005, 2007, 2010a, 2010b; Finneran and Schlundt, 2010; Lucke *et al.,* 2009; Mooney *et al.,* 2009a, 2009b; Popov *et al.,* 2011a, 2011b; Kastelein *et al.,* 2012a; Schlundt *et al.,* 2000; Nachtigall *et al.,* 2003, 2004). For pinnipeds in water, data are limited to measurements of TTS in harbor seals, an elephant seal, and California sea lions (Kastak *et al.,* 1999, 2005; Kastelein *et al.,* 2012b).

Lucke *et al.* (2009) found a threshold shift (TS) of a harbor porpoise after exposing it to airgun noise with a received sound pressure level (SPL) at 200.2 dB (peak-to-peak) re: 1 μPa, which corresponds to a sound exposure level of 164.5 dB re: 1 μPa^2 s after integrating exposure. NMFS currently uses the root-mean-square (rms) of received SPL at 180 dB and 190 dB re: 1 μPa as the threshold above which permanent threshold shift (PTS) could occur for cetaceans and pinnipeds, respectively. Because the airgun noise is a broadband impulse, one cannot directly determine the equivalent of rms SPL from the reported peak-to-peak SPLs. However, applying a conservative conversion factor of 16 dB for broadband signals from seismic surveys (McCauley, *et al.,* 2000) to correct for the difference between peak-to-peak levels reported in Lucke *et al.* (2009) and rms SPLs, the rms SPL for TTS would be approximately 184 dB re: 1 μPa, and the received levels associated with PTS (Level A harassment) would be higher. This is still above NMFS' current 180 dB rms re: 1 μPa threshold for injury. However, NMFS recognizes that TTS of harbor porpoises is lower than other cetacean species empirically tested (Finneran & Schlundt, 2010; Finneran *et al.,* 2002; Kastelein and Jennings, 2012).

Marine mammal hearing plays a critical role in communication with conspecifics, and interpretation of environmental cues for purposes such as predator avoidance and prey capture. Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that occurs during a time where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more serious impacts. Also, depending on the degree and frequency range, the effects of PTS on an animal could range in severity, although it is considered generally more serious because it is a permanent condition. Of note, reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.,* 2007), so one can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

In addition, chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark *et al.* 2009). Acoustic masking is when other noises such as from human sources interfere with animal detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired from maximizing their performance fitness in survival and reproduction.

Masking occurs at the frequency band which the animals utilize. Therefore, since noise generated from vessels dynamic positioning activity is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by odontocetes (toothed whales). However, lower frequency man-made noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. It may also affect communication signals when they occur near the noise band and thus reduce the communication space of animals (*e.g.,* Clark *et al.* 2009) and cause increased stress levels (*e.g.,* Foote *et al.* 2004; Holt *et al.* 2009).

Unlike TS, masking, which can occur over large temporal and spatial scales, can potentially affect the species at population, community, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels have increased by as much as 20 dB (more than 3 times in terms of sound pressure level) in the world's ocean from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessel traffic and cable-laying while operating

dynamic positioning (DP) thrusters contribute to the elevated ambient noise levels, thus increasing potential for or severity of masking.

Finally, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson *et al.* 1995), such as: Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where noise sources are located; and/or flight responses (*e.g.,* pinnipeds flushing into water from haulouts or rookeries).

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography) and is also difficult to predict (Southall *et al.* 2007). Currently NMFS uses a received level of 160 dB re 1 μPa (rms) to predict the onset of behavioral harassment from impulse noises (such as impact pile driving), and 120 dB re 1 μPa (rms) for continuous noises (such as operating DP thrusters). No impulse noise is expected from the Quintillion subsea cable-laying operation. For the Quintillion subsea cable-laying operation, only the 120 dB re 1 μPa (rms) threshold is considered because only continuous noise sources would be generated.

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification could be biologically significant if the change affects growth, survival, and/or reproduction, which depends on the severity, duration, and context of the effects.

Anticipated Effects on Marine Mammal Habitat

Project activities that could potentially impact marine mammal habitats include acoustical impacts to prey resources associated with laying cable on sea bottom. Regarding the former, however, acoustical injury from thruster noise is unlikely. Previous noise studies (*e.g.,* Greenlaw et al. 1988, Davis et al. 1998, Christian et al. 2004) with cod, crab, and schooling fish found little or no injury to adults, larvae, or eggs when exposed to impulsive noises exceeding 220 dB. Continuous noise levels from ship thrusters are generally below 180 dB, and do not create great enough pressures to cause tissue or organ injury.

Nedwell et al. (2003) measured noise associated with cable trenching operations offshore of Wales, and found that levels (178 dB at source) did not exceed those where significant avoidance reactions of fish would occur. Cable burial operations involve the use of ploughs or jets to cut trenches in the sea floor sediment. Cable ploughs are generally used where the substrate is cohesive enough to be ''cut'' and laid alongside the trench long enough for the cable to be laid at depth. In less cohesive substrates, where the sediment would immediately settle back into the trench before the cable could be laid, jetting is used to scour a more lasting furrow. The objective of both is to excavate a temporary trench of sufficient depth to fully bury the cable. The plough blade is 0.2 m (0.7 ft) wide producing a trench of approximately the same width. Jetted trenches are somewhat wider depending on the sediment type. Potential impacts to marine mammal habitat and prey include (1) crushing of benthic and epibenthic invertebrates with the plough blade, plough skid, or ROV track, (2) dislodgement of benthic invertebrates onto the surface where they may die, and (3) and the settlement of suspended sediments away from the trench where they may clog gills or feeding structures of sessile invertebrates or smother sensitive species (BERR 2008). However, the footprint of cable trenching is generally restricted to 2 to 3 m (7–10 ft) width (BERR 2008), and the displaced wedge or berm is expected to naturally backfill into the trench. Jetting results in more suspension of sediments, which may take days to settle during which currents may transport it well away (up to several kilometers) from its source. Suspended sand particles generally settle within about 20 m (66 ft). BERR (2008) reviewed the effect of offshore wind farm construction, including laying of power and communication cables, on the environment. Based on a rating of 1 to 10, they concluded that sediment disturbance from plough operations rated the lowest at 1, with jetting rating from 2 to 4, depending on substrate. Dredging rated the highest (6) relative sediment disturbance.

The maximum amount of trenching possible is about 1,900 km (1,180 mi), but the width of primary effect is only about 3 m (10 ft). Thus, the maximum impact footprint is less than 6 km^2 (2.3 mi^2), an insignificantly small area given the Chukchi Sea area alone is 595,000 km^2 (230,000 mi^2). Overall, cable-laying effects to marine mammal habitat and prey resources are considered not significant.

Proposed Mitigation

In order to issue an incidental take authorization (ITA) under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (where relevant).

For the proposed Quintillion open-water subsea cable-laying operations in the Bering, Chukchi, and Beaufort seas, NMFS worked with Quintillion and its contractor to propose the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity as a result of the activities. The primary purpose of these mitigation measures is to detect marine mammals and avoid vessel interactions during the pre- and post-cable-laying activities. Due to the nature of the activities, the vessel will not be able to engage direction alternation during cable-laying operations. However, since the cable-laying vessel will be moving at a slow speed of 600 meter/hour (0.37 mile per hour or 0.32 knot) during cable-laying operation, it is highly unlikely that the cable vessel would have physical interaction with marine mammals. The following are mitigation measures proposed to be included in the IHA (if issued).

(a) Establishing Zone of Influence (ZOI)

Protected species observers (PSOs) would establish a ZOI where the received level is 120 dB during Qunitillion's subsea cable-laying operation and conduct marine mammal monitoring during the operation.

(b) Vessel Movement Mitigation During Pre- and Post-Cable-Laying Activities

When the cable-lay fleet is traveling in Alaskan waters to and from the project area (before and after completion of cable-laying), the fleet vessels would:

- Not approach concentrations or groups of whales (an aggregation of 6 or more whales) within 1.6 km (1 mi) by all vessels under the direction of Quintillion.
- Take reasonable precautions to avoid potential interaction with the bowhead whales observed within 1.6 km (1 mi) of a vessel.
- Reduce speed to less than 5 knots when visibility drops to avoid the likelihood of collision with whales. The

normal vessel travel speeds when laying cable is well less than 5 knots.

