

navigational products and for GIS related applications. The workshops will be announced in the NOS Web sites, www.nos.noaa.gov, and the Office of Coast Survey, noted above, and by mail to NOS constituents.

NOS plans to conduct an initial briefing that will be open to the general public concerning its plan to release ENC's on the Internet. The briefing will be held at 9 AM, July 11, 2001, Room 4527, 1315 East-West Highway, Silver Spring, Maryland. Members of the public who plan on attending this briefing should contact Mike Brown at (301)-713-2712 x153 or e-mail Mike.Brown@noaa.gov.

NOS has been in contact with the U.S. Coast Guard concerning 33 CFR 164.33, Nautical Charts and Publications, as it pertains to this announced policy. Questions concerning those regulations should be addressed to the Director of Waterways Management, United States Coast Guard, Washington, DC 20593-0001.

NOS is publishing this notice consistent with section 8a(6)(j) of the Office of Management and Budget Circular A-130. Anyone with comments or questions regarding this subject should address them to Captain Nicholas Perugini, NOAA, Chief, Marine Chart Division, Office of Coast Survey, NOS/NOAA, 1315 East-West Highway, Silver Spring, Maryland 20910-3282.

FOR FURTHER INFORMATION CONTACT: Captain Nicholas E. Perugini, NOAA, Chief, Marine Chart Division, Office of Coast Survey, NOS/NOAA 1315 East-West Highway, Silver Spring, Maryland 20910-3282, 301-713-2724, Extension 101, FAX: 301-713-4516.

Dated: June 7, 2001.

Margaret A. Davidson,

Acting Assistant Administrator for Ocean Services and Coastal Zone Management.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 052401B]

Small Takes of Marine Mammals Incidental to Specified Activities; Offshore Seismic Activities in the Beaufort Sea

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

ACTION: ACTION: Notice of receipt of application and proposed authorization for a small take exemption; request for comments.

SUMMARY: NMFS has received a request from WesternGeco, LLC (formerly Western Geophysical) for an authorization to take small numbers of marine mammals by harassment incidental to conducting ocean bottom cable (OBC) seismic surveys in the Alaskan Beaufort Sea. Under the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to authorize WesternGeco to incidentally take, by harassment, small numbers of bowhead whales and other marine mammals in the above mentioned area during the open water period of 2001.

DATES: Comments and information must be received no later than July 16, 2001.

ADDRESSES: Comments on the application should be addressed to Donna Wieting, Chief, Marine Mammal Conservation Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910-3225. A copy of the application, the Technical Monitoring Plan, the Environmental Assessment (EA), and a list of references used in this document may be obtained by writing to this address or by telephoning one of the contacts listed here.

FOR FURTHER INFORMATION CONTACT: Simona Perry Roberts, Office of Protected Resources (301) 713-2322, ext. 106, or Brad Smith, Alaska Region (907) 271-5006.

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, notice of a proposed authorization is provided to the public for review.

Permission may be granted if NMFS finds that the taking will have no more than a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses and that the permissible methods of taking and requirements pertaining to the

monitoring and reporting of such taking are set forth.

On April 10, 1996 (61 FR 15884), NMFS published an interim rule establishing, among other things, procedures for issuing incidental harassment authorizations (IHAs) under section 101 (a)(5)(D) of the MMPA for activities in Arctic waters. For additional information on the procedures to be followed for this authorization, please refer to that document.

Summary of Request

On April 16, 2001, NMFS received an application from WesternGeco requesting an authorization for the harassment of small numbers of several species of marine mammals incidental to conducting OBC seismic surveys during the open water season in the south central Beaufort Sea off Alaska between western Camden Bay and Harrison Bay. The primary area of seismic activity is expected to be an area approximately 16 by 7 kilometers (km) (10 miles (mi) by 4 mi) in and near Simpson Lagoon, west of Prudhoe Bay and offshore of Oliktok Point. Weather permitting, the survey is expected to take place between approximately July 15 and late October, 2001. WesternGeco anticipates completing six survey patches during the 2001 open water season. A detailed description of the work proposed for 2001 is contained in the application (WesternGeco, 2001) which is available upon request (see **ADDRESSES**).

Description of the Activity

Seismic surveys are used to obtain data about geological formations several thousands of feet deep. The proposed seismic operation is an OBC survey. WesternGeco's OBC survey involves dropping cables from a ship to the ocean bottom, forming a patch consisting of 4 parallel cables 8.9 km (5.5 mi) long, separated by approximately 600 meters (m) (1,968 feet (ft)) from each other. Hydrophones and geophones, attached to the cables, are used to detect seismic energy reflected back from rock strata below the ocean bottom. The source of this energy is a submerged acoustic source, called a seismic airgun array, that releases compressed air into the water, creating an acoustical energy pulse that is directed downward toward the seabed. WesternGeco will use two source vessels for the open-water 2001 seismic surveys, one for deep water and one for shallow water, primarily shoreward of the barrier islands. The deep water vessel, the R/V *Arctic Star*, will utilize an airgun array with an air discharge volume of 1,210 cubic inches

(in³) (19.8 liters, L). The maximum source levels for the *Arctic Star* will be at 249 dB re 1 micro Pascal per minute (Pa-m) (when the acoustic pressure is 29.4 bar-meters (zero to peak)), or 253 dB re 1 micro Pa-m (when the acoustic pressure is 45.9 bar-meters (peak-to-peak)). Most operations utilizing the 1,210 in³ array are expected to operate at a gun depth of 2.3 m (7.5 ft) and water depth of <10 m (<32.8 ft). The shallow water source vessel, the R/V *Peregrine*, will utilize an airgun array with an air discharge volume of 640 in³ (10.48 L). The source level maximums for the *Peregrine* will be at 237 dB re 1 micro Pa-m (when the acoustic pressure is 6.7 bar-meters (zero to peak)), or 242 dB re 1 micro Pa-m (when the acoustic pressure is 12.2 bar-meters (peak to peak)). These airgun arrays are smaller and less powerful than the arrays used in some other seismic programs in the Beaufort Sea prior to 1999 and are expected to operate at a gun depth of 1 m (3.3 ft) in very shallow water.

