

# CITES

## **Proposed revision of Resolution Conf. 9.24 (CoP12 Com. I. 3)**

### **Criteria for listing on Appendix I and Appendix II**

### **Test of the applicability of the criteria**

This document has been prepared to facilitate the assessment of the proposed revision of Resolution Conf. 9.24 (CoP12 Com. I. 3) using an individual plant or animal taxon.

**Notice to reviewers:** This review should focus on whether the criteria in Table 1, Table 2 and the accompanying definitions, explanations, and guidelines in Annex 5, are biologically sound

and applicable for the taxon under review. The purpose of this review is not to determine whether the current listing status of the taxon under review is appropriate.

## Registration Form and Contact Details

Please fill in the details below and send the completed document, as appropriate, to the Chairman of the Animals Committee or the Chairman of the Plants Committee.

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**Taxon reviewed (including common and taxonomic names):**

Eastern North Pacific Gray whale (*Eschrichtius robustus*)

**General notes about this species review:**

Two populations of gray whales (*Eschrichtius robustus*) occur in the North Pacific, the eastern (California/Chukchi) population and the western (Korean/Okhotsk) population. Both populations were subjected to intensive commercial whaling during portions of the 19th and 20th centuries. The western population currently exists in small numbers and is considered one of the world's most endangered populations of large whales. However, the eastern population is thought to have been increasing for much of the 20th century. It has doubled in size since 1967 and may have returned to pre-exploitation levels. The eastern gray whale migrates between feeding areas in the north (primarily in the Bering Sea) in summer and calving lagoons in Baja, Mexico, in winter. Much of the migration occurs in a relatively narrow coastal corridor, such as along the California and Oregon coasts.

The following review refers to the eastern gray whale population. The western gray whale population is not evaluated in this review.

**Please return your completed paper or electronic document to one of the below:**

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## Instructions on conducting the criteria review

- Tables 1 and 2 outline the proposed draft criteria for listing species on Appendix I and Appendix II of CITES, respectively. These should be read in conjunction with the definitions, explanations, and guidelines included in the proposed amendment of Annex 5.
- Please test the criteria for Appendix I and II using the information you have for the taxon selected i.e. fill out Table 1 and Table 2. This allows a more complete test of the criteria in the short time allowed to us.
- If you fill in this form electronically then these definitions and explanations can be accessed by clicking on the Hyperlink within the table (or 'Ctrl' and click). To get back to the text after clicking a Hyperlink you click on the 'Back' arrow in the Web toolbar (if this is not set up in your version of Word then go to 'View' in the Word menu, then 'Toolbars' and click on 'Web').
- We have provided a copy of the definitions and explanations (Annex 5) at the end of this document for those who wish to fill in the tables as a hard copy.
- Using the data available to you for your chosen taxon please indicate the key data that you used to make your decision, and any problems you had in interpreting or applying the criteria for your chosen taxon.
- Once completed, please send electronic copies and/or hard copies of the review, as appropriate, to the Chair of the Plants Committee or Animals Committee.
- Thank you for taking part in this process.

