

GXT Responses to Review Comments (2011 Northeast Greenland Survey Program EIA)

The following contains GXT's responses to the specific comments received (through BMP) concerning the EIA filed for its 2011 Northeast Greenland seismic survey. In each case, the following Table indicates where in the EIA the issues are considered and addressed.

NERI's Comments	GXT Response
Seismic Surveys	
<p>As for walrus area goes 3 lines (2550, 5200 and 1150) into conservation areas. All are relatively far from the coast, but especially 1150 ends approx. 30 km from a very important walrus landing place. How seismic shooting will affect walrus in this area is difficult to assess, but there will be a significant risk to scare them away.</p>	<p>As reviewed in Section 3.6.3 and 3.7.3 of GXT's EIA, available information collected from seismic vessels in the Chukchi Sea indicates that some walrus exhibited localized avoidance of the seismic vessel when airguns were operational. Other walrus showed little response and were observed as close as 500 m from the airgun array where received sound levels were predicted as 160 dB re 1 μPa (rms). Walrus hauled out at a terrestrial site are not expected to be affected by a vessel 30 km away. However, animals within the water near the site will likely detect airgun pulses. Although the seismic survey sound may be audible, it may not elicit any overt behavioural response in walrus. In addition, GXT's seismic vessel will only occur on the western portion of seismic line 1150 nearest the walrus haul-out site for a very limited time. As concluded in the EIA, no significant effects on walrus behaviour are expected.</p> <p>As noted by NERI, one line (1150) extends into the southern Walrus Protection Zone (approximately 15 km). However, the line is approximately 68 km from the next nearest line to the north, and is thus within NERI's precaution that any lines in the area should be "of limited extent (a few widely spaced (>10 km) lines)". In addition, enhanced mitigations will be applied in these areas (500 m shutdown zone and additional watch from the icebreaker), as described below for narwhal/bowheads (See EIA 3.6.3)</p>
<p>Numerous lines (many of which are closely spaced, ie by approx. 10 km distance) overlaps with the protection area of narwhal and Greenland whale. An indication in NERI's guidelines that seismic surveys</p>	<p>As noted in the EIA, although GXT has asked to permit several lines in this area, it is not expected that it will possible to do them all in 2011 in any case, as anticipated in the EIA (Section 3.6.2). The</p>

<p>should be avoided or limited in those areas. Limited means that the parallel seismic lines have a distance greater than 10 km. The 18 east-west lines and 2 north-south lines that go into the protected area of Greenland whales and narwhals have distances between 10 and 60 km (including approx. 10 km between 15 of the lines). The multiple lines with 10 km spacing gives rise to some concern when NERI's knowledge about the area are very sparse, and there may be large and important instances of whales which are not taken into account by the designation of the area. Especially, Greenland whales with calf.</p>	<p>extra permitted lines are requested to provide GXT options if the ice conditions are difficult. For instance, in previous years GXT has permitted lines in the new narwhal/bowhead protection zone between Hovgaard Island and Île de France but has never been able to do acquisition there because of ice/weather.</p> <p>However, to increase mitigations there for marine mammals, and as advised by NERI and the BMP in 2010, when working in this area the survey ships will avoid the seaward edge of the landfast (permanent / persistent) ice between Hovgaard Ø and Île de France by a distance of at least 10 km.</p> <p>In addition, as discussed and described below, GXT will implement an array shutdown if a bowhead whale, northern right whale, beluga, narwhal, or walrus is observed within or about to enter within a 500 m radius of the seismic source in these areas. This is an increase from the 200 m shutdown zone previously planned.</p> <p>Also, as described and discussed below, GXT will utilize on-watch personnel on the icebreaker bridge to sight and record marine mammals, and to relay this information immediately to the MMSOs on the seismic ship.</p> <p>Further, if requested by BMP/NERI, GXT will reduce its overall acquisition in the Narwhal/ Bowhead Protection Zone by 240 line km compared to the amount proposed. This is equivalent to reducing every second line by 25 km within the area, though the actual location of the line reductions will be dictated by ice conditions at the time.</p> <p>These enhanced mitigations are included in Table 3 and Section 3.6.1 and 3.6.2 of GXT's EIA.</p>
<p>There will be risk that the seismic activities in the designated protection area will scare away both narwhals and Greenland whales from a presumably critical summer habitat.</p>	<p>Based on studies in other arctic areas (see Sections 3.6.1 and 3.6.2 of the EIA), it is not predicted that narwhals and bowhead whales will be scared away from their summer habitat. GXT will follow all BMP regulations and other indicated enhanced mitigation measures for marine mammals, including a shutdown of the airgun arrays for</p>