The seismic vessels will sail along pre-plotted source lines arranged orthogonally to the OBCs. Each source line will be 5 km (3.1 mi) long and adjacent source lines will be approximately 500 m (1,640 ft) apart. There will be 34 source lines for each seismic patch. The overall grid of source lines for a given patch will be 4.7 km by 16.5 km (2.9 mi by 10.2 mi) and the source line for one patch will overlap with those from adjacent patches.

After sufficient data have been recorded to allow accurate mapping of the rock strata, the cables are lifted onto the deck of one of the two self-powered cable vessels (R/V *Western Endeavor* and R/V *Western Frontier*), moved to a new location (ranging from several hundred to a few thousand feet away), and placed onto the seabed again. A small utility vessel (*Ski Barge*) may also be used to transfer seismic crew and/or marine mammal observers, as well as supplies and refuse, between the seismic vessels and Prudhoe Bay. Air support will be limited to infrequent (if any) helicopter flights and, starting in early September, aerial surveys at altitudes from 900 to 1500 ft (274 to 457 m). For a more detailed description of the seismic operation, please refer to WesternGeco (2001).

Description of Habitat and Marine Mammals Affected by the Activity

A detailed description of the Beaufort Sea ecosystem and its associated marine mammals can be found in several documents (Corps of Engineers, 1999; NMFS, 1999; Minerals Management Service (MMS), 1992, 1996) and is not repeated here.

Marine Mammals

The Beaufort/Chukchi Seas support a diverse assemblage of marine mammals, including bowhead whales (*Balaena mysticetus*), gray whales (*Eschrichtius robustus*), beluga whales (*Delphinapterus leucas*), ringed seals (*Phoca hispida*), spotted seals (*Phoca largha*) and bearded seals (*Erignathus barbatus*). Descriptions of the biology and distribution of these species and of others can be found in NMFS (1999), Western Geophysical (2000), WesternGeco (2001), the annual monitoring reports for seismic surveys in the Beaufort Sea (LGL Ltd. and Greeneridge Sciences Inc, 1997, 1998, 1999, 2000) and several other documents (Corps of Engineers, 1999; Lentfer, 1988; MMS, 1992, 1996; Ferrero *et al.*, 2000). Please refer to those documents for information on these species.

Potential Effects of Seismic Surveys on Marine Mammals

Disturbance by seismic noise is the principal means of taking by this activity. Support vessels and aircraft may provide a potential secondary source of noise. The physical presence of vessels and aircraft could also lead to non-acoustic effects on marine mammals involving visual or other cues.

Underwater pulsed sounds generated by open water seismic operations may be detectable a substantial distance away from the activity. The effect of these pulsed sounds on living marine resources, particularly marine mammals in the area, will be dependent on the hearing sensitivity of the species, the behavior of the animal at the time the sound is detected, as well as the distance and level of the sound relative to ambient conditions. Any sound that is detectable is (at least in theory) capable of eliciting a disturbance or avoidance reaction by some marine mammals or of masking signals of comparable frequency that are generated by marine mammals (e.g., whale calls) (WesternGeco, 2001). An incidental harassment take is presumed to occur when marine mammals in the vicinity of the seismic source, the seismic vessel, other vessels, or aircraft show a disturbance or avoidance reaction to the generated sounds or to visual cues.

When the received levels of noise exceed some behavioral reaction threshold, cetaceans will show disturbance reactions. The levels, frequencies, and types of noise that will elicit a response vary between and within species, individuals, locations, and seasons. Behavioral changes may be subtle alterations in the surface,

respiration, and dive cycles. More conspicuous responses include changes in activity or aerial displays, movement away from the sound source, or complete avoidance of the area. The reaction threshold and degree of response are related to the activity of the animal at the time of the disturbance. Whales engaged in active behaviors, such as feeding, socializing, or mating, are less likely than resting animals to show overt behavioral reactions, unless the disturbance is directly threatening. Seismic pulses have been observed to cause strong avoidance reactions by many of the bowhead whales occurring within a distance of several kilometers, including changes in surfacing, respiration and dive cycles, and to sometimes cause avoidance or other changes in bowhead behavior at considerably greater distances (Richardson *et al.*, 1995; Rexford, 1996; MMS, 1997; Miller *et al.*, 1999). Airgun pulses may also disturb some other marine mammal species occurring in the area. Ringed seals within a few hundred meters of an airgun array showed variable behavior to the noise, with some moving somewhat farther away and other seals not moving far at all (Harris *et al.*, 1997, 1998, in press; Lawson and Moulton, 1999; Moulton and Lawson, 2000).

Although some masking of low-frequency sounds (e.g., bowhead and gray whale calls) is a possibility for this activity, the intermittent nature of seismic survey pulses used by WesternGeco (1 second in duration every 16 to 24 seconds), as well as the fact that airgun operations are expected to occur no more than 50 percent of the time, will limit the extent of any masking. Bowhead whales are known to continue calling in the presence of seismic survey sounds, and their calls can be heard between seismic pulses (Greene *et al.*, 1997, 1999; Richardson *et al.*, 1986). Masking effects are expected to be absent in the case of beluga whales, given that sounds utilized by them are at much higher frequencies (in the 2 to 6 kilohertz (kHz) range) (Sjare and Smith, 1986) than are airgun sounds from WesternGeco's seismic surveys (highest frequency of 188 hertz (Hz)) (WesternGeco, 2001).