The Completed forms must be returned by 31 October 2003

**Table 1 – Comments from reviewer on applicability of criteria for listing on Appendix I**

<p style="text-align: center;"><b>CRITERON</b></p> <p>For your information for a species to fulfill the draft criteria for Appendix I it must meet the trade criteria and at least one of the criteria A-D.</p>	<p style="text-align: center;"><b>NOTES</b></p> <p>Whenever appropriate, indicate ways in which this criterion and definitions, explanations and guidelines could be improved and/or quantified to better suit this taxon and its relatives (If you need additional space, please use a separate sheet of paper).</p> <p>For the following specific questions, if a point estimate is not available, please provide a likely range of values (e.g., “about 6,000 – 10,000 individuals”) or some kind of rough estimate or inference (e.g., “likely to be less than 500 square kilometres”). Please try to make a numerical guess or give a verbal description and only use DNW (Do Not Know) if there is truly no information available on the quantity in question.</p>
<p><b>Trade Criterion</b> Is or may the <a href="#">species</a> be <a href="#">affected by trade</a>?</p>	<p><b>Yes. The eastern gray whales were almost depleted by commercial harvests in the 1800s and early 1900s, and it was commercially exploited well into the 20th Century. Although this whale is still harvested by aboriginal people in Russia (approximately 120 whales per year), since the moratorium to hunt and commercially exploit it, the population has increased to over 25,000 individuals. This recovery has generated expressions in favor of reopening the exploitation of the eastern population. Even though international trade is forbidden by the International Whaling Commission, there are evidences of trade of whale meat in several countries, so there is potential for demand of this species. Different species cannot be recognized without genetic testing. Peer-reviewed forensic research has confirmed that gray whale meat has recently been offered in foreign markets.</b></p> <p><b>Comments:</b> <b>YES. The criterion applies to the taxon and related taxa.</b></p>

A) The **wild population is small**, and is characterized by at least one of the following (see definitions below):

What was/is the estimated size of the **population**? Please include units of measurement.

**Not currently a small population. The most recent population estimate for the 2001/2 season was 16,848 individuals (CV = 9.49%; 95% log-normal confidence interval = 13,995 – 20,283). The population size is considered to be close to the pre-exploitation levels, if the average population size estimate is considered (average of the last 3 surveys (1997/1998, 2000/2001, 2001/2002) is 20,937).**

**The last estimate was lower than estimates in previous seasons. Probably due to high mortality rates in 1999 and 2000 and/or environmental factors that prevented some whales from migrating.**

**Comments:**

**YES. The criterion applies to the taxon and related taxa. However, we have some observations:**

**5000 whales would be a reasonable definition of a small population as defined in the criteria (where a decline to 5-30% of a historic high is considered an important decline, and such a population therefore small). For eastern gray whales, 5000 represents approximately 20% of what is thought to be the population's highest known level. However, for some whale populations, 5000 would be too high of a guideline, and for more abundant populations, 5000 might be too low. As an example, it does not appear that the western gray whale population was ever much greater than 10000, so 5000 might not be considered "small" in that context. As an example of what would be a very small population for a gray whale, the western gray whale currently numbers about 100 whales or less. It is considered one of the smallest and most endangered populations of baleen whales in the world.**

**This criterion of size may also be based on percentages in relation with historical abundances, when available, previous to a decline due to human activities or natural causes. For example:**

**Small wild population: 25-50% of the historical abundance**

**Very small wild population: less than 50% of the historical abundance.**

**When there are no historical abundance estimates it might be feasible to look at reproductive parameters instead. For example, a population can be considered small when:**

- The population is growing in the exponential phase of the population curve. The slope (growth rate) to determine that the population is in the exponential phase can be modeled for every taxon or it can be determined by comparison to other healthy populations.**
- The fecundity or fertility rate is high as compared with historical data or other healthy populations.**
- The age at first maturity is lower as compared with historical data or other healthy populations.**

**A)(i) an observed, inferred or projected [decline](#) in the number of individuals or the area and quality of habitat; or**

**The eastern gray whale declined substantially in the 1800s and early 1900s from over-harvesting, but is thought to have increased for most of the mid and late 1900s. The population has been monitored since 1967 and has doubled in**

population size. The rate of population growth has decreased, and the population has been roughly stable since the late 1980s. A decline in the population appears to have occurred in 1999 and 2000 (based on stranding and survey data). Additionally, fewer calves were produced in those years, and a measure of body condition from aerial photogrammetry indicated whales were underweight in those years. The magnitude of the decline is certainly less than either CITES definition for decline (historical or recent). Given the level of uncertainty in abundance estimates, the magnitude of the decline is not known exactly, but appears to have been roughly a 15-30% decline over several years. The decline appears to be over because stranding rates returned to their pre-1999 levels in 2001 and have remained there. Additionally, the production of calves has returned to pre-1999 levels, and the body condition index has increased, indicating the whales are no longer underweight, on average.