Mitigation Conclusions

NMFS has carefully evaluated Quintillion's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measures are expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).
2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).
3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).
4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing the severity of harassment takes only).
5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.
6. For monitoring directly related to mitigation—an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance. Proposed measures to ensure availability of such species or stock for taking for certain subsistence uses are discussed later in this document (see ''Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses'' section).

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth, ''requirements pertaining to the monitoring and reporting of such taking.'' The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Quintillion submitted a marine mammal monitoring plan as part of the IHA application. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period or from the peer review panel (see the ''*Monitoring Plan Peer Review*'' section later in this document).

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

1. An increase in our understanding of the likely occurrence of marine mammal species in the vicinity of the action, *i.e.,* presence, abundance, distribution, and/or density of species.
2. An increase in our understanding of the nature, scope, or context of the likely exposure of marine mammal species to any of the potential stressor(s) associated with the action (*e.g.,* sound or visual stimuli), through better understanding of one or more of the following: The action itself and its environment (*e.g.,* sound source characterization, propagation, and ambient noise levels); the affected species (*e.g.,* life history or dive pattern); the likely co-occurrence of marine mammal species with the action (in whole or part) associated with specific adverse effects; and/or the likely biological or behavioral context of exposure to the stressor for the marine mammal (*e.g.,* age class of exposed animals or known pupping, calving or feeding areas).
3. An increase in our understanding of how individual marine mammals respond (behaviorally or physiologically) to the specific stressors associated with the action (in specific contexts, where possible, *e.g.,* at what distance or received level).
4. An increase in our understanding of how anticipated individual responses, to individual stressors or anticipated combinations of stressors, may impact either: The long-term fitness and survival of an individual; or the population, species, or stock (*e.g.,* through effects on annual rates of recruitment or survival).
5. An increase in our understanding of how the activity affects marine mammal habitat, such as through effects on prey sources or acoustic habitat (*e.g.,* through characterization of longer-term contributions of multiple sound sources to rising ambient noise levels and assessment of the potential chronic effects on marine mammals).
6. An increase in understanding of the impacts of the activity on marine mammals in combination with the impacts of other anthropogenic activities or natural factors occurring in the region.
7. An increase in our understanding of the effectiveness of mitigation and monitoring measures.
8. An increase in the probability of detecting marine mammals (through improved technology or methodology), both specifically within the safety zone (thus allowing for more effective implementation of the mitigation) and in general, to better achieve the above goals.

Proposed Monitoring Measures

Monitoring will provide information on the numbers of marine mammals potentially affected by the subsea cable-laying operation and facilitate real-time mitigation to prevent injury of marine mammals by vessel traffic. These goals will be accomplished in the Bering, Chukchi, and Beaufort seas during 2016 by conducting vessel-based monitoring and passive acoustic monitoring to document marine mammal presence and distribution in the vicinity of the operation area.

Visual monitoring by Protected Species Observers (PSOs) during subsea cable-laying operation, and periods

when the operation is not occurring, will provide information on the numbers of marine mammals potentially affected by the activity. Vessel-based PSOs onboard the vessels will record the numbers and species of marine mammals observed in the area and any observable reaction of marine mammals to the cable-laying operation in the Bering, Chukchi, and Beaufort seas.

Vessel-Based PSOs

Vessel-based monitoring for marine mammals would be done by trained protected species observers (PSOs) throughout the period of subsea cable-laying operation. The observers would monitor the occurrence of marine mammals near the cable-laying vessel during all daylight periods during operation. PSO duties would include watching for and identifying marine mammals; recording their numbers, distances, and reactions to the survey operations; and documenting ''take by harassment.''

A sufficient number of PSOs would be required onboard each survey vessel to meet the following criteria:

- 100% monitoring coverage during all periods of cable-laying operations in daylight;
- Maximum of 4 consecutive hours on watch per PSO; and
- Maximum of 12 hours of watch time per day per PSO.

PSO teams will consist of Inupiat observers and experienced field biologists. Each vessel will have an experienced field crew leader to supervise the PSO team. The total number of PSOs may decrease later in the season as the duration of daylight decreases.

(1) PSOs Qualification and Training

Lead PSOs and most PSOs would be individuals with experience as observers during marine mammal monitoring projects in Alaska or other offshore areas in recent years. New or inexperienced PSOs would be paired with an experienced PSO or experienced field biologist so that the quality of marine mammal observations and data recording is kept consistent.

Resumes for candidate PSOs would be provided to NMFS for review and acceptance of their qualifications. Inupiat observers would be experienced in the region and familiar with the marine mammals of the area. All observers would complete a NMFS-approved observer training course designed to familiarize individuals with monitoring and data collection procedures.

(2) Specialized Field Equipment

The PSOs shall be provided with Fujinon 7 × 50 or equivalent binoculars for visual based monitoring onboard all vessels.

Laser range finders (Leica LRF 1200 laser rangefinder or equivalent) would be available to assist with distance estimation.

Acoustic Monitoring

(1) Sound Source Measurements

Quintillion plans to conduct a sound source verification (SSV) on one of the cable-lay ships and the anchor-handling tugs when both are operating near Nome (early in the season).

(2) Passive Acoustic Monitoring

After consulting with NMFS Office of Protected Resources, the National Marine Mammal Laboratory (NMML), and the North Slope Borough Department of Wildlife, Quintillion proposes to contribute to the 2016 joint Arctic Whale Ecology Study (ARCWEST)/Chukchi Acoustics, Oceanography, and Zooplankton Study-extension (CHAOZ–X).

The summer minimum extent of sea ice in the northern Bering Sea, Chukchi Sea, and western Beaufort Sea has diminished by more than 50% over the past two decades. This loss of ice has sparked concerns for long-term survival of ice-dependent species like polar bears, Pacific walrus, bearded seals, and ringed seals. In contrast, populations of some Arctic species such has bowhead and gray whales have increased in abundance, while subarctic species such as humpback, fin, and minke whales have expanded their ranges into the Arctic in response to warmer water and increased zooplankton production. The joint ARCWEST/CHAOZ–X program has been monitoring climate change and anthropogenic activity in the Arctic waters of Alaska since 2010 by tracking satellite tagged animals, sampling lower trophic levels and physical oceanography, and passively acoustically monitoring marine mammal and vessel activity. The current mooring locations for the passive acoustical monitoring (PAM) portion of the joint program align closely with the proposed Quintillion cable-lay route. Operating passive acoustic recorders at these locations in 2016 would provide information not only on the distribution and composition of the marine mammal community along the proposed cable-lay route at the time cable-lay activities would be occurring, but they could also record the contribution of the cable-lay activity on local acoustical environment where the route passes close to these stations.

Monitoring Plan Peer Review

The MMPA requires that monitoring plans be independently peer reviewed ''where the proposed activity may affect the availability of a species or stock for taking for subsistence uses'' (16 U.S.C. 1371(a)(5)(D)(ii)(III)). Regarding this requirement, NMFS' implementing regulations state, ''Upon receipt of a complete monitoring plan, and at its discretion, [NMFS] will either submit the plan to members of a peer review panel for review or within 60 days of receipt of the proposed monitoring plan, schedule a workshop to review the plan'' (50 CFR 216.108(d)).

NMFS has established an independent peer review panel to review Quintillion's 4MP for the proposed subsea cable-laying operation in the Bering, Chukchi, and Beaufort seas. The panel is scheduled to meet via web conference in early March 2016, and will provide comments to NMFS in April 2016. After completion of the peer review, NMFS will consider all recommendations made by the panel, incorporate appropriate changes into the monitoring requirements of the IHA (if issued), and publish the panel's findings and recommendations in the final IHA notice of issuance or denial document.