Permanent hearing damage is not expected to occur during the project. There is no direct evidence that the hearing systems of marine mammals close to an airgun array would be at risk of temporary or permanent hearing impairment; however, depending on the species, the equipment being used, and the number of pulses to which the animal is exposed, temporary threshold shift (TTS) is a theoretical possibility for

animals within a few hundred meters of the source (Richardson *et al.*, 1995; Finneran *et al.*, 2000). Planned monitoring and mitigation measures, proposed by WesternGeco and described later in this document, are designed to avoid sudden onsets of seismic pulses at full power, to detect marine mammals occurring near the array, and to avoid exposing them to sound pulses that have any possibility of causing hearing impairment.

Bowhead Whales

Studies conducted prior to 1996 (Reeves *et al.*, 1984, Fraker *et al.*, 1985, Richardson *et al.*, 1986, Ljungblad *et al.*, 1988) have reported that, when an operating seismic vessel approaches within a few kilometers, most bowhead whales exhibit strong avoidance behavior and changes in surfacing, respiration, and dive cycles. In three studies of bowhead whales and one of gray whales during this period, surfacing-dive cycles were unusually rapid in the presence of seismic noise, with fewer breaths per surfacing and longer intervals between breaths (Richardson *et al.*, 1986; Koski and Johnson, 1987; Ljungblad *et al.*, 1988; Malme *et al.*, 1988). This pattern of subtle effects was evident among bowhead whales 6 km to at least 73 km (3.7 to 45.3 mi) from seismic vessels. One visibly apparent avoidance response reported from pre-1996 studies involved observations of bowhead whales swimming away from a seismic vessel 24 km (15 mi) away (Koski and Johnson, 1987). It is likely that some migrating bowhead whales show avoidance at distances exceeding those at which Ljungblad *et al.* (1988) and Richardson *et al.* (1986) observed responses. However, at distances greater than around 24 km (15 mi), only subtle changes in the surfacing, respiration, dive cycles were detectable (Richardson *et al.*, 1986).

Results from the 1996–1998 BP, Inc. and Western Geophysical seismic monitoring program indicate that most migrating bowhead whales deflected seaward to avoid an area within about 20 km (12.4 mi) of an active nearshore seismic operation when there were no barrier islands or very shallow water between the seismic operation and the whales (Miller *et al.*, 1998, 1999). The available data do not provide an unequivocal estimate of the distance at which approaching bowhead whales began to deflect, but this may be on the order of 35 km (21.7 mi). It is also uncertain how far beyond (west of) the seismic operation the seaward deflection persisted (Miller *et al.*, 1999). Although very few bowhead whales

approached within 20 km (12.4 mi) of the operating seismic vessel, the number of bowhead whales sighted within that area returned to normal within 12–24 hours after the airgun operations ended (Miller *et al.*, 1999).

Inupiat whalers believe that migrating bowhead whales are sometimes displaced at distances considerably greater than suggested by the pre-1996 scientific studies (Rexford, 1996). Also, whalers believe that avoidance effects can extend out to distances on the order of 30 miles, and that bowhead whales exposed to seismic pulses are also skittish and difficult to approach. The “skittish” behavior may be related to the observed subtle changes in the behavior of bowhead whales exposed to seismic pulses from distant seismic vessels (Richardson *et al.*, 1986).

Gray Whales

The reactions of gray whales to seismic pulses are similar to those documented for bowhead whales during the 1980s. Migrating gray whales along the California coast were noted to slow their speed of swimming, turn away from seismic noise sources, and increase their respiration rates. Malme *et al.* (1983, 1984, 1988) concluded that approximately 50 percent of the migrating gray whales showed avoidance when the average received pulse level was 170 dB (re 1 micro-Pa). By some behavioral measures, clear effects were evident at average pulse levels of 160+ dB, and less consistent results were suspected at levels of 140–160 dB, farther away. Recent research on migrating gray whales showed responses similar to those observed in the earlier research when the source was moored in the migration corridor 2 km (1.2 mi) from shore. However, when the source was placed offshore (4 km (2.5 mi)) of the migration corridor, the avoidance response was not evident on track plots (Tyack and Clark, 1998).

Beluga Whale

The beluga whale is the only species of toothed whale (Odontoceti) expected to be encountered in the Beaufort Sea. Beluga whales have poor hearing thresholds at frequencies below 200 Hz, where most of the energy from airgun arrays is concentrated. Their thresholds at these frequencies (as measured in a captive situation), are 125 dB re 1 micro-Pa or more depending upon frequency (Johnson *et al.*, 1989). Although not expected to be significantly affected by the noise, given the high source levels of seismic pulses, airgun sounds may sometimes be audible to beluga whales at distances of 100 km (62.1 mi) (Richardson and

Wursig, 1997), and perhaps further if actual low-frequency hearing thresholds in the open sea are better than those measured in captivity (WesternGeco, 2001). The reaction distance for beluga whales, although presently unknown, is expected to be less than that for bowhead whales, given the presumed poorer sensitivity of beluga whales to low-frequency sounds (WesternGeco, 2001).

Ringed, Spotted, and Bearded Seals

No detailed studies of reactions by seals to noise from open water seismic exploration have been published (Richardson *et al.*, 1995). However, there are some data on the reactions of seals to various types of impulsive sounds (LGL and Greeneridge, 1997, 1998, 1999a; J. Parsons as quoted in Greene, *et al.* 1985; Anon., 1975; Mate and Harvey, 1985). Also, the results from the 1996–2000 BP and Western Geophysical monitoring studies provide a substantial amount of directly relevant information (Harris *et al.*, 1997, 1998, in press; Lawson and Moulton, 1999; Moulton and Lawson, 2000). During these monitoring studies, the operation of the airgun array had minor and variable effects on the behavior of seals within a few hundred meters of the array and (to a limited extent) the distribution of seals around the source vessel (Moulton and Lawson, 2000). Nonetheless, seals were observed throughout each season in the general area where seismic operations were occurring. Seals were sometimes observed within the 190 dB re 1 micro-Pa designated safety radii, and at these times the airguns were shut down.

