causing a positive climate feedback loop as it’s contributing further to global warming. By 2100, it is predicted that 50-60% of sea ice will have melted.

This threat, which is enhanced by human factors, is leading to other threats; ones which were once unreachable in the untouched wilderness of the Arctic. Many species are incredibly sensitive to human disruption, so are easily threatened by development in the Arctic. Drilling for oil is an incredibly politically sensitive topic in the Arctic, with Democrats and Republicans having different opposing views, as well as local tribes (such as the Inuipts and the Gwich’ins). It was originally considered an unconventional source and not economically viable, but due to the melting of the sea ice, areas like the Coastal Plain in the Arctic National Wildlife Refuge have become an option. The Arctic is said to hold over 90 billion barrels of oil and Shell has just been granted a license to begin drilling there. The biggest threat of oil drilling is oil spills; particularly after the 1989 Exxon spill, in which 11 million gallons leaked out into the Gulf of Alaska, damaging more than 1,300 miles of remote coastlines. It destroyed the Bligh reef (in which the oil tanker crashed in to), marine animals and animals living close to the shorelines. Oil extracts can still be found 25 years later. However, the oil rigs also create noise pollution underwater, which disrupts Bowhead Whales who communicate up to 20 miles using sound wave frequencies.

Similarly to this, mineral extraction can create pollution; both in the form of noise pollution and litter. As it is creating new jobs, it will result in more people migrating to the area, hence affecting previously untouched wildernesses and leaving behind waste. At Prudhoe Bay, 60 waste sites leak sewage. On Baffin Island, Canada, mineral extraction is happening as a ‘test case’ whereby it is a threat as other countries could soon follow suit. Originally, a railway was planned to transport the primary commodity (iron ore), but due to the price of iron ore falling on the global market, it changed this plan (which had been assessed and allowed by environmentalists) in favour of transporting the goods by dump trucks. These threaten Arctic biodiversity as roads creates fragmentation between species and cause roadkill.

Between 1950 and 2006, some 950,000 tonnes of fish were caught in the Arctic, yet only 12,700 tonnes were reported to the UN. This makes fishing quotas and population projections of marine life difficult to plan. Fishing boats (and oil tankers) repeatedly pass through Unimak Pass, which is considered one of the world’s most pristine and biodiverse marine areas. Fishing boats, (from oil spills from their engines and heavy anchors on the ocean bed) destroy reefs and other fragile life. 5000 unregulated tankers and cargo ships travel this route each year. Fishing is arguably one of the biggest threats as it is one of the hardest to solve. Countries can only claim parts of the Arctic located up to 200 miles away from their coastline (The Exclusive Economic Zone), which leaves a large portion of the Arctic unowned. What’s more, since the Arctic Circle is made up of 8 countries, with each one having their own rules and regulations, it makes it incredibly difficult for a treaty to be drawn up.

The last threat is tourism/ commercial shipping. Each year 1.5 million people visit the Arctic for recreational purposes. This is a large percentage as the Arctic only has 4 million inhabitants. As sea ice is melting, it has meant the Northwest Passage has become accessible for a few summer months each year. This route cuts shipping journeys significantly, but is also incredibly dangerous due to the unpredictable floating ice (between 1995 and 2004, 43 ships sank in the Arctic). This, plus the fact that tourist boats have risen from 13 in 2003 to 39 in 2008, is increasing the threat from oil spills and direct damages to marine ecosystems.

Overall, the biggest threat is climate change as it is now inevitable. The other threats are equally as damaging and have more direct impacts to biodiversity, but they are solely related to human factors and can be prevented. Arctic Fishing is a big threat as corrupt governments and incorrect fishing data is meaning that over-abstraction of fish (such as Arctic Cod) is an issue. This not only affects human consumption, but affects Arctic food webs. Most of these threats have only began developing in recent years due to them being previously unreachable due to the Arctic’s climatic conditions, which is making the outcomes of them difficult to predict. Of all the threats, mineral extraction has the biggest potential to influence other countries into partaking in similar developments.

3) Examine the 3 options for managing the Arctic’s future (13)