Reporting Measures

(1) Final Report

The results of Quintillion's subsea cable laying activities monitoring reports would be presented in the ''90-day'' final reports, as required by NMFS under the proposed IHA. The initial final reports are due to NMFS within 90 days after the expiration of the IHA (if issued). The reports will include:

- Summaries of monitoring effort (*e.g.,* total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);
- Summaries of initial analyses of the datasets that interpret the efficacy, measurements, and observations, rather than raw data, fully processed analyses, or a summary of operations and important observations;
- Analyses of the effects of various factors influencing detectability of marine mammals (*e.g.,* sea state, number of observers, and fog/glare);
- Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;

• Estimates of uncertainty in all take estimates, with uncertainty expressed by the presentation of confidence limits, a minimum-maximum, posterior probability distribution, or another applicable method, with the exact approach to be selected based on the sampling method and data available;

• A clear comparison of authorized takes and the level of actual estimated takes; and

• A complete characterization of the acoustic footprint resulting from various activity states.

The ''90-day'' reports will be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS.

(2) Notification of Injured or Dead Marine Mammals

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as a serious injury, or mortality (*e.g.,* ship-strike, gear interaction, and/or entanglement), Quintillion would immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Alaska Regional Stranding Coordinators. The report would include the following information:

• Time, date, and location (latitude/longitude) of the incident;

• Name and type of vessel involved;

• Vessel's speed during and leading up to the incident;

• Description of the incident;

• Status of all sound source use in the 24 hours preceding the incident;

• Water depth;

• Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, and visibility);

• Description of all marine mammal observations in the 24 hours preceding the incident;

• Species identification or description of the animal(s) involved;

• Fate of the animal(s); and

• Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with Quintillion to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Quintillion would not be able to resume its activities until notified by NMFS via letter, email, or telephone.

In the event that Quintillion discovers a dead marine mammal, and the lead PSO determines that the cause of the death is unknown and the death is relatively recent (*i.e.,* in less than a moderate state of decomposition as described in the next paragraph), Quintillion would immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with Quintillion to determine whether modifications in the activities are appropriate.

In the event that Quintillion discovers a dead marine mammal, and the lead PSO determines that the death is not associated with or related to the activities authorized in the IHA (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Quintillion would report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators, within 24 hours of the discovery. Quintillion would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Quintillion can continue its operations under such a case.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Takes by Level B harassments of some species are anticipated as a result of Quintillion's proposed subsea cable-laying operation. NMFS expects marine mammal takes could result from noise propagation from dynamic position thrusters during cable-laying operation. NMFS does not expect marine mammals would be taken by collision with cable and support vessels, because the vessels will be moving at low speeds, and PSOs on the vessels will be monitoring for marine mammals and will be able to alert the vessels to avoid any marine mammals in the area.

For non-impulse sounds, such as those produced by the dynamic positioning thrusters during Quintillion's subsea cable-laying operation, NMFS uses the 180 and 190 dB (rms) re 1 µPa isopleth to indicate the onset of Level A harassment for cetaceans and pinnipeds, respectively; and the 120 dB (rms) re 1 µPa isopleth for Level B harassment of all marine mammals. Quintillion provided calculations of the 120-dB isopleths expected to be produced by the dynamic positioning thrusters during the proposed cable-laying operation to estimate takes by harassment. NMFS used those calculations to make the necessary MMPA findings. Quintillion provided a full description of the methodology used to estimate takes by harassment in its IHA application, which is also provided in the following sections. There is no 180 or 190-dB zone from the proposed activities.

Noise Sources

The proposed cable-laying activity is expected to generate underwater noises from several sources, including thrusters, plows, jets, ROVs, echo sounders, and positioning beacons. The predominant noise source and the only underwater noise that is likely to result in take of marine mammals during cable laying operations is the cavitating noise produced by the thrusters during dynamic positioning of the vessel (Tetra Tech 2014). Cavitation is random collapsing of bubbles produced by the blades. The *C/S Ile de Brehat* maintains dynamic positioning during cable-laying operations by using two 1,500 kW bow thrusters, two 1,500 kW aft thrusters, and one 1,500 kW fore thruster. Sound source measurements have not been conducted specific to the *C/S Ile de Brehat* but other acoustical studies have shown thruster noise measurements ranging between 171 and 180 dB re 1 µPa (rms) at 1 m (Nedwell et al. 2003, MacGillivary 2006, Samsung 2009, Hartin et al. 2011, Deepwater Wind 2013, Tetra Tech 2014).

Various acoustical investigations in the Atlantic Ocean have modeled distances to the 120 dB isopleth with results ranging between 1.4 and 3.575 km (Samsung 2009, Deepwater Wind 2013, Tetra Tech 2014) for water depths similar to where Quintillion would be operating in the Arctic Ocean. However, all these ranges were based on conservative modeling that included

maximum parameters and worst-case assumptions.

Hartin et al. (2011) physically measured dynamic positioning noise from the 104-m (341-ft) *Fugro Synergy* operating in the Chukchi Sea while it was using thrusters (2,500 kW) more powerful than those used on the *C/S Ile de Brehat* (1,500 kW). Measured dominant frequencies were 110 to 140 Hz, and the measured (90th percentile) radius to the 120-dB isopleth was 2.3 km (1.4 mi). Because this radius is a measured value from the same water body where Quintillion's cable-laying operation would occur, as opposed to a conservatively modeled value from the Atlantic Ocean, it is the value used in calculating marine mammal exposure estimates. Sound source levels from the *Fugro Synergy* during dynamic positioning did not exceed 180 dB, thus there are no Level A harassment or injury concerns.

Acoustic Footprint

The acoustical footprint (total ensonified area) was determined by assuming that dynamic position would occur along all trunk and branch lines within the proposed fiber optics cable network, regardless of the cable-lay vessel used. The sum total of submerged cable length is 1,902.7 km (1,182.3 mi). Assuming that the radius to the 120 dB isopleth is 2.3 km (1.4 mi) (Hartin et al. 2011), then the total ensonified area represents a swath that is 1,902.7 km (1,182.3 mi) in length and 4.6 km (2.8 mi) in width (2 x 2.3 km) or 8,752.4 km^2 (3,379.3 mi^2). The Nome branch (194.7 km [121.0 mi]) and 87.1 km (54.1 mi) of the trunk line between BU Nome and BU Kotzebue fall within the Bering Sea. The combined length is 281.8 km (175.1 mi) and the total ensonified area is 1,296.3 km^2 (500.5 mi^2). The Oliktok branch (73.9 km [45.9 mi]) and 254.1 km (157.9 mi) of the trunk line between Barrow and Oliktok are found in the Beaufort Sea. Here the combined length is 328 km (203.8 mi) and total ensonified area is 1,508.8 km^2 (582.6 mi^2). The remaining area 5,947.3 km^2 (2,296.3 mi^2) falls within the Chukchi Sea.

Marine Mammal Densities

Density estimates for bowhead, gray, and beluga whales were derived from aerial survey data collected in the Chukchi and Beaufort seas during the 2011 to 2013 Aerial Surveys of Arctic Marine Mammals (ASAMM) program (Clarke et al. 2012, 2013, 2014, 2015). The proposed cable routes cross ASAMM survey blocks 2, 11, and 12 in the Beaufort Sea, and blocks 13, 14, 18, 21, and 22 in the Chukchi Sea. Only data collected in these blocks were used to estimate densities for bowhead and gray whales. Beluga densities were derived from ASAMM data collected depth zones between 36 and 50 m (118 and 164 ft) within the Chukchi Sea between longitudes 157° and 169° W., and the depth zones between 21 and 200 m (68.9 and 656.2 ft) in the Beaufort Sea between longitudes 154° and 157° W. These depth zones reflect the depths where most of the cable-lay will occur. Harbor porpoise densities (Chukchi Sea only) are from Hartin et al. (2013), and ringed seal densities from Aerts et al. (2014; Chukchi Sea) and Moulton and Lawson (2002; Beaufort Sea). Spotted and bearded seal densities in the Chukchi Sea are also from Aerts et al. (2014), while spotted and bearded seal densities in the Beaufort Sea were developed by assuming both represented 5% of ringed seal densities. Too few sightings have been made in the Chukchi and Beaufort seas for all other marine mammal species to develop credible density estimates.