Underwater audiograms have been obtained for three species of phocid seals - the ringed, harbor, and harp seals (*Pagophilus groenlandicus*). These audiograms were reviewed in Richardson *et al.* (1995) and Kastak and Schusterman (1998). Below 30–50 kHz, the hearing threshold of phocinids is essentially flat, down to at least 1 kHz, and ranges between 60 and 85 dB re 1 micro-Pa. There are few published data on hearing sensitivity of phocid seals below 1 kHz. NMFS considers harbor seals to have a hearing threshold of 70–85 dB at 1 kHz (60 FR 53753, October 17, 1995), and recent measurements for a harbor seal indicate that, below 1 kHz, its thresholds deteriorate gradually to 97 dB re 1 micro-Pa at 100 Hz (Kastak and Schusterman, 1998).

Based on published references (see LGL and Greeneridge, 1997, 1998, 1999a; Thompson *et al.* 1998), it is unlikely that pinnipeds would be harassed or injured by low frequency sounds from a seismic source unless

they were within relatively close proximity of the seismic array. For permanent injury, pinnipeds would likely need to remain in the high-noise field for extended periods of time. Existing evidence also suggests that, while seals may be capable of hearing sounds from seismic arrays, they appear to tolerate intense pulsatile sounds without known effect once they learn that there is no danger associated with the noise (see, for example, NMFS/ Washington Department of Wildlife,

1995). In addition, they will apparently not abandon feeding or breeding areas due to exposure to these noise sources (Richardson *et al.*, 1991) and may habituate to certain noises over time. Since seismic work is fairly common in Beaufort Sea waters, pinnipeds have been previously exposed to seismic noise and may not react to it after initial exposure. For a discussion on the anticipated effects of ships, boats, and aircraft on marine mammals and their food

sources, please refer to the application (WesternGeco, 2001). Information on these effects is preliminarily adopted by NMFS as the best information available on this subject.

Numbers of Marine Mammals Expected to Be Taken

WesternGeco estimates that the following numbers of marine mammals may be subject to Level B harassment, as defined in 50 CFR 216.3:

Species	Population Size	Takes by Harassment in 2001	
		Maximum Number ¹	Probable ²
Bowhead whale	8,200		
160 dB criterion	-	1,000	<500
20 km criterion	-	2,630	1,300
Gray whale	26,000	<10	0
Beluga whale	39,258	250	<150
Ringed seal ³	1-1.5 million	400	<200
Spotted seal ³	>200,000	10	<2
Bearded seal ³	>300,000	50	<15

¹ The maximum number that might be taken if seismic surveys are operable during the September/October period and the bowhead migration passes unusually close to shore as in 1997.

² The number that could be taken under the most likely operating conditions.

³ Some individual seals may be harassed more than once.

Estimates of Marine Mammal Takes

Estimates of takes by harassment will be made through vessel and/or aerial surveys. Preliminarily, WesternGeco will estimate the number of (1) marine mammals observed within the area strongly ensounded by the OBC seismic vessel (see Mitigation section below for area description); (2) marine mammals observed showing apparent avoidance or disturbance reactions to seismic pulses (e.g., heading away from the seismic vessel in an atypical direction); (3) marine mammals estimated to be subject to take by type (1) or (2) when no monitoring observations were possible; and (4) bowhead whales whose migration routes came within 20 km or greater (actual distance dependent on a combination of 1996-1998 and 2001 data) of the operating OBC seismic vessel, or would have if they had not been displaced farther offshore.

Effects of Seismic Noise and Other Activities on Subsistence Needs

The disturbance and potential displacement of marine mammals by sounds from seismic activities are the principle concerns related to subsistence use of the area. The harvest of marine mammals (mainly bowhead whales, but also ringed and bearded seals) is central to the culture and subsistence economies of the coastal North Slope communities. In particular,

if migrating bowhead whales are displaced farther offshore by elevated noise levels, the harvest of these whales could be more difficult and dangerous for hunters. The harvest could also be affected if bowhead whales become more "skittish" when exposed to seismic noise.

Nuiqsut is the community closest to the area of the proposed activity. The communities of Barrow and Kaktovik also harvest resources that pass through the general area, but do not regularly hunt in the planned seismic exploration area. Subsistence hunters from all three communities conduct an annual hunt for migrating bowhead whales during the autumn months. In recent years, Nuiqsut whalers typically take two to four whales each year (WesternGeco, 2001). Nuiqsut whalers concentrate their efforts on areas north and east of Cross Island, generally in water depths greater than 20 m (65 ft).

Whalers from the village of Kaktovik search for whales east, north, and west of the village. Kaktovik is located 72 km (45 mi) east of the easternmost end of WesternGeco's planned 2001 seismic exploration area.

Whalers from the village of Barrow search for bowhead whales much farther from the planned seismic area, > 200 km (>125 mi) to the west (WesternGeco, 2001).

The location of the proposed seismic activity is south of the center of the westward migration route of bowhead

whales, but there is some limited overlap with the southern limit of the migration. Seismic monitoring results from 1996-1998 indicate that most bowhead whales avoid the area within about 20 km (12.4 mi) around the airgun array when it is operating, and some avoid the area within 30 km (18.6 mi). In addition, bowhead whales may be able to hear the sounds emitted by the seismic array out to a distance of 50 km (31.1 mi) or more, depending on the ambient noise level and the efficiency of sound propagation along the path between the seismic vessel and the whale (Miller *et al.*, 1997).