	narwhals and bowhead whales within a 500 m zone in all protection areas, and increased whale monitoring (see EIA Section 3.6).
EIA	
<p>The environmental impact assessment indicates that GXT is aware of issues surrounding the seismic noise and the sensitive elements in the environment. But GXT's assessment of the impacts ("negligible" to "moderate", and "dual risk" [residual risk?]) influences are all "not significant", especially on marine mammals are on the low side of what NERI assesses.</p>	<p>It should be noted that in GXT's EIA methodology, these assessment designations are intended to be with all mitigations in place.</p> <p>GXT's assessment is based on the best available scientific information and considers BMP's required mitigation measures. However, it is acknowledged that there are data gaps that influence the certainty in these impact predictions. These uncertainties are indicated as reduced levels of confidence in the impact predictions. GXT's enhanced marine mammal monitoring program will help address these data gaps (EIA Section 3.6).</p> <p>To further ensure the accuracy of the assessment predictions that no effects will be significant with mitigations in place, GXT will apply enhanced mitigation measures. As a further cautionary approach (see response to GINR comment below) to BMP's minimum mitigation measures for marine mammals, GXT is proposing to increase the shutdown zone implemented during its 2009 and 2010 seismic programs from 200 m to 500 m around the seismic source for bowhead whale, northern right whale, beluga, narwhal, or walrus in all protection areas/zones, although Government regulations do not require any shutdowns. Further, in all areas, GXT will maintain an increased marine mammal watch from the icebreaker. These enhanced measures are described in Sections 3.5 and 3.6 of the EIA.</p> <p>To make sure that all personnel are aware of the environmental issues and mitigations that will be applied for the 2011 survey, GXT environmental and Project management personnel had in-person meetings with seismic survey vessel crew and managers in Munkebo, Denmark, in early July 2011 to ensure full compliance.</p>
The areas which GXT estimates that the animals can	As noted (see previous comment on walrus),

<p>be affected within ("spatial extent") of the seismic sources are too small, and set to max 101-1,000 km. The very strong sound source to be used can probably affect narwhals up to 150 km distance from each shot point, which would correspond to a minimum area of 70,000 square km.</p>	<p>although the seismic survey sound may be audible to a marine mammal at relatively long distances, the sound is not expected to be of sufficient level to elicit any overt behavioural response. During studies of other arctic marine mammal (bowhead whales, beluga whales, ringed seals, walrus) response to seismic surveys, behavioural response distances support the spatial extent predictions provided in GXT's EIA. It is acknowledged that narwhal responses to seismic surveys have not been studied but the best available information was used in the EIA to make effects predictions.</p> <p>LGL did not use the larger distance of 30-35 km for bowhead whale avoidance given that these distances apply to migrating bowheads (in Alaska), and it is assumed that bowheads encountered off NE Greenland during August and September will be on their summering ground and more likely to exhibit smaller-scale avoidance, like bowheads in the Canadian Beaufort.</p> <p>Narwhals, at least those in the eastern Canadian Arctic, appear to be less responsive to underwater noise than belugas. Therefore, using the larger 20 km zone (10-20 km zone found in Canadian Beaufort for seismic) of avoidance for narwhal did not seem appropriate.</p> <p>However, if 30 km (migrating bowhead) and 20 km (narwhal) radii are assumed, the potential areas of effect would be about 2,850 sq km and 1,250 sq km respectively.</p> <p>In either case a 101-1,000 km extent, and these other two areas (above), would all fall within the "regional" category used for this purpose by Boertmann et al 2009.</p>
<p>The environmental impact assessment does not address the special sound- transmission conditions that may be in the Arctic waters where the water columns are often highly stratified. This can lead to noise from the seismic sources can affect marine mammals over much larger distances than in non-stratified water, which usually underlie the calculations of transmission of sound from the seismic sources. These factors are discussed in NERI's Guidelines.</p>	<p>Many of the studies used as background information in GXT's EIA were conducted in the U.S. and Canadian Arctic where sound transmission has been shown to be enhanced by such features as subsea permafrost and possibly water column stratification. GXT recognizes that underwater sound propagation can vary widely from region to region. However, the effects predictions are based on the best available scientific information and are considered valid, particularly applying enhanced</p>