The density estimates for the seven species are presented in Table 3 (Chukchi/Bering) and Table 4 (Beaufort) below. The specific parameters used in deriving these estimates are provided in the discussions that follow.

TABLE 3—MARINE MAMMAL DENSITIES (#/km^2) IN THE CHUKCHI AND BERING SEAS

Species	Summer	Fall
Bowhead Whale	0.0025	0.0438
Gray Whale	0.0680	0.0230
Beluga Whale	0.0894	0.0632
Harbor Porpoise	0.0022	0.0022
Ringed Seal	0.0846	0.0507
Spotted Seal	0.0423	0.0253
Bearded Seal	0.0630	0.0440

TABLE 4—MARINE MAMMAL DENSITIES (#/km^2) IN THE BEAUFORT SEA

Species	Summer	Fall
Bowhead Whale	0.0444	0.0742
Gray Whale	0.0179	0.0524
Beluga Whale	0.0021	0.0142
Ringed Seal	0.3547	0.2510
Spotted Seal	0.0177	0.0125
Bearded Seal	0.0177	0.0125

Bowhead Whale: The summer density estimate for bowhead whales was derived from June, July, and August aerial survey data collected in the Chukchi and Beaufort Sea during the 2011 to 2014 ASAMM program (Clarke et al. 2012, 2013, 2014, 2015). Fall data were collected during September and October. Data only from the survey blocks that will be crossed by the proposed cable route were used in the calculations, and included blocks 3, 11, and 12 in the Beaufort Sea and 13, 14, 18, 21, and 22 in the Chukchi Sea. ASAMM surveys did not extend more than about 25 km (15.5 mi) south of Point Hope, and there are no other systematic survey data for bowhead whales south of the point. During these three years, 87 bowhead whales were recorded in the three Beaufort Sea blocks during 12,161 km (7,556 mi) of summer survey effort (0.0072/km), and 201 whales during 16,829 km (10,457 mi) of fall effort (0.0019/km). In the five Chukchi Sea survey blocks, 11 bowheads were recorded during 27,183 km (16,891 mi) of summer effort (0.0004/km), and 160 during 22,678 km (14,091 mi) of fall survey (0.0071/km).

Applying an effective strip half-width (ESW) of 1.15 (Ferguson and Clarke 2013), and a 0.07 correction factor for whales missed during the surveys, results in corrected densities of 0.0444 (Beaufort summer), 0.0742 (Beaufort fall), 0.0025 (Chukchi summer), and 0.0438 (Chukchi fall) whales per km^2 (Tables 3 and 4).

Gray whale: Gray whale density estimates were derived from the same ASAMM transect data used to determine bowhead whale densities. During the four years of aerial survey, 35 gray whales were recorded in the three Beaufort Sea blocks during 12,161 km (7,557 mi) of summer survey effort (0.0029/km), and 142 gray whales during 16,829 km (10,457 mi) of fall effort (0.0084/km). In the five Chukchi Sea survey blocks, 298 gray whales were recorded during 27,183 km (16,891 mi) of summer effort (0.0084/km), and 84 during 22,678 km (14,091 mi) of fall survey (0.0037/km). Applying an effective strip half-width (ESW) of 1.15 (Ferguson and Clarke 2013), and a correction factor of 0.07, results in corrected densities of 0.0179 (Beaufort summer), 0.0524 (Beaufort fall), 0.0680 (Chukchi summer), and 0.0230 (Chukchi fall) whales per km^2 (Tables 3 and 4).

Beluga Whale: Beluga whale density estimates were derived from the ASAMM transect data collected from 2011 to 2014 (Clarke et al. 2012, 2013, 2014, 2015). During the summer aerial surveys (June–August) there were 248 beluga whale observed along 3,894 km (2,420 mi) of transect in waters between 21 to 200 m (13–124 ft) deep and between longitudes 154° W. and 157° W. This equates to 0.0637 whales/km of trackline and a corrected density of 0.0894 whales per km^2, assuming an ESW of 0.614 km and a 0.58 correction factor. Fall density estimates (September–October) for this region were based on 192 beluga whales seen along 4,267 km (2,651 mi). This equates to 0.0449 whales/km of trackline and a corrected density of 0.0632 whales per km^2, assuming an ESW of 0.614 km and a 0.58 correction factor.

During the summer aerial surveys (June–August) there were 30 beluga whale observed along 20,240 km (12,577 mi) of transect in waters less than 36 to 50 m (22–31 ft) deep and between longitudes 157° W. and 169° W. This equates to 0.0015 whales/km of trackline and a corrected density of 0.0021 whales per km^2, assuming an ESW of 0.614 km and a 0.58 correction factor. Calculated fall beluga densities for the same region was based on 231 beluga whales seen during 22,887 km of transect (1,794 mi). This equates to 0.0101 whales/km and a corrected density of 0.142 whales per km^2, again assuming an ESW of 0.614 km and a 0.58 correction factor.

Harbor Porpoise: Although harbor porpoise are known to occur in low numbers in the Chukchi Sea (Aerts et al. 2014), no harbor porpoise were positively identified during COMIDA and ASAMM aerial surveys conducted in the Chukchi Sea from 2006 to 2013 (Clarke et al. 2011, 2012, 2013, 2014). A few small unidentified cetaceans that were observed may have been harbor porpoise. Hartin et al. (2013) conducted vessel-based surveys in the Chukchi Sea while monitoring oil and gas activities between 2006 and 2010 and recorded several harbor porpoise throughout the summer and early fall. Vessel-based surveys may be more conducive to sighting these small, cryptic porpoise than the aerial-based COMIDA/ASAMM surveys. Hartin et al.'s (2013) three-year average summer densities (0.0022/km^2) and fall densities (0.0021/km^2) were very similar, and are included in Table 3.

Ringed and Spotted Seals: Aerts et al. (2014) conducted a marine mammal monitoring program in the northeastern Chukchi Sea in association with oil & gas exploration activities between 2008 and 2013. For seal sightings that were either ringed or spotted seals, the highest summer density was 0.127 seals/km^2 (2008) and the highest fall density was 0.076 seals/km^2 (2013). Where seals could be identified to species, they found the ratio of ringed to spotted seals to be 2:1. Applying this ratio to the combined densities results in species densities of 0.0846 seals/km^2 (summer) and 0.0507 seals/km^2 (fall) for ringed seals, and 0.0423 seals/km^2 (summer) and 0.0253 seals/km^2 (fall) for spotted seals. These are the densities used in the exposure calculations (Table 3) and to represent ringed and spotted seal densities for both the northern Bering and Chukchi seas.

Moulton and Lawson (2002) conducted summer shipboard-based surveys for pinnipeds along the nearshore Alaskan Beaufort Sea coast, while the Kingsley (1986) conducted surveys here along the ice margin representing fall conditions. The ringed seal results from these surveys were used in the exposure estimates (Table 3). Neither survey provided a good estimate of spotted seal densities. Green and Negri (2005) and Green et al. (2006, 2007) recorded pinnipeds during barging activity between West Dock and Cape Simpson, and found high numbers of ringed seal in Harrison Bay, and peaks in spotted seal numbers off the Colville River Delta where a haulout site is located. Approximately 5% of all phocid sightings recorded by Green and Negri (2005) and Green et al. (2006, 2007) were spotted seals, which provide a suitable estimate of the proportion of ringed seals versus spotted seals in the Colville River Delta and Harrison Bay, both areas close to the proposed Oliktok branch line. Thus, the estimated densities of spotted seals in the cable-lay survey area were derived by multiplying the ringed seal densities from Moulton and Lawson (2002) and Kingsley (1986) by 5%.