Cross Island, the principle field camp location for Nuiqsut whalers, is located within the general area of the proposed 2001 seismic area. Thus, the possibility and timing of potential seismic operations in the Cross Island area requires WesternGeco to provide NMFS with either (1) a Plan of Cooperation with the Alaska Eskimo Whaling Commission (AEWC) and the North Slope whaling communities, or (2) measures that have been or will be taken to avoid any unmitigable adverse impact on the availability of these animals for subsistence needs. WesternGeco's application has preliminarily identified those measures that will be taken to minimize any adverse effect on subsistence. In addition, the timing of seismic operations will be addressed in a Conflict Avoidance Agreement (CAA)

with the Nuiqsut whalers and the AEWC (WesternGeco, 2001). Also, the monitoring plan proposed by WesternGeco (2001) is expected to provide information that will help resolve uncertainties about the effects of seismic exploration on the accessibility of bowhead whales to hunters.

Nuiqsut hunters also hunt seals for subsistence purposes. Most seal hunting has been during the early summer in open water. Boat crews hunt ringed, spotted, and bearded seals. The most important sealing area for Nuiqsut hunters is off the Colville Delta, extending as far west as Fish Creek and as far east as Pingok Island. The planned seismic exploration during the summer has some potential to influence seal hunting activities by residents of Nuiqsut. During BP and Western Geophysical's 1996-2000 seismic programs, an operating airgun array apparently did not displace seals by more than a few hundred meters (and usually much less). Therefore, because WesternGeco is proposing similar mitigation and consultation procedures this year, it is unlikely that seismic activities would have more than a negligible impact on Nuiqsut seal hunting.

Anticipated Impact on Habitat

The proposed seismic activity is not expected to cause significant and permanent impacts on habitats used by marine mammals, or to the food sources they utilize. The main impact associated with the proposed activity will be temporarily elevated noise levels.

Prey fish often react to sounds, especially strong and/or intermittent sounds of low frequency (Chapman and Hawkins, 1969; Pearson *et al.*, 1992; Skalski *et al.*, 1992). Fish often habituate to repeated strong sounds rather rapidly, on time scales of minutes to an hour. However, the habituation does not endure, and resumption of the disturbing activity may again elicit

disturbance responses from the same fish. Fish near the airgun arrays are likely to dive to the bottom or exhibit some other kind of behavioral response (WesternGeco, 2001). This would likely have little or no impact on seal or beluga whale feeding in the shallow areas where seismic work is planned.

Many crustaceans can make sounds and some Crustacea and other invertebrates have some type of sound receptor. However, the reactions of zooplankton and benthic animals, the primary prey species of bowhead and gray whales, to sound are not known. Zooplankton may react to the shock wave from an airgun array when they occur very close to the source. However, little or no mortality is expected. A reaction by zooplankton to a seismic impulse would only be relevant to bowhead whales if it caused a concentration of zooplankton to scatter. Pressure changes of sufficient magnitude to cause this type of reaction would probably occur only very close to the source. Impacts on zooplankton behavior are predicted to be negligible and this would translate into negligible impacts on feeding bowhead whales.

Physical contact with the ocean bottom by cables and ancillary equipment will be temporary and in a very small fraction of the potential survey area. The use of OBCs could result in some short-term disturbance to sediments and benthic organisms in the immediate area of the cable. Recovery of disturbed soft-bottom areas will occur in a manner similar to that occurring after natural disturbances by ice scour.

The 2001 OBC survey area may overlap with areas identified as "Boulder Patch" habitat. If such overlap occurs, WesternGeco will adhere to any applicable requirements identified by the responsible governmental agencies.

Mitigation

For the 2001 seismic operations, WesternGeco will reduce its primary

airgun array from the 1,500 in³ used in 1998 to 1,210 in³. This reduction in volume will lower the source levels and result in lower received levels at each distance compared to Western Geophysical's 1998 project. The smaller volume 640 in³ airgun array consists of sixteen 40 in³ airguns in four 4-gun clusters. The airguns comprising this small volume array will be spread out horizontally, such that the energy from the array, like that from the 1,210 in³ array, will be directed downward as far as possible. The distances within which received levels (see the proposed safety radii below) can exceed 190 dB and 180 dB re 1 micro-Pa have been measured at two airgun depths (2.3 and 5 m or 7.5 and 16.4 ft) and in two water depths (8 and 23 m or 26.2 and 75.5 ft) (Greene and McLennan, 2000), and are reduced relative to those around the 1998 array. The shallower depth at which the 640 in³ array will operate will tend to reduce the source level (and hence the 190 and 180 dB safety radii) even farther; however, as a precautionary approach, the 190 and 180 dB radii for the 1,210 in³ airgun operating at 2.3 m (7.5 ft) depth will be assumed to apply to the 640 in³ array operating at 1 m (3.3 ft) gun depth.

Proposed safety radii for OBC seismic operations in 2001 are based on comprehensive measurements of the sounds recorded in the water near the OBC array in 1999 and analyzed by Greene and McLennan (2000).

Vessel-based observers will monitor marine mammal presence in the vicinity of the seismic arrays throughout the seismic program. To avoid the potential for injury, WesternGeco proposes to immediately shut down the seismic source if seals and/or whales are sighted within the proposed safety radii. The proposed safety radii are as follows:

SOURCE (in ³)	AIRGUN DEPTH (m/ft)	WATER DEPTH (m/ft)	SAFETY RADII(m/ft)	
			190 dB (Seals)	180 dB (Whales)
1210	2.3/7.5	<10/<32.8	100	150
1210	2.3/7.5	>10/>32.8	160	550
1210	5/16.4	<10/<32.8	160	350
1210	5/16.4	>10/>32.8	260	900
640	1/3.3	<10/<32.8	100	150
640	1/3.3	>10/>32.8	160	550

In addition, WesternGeco proposes to ramp-up the 1,210 in³ and 640 in³ seismic sources to operating levels at a rate no greater than 6 dB per minute. Under normal operational conditions

(source vessel speed at least 4 knots), a ramp-up would be required after the array has been inactive for a period lasting 1 minute or longer. If the towing speed is reduced to 3 knots or less, it is

proposed that a ramp-up would be required after the array has been inactive for a period lasting 2 minutes or longer. Ramp-up will begin with an air volume discharge not exceeding 80

in³ for the 1,210 in³, and 40 in³ for the 640 in³ array. Additional guns will be added at appropriate intervals so as to limit the rate of increase in source level to 6 dB per minute.