	mitigations which consider these factors (see EIA Section 3.14).
GINR's Comments	GXT's Response
Due to time constraints this hearing answer will focus only on the most serious issue of the application: the potential negative effect of the proposed survey on the critically threatened bowhead whales in the area.	----
The impact assessment provided by GXT has a good description of bowhead whale reaction to seismic noise. Research on the Alaskan Beaufort Sea has shown that bowhead whales do change behaviour when exposed to low frequency sound from airgun arrays. In the best documented study GINR know about, Richardson et al (1986) tested the effect on bowhead whales of a seismic boat (source level 248 dB re: 1 pPa) and concluded that bowheads exhibit avoidance reactions when they receive seismic pulses stronger than about 160 dB re; 1 pPa. Whales began to orient away when the airgun array began to fire 7.5 km away and were displaced by about 2 km (Richardson, Würsig et al. 1986).	<p>We concur with the reviewer that one of the best studies of bowhead whale response to airgun noise is Richardson et al. (1986). Since publication of that study, other studies (as reviewed in Section 3.6.2 of the EIA) have also shown that bowhead whales on their summering grounds exhibit at most localized avoidance of airgun arrays and that this zone of avoidance becomes more pronounced (albeit temporary) during migration. Recently, drawing on data collected by DFO during GXT's western Canadian seismic surveys, Harwood et al. (2010) have found that "While limited in scope, existing research results obtained while seismic or drilling operations were underway have shown no marked or measurable effects on either the behaviour or distribution of these species [bowhead whales, beluga whales and ringed seals] by offshore industrial operations in the [Canadian Beaufort Sea] to date. Differences in behaviour and distribution have been recorded, but were localized and temporary."</p> <p>Ref: Harwood, L., T. Smith, A. Joynt, D. Kennedy, R. Pitt, S. Moore, and P. Millman. 2010. Potential for displacement of whales and seals by seismic and exploratory drilling activity in the Canadian Beaufort Sea - what have research and observations revealed to date? (Abstract for presentation by Lois Harwood, DFO Canada, to the Canada - US Northern Oil and Gas Research Forum in Calgary, December 2010).</p>
Between 1605 and 1911, the bowhead whales of East Greenland and Spitsbergen were unsustainably hunted until the stock was considered extinct (Allen and Keay 2004). Observations from the second half of the XX century, especially after the 1980s, indicate that there are bow- head whales in the	Agreed. See section 3.6.2 of the EIA.