It is also important to mention that in the case of gray whales, at this point in time, loosing individuals to human activities might not be a problem. However, due to their very coastal habits their critical habitats might be threatened. In their feeding grounds changes or shifts in their environment, with extended impacts on the biota, may reduce or impact their feeding grounds.

Development of their breeding grounds might also have an impact. The added impact of several plans to develop the Baja California west coast is a matter of concern: the installation of, probably, three natural gas stations along the coast of Baja California, which includes the construction of jetties and wave breakers on some sites that coincide with the coastal migration route of gray whales, particularly on the northward migration route of the most vulnerable individuals, the mother and calf pairs. The Nautical Steps Project with a string of Marinas, Gas stations, hotels, Golf courses, etc; constant urban development.

**Comments:**

**YES.** The sub-criterion applies. However, even though declines in percentage might be a way to go, current information on decline to a population size of ~300 animals seems to be the limit to large whales. At this population size the effect of small population size seems too surface (e.g. right whales). See “depensation” as vulnerability factor below.

<p>A)(ii) each <a href="#">sub-population being very small</a>; or</p>	<p>What were/are the estimated sizes of the <a href="#">subpopulation(s)</a>? Please include units of measurement.</p> <p><b>There are no known subpopulations within the eastern gray whale population, but eastern gray whales are one (out of two) subpopulation of <i>E. robustus</i>.</b></p> <p><b>Comments:</b>  <b>YES. The criterion applies to the taxon and related taxa. Same considerations as explained in the population size criterion (A).</b></p>
<p>A)(iii) a majority of individuals, during one or more life-history phases, being concentrated in one <a href="#">sub-population</a>; or</p>	<p><b>Although the eastern gray whale consists of only one population, this is not considered to be a substantial risk factor for this species. Gray whales are numerous and highly mobile and are therefore not at risk solely from being in a single sub-population.</b></p> <p><b>Comments:</b>  <b>YES. The criterion applies to the taxon and related taxa. However, in this case we recommend to add the next sentences to be more applicable:</b></p> <p><b>“a majority of individuals, during one or more life-history phases or age classes, being concentrated in one sub-population or a majority of individuals being concentrated in some geographic region of its distribution area during some specific time; or”</b></p> <p><b>The gray whale tends to be concentrated in lagoons of the Baja California Peninsula during the winter period and in arctic waters during the summer period. Recent genetic data suggest that there may be groups of related gray whales within the population that preferentially seek and utilize specific breeding lagoons for calving. So there could be some population sub-structure. Also, there are reports that some individuals do not make the whole migration and others might be resident in the middle of the route. This could also separate whales during the breeding season.</b></p>
<p>A)(iv) large short-term <a href="#">fluctuations</a> in the number of individuals appropriate to measuring population size for the species concerned;</p>	<p>If the population was/is characterized by large short-term <a href="#">fluctuations</a> in the numbers of individuals, what was/is the average magnitude in orders of magnitude? What was/is the average period of fluctuation in years?</p>

	<p><b>-Fluctuations are thought to be much less than an order of magnitude. Insufficient data exist to continuously monitor year-to-year fluctuations, but the life-history of gray whales and their relatively low maximum rate of increase suggest that large short-term fluctuations are unlikely to occur, and this is likely true for all species of whale.</b></p> <p><b>Comments:</b>  <b>This sub-criterion is not relevant to the taxon. As mentioned above, the relatively large coefficient of variation associated to abundance estimations and the “k” strategies characteristic of cetaceans make short-term population trends unmeasurable. No wording changes recommended to sub-criterion.</b></p>
<p>A)(v) a high <a href="#">vulnerability</a> due to the species' biology or behaviour (including migration).</p>	<p><b>Mainly the indications mentioned in A iii) that such a structure within the population in the breeding and calving grounds may have implications for the resiliency of the population to perturbations ranging from human activities to natural climate changes. In addition, the gray whale migrates through waters very near to the coast line, traveling at relatively slow speeds and with the company of calves during the northward migration. The migratory corridor is also restricted and a high proportion of the population could be affected for example by an oil spill if it coincided with the timing of the migration. These entire aspects make the gray whale a vulnerable species in front of the multiple human activities carried out in coastal waters.</b></p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>