Monitoring

As part of its application, WesternGeco provided a monitoring plan for assessing impacts to marine mammals from seismic surveys in the Beaufort Sea. This monitoring plan is described in WesternGeco (2001) and in LGL, Ltd. and Greeneridge Sciences Inc. (2001). As required by the MMPA, this monitoring plan will be subject to a peer-review panel of technical experts prior to formal acceptance by NMFS.

WesternGeco plans to conduct the following monitoring:

Vessel-based Visual Monitoring

It is proposed that one or two marine mammal observers aboard the seismic source vessel will search for and observe marine mammals whenever seismic operations are in progress and for at least 30 minutes before the planned start of seismic transmissions. These observers will scan the area immediately around the vessels with reticle binoculars during the daytime. Laser rangefinding binoculars will be available to assist with distance estimation. If operations continue after mid-August, when the duration of darkness increases, image intensifiers and additional light sources will be used to illuminate the safety zone (see application for more detail).

A total of four observers (three trained biologists and one Inupiat observer/communicator) will be based aboard the seismic source vessel *Arctic Star*. They will work in teams of two, with individual watches limited to no more than 4 consecutive hours.

A total of two observers will be based aboard the seismic source vessel *Peregrine*. Individual watches will be limited to no more than 4 consecutive hours. In addition, wheelhouse staff aboard the *Peregrine* will assist in maintaining a watch for marine mammals. If operations continue for substantially more than 12 hours per day, 1 or 2 additional observers will be required on a rotating basis.

When marine mammals are detected within or about to enter the safety zone designated to prevent injury to the animals (see Mitigation), the geophysical crew leader will be notified and the airgun(s) will be shut down immediately.

Aerial Surveys

If OBC seismic work continues after August 31, 2001, aerial surveys by

WesternGeco's marine mammal contractor, LGL Ltd., would occur from the date on which OBC seismic operations commence until 1 day after the OBC seismic operations end. If OBC seismic work is suspended during the bowhead subsistence hunting season, but resumes later in the autumn, aerial surveys will commence (or resume) when OBC seismic work resumes. WesternGeco proposes to continue aerial surveys until 1 day after OBC seismic work ends.

The primary objective of the aerial surveys will be to document the occurrence, distribution, and movements of bowhead whales, and (secondarily) beluga and gray whales in and near the area where they might be affected by the seismic pulses. These observations will be used to estimate the level of harassment takes and to assess the possibility that seismic operations affect the accessibility of bowhead whales for subsistence hunting. Pinnipeds will be recorded when seen, although survey altitude will be too high for systematic surveys of seals. Sonobuoys will be dropped to document seismic and ambient noise at offshore locations, including locations near whales.

WesternGeco proposes to fly at 300 m (1,000 ft) in areas where no whaling is underway, but it may reduce that altitude to no less than 275 m (900 ft) under low cloud conditions. In addition, and subject to the terms of the 2001 CAA with subsistence communities, surveys may be flown at 457 m (1,500 ft) altitude over areas where whaling is occurring on that date and should avoid direct overflights of whaleboats and Cross Island, where whalers from Nuiqsut are based during their autumn whale hunt.

The daily aerial surveys are proposed to cover a grid of 18 north-south lines spaced 8 km (5 mi) apart and extending seaward to about the 100 m (328 ft) depth contour (typically about 65 km (40.4 mi) offshore). This grid will extend from about 65 km (40.3 mi) east to 65 km (40.3 mi) west of the area in which seismic operations are underway on that date. This survey design will provide extended coverage to determine the eastward and westward extent of the offshore displacement of whales by seismic operations. In 2001, no "intensive" grid surveys are planned to be conducted because very few whales occur within 20 km (12.4 mi) of the seismic operation.

Detailed information on the aerial survey program can be found in WesternGeco(2001) and in LGL Ltd. and Greeneridge Sciences Inc. (2001), which

are incorporated in this document by citation.

Acoustical Measurements

The acoustic measurement program proposed for 2001 is designed to provide, in conjunction with existing results from previous years (see LGL and Greeneridge Sciences Inc., 1997, 1998, 1999), the specific acoustic data needed to document the seismic sounds to which marine mammals will be exposed in 2001. Proposed emphasis is on situations and locations not studied in detail during previous operations.

WesternGeco has two basic objectives for collecting acoustic measurements, one physical and one biological. The physical acoustics objective is to determine the characteristics of airgun array pulses as received in the bowhead migration corridor at varying distances offshore and to the east of the area of seismic exploration in 2001 and in 1996–98 plus 2001 combined. Pulse characteristics to be determined are received levels and pulse durations versus range offshore and to the east, spectral properties, and signal-to-ambient ratios. These measurements will only be made if seismic operations continue into September/October. The biological objective is to determine whether there are differences in the pattern of bowhead call detection rates near, offshore of, and east of the seismic exploration area at times with and without active seismic operations based on 2001 data and combined 1996-98 and 2001 data. If there are differences, then WesternGeco proposes to use the combined acoustic and aerial survey data to evaluate whether the noise-related differences in call detection rate are attributable to differences in calling behavior, whale distribution, or a combination of the two.

In 2001, the acoustic measurement program is planned to include (1) deployment in late August/September of autonomous seafloor acoustic recorders (ASARs) to provide continuous acoustic data for extended periods, and (2) use of air-dropped sonobuoys in September/October. WesternGeco proposes to use these methods only if OBC surveys occur in September/October.