<p>area, perhaps only a few tens (Gilg and Born 2005; Boertmann, Merkel et al. 2009; Wiig, Bachmann et al. 2010). Passive acoustic monitoring indicates that bowhead whales are present in the northern part of the Greenland Sea year round (Lydersen, pers. com.), Furthermore, the only whale of this stock tagged so far with a satellite transmitter migrated along the continental slope from the Fram Strait at ca. 80° N to 690 N (Lydersen, pers. com.), making extensive use of the area where the 2D survey is planned.</p>	
<p>Recommendations for additional mitigation measures</p>	
<p>GINR Because the size of the bowhead whale stock in East Greenland and Svalbard is so small, the opportunities for migrating, feeding and reproducing of each individual can have an effect at population level.</p> <p>In order to reduce the changes of negatively affecting the bowhead whales with a seismic survey in the area, GINR recommend that the standard mitigation measures are modified for the Greenland Sea, so that the seismic source is shut down if a bowhead whale is within 2 km from the seismic vessel.</p> <p>GINR notice that in the impact assessment provided by GXT it is mentioned that "BMP/NERI does not require shutdowns for marine mammals entering the safety zone after the array is at full power, GXT will implement a shutdown if a bowhead whale, northern right whale, beluga, narwhal, or walrus is observed within or about to enter within a 200 m radius of the seismic source".</p>	<p>Although no shutdowns are required under the Guidelines, GXT will undertake to shut down the array if a bowhead whale, northern right whale, beluga, narwhal, or walrus is sighted within a 500 m radius (Safety Zone) of the seismic ship whenever the ships are in any of the walrus, narwhal or bowhead protection zones. This distance follows BMP/NERI guidance distances for the pre-ramp-up watch and the ramp up monitoring. It is also used commonly in several other jurisdictions where shutdowns are required, such as Eastern Canada.</p> <p>In addition, as described and discussed below, GXT will utilize on-watch personnel on the icebreaker bridge to sight and record marine mammals, and to relay this information immediately to the MMSOs on the seismic ship. This should extend the ability to detect whales / walruses in the approaching waters a further 1000 m or more and to alert the seismic ship MMSOs.</p> <p>See EA Table 3 and Sections 3.5 and 3.6.</p>
<p>Finally, GINR recommend that additional marine mammal observers should be placed on the icebreaker operating in front of the seismic vessel to increase the chances of timely detection of bowhead whales and improve the quality of the records of marine mammals and birds during the survey. Observers would be needed on board the seismic vessel, since the icebreaker may not be ahead of the seismic vessel when surveying open water.</p>	<p>To take into consideration GINR's advice, GXT will commit to using on-watch bridge personnel on the icebreaker bridge to sight and record marine mammals, and to relay this information immediately to the MMSOs on the seismic ship. In particular, the two ice experts, who are trained in observation and are constantly scanning the waters ahead of the ship, will assist in this. They will be provided with the standard marine mammal recording forms and the methodology by</p>

	<p>the lead MMSO on the icebreaker (Dr. T. Lang) Additional bridge crew may also help with this task.</p>
<p>NNPAN's Comments</p>	<p>GXT's Response</p>
<p>In general: NNPAN find it worrying that the seismic surveys will take place in an area of such importance to marine mammals. Generally, NNPAN much like the routes for the seismic surveys are planned so unnecessary impacts on wildlife are avoided. This includes in particular with regard to Greenland whale and narwhal, which is sensitive to noise. NNPAN attached great importance to marine mammals and other living species are not unnecessarily disturbed by all types of mineral activities. In this context requests NNPAN about that the company in question during the seismic SUN/SYS are extra attention to the surrounding environment and nature.</p>	<p>GXT acknowledges NNPAN's concerns and will follow all BMP regulations and other suggested mitigation measures for marine mammals, including GXT's enhanced 2011 mitigation measures described above and below.</p> <p>GXT's marine mammal monitoring and mitigation program will allow for the documentation and minimization of seismic survey sound effects on marine mammals.</p> <p>See EA Sections 3.5 and 3.6.</p>
<p>Environment: Based on the material received NNPAN finds the company's statement of environmental matters is very limited. NNPAN miss in the received consultation material a more comprehensive explanation of such guidance on standards for the elimination of sewage, waste management and standards for air pollution.</p> <p>It is particularly important that the company in question during the seismic surveys use soft start and have an MMO (marine mammal observer) to give particular attention to marine mammals in the survey area and have clear guidelines on what to do if animals are observed.</p>	<p>GXT did provide detailed appendices to BMP about several other environmental precautions/ standards - including standards for the elimination of sewage, waste management and standards for air pollution, and plans - to be followed as part of the overall application submission process, such as vessel-specific waste management plans for each ship. These are not contained in the summary document, or in full in the EIA itself, owing to space limitations. However, all of GXT's sewage, waste management and air pollution prevention practices meet international MARPOL arctic standards and those specified by BMP (such as standards for sulphur in fuel). If requested, GXT can supply these plans directly to NNPAN. In the present EIA, these are summarized in EIA Section 4.6 and 4.7 of the EIA.</p> <p>As recommended by NNPAN and as stated in and the NERI and BMP Guidelines, the two survey MMSOs will ensure pre-ramp up watches, full soft-start procedures, and shutdown procedures (as described above) for whales and walrus (see EIS 3.6). In addition, GXT has just completed meetings with the seismic ship managers and key supervisors (at port in Munkebo, Denmark) to</p>