<p><b>B)</b> The wild <b>population</b> has a restricted <b>area of distribution</b> and is characterized by at least one of the following (see definitions below):</p>	<p>What was/is the estimated <u>area of distribution</u>? If listing on the basis of one or more <u>sub-populations</u>, what were/are the estimated areas of distribution of the subpopulation(s)? Please include units of measurement?</p> <p>As already mentioned at A iii), the eastern gray whale has a restricted area of distribution for a portion of the year. For a migratory species, the area of distribution is defined to be the smallest area essential at any stage for the survival of that species (e.g., colonial nesting sites, feeding sites for migratory taxa, etc.). Therefore, for the eastern gray whale the smallest area of essential habitat is the breeding lagoons. The total area of the breeding lagoons that are used (Ojo de Liebre, San Ignacio and the Magdalena Bay complex), along with adjacent areas of the coastline, total perhaps 1000 square km of area. This concentration of the majority of the population in these lagoons was what made this population vulnerable to over-harvest in the 1800s.</p> <p><b>Comments:</b>  <b>YES, The criterion applies to the taxon and related taxa.</b></p>
<p><b>B)(i)</b> <u>fragmentation</u> or occurrence at very few locations; or</p>	<p>The population is not fragmented currently. Although it breeds and rears its young at Mexican lagoons, and in summer it is dispersed throughout the Bering Sea and parts of the Chukchi Sea, it is not a fragmentation. However, population fragmentation is possible in this species.</p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<p><b>B)(ii)</b> large fluctuations in the <u>area of distribution</u> or the number of <u>sub-populations</u>; or</p>	<p>There are no known subpopulations and the area of distribution has not undergone large fluctuations. However, these types of fluctuations would be measurable for this species.</p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<p><b>B)(iii)</b> a high <u>vulnerability</u> due to the species' biology or behaviour (including migration); or</p>	<p>As mentioned above the sub-structure within the population in the breeding and calving grounds may have implications for the resiliency of the population to perturbations from human activities to natural climate changes</p> <p><b>Comments:</b></p>

	<b>YES, The sub-criterion applies to the taxon. However, it is not clear that it is particularly useful for cetaceans. Many animal populations would appear to meet the definition of vulnerability as defined.</b>
<b>B)(iv)</b> an observed, inferred or projected decrease in any one of the following:	
<ul style="list-style-type: none"> <li>the <a href="#">area of distribution</a>; or</li> </ul>	<b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b>
<ul style="list-style-type: none"> <li>the area of habitat; or</li> </ul>	<b>Could be detected and if feeding grounds diminish due to a drastic reduction of its main prey.</b>  <b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b>
<ul style="list-style-type: none"> <li>the number of <a href="#">sub-populations</a>; or</li> </ul>	<b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b>
<ul style="list-style-type: none"> <li>the number of individuals; or</li> </ul>	<b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b>
<ul style="list-style-type: none"> <li>the quality of habitat; or</li> </ul>	<b>As mentioned above the development plans for three LNG plants plus the Nautical Steps Tourist development in the western coast of Baja California, and the risk of increasing fishing effort with drift nets, could potentially degrade the habitat in those locations, though this is hard to predict with much certainty.</b>  <b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b>
<ul style="list-style-type: none"> <li>the recruitment.</li> </ul>	<b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa. However, we propose to modify it to:</b>