(1) The ASARs would be placed on the sea bottom at three locations in late August or September if OBC seismic work extends into the September/October 2001 period. This method provides a large number of measurements of received characteristics of seismic pulses in the whale migration corridor well offshore and east of the area of OBC seismic exploration. ASARs would also provide continuous data on whale calling

patterns at times with and times without airgun operations. These recorders would also collect data on ambient noise levels.

(2) Sonobuoys would be dropped and monitored from survey aircraft during September/October (if the seismic operations are continuing at that time) at an average rate of about two sonobuoys per day of aerial surveys on days when bowhead whales are seen. This method provides data on received levels and other characteristics of seismic pulses received in the bowhead whale migration corridor, including some of the specific locations where bowhead whales are observed. Sonobuoys would also provide the ambient noise data needed to estimate signal-to-noise ratios for seismic pulses received by whales.

For a more detailed description of planned monitoring activities, please refer to the application and the Technical Monitoring Plan (WesternGeco, 2001; LGL Ltd. and Greeneridge Sciences Inc., 2001).

Reporting

WesternGeco will provide an initial report on 2001 activities to NMFS within 90 days after the end of the seismic program. This report will summarize dates and locations of seismic operations, marine mammal sightings (dates, times, locations, behaviors, associated seismic survey activities), estimates of the amount and nature of all takes by harassment or in other ways, and any apparent effects on accessibility of marine mammals to subsistence users.

A final technical report will be provided by WesternGeco no later than April 30, 2002. The final technical report will contain a description of the methods, results, and interpretation of all monitoring tasks.

Consultation

Under section 7 of the Endangered Species Act (ESA), NMFS completed an informal consultation on the issuance of an IHA for similar activities on July 26, 1999. If an authorization to incidentally harass listed marine mammals is issued under the MMPA for this activity, NMFS will issue an Incidental Take Statement under section 7 of the ESA.

National Environmental Policy Act (NEPA)

In 1999, NMFS conducted an environmental assessment (EA) on the impacts of conducting seismic surveys during the open water season in the U.S. Beaufort Sea. In that analysis NMFS determined that neither the authorization for the harassment of

small numbers of several species of marine mammals incidental to conducting seismic surveys nor the alternatives to that action would significantly affect the quality of the human environment. Since this proposed action by WesternGeco, LLC does not differ from actions previously analyzed by NMFS under the 1999 EA, this action is categorically excluded from further NEPA review (NOAA NAO 216-6). A copy of the 1999 EA is available upon request (see **ADDRESSES**).

Preliminary Conclusions

NMFS has preliminarily determined that the short-term impact of conducting seismic surveys in the Alaskan Beaufort Sea will result, at worst, in a temporary modification in behavior by certain species of cetaceans and possibly by pinnipeds. While behavioral modifications may be made by these species to avoid the resultant noise, this behavioral change is expected to have a negligible impact on the animals.

While the number of potential incidental harassment takes will depend on the annual variability in distribution and abundance of marine mammals within the area of seismic operations, due to the distribution and abundance of marine mammals during the projected period of activity and the location of the proposed seismic activity in waters generally too shallow and distant from the edge of the pack ice for most marine mammals of concern, the number of potential harassment takings is estimated to be small. In addition, no take by injury and/or death is anticipated, and the potential for temporary or permanent hearing impairment will be minimized through the incorporation of the mitigation measures mentioned in this document. No rookeries, mating grounds, year-round areas of concentrated feeding, or other areas of special significance for marine mammals occur within or near the planned area of operations during the season of operations.

Because bowhead whales are east of the seismic area in the Canadian Beaufort Sea until late August/early September, seismic activities are not expected to impact subsistence hunting of bowhead whales prior to that date. After August 31, 2001, until 1 day after the OBC seismic operations end, aerial survey flights for bowhead whale assessments are proposed to be undertaken by WesternGeco. If OBC seismic work is suspended during the bowhead subsistence hunting season, but resumes later in the autumn, aerial surveys will commence (or resume) when OBC seismic work resumes. The proposed duration for aerial surveys

will be a reduction from previous years. WesternGeco believes this reduction is appropriate because some of the main questions about disturbance to bowhead whales from a nearshore seismic operation were answered by the 1996-1998 monitoring projects. In addition, the MMS expects to conduct its broad-scale aerial survey work from approximately August 31 until the end of the bowhead migration in October. WesternGeco believes that this combined aerial survey data will provide sufficient information to estimate the numbers of bowhead whales taken by harassment.

Appropriate mitigation measures to avoid an unmitigable adverse impact on the availability of bowhead whales for subsistence needs will be the subject of consultation between WesternGeco and subsistence users.

Open-water seismic exploration in the Alaskan Beaufort Sea does have some potential to influence seal hunting activities by residents of Nuiqsut. However, because the main summer sealing by the village of Nuiqsut is conducted off the Colville Delta, west of the proposed survey area, and the zone of influence by seismic sources on seals is expected to be fairly small (less than a few hundred meters), NMFS believes that WesternGeco's OBC seismic survey will not have an unmitigable adverse impact on the availability of seals for subsistence uses.

Proposed Authorization

Provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated, NMFS proposes to issue an IHA to WesternGeco for an OBC seismic survey during the 2001 Alaskan Beaufort Sea open water season. NMFS has preliminarily determined that the proposed seismic activity would result in the harassment of only small numbers of bowhead whales, beluga whales, ringed seals, bearded seals, and possibly spotted seals and gray whales; would have no more than a negligible impact on these marine mammal stocks; and would not have an unmitigable adverse impact on the availability of marine mammal stocks for subsistence uses.

Information Solicited

NMFS requests interested persons to submit comments, and information, concerning this request (see **ADDRESSES**).

Dated: June 7, 2001.

Wanda L. Cain,

Acting Deputy Director, Office of Protected Resources.