	<p>describe and detail all environmental requirements, and ensure clear guidance about marine mammal procedures and mitigations in particular. (EIA 3.5)</p> <p>It is of note that the two MMSOs on the Polar Explorer are very experienced and highly trained and qualified in these duties.</p>
<p>International agreements and conventions: NNPAN impress on that the company in question lives up to MARPOL 73/78 standards and handle waste and wastewater environmentally correct. NNPAN expect further that all international rules and conventions concerning the marine environment are respected like Landstings-forordning No. 4 of 3 November 1994 on the protection of the marine environment is complied with.</p>	<p>As stated in the EIA (Section 4.6 and 4.7), GXT will follow all MARPOL 73/78 standards, and relevant international rules. As noted above, GXT has also filed other detailed environmental protection plans to be followed as part of the overall application submission process, such as vessel-specific waste management plans for each ship.</p> <p>GXT project vessels will also comply with all parts of Landstings-forordning No. 4 of 3 November 1994 on the protection of the marine environment that apply to the GXT project area and vessels. (EIA 4.6)</p>
KANUKOKA's Comments	GXT's Response
<p>The area next to National Park in Northeast Greenland is a natural area with important populations of marine mammals and birds. Municipalities will urge that the most sensitive areas exempted most of disturbance. In the area applied for in- stance, there is several polynier which are important feeding areas for Arctic seabirds and important wintering sites for marine mammals.</p>	<p>During preparation of the EIA, the ecological importance of areas adjacent to the National Park in NE Greenland was considered (see EIA Sections 2.2.7, 2.2.8, 3.13.1 and 3.13.3). All regulations applicable to birds and marine mammals will be followed. In some instances, as described above, GXT has increased mitigation measures set forth by regulatory agencies to afford further protection to marine mammals. It should also be noted that given the nature of 2-D seismic surveys, the seismic vessel will only occur in a given area for a limited period, and in the case of GXT's 2011 project, will only occur there during August to October, thereby, minimizing the potential for affecting marine mammals in sensitive areas and during the winter.</p>
<p>If despite exemption for polynier in Northeast Greenland for other exploration and exploitation, it</p>	<p>Seismic data (lines) in these areas (narwhal/ bowhead Protection Zone) are important for the</p>