Spotted seals are a summer resident in the Beaufort Sea and are generally found in nearshore waters, especially in association with haulout sites at or near river mouths. Their summer density in the Beaufort Sea is a function of distance from these haul out sites. Near Oliktok Point (Hauser et al. 2008, Lomac-McNair et al. 2014) where the Oliktok cable branch will reach shore, they are more common than ringed seals, but they are very uncommon farther offshore where most of the Beaufort Sea cable-lay activity will occur. This distribution of density is taken into account in the take authorization request.

Bearded Seal: The most representative estimates of summer and fall density of bearded seals in the northern Bering and Chukchi seas come from Aerts et al. (2014) monitoring program that ran from 2008 to 2013 in the northeastern Chukchi Sea. During this period the highest summer estimate was 0.063 seals/km^2 (2013) and the highest fall estimate was 0.044 seals/km^2 (2010). These are the values that were used in developing exposure estimates for this species for the northern Bering and Chukchi sea cable-lay areas (Table 3).

There are no accurate density estimates for bearded seals in the Beaufort Sea based on survey data. However, Stirling et al. (1982) noted that the proportion of eastern Beaufort Sea bearded seals is 5% that of ringed seals. Further, Clarke et al. (2013, 2014) recorded 82 bearded seals in both the Chukchi and Beaufort seas during the 2012 and 2013 ASAMM surveys, which represented 5.1% of all their ringed seal and small unidentified pinniped sightings (1,586). Bengtson et al. (2005) noted a similar ratio (6%) during spring surveys of ice seals in the Chukchi Sea. Therefore, the density values in Table 3 (/km^2) were determined by multiplying ringed seal density from Moulton and Lawson (2002) and Kingsley (1986) by 5% as was done with spotted seals.

Level B Exposure Calculations

The estimated potential harassment take of local marine mammals by QSO's fiber optics cable-lay project was

determined by multiplying the seasonal animal densities in Tables 3 and 4 with the seasonal area that would be ensonified by thruster noise greater than 120 dB re 1 μPa (rms). The total area that would be ensonified in the Chukchi Sea is 5,947 km² (2,296 mi²), and for the Bering Sea 1,296 km² (500 mi²). Since there are no marine mammal density estimates for the northern Bering Sea, the ensonified area was combined with the Chukchi Sea for a total ZOI of 7,243 km² (2,796 mi²). The ensonified area for the Beaufort Sea is 1,509 km² (583 mi²).

Because the cable laying plan is to begin in the south as soon as ice conditions allow and work northward, the intention is to complete the Bering and Chukchi seas portion of the network (1,575 km, [979 mi]) during the summer (June to August), and Beaufort Sea portion (328 km [204 mi]) during the fall (September and October). Thus, summer exposure estimates apply for the Bering and Chukchi areas and the fall exposure estimates for the Beaufort (Table 5).

TABLE 5—THE ESTIMATED NUMBER OF LEVEL B HARASSMENT EXPOSURES TO MARINE MAMMALS

Species	Exposures Bering/ Chukchi	Exposures Beaufort	Exposures total
Bowhead Whale	18	112	*130*
Gray Whale	493	79	*572*
Beluga Whale	648	21	*669*
Harbor Porpoise	16	0	*16*
Ringed Seal	613	379	*992*
Spotted Seal	306	19	*325*
Bearded Seal	451	19	*470*

The estimated takes of marine mammals are based on the estimated exposures for marine mammals with known density information. For marine mammals whose estimated number of exposures were not calculated due to a lack of reasonably accurate density estimates, but for which occurrence records within the project area exist (*i.e.,* humpback whale, fin whale, minke whale, killer whale, and ribbon seal), a small number of takes relatively based on group size and site fidelity have been requested in case they are encountered. A summary of estimated takes is provided in Table 6.

TABLE 6—LEVEL B TAKE REQUEST AS PERCENTAGE OF STOCK

Species	Stock abundance	Level B take requested	Request Level B take by stock (percent)
Bowhead whale	19,534	130	0.8
Beluga whale (Beaufort Sea stock)	39,258	669	1.7
Beluga whale (E. Chukchi Sea stock)	3,710	669	18.0
Beluga whale (E. Bering Sea stock)	19.186	669	3.5
Gray whale	20,990	572	2.7
Humpback whale (W.N. Pacific stock)	1,107	15	1.36
Humpback whale (Cent. N. Pacific stock)	10,103	15	0.14
Fin whale	1,652	15	0.91
Minke whale	1,233	5	0.40
Killer whale	2,347	5	0.21
Harbor porpoise	48,215	16	0.03
Ringed seal	249,000	992	0.49
Spotted seal	460,268	325	0.07
Bearded seal	155,000	470	0.08
Ribbon seal	61,100	5	0.01

The estimated Level B takes as a percentage of the marine mammal stock are less than 1.72% in all cases (Table 6). The highest percent of population estimated to be taken is 18% for Level B harassments of the East Chukchi Sea stock of beluga whale. However, that percentage assumes that all beluga whales taken are from that population. Most likely, some beluga whales would be taken from each of the three stocks, meaning fewer than 669 beluga whales would be taken from either individual stock. The Level B takes of beluga whales as a percentage of populations would likely be below 1.7, 18, and 3.5% for the Beaufort Sea, East Chukchi Sea, and East Bering Sea stocks, respectively.

Analysis and Preliminary Determinations

Negligible Impact

Negligible impact is ''an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival'' (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number

and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

To avoid repetition, this introductory discussion of our analyses applies to all the species listed in Table 6, given that the anticipated effects of Quintillion's subsea cable-laying operation on marine mammals (taking into account the proposed mitigation) are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described separately in the analysis below.

No injuries or mortalities are anticipated to occur as a result of Quintillion's subsea cable-laying operation, and none are authorized. Additionally, animals in the area are not expected to incur hearing impairment (*i.e.,* TTS or PTS) or non-auditory physiological effects. The takes that are anticipated and authorized are expected to be limited to short-term Level B behavioral harassment in the form of brief startling reaction and/or temporary vacating the area.

Any effects on marine mammals are generally expected to be restricted to avoidance of a limited area around Quintillion's proposed activities and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment.'' Mitigation measures, such as controlled vessel speed and dedicated marine mammal observers, will ensure that takes are within the level being analyzed. In all cases, the effects are expected to be short-term, with no lasting biological consequence.

Of the 11 marine mammal species likely to occur in the proposed cable-laying area, bowhead, humpback, and fin whales, and ringed and bearded seals are listed as endangered or threatened under the ESA. These species are also designated as ''depleted'' under the MMPA. None of the other species that may occur in the project area are listed as threatened or endangered under the ESA or designated as depleted under the MMPA.

The project area of the Quintillion's proposed activities is within areas that have been identified as biologically important areas (BIAs) for feeding for the gray and bowhead whales and for reproduction for gray whale during the summer and fall months (Clarke et al. 2015). In addition, the coastal Beaufort Sea also serves as a migratory corridor during bowhead whale spring migration, as well as for their feeding and breeding activities. Additionally, the coastal area of Chukchi and Beaufort seas also serve as BIAs for beluga whales for their feeding and migration. However, the Quintillion's proposed cable laying operation would briefly transit through the area in a slow speed (600 meters per hour). As discussed earlier, the Level B behavioral harassment on marine mammals from the proposed activity is expected to be brief startling reaction and temporary vacating of the area. There is no long-term biologically significant impact to marine mammals expected from the proposed subsea cable-laying activity.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from Quintillion's proposed subsea cable-laying operation in the Bering, Chukchi, and Beaufort seas is not expected to adversely affect the affected species or stocks through impacts on annual rates of recruitment or survival, and therefore will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

The requested takes represent less than 18% of all populations or stocks potentially impacted (see Table 6 in this document). These take estimates represent the percentage of each species or stock that could be taken by Level B behavioral harassment. The numbers of marine mammals estimated to be taken are small proportions of the total populations of the affected species or stocks.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, NMFS finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

The proposed cable-lay activities will occur within the marine subsistence areas used by the villages of Nome, Wales, Kotzebue, Little Diomede, Kivalina, Point Hope, Wainwright, Barrow, and Nuiqsut. Subsistence use various considerably by season and location. Seven of the villages hunt bowhead whales (Suydam and George 2004). The small villages of Wales, Little Diomedes, and Kivalina take a bowhead whale about once every five years. Point Hope and Nuiqsut each harvest three to four whales annually, and Wainwright five to six. Harvest from Barrow is by far the highest with about 25 whales taken each year generally split between spring and fall hunts. Point Hope and Wainwright harvest occurs largely during the spring hunt, and Nuiqsut's during the fall. Nuiqsut whalers base from Cross Island, located 70 km (44 mi) east of Oliktok.

