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Québec, 17 novembre 2003.

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Objet : Avis scientifique (non sollicité) sur la proposition de projet réduit de GSI « *GSI West Gulf of St. Lawrence, Survey 2003, Novembery 2003* »

Bonjour,

Il nous semble toujours aussi dérisoire d'évaluer l'impact d'un projet de levés sismiques, tel que celui proposé par GSI pour le golfe Saint-Laurent en novembre 2003, sans considérer l'ensemble des activités dont ce projet n'est en fait que la première étape.

Nous vous transmettons tout de même dans le document joint notre avis, non sollicité, sur la nouvelle proposition de levés sismiques de GSI pour l'ouest du Golfe Saint-Laurent..

Nous avons concentré notre évaluation sur les impacts potentiels du projet sur les mammifères marins et particulièrement sur deux « espèces en voie de disparition » pour lesquelles le secteur visé pourrait être considéré comme un « habitat essentiel » ou un « habitat critique ». Le focus de notre avis ne reflète en rien notre opinion sur les autres impacts possibles d'un tel projet mais plutôt notre champ d'expertise particulier.

En espérant que cet avis sera bien entendu, veuillez accepter mes salutations.

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Unsolicited scientific advice on GSI's scaled-down Western Gulf of St. Lawrence Marine Seismic Program 2003

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GSI contends its reviewed scaled-down program and proposed additional mitigation measures have addressed the uncertainties surrounding the project. It is our contention that the reviewed program does not eliminate risk of physical damage, neither does it reduce the risks for behavioural effects on marine mammals to an acceptable level.

> Given that the project would be carried out in a habitat that could be considered as "critical" for an endangered species of marine mammals;
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> Given that the uncertainties surrounding potential physical damage and behavioural effects of seismic surveys on marine mammals;
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> Given that reduced feeding efficiency or interference in reproductive activity of a single individual could hamper an endangered population recovery;
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> Given that the 1600 km now proposed by GSI could be followed by 17 500 additional km of seismic surveys by 2005, exploratory drillings and exploitation for which no environmental assessments have been conducted,

GSI 2003 Western Gulf of St. Lawrence Marine Seismic Program should not be authorized.

Risks of physical damage to marine mammals.

Even in good visibility conditions, it is not possible to insure that no whale will be present in the 500-m whale shut down safety zone or within the 180-dB safety zone (less than 500 m).

By allowing nighttime surveys and surveys during restricted visibility conditions, GSI considerably reduces the chances of detecting the presence of marine mammals at close range from the survey boat. Whereas the acoustic monitoring system could at least theoretically be capable of locating vocal animal in the area, the precision will not be high and it will not detect silent whales. While the sex-specific rate of vocalization of blue whales is not known, it is likely that male are more actively vocal than females (Croll *et al* 2002) and that they are not always vocally active (Mellinger and Clark 2003). In the case of belugas, studies have shown that they are vocally active between 26 and 51percent of the time (Antoine Godefroy, submitted MSc thesis, Université du Québec à Rimouski).

Behavioural effects on marine mammals

GSI cites Croll *et al* 2001 to support their argument that their project will have "few serious welfare implications and no serious effects on survival and reproductive success in cetacean populations".

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Here are few more complete extracts from Croll *et al* 2001:

1) *At the spatial and temporal scales examined, we found no obvious responses of rorquals to the presence of anthropogenic LF (low –frequency) noise. It is possible (perhaps likely) that brief interruption of normal behaviour or short term physiological response to LF noise at RLs (received levels) of approximately 140 dB re 1 uPa have few serious welfare implications and no serious effects on survival and reproductive success in cetacean populations. However, long-term impacts (e.g. displacement, masking of biologically important signals) while more difficult to identify and quantify, may be biologically significant through reduction in feeding efficiency, survival, or reproduction success.* (page 25)

2) *In addition, recovery of endangered populations of mysticetes (e.g. blue, fin, sei, humpback, right and bowhead whales) that were severely reduced by commercial whaling may be hampered if anthropogenic LF noise affects long-term reproductive success or survival in these species. While this study expands our knowledge of the short-term, smaller scale effects from an intermittent sound source, in many cases the basic information needed to understand the long-term consequences of more continuous and widely spread anthropogenic LF noise sources is missing*. (page 25)

Although the experimental design used by Croll *et al* 2001 is relevant for species, distances and received sound levels, it is dramatically different in two important aspects. GSI airguns will produce sounds every 8 seconds for weeks, whereas in their experiment Croll *et al* 2001 put out series of 9 individual sounds for a total duration of 43 seconds every 10 minutes in daylight only and on several days interspersed with days of no transmission. On both a spatial and a temporal scale, GSI's project could be considered as long-term compared to Croll *et al*'s experiment. And this not considering the 17 500 km GSI mentioned the industry plans to survey before 2005.

Furthermore, Croll *et al* (2001) mentioned that most whales submitted to their experimentation were transient and that their study could not be used to test whether the insonification of the area could force the animals to leave.

Considering all the surrounding uncertainties, the authors add:

3) *Given the present lack of scientific knowledge on the impact of anthropogenic sound in the ocean, we recommend that a precautionary approach is most appropriate. Furthermore,* ***given the present state of uncertainties, we believe that the risk of cumulative impact on a habitat that is broadly critical for many animal groups is unacceptable.*** **(page 25)**

References

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