	<ul style="list-style-type: none"> <li>• <b>the recruitment, natality rate or infant survival.</b></li> </ul>
<p>C) A marked <b>decline</b> in <b>population size</b> in the wild, which has been either (see definitions below):</p>	<p>Historical extent of <b>decline</b> - To what extent has the <b>population</b> or the <b>area of distribution</b> (please specify which) declined since historical times (i.e., going back 100 years or more if known; else based on whatever information is available)? (Ex. The ___ has declined down to ___% of the historical levels of ___ years ago.)</p> <p>Recent rate of <b>decline</b> - Characterize the recent (10-20 year) trends in population size or area of distribution (please specify which).</p> <p><b>The eastern gray whale declined substantially in the 1800s and early 1900s from over-harvesting, but is thought to have increased since the 1940s after the large harvest levels declined. The population has been monitored since 1967 and has doubled in population size. The rate of population growth has decreased, and the population has been roughly stable since the late 1980s.</b></p> <p><b>Historically, the eastern gray whales is estimated to have declined to a small fraction of its original size by about 1900. It may have been at only 4% of its pre-exploitation size. It is currently thought to be close to its pre-exploitation size, and is therefore fully recovered.</b></p> <p><b>Regarding extinction risk, the absolute size of a whale population is thought to be a better measure of risk than the size relative to historic levels. A population of 5000 that declined to 500 whales would likely be considered at a high risk of extinction, whereas a population of 50,000 that similarly declined to 10% of its historic high would not be considered to be at as high a risk of extinction, with 5000 whales remaining.</b></p> <p><b>Comments:</b> <b>YES, The criterion applies to the taxon and related taxa.</b></p>
<p>C)(i) observed as ongoing or as having occurred in the past (but with a potential to resume); or</p>	<p><b>There are no data about how low the population was driven to by hunting. But it's clear that numbers were low. As noted above, the eastern gray whale is now thought to be recovered from historical exploitation, and there has been no recent decline as defined by CITES.</b></p> <p><b>Comments:</b> <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>

C)(ii) inferred or projected on the basis of any one of the following:	
<ul style="list-style-type: none"> <li>• a decrease in area of habitat; or</li> </ul>	<p><b>It is not known if the gray whale showed a decrease in feeding range when severely depleted in the 1800s.</b></p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon. However, “a decrease in area of <i>habitat use</i>” is a more useful index for whales. (One example is the dramatic reduction in range of the Cook Inlet population of beluga whales, used to infer that the population had declined substantially).</b></p>
<ul style="list-style-type: none"> <li>• a decrease in quality of habitat; or</li> </ul>	<p><b>Some authors mention that densities of prey have become reduced for unknown reasons in part of feeding range, but the preferred habitat is not fully determined or surveyed. It has been suggested that prey populations have been depleted by feeding by the whales themselves. It has also been suggested that the decline in prey density is due to changing oceanographic conditions. Feeding areas have possibly shifted but the cause of shift remains unknown. High density feeding aggregations have historically been seen in the Chirikov Basin in the Bering Sea, but a recent survey found relatively few whales there and found some evidence, though limited in sample size, that gray whales were in high feeding density north of the Bering Strait.</b></p> <p><b>It could also be the case if planned developments affect the population.</b></p> <p><b>There are some circumstances where a decline in a whale population could be predicted from knowledge of a substantial decrease in the quality of habitat.</b></p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<ul style="list-style-type: none"> <li>• levels or pattern of exploitation; or</li> </ul>	<p><b>The current aboriginal harvest is thought to be sustainable and has been approved by the International Whaling Commission. It is thought that the current harvest level will allow the population to remain at the high levels which are the management goal under the International Whaling Commission. However, changes in the levels or pattern of exploitation could be measured for this species.</b></p>