Beluga are also annually harvested by the above villages. Beluga harvest is most important to Point Hope. For example, the village harvested 84 beluga whales during the spring of 2012, and averaged 31 whales a year from 1987 to 2006 (Frost and Suydam 2010). Beluga are also important to Wainwright villages. They harvested 34 beluga whales in 2012, and averaged 11 annually from 1987 to 2006 (Frost and Suydam 2010). All the other villages—Nome, Kotzebue, Wales, Kivalina, Little Diomede, and Barrow—averaged less than 10 whales a year (Frost and Suydam 2010).

All villages utilize seals to one degree or another as well. Ringed seal harvest mostly occurs in the winter and spring when they are hauled out on ice near leads or at breathing holes. Bearded seals are taken from boats during the early summer as they migrate northward in the Chukchi Sea and eastward in the Beaufort Sea. Bearded seals are a staple for villages like Kotzebue and Kivalina that have limited access to bowhead and beluga whales (Georgette and Loon 1993). Thetis Island, located just off the Colville River Delta, is an important base from which villagers from Nuiqsut hunt bearded seals each summer after ice breakup. Spotted seals are an important summer resource for Wainwright and Nuiqsut, but other villages will avoid them because the meat is less appealing than other available marine mammals.

The proposed cable-lay activity will occur in the summer after the spring bowhead and beluga whale hunts have ended, and will avoid the ice period when ringed seals are harvested. The Oliktok branch will pass within 4 km (2 mi) of Thetis Island, but the laying of cable along that branch would occur in late summer or early fall, long after the bearded seal hunt is over. Based on the proposed cable-lay time table relative to the seasonal timing of the various subsistence harvests, cable-lay activities into Kotzebue (bearded seal), Wainwright (beluga whale), and around Point Barrow (bowhead whale) could overlap with important harvest periods. Quintillion will work closely with the AEWC, the Alaska Beluga Whale Committee, the Ice Seal Committee, and

the North Slope Borough to minimize any effects cable-lay activities might have on subsistence harvest.

Plan of Cooperation or Measures To Minimize Impacts to Subsistence Hunts

Regulations at 50 CFR 216.104(a)(12) require IHA applicants for activities that take place in Arctic waters to provide a Plan of Cooperation (POC) or information that identifies what measures have been taken and/or will be taken to minimize adverse effects on the availability of marine mammals for subsistence purposes.

Quintillion has prepared a draft POC, which was developed by identifying and evaluating any potential effects the proposed cable-laying operation might have on seasonal abundance that is relied upon for subsistence use.

Specifically, Quintillion has contracted with Alcatel-Lucent Submarine Networks to furnish and install the cable system. Alcatel-Lucent's vessel, Ile de Brehat, participates in the Automatic Identification System (AIS) vessel tracking system allowing the vessel to be tracked and located in real time. The accuracy and real time availability of AIS information via the web for the Bering, Chukchi, and Beaufort Seas will not be fully known until the vessels are in the project area. If access to the information is limited, Quintillion will provide alternate vessel information to the public on a regular basis. Quintillion can aid and support the AIS data with additional information provided to the local search and rescue, or other source nominated during the community outreach program.

In addition, Quintillion will communicate closely with the communities of Pt. Hope, Pt. Lay, and Wainwright should activities progress far enough north in late June to mid-July when the villages are still engaged with their annual beluga whale hunt. Quintillion will also communicate closely with the communities of Wainwright, Barrow, and Nuiqsut to minimize impacts on the communities' fall bowhead whale subsistence hunts, which typically occur during late September and into October.

Prior to starting offshore activities, Quintillion will consult with Kotzebue, Point Hope, Wainwright, Barrow, and Nuiqsut as well as the North Slope Borough, the Northwest Arctic Borough, and other stakeholders such as the EWC, the Alaska Eskimo Whaling Commission (AEWC), the Alaska Beluga Whale Committee (ABWC), and the Alaska Nanuuq Commission (ANC). Quintillion will also engage in consultations with additional groups on request.

The draft POC is attached to Quintillion's IHA application.

Endangered Species Act (ESA)

Within the project area, the bowhead, humpback, and fin whales are listed as endangered and the ringed and bearded seals are listed as threatened under the ESA. NMFS' Permits and Conservation Division has initiated consultation with staff in NMFS' Alaska Region Protected Resources Division under section 7 of the ESA on the issuance of an IHA to Quintillion under section 101(a)(5)(D) of the MMPA for this activity. Consultation will be concluded prior to a determination on the issuance of an IHA.

National Environmental Policy Act (NEPA)

NMFS is preparing an Environmental Assessment (EA), pursuant to NEPA, to determine whether the issuance of an IHA to Quintillion for its subsea cable-laying operation in the Bering, Chukchi, and Beaufort seas during the 2016 Arctic open-water season may have a significant impact on the human environment. NMFS has released a draft of the EA for public comment along with this proposed IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to Quintillion for subsea cable-laying operation in the Bering, Chukchi, and Beaufort Sea during the 2016 Arctic open-water season, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

This section contains a draft of the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

(1) This Authorization is valid from June 1, 2016, through October 31, 2016.

(2) This Authorization is valid only for activities associated with subsea cable-laying related activities in the Bering, Chukchi, and Beaufort seas. The specific areas where Quintillion's operations will be conducted are within the Bering, Chukchi, and Beaufort seas, Alaska, as shown in Figure 1 of Quintillion's IHA application.

(3)(a) The species authorized for incidental harassment takings by Level B harassment are: Beluga whales (*Delphinapterus leucas*); bowhead whales (*Balaena mysticetus*); gray whales (*Eschrichtius robustus*), humpback whale (*Megaptera novaeangliae*), fin whale (*Balaenoptera physalus*), killer whale, (*Orcinus orca*), harbor porpoise (*Phocoena phocoena*), ringed seal (*Phoca hispida*), bearded seals (*Erignathus barbatus*); and spotted seals (*Phoca largha*) (Table 6).

(3)(b) The authorization for taking by harassment is limited to the following acoustic sources and from the following activities:

(i) Operating dynamic positioning thrusters during subsea cable-laying activities; and

(ii) Vessel activities related to subsea cable-laying activities.

(3)(c) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the Alaska Regional Administrator (907–586–7221) or his designee in Anchorage (907–271–3023), National Marine Fisheries Service (NMFS) and the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at (301) 427–8401, or her designee (301–427–8418).

(4) The holder of this Authorization must notify the Chief of the Permits and Conservation Division, Office of Protected Resources, at least 48 hours prior to the start of subsea cable-laying activities (unless constrained by the date of issuance of this Authorization in which case notification shall be made as soon as possible).

(5) Prohibitions

(a) The taking, by incidental harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed in Table 6. The taking by serious injury or death of these species or the taking by harassment, injury or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(b) The taking of any marine mammal is prohibited whenever the required source vessel protected species observers (PSOs), required by condition 7(a)(i), are not onboard in conformance with condition 7(a)(i) of this Authorization.

(6) Mitigation

(a) Establishing Disturbance Zones:

(i) Establish zones of influence (ZOIs) surrounding the cable-laying vessel where the received level would be 120 dB (rms) re 1 μPa. The size of the modeled distance to the 120 dB (rms) re 1 μPa is 2.3 km.