is evaluated that seismic surveys is needed the interference from the studies should be minimized. Narwhal area, shown in Figure 5 in non- technical summary of EIA should be kept free as possible for navigation because navigation and seismic activity can be disturbing.	full picture of northeast Greenland’s resources. However, as described above, GXT will follow all BMP Guidelines and other an additional enhanced environmental mitigation plan, as described above, to protect marine animals. See EIA Section 3.5 and 3.6.
Municipalities appreciate GXT will stop the seismic surveys if walrus or whales come closer than 200 m from air cannons, although this is not a requirement of the Guidelines from NERI.	Understood. As stated in the additional mitigations (above) GXT will extend this to 500 m in the walrus, narwhal and bowhead protected zones. (EIA Section 3.6)
SIK’s Comments	GXT’s Response
SIK raises concern about the use of English in most of GXT’s submissions	GXT understands this concern; GXT follows all language related requirements within the regulatory process.
SIK is nevertheless positive about the planned studies of seismic, gravity and magnetic conditions in waters off northeast Greenland.	GXT appreciates SIK’s positive position.
KNSP (Greenland's Employers' Association) Comments	GXT’s Response
Greenland’s Employers Association requests that, in connection with permissions to conduct seismic surveys, there is a requirement for cooperation and exchange of data with educational and research institutions of generally relevant information, such as habitat surveys.	GXT does supply all its wildlife observation data to BMP, NERI (2009 – 2011) and (starting in 2011) to GINR. Weather and ice data are also collected and can be made available. It may be of interest to KNSP that during GXT’s 2010 survey off Northeast Greenland, the first sighting of a Common Rosefinch in Greenland territory was recorded and photographed.
ICC Comments	GXT Response
General	
General comments about Government regulatory procedures and the consultation / review process.	---
Why is there an interest in geological data within protected areas, where ice conditions make it extremely difficult to collect data and when companies ultimately can not be allowed to drill for oil? ... ICC can not imagine that anyone could gain by doing seismic surveys within the protection zones.	The overall purpose of the Project is to conduct a marine 2-D seismic, gravity and magnetic data acquisition program located offshore of Northeast Greenland focused on the areas from North Denmarkshavn Salt Basin to Northeast Greenland Volcanic Province and eastward into Thetis Basin. The survey overlaps portions of both the East Greenland and North Greenland BMP licence Regions, though the great majority is in the North

	<p>Region.</p> <p>The aim of the 2011 study is to continue to collect seismic data, supplementing GXT's 2009 and 2010 programs, to reveal the large scale region-wide geological profile. As with the 2009 and 2010 surveys, the 2011 Project is a Basin Span survey. GXT's world-wide Span surveys examine very broad and deep geological formations in and around basin areas using advanced geophysical techniques. They provide information on the geologic evolution, deep basin architecture, and the depositional and structural histories of an entire region. The Northeast Greenland 2009, 2010 and 2011 surveys are part of GXT's Arctic Basin Span programs which have been conducted previously in Arctic waters off Alaska, western Canada and Norway. Surveying these ultra-deep formations allows for a better evaluation of the evolution of the geological basin areas, including identifying source rocks, migration pathways, and play types. These programs are not designed to identify specific potential drilling locations.</p> <p>See EIA Section 1.2.</p>
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<p>DMU / NERI's guidelines include that seismic activity is not recommended in the protection zones, but in case it occurs, it must be limited to a few, widely scattered lines with at least 10 km between. GXT admits that there is overlap between the study area and protection zones, but while it helps to provide information that only a few of the lines are closer than 10km from each other, the overlap as extensive as in the protection of narwhal and Greenland whale in the northeastern waters (Figure 5, page 7 of the summary) and therefore does not meet the requirement of "few" lines? That you probably still will not be able implement all the lines due to ice conditions is not a very good argument in itself because it depends too much of an exogenous factor. ... Given that we are dealing with very vulnerable populations, says ICC that the precautionary principle should be used in such a way that seismic surveys have totally prohibited in any of these with that knowledge in this area increases. To sum up, the ICC can not accept seismic surveys within the protection zones.</p>	<p>As described and detailed in the EIA (Section 3.6), GXT's lines in these areas are widely spaced but several lines do extend into the narwhal/bowhead whale Protection Zone. Consequently, GXT has enhanced its mitigations in these areas beyond those usually required by BMP, with 500 m shutdown zones (in addition to pre-ramp up wand ramp up watches), and extra marine mammal observation from the icebreaker. In addition, GXT will avoid the ice edge, cutting its lines 10 km back of the ice margin, as advised by NERI.</p> <p>ICC is correct that (although GXT has not been able to enter this area in past years owing to ice), it could be possible. Consequently, in case the zone lines are completely ice free this year, and if recommended/advised by BMP/NERI, GXT has proposed to reduce its overall acquisition in the Protection Zone by 240 line km compared to the amount proposed. This is equivalent to reducing every second line by 25 km within the area, though the actual location of the line reductions will be dictated by conditions at the time.</p>
<p>Specific comments on the EIA summary</p>	
<p>On page 4 [summary] in the "Biological Environment - Marine Mammals", it is not mentioned that narwhals are categorized as with insufficient data (DD = data deficient) in East Greenland, in consequence on the Red List 2007. This should be specified, as for other marine mammals. Lack of knowledge in a vulnerable ecosystem should be said to give rise to the precautionary principle.</p>	<p>The details of Red List status are provided in GXT's full EIA document. See Sections 2.2.6 and Appendix 1 and 3 of the EIA.</p>
<p>On page 5 of that section [summary] the "harp seal" is twice in the list of species of seals, which may be a typo.</p>	<p>This was a typo in the summary and is corrected in the full EIA document. See EIA Sections 2.2.5 and 3.6.4.</p>
<p>As described in DMU / NERI guidelines for seismic array studies, it must not be started if there are marine mammals within the safety zone 500 m around the source, but it is not required to stop the array if marine mammals are approaching when the array is in operation. ICC welcomes that GXT has chosen to discontinue operations if whales or walrus are observed inside or entering a 200 m zone around the source. However, GXT should add</p>	<p>Based on other advice received and to implement extra precautions in the Protection Zones, GXT will increase this shut down zone to 500 m in those areas (see EIA Section 3.6).</p> <p>GXT has also added this to Table 3 in the revised EIA document for each relevant species, and also to the procedure list in Section 4.2 in the EIA.</p>