	<p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<ul style="list-style-type: none"> <li>threats from extrinsic human-induced factors such as competition/predation by introduced species or the effects of hybridization, toxins and pollutants; or</li> </ul>	<p><b>Gray whales, like most whales, contain oil-soluble contaminants such as PCBs, but it has not been suggested that levels are high enough to impact the population. However, these threats could in theory pose a risk to a gray whale population that has declined substantially.</b></p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<ul style="list-style-type: none"> <li>a decreasing recruitment</li> </ul>	<p><b>Calf production was well below the average through the winter seasons of 1999-2001. This past season numbers peaked up but there has been no overall trend over the time period calf production has been monitored. Given that the population is thought to be leveling off near carrying capacity, it is expected that density dependence should cause recruitment to decrease.</b></p> <p><b>In isolation, decreasing recruitment would not be a good metric to infer status of a whale population, as such decreases are expected from populations approaching their historical levels. However, decreasing recruitment could be a concern in other situations, such as in a very small population.</b></p> <p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa. However, we propose to modify it to:</b></p> <ul style="list-style-type: none"> <li><b>“ a decreasing recruitment, natality rate or infant survival”.</b></li> </ul>
<p><b>D) If not included in Appendix I, is likely to satisfy one or more of criteria A-C within 5 years?</b></p>	<p><b>There is no current threat identified that would lead to the expectation that the status of the population would decline substantially in the next 5 years.</b></p>

For criteria **A)(v)** and **B)(iii)**, please check which if any of the vulnerability factors listed below apply:

- low fecundity
- slow growth rate
- high age at first maturity

- distorted age, size or sex ratio
- complex social structure
- extensive migratory behaviour

- strong aggregating behaviour (e.g., schooling)

- low population density (for sessile or semi-sessile species)
- specialized niche requirements (e.g. diet and habitat)
- species associations such as symbiosis and other forms of co-dependency
- fragmentation and habitat loss
- reduced genetic diversity

- depensation (prone to continuing decline, even in the absence of exploitation)
- high degree of endemism (gray whales are restricted to the North Pacific, which is unusual for a baleen whale, most of which are distributed worldwide)
- threats from disease
- threats from invasive species

- threats from rapid environmental change (e.g. climate regime shifts). (As an Arctic species, gray whales are potentially vulnerable to environmental change)
- selectivity of removals (that may compromise recruitment)
- Other (please specify)

**Table 2 – Comments from reviewer on applicability of criteria for listing on Appendix II**

<p style="text-align: center;"><b>Criterion</b></p> <p>For your information for a species to fulfill the draft criteria for Appendix II it must meet at least one of the criteria A-D.</p>	<p style="text-align: center;"><b>NOTES</b></p> <p>Whenever appropriate, indicate ways in which this criterion and definitions, explanations and guidelines could be improved and/or quantified to better suit this taxon and its relatives (If you need additional space, please use a separate sheet of paper).</p>
<p><b>Trade Criterion</b> Is or may the <a href="#">species</a> be <a href="#">affected by trade</a>?</p>	<p><b>Yes. Historic harvests approached 500 whales per year in the mid 1800s; current harvest is approximately 120 whales per year. Whale meat is currently sold in several countries (and there is interest of some nations to reopen exploitation), but different species cannot be recognized without genetic testing. Peer-reviewed forensic research has confirmed that gray whale meat has recently been offered in foreign markets. Moreover, even if genetic forensic methods were fully utilized, at this time eastern gray whales cannot be genetically distinguished from western gray whales, which are critically endangered under IUCN. There are population level genetic differences between eastern and western gray whales, but there is no current method that could be used to unambiguously assign an individual whale or meat sample to a population. Therefore, there is no certain method that could be used to distinguish meat from eastern gray whales from meat from western gray whales.</b></p> <p><b>Comments:</b> <b>YES, The criterion applies to the taxon and related taxa. This is an important and useful criterion for whales, given the difficulties in identifying meat to species and population, and given that there were historically markets for meat of whales currently considered endangered or even critically endangered.</b></p>