(ii) Immediately upon completion of data analysis of the field verification measurements required under condition 7(e)(i) below, the new 120 dB (rms) re 1 μPa ZOI shall be established based on the sound source verification.

(b) Vessel Movement Mitigation:

(i) When the cable-lay fleet is traveling in Alaskan waters to and from

the project area (before and after completion of cable-laying), the fleet vessels would:

(A) Not approach within 1.6 km (1 m) distance from concentrations or groups of whales (aggregation of six or more whales) by all vessels under the direction of Quintillion.

(B) Take reasonable precautions to avoid potential interaction with the bowhead whales observed within 1.6 km (1 mi) of a vessel.

(C) Reduce speed to less than 5 knots when weather conditions require, such as when visibility drops, to avoid the likelihood of collision with whales. The normal vessel travel speeds when laying cable is well less than 5 knots; however vessels laying cable cannot change course and cable-laying operations will not cease until the end of cable is reached.

(c) Mitigation Measures for Subsistence Activities:

(i) For the purposes of reducing or eliminating conflicts between subsistence whaling activities and Quintillion's subsea cable-laying program, Quintillion will provide a daily report of all Quintillion activities and locations to the subsistence communities (see reporting below).

(ii) Quintillion will provide the Alaska Eskimo Whaling Association (Barrow), Kawerak, Inc, (Nome), and Maniilaq Association (Kotzebue) memberships with the Marine Exchange of Alaska so that subsistence communities can track all vessel operations via the vessels' autonomous information system.

(iii) Quintillion will prepare a daily report of project activities, sea conditions, and subsistence interactions, and send to all interested community leaders.

(iv) The daily reports will include a contact address and phone number where interested community leaders can convey any subsistence concerns.

(v) Quintillion shall monitor the positions of all of its vessels and will schedule timing and location of cable-laying segments to avoid any areas where subsistence activity is normally planned.

(vi) Barge and ship transiting to and from the project area:

(A) Vessels transiting in the Beaufort Sea east of Bullen Point to the Canadian border shall remain at least 5 miles offshore during transit along the coast, provided ice and sea conditions allow. During transit in the Chukchi Sea, vessels shall remain as far offshore as weather and ice conditions allow, and at all times at least 5 miles offshore.

(B) From August 31 to October 31, transiting vessels in the Chukchi Sea or Beaufort Sea shall remain at least 20 miles offshore of the coast of Alaska from Icy Cape in the Chukchi Sea to Pitt Point on the east side of Smith Bay in the Beaufort Sea, unless ice conditions or an emergency that threatens the safety of the vessel or crew prevents compliance with this requirement. This condition shall not apply to vessels actively engaged in transit to or from a coastal community to conduct crew changes or logistical support operations.

(C) Vessels shall be operated at speeds necessary to ensure no physical contact with whales occurs, and to make any other potential conflicts with bowheads or whalers unlikely. Vessel speeds shall be less than 10 knots when within 1.6 kilometers (1 mile) of feeding whales or whale aggregations (6 or more whales in a group).

(D) If any vessel inadvertently approaches within 1.6 kilometers (1 mile) of observed bowhead whales, except when providing emergency assistance to whalers or in other emergency situations, the vessel operator will take reasonable precautions to avoid potential interaction with the bowhead whales by taking one or more of the following actions, as appropriate:

- Reducing vessel speed to less than 5 knots within 900 feet of the whale(s);
- Steering around the whale(s) if possible;
- Operating the vessel(s) in such a way as to avoid separating members of a group of whales from other members of the group;
- Operating the vessel(s) to avoid causing a whale to make multiple changes in direction; and
- Checking the waters immediately adjacent to the vessel(s) to ensure that no whales will be injured when the propellers are engaged.

(vii) Quintillion shall complete operations in time to ensure that vessels associated with the project complete transit through the Bering Strait to a point south of 59 degrees North latitude no later than November 15, 2016. Any vessel that encounters weather or ice that will prevent compliance with this date shall coordinate its transit through the Bering Strait to a point south of 59 degrees North latitude with the appropriate Com-Centers. Quintillion vessels shall, weather and ice permitting, transit east of St. Lawrence Island and no closer than 10 miles from the shore of St. Lawrence Island.

(7) Monitoring:

(a) Vessel-based Visual Monitoring:

(i) Vessel-based visual monitoring for marine mammals shall be conducted by NMFS-approved protected species observers (PSOs) throughout the period of survey activities.

(ii) PSOs shall be stationed aboard the cable-laying vessels and the Oliktok cable-laying barge through the duration of the subsea cable-laying operation. PSOs will not be aboard the smaller barge in waters of depths less than 12 m.

(iii) A sufficient number of PSOs shall be onboard the survey vessel to meet the following criteria:

(A) 100% Monitoring coverage during all periods of cable-laying operations in daylight;

(B) Maximum of 4 consecutive hours on watch per PSO, with a minimum 1-hour break between shifts; and

(C) Maximum of 12 hours of watch time in any 24-hour period per PSO.

(iv) The vessel-based marine mammal monitoring shall provide the basis for real-time mitigation measures as described in (6)(b) above.

(b) Protected Species Observers and Training

(i) PSO teams shall consist of Inupiat observers capable of carrying out requirements of the IHA and NMFS-approved field biologists.

(ii) Experienced field crew leaders shall supervise the PSO teams in the field. New PSOs shall be paired with experienced observers to avoid situations where lack of experience impairs the quality of observations.

(iii) Crew leaders and most other biologists serving as observers in 2016 shall be individuals with experience as observers during recent marine mammal monitoring projects in Alaska, the Canadian Beaufort, or other offshore areas in recent years.

(iv) Resumes for PSO candidates shall be provided to NMFS for review and acceptance of their qualifications. Inupiat observers shall be experienced (as hunters or have previous PSO experience) in the region and familiar with the marine mammals of the area.

(v) All observers shall complete an observer training course designed to familiarize individuals with monitoring and data collection procedures. The training course shall be completed before the anticipated start of the 2016 open-water season. The training session(s) shall be conducted by qualified marine mammalogists with extensive crew-leader experience during previous vessel-based monitoring programs.

(vi) Training for both Alaska native PSOs and biologist PSOs shall be conducted at the same time in the same room. There shall not be separate training courses for the different PSOs.

(vii) Crew members should not be used as primary PSOs because they have

other duties and generally do not have the same level of expertise, experience, or training as PSOs, but they could be stationed on the fantail of the vessel to observe the near field, especially the area around the airgun array, and implement a power-down or shutdown if a marine mammal enters the safety zone (or exclusion zone).

(viii) If crew members are to be used in addition to PSOs, they shall go through some basic training consistent with the functions they will be asked to perform. The best approach would be for crew members and PSOs to go through the same training together.

(ix) PSOs shall be trained using visual aids (*e.g.,* videos, photos), to help them identify the species that they are likely to encounter in the conditions under which the animals will likely be seen.

(x) Quintillion shall train its PSOs to follow a scanning schedule that consistently distributes scanning effort appropriate for each type of activity being monitored. All PSOs should follow the same schedule to ensure consistency in their scanning efforts.

(xi) PSOs shall be trained in documenting the behaviors of marine mammals. PSOs should record the primary behavioral state (*i.e.,* traveling, socializing, feeding, resting, approaching or moving away from vessels) and relative location of the observed marine mammals.

(c) Marine Mammal Observation Protocol

(i) PSOs shall watch for marine mammals from the best available vantage point on the survey vessels, typically the bridge.

(ii) PSOs shall scan systematically with the unaided eye and 7×50 reticle binoculars, and night-vision equipment when needed.

(iii) Personnel on the bridge shall assist the marine mammal observer(s) in watching for marine mammals; however, bridge crew observations will not be used in lieu of PSO observation efforts.

