

**CONCOURS POUR L'ADMISSION EN FORMATION INITIALE POUR  
L'OBTENTION DES DIPLOMES D'OFFICIER CHEF DE QUART MACHINE ET DE  
CHEF MECANICIEN 8000 kW**

**ANGLAIS**

**(Durée : 2 heures)**

-----

*Nota : L'usage d'un dictionnaire est interdit.*

Marine life exists in a world dominated by sound. Marine species use sound to find prey and to communicate. But over the last 100 years or so increasing levels of anthropogenic noise from shipping, oil and gas exploration, naval sonar training, construction and other activities have begun to drown out the ocean's natural sound.

Two main reasons that make environmental impact of noise in marine life especially grave are: firstly noise travels much more in water, covering greater distances than it would do on land while travelling through air, and secondly because marine life is extremely sensitive to noise pollution. Due to their extreme reliance on underwater sounds for basic life functions like searching for food and mating, underwater noise pollution disrupts marine life in serious ways.

Sources of ocean noise pollution include everything from ship noise to the low frequency sonar 'sounds' used extensively in submarine detection or even the seismic air gun noise from oil and gas exploration or even commercial shipping traffic and coastal jet ski traffic. Studies have shown that while these 'sounds' may have no impact on humans, in marine life, they can be detrimental. Population of cetacean (whales and dolphins) has declined in areas prone to such noise pollution from ships.

The death of animals can occur merely hours after exposure to extreme underwater noise. Beaching themselves shortly after a tactical sonar exercise is a rather common environmental impact of noise pollution. Such beaching has been reported in regions like Greece, Madeira, Hawaii, Spain and the coastal US areas where sonar exercises are common.

Dislocation or movement of marine animals to a newer location is also one of the many ocean noise pollution effects. While this may seem like a survival mechanism, studies conducted for a follow up on these animals isn't that promising as most animals fail to acclimatize in the new environment, not to mention loss of diversity in many regions.

*Tourner la page SVP*

Most animals are alarmed by the alien sounds. Deaths can occur due to hemorrhages, changed diving pattern, migration to newer places, and damage to internal organs and an overall panic response to the foreign sounds. There is also a disruption in normal communication between marine animals as a result of underwater noise pollution. This means animals prone to noise pollution are unable to call their mates, look for food or even make a cry for help under such circumstances.

Many marine animals like fish, such as herring, cod and blue whiting etc. show signs of extensive damage to their ears upon exposure to seismic air guns even up to several kilometers. Exposure to noise during embryonic stage increases sensitivity of fish to noise impact, increasing the mortality rates at time of birth and development of genetic anomalies. The migration to new areas not only affects the marine diversity balance but indirectly affects humans too. A decreased catch in many fish species especially in areas susceptible to noise pollution from ships has been noticed.

Sensitivity of various marine animals to ocean noise pollution is varying. While cetaceans may show a greater resistance, soft shelled species like mollusks, prawns, fish etc are much more sensitive. Studies are being conducted to understand effects of noise pollution on marine life in a much better way. But until a safe mechanism can be thought of which will ensure that marine animals do not continue to commit as much mass suicide due to human errors, safety through prevention is out best shot at keeping the ocean's sanctuary intact.

*Tourner la page SVP*

**1<sup>ère</sup> QUESTION (valeur = 8)**

**Translate into French from** “Two main reasons that make...to...diversity in many regions.”

**2<sup>ème</sup> QUESTION (valeur = 4)**

**Répondre aux propositions suivantes (répondez a, b, c ou d)**

1. Levels of noise pollution have been increasing....
  - a) for less than 100 years.
  - b) for the last decade.
  - c) for about 100 years.
  - d) every 100 years.
  
2. One of the main reasons that make the impact of noise in marine life so serious is that....
  - a) noise travels much faster in water but at a shorter distance than on land.
  - b) noise travels much more in water and at a farther distance than on land .
  - c) noise travels faster on land and much slower in water
  - d) noise travels much more in water but covering less distance than on land.
  
3. Studies have shown that ocean noise pollution ...
  - a) have no effect on whales and dolphins.
  - b) lowers population in coastal towns.
  - c) prevents underwater diving.
  - d) is harmful to marine life.
  
4. Death of marine animals by beaching has been found in areas
  - a) where sonar activity is present .
  - b) near New Zealand.
  - c) where there is volcanic activity.
  - d) where there are strong tides.

*Tourner la page SVP*

5. Dislocation or movement of marine animals to a newer location...
- a) has shown they adapt easily to the new environment.
  - b) is one of the ocean noise pollution effects.
  - c) has a positive effect on many regions.
  - d) has increased fishing.
6. Underwater noise pollution can cause marine animals ....
- a) to eat more.
  - b) to cry for help.
  - c) to become frightened.
  - d) to change their mate.
7. Marine animals like fish show extensive damage . ..... when exposed to seismic air guns.
- a) to their fins.
  - b) to their gills.
  - c) to their ears.
  - d) to their lungs .
8. Anthropogenic noise means:
- a) Sound pollution made by humans.
  - b) Communication between whales.
  - c) Sounds emitted when certain fish species are mating.
  - d) Sounds made by sharks hunting their prey.

### 3<sup>ème</sup> QUESTION (valeur = 8)

Underwater ocean noise is a fundamental threat to the marine ecology system.

**Develop your ideas (about 150 - 200 words).**

Nota :

1. *Aucun document n'est autorisé.*
2. *Délits de fraude : « Tout candidat pris en flagrant délit de fraude ou convaincu de tentative de fraude se verra attribuer la note zéro, éliminatoire, sans préjudice de l'application des sanctions prévues par les lois et règlements en vigueur réprimant les fraudes dans les examens et concours publics »*