<p><b>A)</b> It is known, or can be inferred, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.</p>	<p><b>Comments:</b>  <b>YES, The criterion applies to the taxon.</b></p>
<p><b>B)</b> It is known, or can be inferred or projected, that harvesting of specimens from the wild for international trade has, or may have, a detrimental impact on the species by either:</p>	<p><b>Commercial harvests in the 1800s had a detrimental impact on the species, but there has not been any large illegal harvest of eastern gray whales noted in recent decades, and the legal aboriginal harvests are managed at sustainable levels by the International Whaling Commission (IWC). If substantial illegal harvests were to begin, or if range states were to no longer adhere to harvest quotas set by the International Whaling Commission, this conclusion could change.</b></p> <p><b>Comments:</b>  <b>YES, The criterion applies to the taxon and related taxa.</b></p>
<p><b>B)(i)</b> Exceeding, over an extended period, the level that can be continued to perpetuity.</p>	<p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>
<p><b>B)(ii)</b> Reducing it to a population level at which its survival would be threatened by other influences.</p>	<p><b>Comments:</b>  <b>YES, The sub-criterion applies to the taxon and related taxa.</b></p>

<p>C) The specimens of the species in the form in which they are traded resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2(a), or in Appendix I, such that a non-expert, with reasonable effort, is unlikely to be able to distinguish between them.</p>	<p>There is no way to distinguish the whale meat in a market without molecular techniques. Also, sometimes meats of different species are blended and are, therefore, impossible to distinguish. Moreover, even if an expert utilized genetic forensic methods, at this time eastern gray whales cannot be genetically distinguished from western gray whales, which are Critically Endangered under IUCN. There are population level genetic differences between eastern and western gray whales, but there is no current method that could be used to unambiguously assign an individual whale or meat sample to a population. Therefore, there is no certain method that could be used to distinguish meat from eastern gray whales from meat from western gray whales.</p> <p>Comments:  <b>YES, The criterion applies to the taxon and related taxa.</b></p>
<p>D) There are compelling reasons, other than those given in C to ensure that effective control of trade in currently listed species is achieved.</p>	<p>One potential “compelling reason” is the use of genetic forensics to distinguish between cetacean species and between eastern and western gray whales. To date, no diagnostic, transparent and therefore reliable market forensic survey has been developed nor has the ability to correctly assign individuals to eastern or western gray whales using genetics been shown. Therefore, currently it would not be practical to, for example, separate the two gray whale sub-populations into two different Appendices.</p> <p>Comments:  <b>YES, The criterion applies to the taxon and related taxa.</b></p>

For criteria A) and B), please check which if any of the vulnerability factors listed below apply:

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> low fecundity                                  | <input type="checkbox"/> low population density (for sessile or semi-sessile species)            | <input type="checkbox"/> depensation (prone to continuing decline, even in the absence of exploitation)   |
| <input checked="" type="checkbox"/> slow growth rate                               | <input checked="" type="checkbox"/> specialized niche requirements (e.g. diet and habitat)       | <input checked="" type="checkbox"/> high degree of endemism (gray whales are restricted to the North Pacific, which is unusual for a baleen whale, most of which are distributed worldwide) |
| <input checked="" type="checkbox"/> high age at first maturity                     | <input type="checkbox"/> species associations such as symbiosis and other forms of co-dependency | <input type="checkbox"/> threats from disease   |
| <input type="checkbox"/> distorted age, size or sex ratio                          | <input type="checkbox"/> fragmentation and habitat loss  |   |
| <input type="checkbox"/> complex social structure                                  | <input type="checkbox"/> reduced genetic diversity   |   |
| <input checked="" type="checkbox"/> extensive migratory behaviour                  |  |   |
| <input checked="" type="checkbox"/> strong aggregating behaviour (e.g., schooling) |  |   |

- threats from invasive species
- threats from rapid environmental change (e.g. climate regime shifts). (As an Arctic species, gray whales are potentially vulnerable to environmental change)
- selectivity of removals (that may compromise recruitment)
- Other (please specify)