(iv) Monitoring shall consist of recording of the following information:

(A) The species, group size, age/size/sex categories (if determinable), the general behavioral activity, heading (if consistent), bearing and distance from vessel, sighting cue, behavioral pace, and apparent reaction of all marine mammals seen near the vessel (*e.g.,* none, avoidance, approach, paralleling, etc.);

(B) The time, location, heading, speed, and activity of the vessel, along with sea state, visibility, cloud cover and sun glare at (I) any time a marine mammal is sighted, (II) at the start and end of each watch, and (III) during a watch (whenever there is a change in one or more variable);

(C) The identification of all vessels that are visible within 5 km of the vessel from which observation is conducted whenever a marine mammal is sighted and the time observed;

(D) Any identifiable marine mammal behavioral response (sighting data should be collected in a manner that will not detract from the PSO's ability to detect marine mammals);

(E) Any adjustments made to operating procedures; and

(F) Visibility during observation periods so that total estimates of take can be corrected accordingly.

(vii) Distances to nearby marine mammals will be estimated with binoculars (7×50 binoculars) containing a reticle to measure the vertical angle of the line of sight to the animal relative to the horizon. Observers may use a laser rangefinder to test and improve their abilities for visually estimating distances to objects in the water.

(viii) PSOs shall understand the importance of classifying marine mammals as ''unknown'' or ''unidentified'' if they cannot identify the animals to species with confidence. In those cases, they shall note any information that might aid in the identification of the marine mammal sighted. For example, for an unidentified mysticete whale, the observers should record whether the animal had a dorsal fin.

(ix) Additional details about unidentified marine mammal sightings, such as ''blow only,'' mysticete with (or without) a dorsal fin, ''seal splash,'' etc., shall be recorded.

(x) Quintillion shall use the best available technology to improve detection capability during periods of fog and other types of inclement weather. Such technology might include night-vision goggles or binoculars as well as other instruments that incorporate infrared technology.

(d) Field Data-Recording and Verification

(i) PSOs shall utilize a standardized format to record all marine mammal observations.

(ii) Information collected during marine mammal observations shall include the following:

(A) Vessel speed, position, and activity

(B) Date, time, and location of each marine mammal sighting

(C) Marine mammal information under (c)(iv)(A)

(D) Observer's name and contact information

(E) Weather, visibility, and ice conditions at the time of observation

(F) Estimated distance of marine mammals at closest approach

(G) Activity at the time of observation, including possible attractants present

(H) Animal behavior

(I) Description of the encounter

(J) Duration of encounter

(K) Mitigation action taken

(iii) Data shall be recorded directly into handheld computers or as a back-up, transferred from hard-copy data sheets into an electronic database.

(iv) A system for quality control and verification of data shall be facilitated by the pre-season training, supervision by the lead PSOs, and in-season data checks, and shall be built into the software.

(v) Computerized data validity checks shall also be conducted, and the data shall be managed in such a way that it is easily summarized during and after the field program and transferred into statistical, graphical, or other programs for further processing.

(e) Passive Acoustic Monitoring

(i) Sound Source Measurements:

(a) Using a hydrophone system, the holder of this Authorization is required to conduct sound source verification test for the dynamic positioning thrusters of the cable-laying vessel early in the season.

(b) The test results shall be reported to NMFS within 5 days of completing the test.

(ii) Marine Mammal Passive Acoustic Monitoring

(a) Quintillion would support the 2016 joint Arctic Whale Ecology Study (ARCWEST)/Chukchi Acoustics, Oceanography, and Zooplankton Study-extension (CHAOZ–X).

(9) Reporting:

(a) Sound Source Verification Report: A report on the preliminary results of the sound source verification measurements, including the measured source level, shall be submitted within 14 days after collection of those measurements at the start of the field season. This report will specify the distances of the ZOI that were adopted for the survey.

(b) Technical Report (90-day Report): A draft report will be submitted to the Director, Office of Protected Resources, NMFS, within 90 days after the end of Quintillion's subsea cable-laying operation in the Bering, Chukchi, and Beaufort seas. The report will describe in detail:

(i) Summaries of monitoring effort (*e.g.,* total hours, total distances, and

marine mammal distribution through the project period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);

(ii) Summaries that represent an initial level of interpretation of the efficacy, measurements, and observations, rather than raw data, fully processed analyses, or a summary of operations and important observations;

(iii) Analyses of the effects of various factors influencing detectability of marine mammals (*e.g.,* sea state, number of observers, and fog/glare);

(iv) Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;

(v) Estimates of uncertainty in all take estimates, with uncertainty expressed by the presentation of confidence limits, a minimum-maximum, posterior probability distribution, or another applicable method, with the exact approach to be selected based on the sampling method and data available; and

(vi) A clear comparison of authorized takes and the level of actual estimated takes.

(d) The draft report shall be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS. The draft report will be considered the final report for this activity under this Authorization if NMFS has not provided comments and recommendations within 90 days of receipt of the draft report.

(10)(a) In the unanticipated event that survey operations clearly cause the take of a marine mammal in a manner prohibited by this Authorization, such as a serious injury or mortality (*e.g.,* ship-strike, gear interaction, and/or entanglement), Quintillion shall immediately cease cable-laying operations and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301–427–8401. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident;

(ii) The name and type of vessel involved;

(iii) The vessel's speed during and leading up to the incident;

(iv) Description of the incident;

(v) Status of all sound source use in the 24 hours preceding the incident;

(vi) Water depth;

(vii) Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, and visibility);

(viii) Description of marine mammal observations in the 24 hours preceding the incident;

(ix) Species identification or description of the animal(s) involved;

(x) The fate of the animal(s); and

(xi) Photographs or video footage of the animal (if equipment is available).

(b) Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with Quintillion to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Quintillion may not resume their activities until notified by NMFS via letter, email, or telephone.

(c) In the event that Quintillion discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.,* in less than a moderate state of decomposition as described in the next paragraph), Quintillion will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301–427–8401 and the NMFS Alaska Stranding Hotline (1–877–925–7773). The report must include the same information identified in Condition 10(a) above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with Quintillion to determine whether modifications in the activities are appropriate.

(d) In the event that Quintillion discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in Condition 3 of this Authorization (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Quintillion shall report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301–427–8401 and the NMFS Alaska Stranding Hotline (1–877–925–7773) within 24 hours of the discovery. Quintillion shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Quintillion can continue its operations under such a case.

(11) The Plan of Cooperation outlining the steps that will be taken to cooperate and communicate with the native communities to ensure the availability of marine mammals for subsistence uses, must be implemented.

(12) This Authorization may be modified, suspended, or withdrawn if the holder fails to abide by the conditions prescribed herein or if the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals, or if there is an unmitigable adverse impact on the availability of such species or stocks for subsistence uses.

(13) A copy of this Authorization and the Incidental Take Statement must be in the possession of each vessel operator taking marine mammals under the authority of this Incidental Harassment Authorization.

(14) Quintillion is required to comply with the Terms and Conditions of the Incidental Take Statement corresponding to NMFS' Biological Opinion.

Request for Public Comments

NMFS requests comment on our analysis, the draft authorization, and any other aspect of the Notice of Proposed IHA for Quintillion's proposed subsea cable-laying operation in the Bering, Chukchi, and Beaufort seas. Please include with your comments any supporting data or literature citations to help inform our final decision on Quintillion's request for an MMPA authorization.

Dated: March 24, 2016.

Donna S. Wieting,

Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2016–07109 Filed 3–29–16; 8:45 am]

BILLING CODE 3510–22–P

COMMODITY FUTURES TRADING COMMISSION

Market Risk Advisory Committee

AGENCY: Commodity Futures Trading Commission.

ACTION: Notice of meeting.

SUMMARY: The Commodity Futures Trading Commission (CFTC) announces that on April 26, 2016, from 10:00 a.m. to 1:30 p.m., the Market Risk Advisory Committee (MRAC) will hold a public meeting at the CFTC's Washington, DC, headquarters. The MRAC will describe and discuss how well the derivatives markets are currently functioning, including the impact and implications of the evolving structure of these markets on the movement of risk across market participants. Specific topics to be covered are listed in this Notice.

DATES: The meeting will be held on April 26, 2016, from 10:00 a.m. to 1:30