<p>this in Table 2, so staff can clearly see what DMU / NERI recommend and what GXT has added as additional guidelines so that nothing is missed.</p>	
<p>Place names mentioned in the report should be marked on the map, so readers know where places lie. Examples from the text are Kilen, Hovgaard island, Amdrup Land, Ile de France, Sand Island and Little Snenæs.</p>	<p>GXT has revised the main survey overview map (Figure 1 of the EIA report) to include place names mentioned in the EIA.</p>
<p>In Table 1 are listed some procedures for mitigations. The document itself should read so that the mitigation procedures apply the same for all whales and walruses. There should be greater details for the three procedures to be followed - [1 "Ramp-up of airgun array"; 2 "Delayed start of airgun if whale sighted in safety zone "; 3 "Array shutdown"]</p>	<p>The information in this Table from the Summary document is in Table 3 of the EIA. The Table has now been expanded to make it clear that these mitigations are included for all relevant species (whales and walruses).</p> <p>The procedures, as described by ICC , are provided in section 4.2 of GXT’s EIA and in greater detail in the United Kingdom’s “JNCC guidelines for minimising the risk of disturbance and injury to marine mammals from seismic surveys” (August 2010), Section 3, available at http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_Aug%202010.pdf. However, the JNCC does not require shutdowns after the array ramp -up has begun, so does not describe those procedures. (NERI does require a shutdown if an animal is sighted during ramp-up.)</p> <p>Of note, GXT’s MMSOs use their own detailed handbook / checklist of procedures and all GXT’s MMSOs have extensive experience in monitoring, ramp up and shutdown procedures. Further, shipboard managers have been briefed about these commitments (in person, by GXT project and environmental managers) and understand the MMSO’s authority to order an immediate array shutdown or start-up delay.</p>
<p>Table 3 states that the purpose of one of the tasks is to "Improve the knowledge on temporal and spatial distribution of marine mammals and seabirds in the West Greenland waters ", but investigations are to be carried out in East Greenland. This may be a copying error and must be corrected.</p>	<p>This statement is accurately quoted from the BMP/NERI document used, but communications with NERI indicate that this applies equally for East Greenland. See GXT EIA Section 4.5.2.</p>