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CONSUMER PRODUCT SAFETY COMMISSION

[CPSC Docket No. 01-C0008]

Fisher-Price, Inc., a Corporation Provisional Acceptance of a Settlement Agreement and Order

AGENCY: Consumer Product Safety Commission.

ACTION: Notice.

SUMMARY: It is the policy of the Commission to publish settlements which it provisionally accepts under the Consumer Product Safety Act in the **Federal Register** in accordance with the terms of 16 CFR 1118.20(e). Published below is a provisionally-accepted Settlement Agreement with Fisher-Price, Inc., a corporation containing a civil penalty of \$1,100,000.

DATES: Any interested person may ask the Commission not to accept this agreement or otherwise comment on its contents by filing a written request with the Office of the Secretary by June 29, 2001.

ADDRESSES: Persons wishing to comment on this Settlement Agreement should send written comments to the Comment 01-C0008, Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207.

FOR FURTHER INFORMATION CONTACT: Roald G. Yelenik, Trial Attorney, Office of Compliance and Enforcement, Consumer Product Safety Commission, Washington, DC 20207; telephone (301) 504-0626, 1351.

SUPPLEMENTARY INFORMATION: The text of the Agreement and Order appears below.

Dated: June 7, 2001.

Todd A. Stevenson,

Acting Secretary.

Settlement Agreement and Order

1. This Settlement Agreement, made by and between the staff ("the staff") of the U.S. Consumer Product Safety Commission (the "Commission") and Fisher-Price, Inc. ("Fisher-Price" or "Respondent"), a corporation, in accordance with 16 CFR 1118.20 of the Commission's Procedures for Investigations, Inspections, and Inquiries under the Consumer Product Safety Act ("CPSA"), is a settlement of the staff allegations set forth below.

The Parties

2. The Commission is an independent federal regulatory agency responsible for the enforcement of the Consumer Product Safety Act, 15 U.S.C. 2051-2084.

3. Respondent is a corporation organized and existing under the laws of the State of Delaware with its principal corporate offices located in East Aurora, N.Y. Fisher-Price designs and distributes toys and juvenile products. In May 1994, the parent corporation of Fisher-Price acquired Kransco, the manufacturer of "Power Wheels" ride-on cars and trucks. Subsequently, Fisher-Price designed, marketed and distributed "Power Wheels" ride on cars and trucks.

Staff Allegations

4. Between 1994 and October 1998, Fisher-Price distributed nationwide, and prior to that time, Kransco manufactured and sold nationwide, a total of approximately 10 million battery-powered Super 6 and 12-volt "Power Wheels" ride-on toy cars and trucks (the "vehicle(s)") in nearly 100 different models. These vehicles are intended for children two to seven years old.

5. The vehicles are "consumer product(s)" and Respondent is a "distributor" of "consumer product(s)," which were "distributed in commerce" as those terms are defined in sections 3(a)(1), (5), (11) and (12) of the CPSA, 15 U.S.C. 2052(a)(1), (5), (11) and (12).

6. The vehicles are defective because their electrical components can overheat, melt, short circuit, or otherwise fail and thereby cause fires. If this should occur, children and other consumers could suffer serious injuries or death. Additionally, wiring problems can prevent the vehicles from stopping, thereby creating the potential for collisions that could cause serious injury or death.

7. Between early 1995 and July 1998, Respondent received reports of more than 116 fires involving the vehicles and reports of more than 1,800 incidents of the vehicles' electrical components overheating, short-circuiting, melting or failing. This resulted in at least nine minor burn injuries to children, and up to \$300,000 in property damage to 22 houses and garages. Moreover, Fisher-Price was aware of at least 71 incidents involving the products' failure to stop, resulting in six minor injuries when the vehicles hit a car, truck, pole, window or fence.

8. Despite being aware of the information set forth in paragraphs 6 and 7 above, Fisher-Price did not

provide a written report to the Commission until March 1997, when it partially responded to the Commission staff's February 1997 request for a Full Report. However, Respondent did not fully comply with the staff's investigational requests until July 1998.

9. Although Respondent had obtained sufficient information to reasonably support the conclusion that these vehicles contained defects which could create a substantial product hazard, or created an unreasonable risk of serious injury or death, it failed to report such information to the Commission as required by section 15(b) of the CPSA. By failing to report, Fisher-Price violated section 19(a)(4) of the CPSA, 15 U.S.C. 2068(a)(4).

10. Respondent committed this failure to report to the Commission "knowingly", as the term "knowingly" is defined in section 20(d) of the CPSA, 15 U.S.C. 2069(d), and Respondent is subject to civil penalties under section 20 of the CPSA.

Response of Fisher-Price

11. Respondent denies that the vehicles contain defects which could create a substantial product hazard pursuant to section 15(a) of the CPSA, 15 U.S.C. 2064(a).

12. Respondent denies that it violated the reporting requirements of section 15(b) of the CPSA, 15 U.S.C. 2064(b).

13. Respondent denies that the information available to it reasonably supported the conclusion that the vehicles contained a defect which could create a substantial product hazard or created an unreasonable risk of serious injury or death, and, therefore, no report was required under section 15(b) of the CPSA, 15 U.S.C. 2064(b).

14. Notwithstanding its denial that the vehicles contain a defect which could create a substantial product hazard, and notwithstanding its denial that the vehicles create an unreasonable risk of serious injury or death, Respondent, nevertheless, cooperated with the staff in recalling the products.

15. Respondent agrees to this Settlement Agreement and Order solely to avoid incurring additional legal costs and it does not constitute nor is it evidence of an admission of any fault, any liability, any violation of any law, or any wrongdoing by Respondent.

16. Respondent enters into this Agreement solely to settle the allegations of the staff that a civil penalty is appropriate.

Agreement of the Parties

17. The Commission has jurisdiction over this matter and over Fisher-Price under the CPSA, 15 U.S.C. 2051-2084.