A US proposal for a global ban on billions of dollars in subsidies that drive overfishing of the oceans has won widespread support from World Trade Organisation members and raised hopes for an international pact later this year.

Environmental groups such as WWF hailed the US plan, discussed by the WTO for the first time on Tuesday, as a groundbreaking step towards an ambitious accord that would have a big impact on marine conservation.

"The WTO has the ability to reverse one of the most critical environmental challenges in our lifetime by eliminating market-distorting and ecologically destructive fisheries subsidies," said Courtney Sakai, campaign director at Oceana, a conservation group that advised the US government.

Noting that more than 2.6bn people depend on fish for food, Peter Allgeier, US WTO ambassador, said strong action would help control the "race to fish".

The US plan would impose a broad prohibition on subsidies for deep-sea fishing while making an exception for programmes that do not increase fishing capacity such as vessel decommissioning, conservation and infrastructure. Special rules would apply to poor countries. Though many rich and poor countries spoke in support of the US approach, it continues to be opposed by some of the biggest subsidisers, notably Japan and the European Union, which fear the effects on their fishing communities.

According to a study by the University of British Columbia, global fisheries subsidies total an estimated $30bn-$34bn annually, with at least $20bn (£10bn; €15bn) being "harmful" subsidies promoting overcapacity and overfishing.

Subsidies for boat-building and modernisation have helped lift the capacity of the world’s fishing fleet to more than twice the level needed for sustainable fishing, the study says, listing the biggest subsidisers as Japan ($5.3bn), the EU ($3.3bn) and China ($3.1bn).

Leading scientists warned last year that commercial fisheries could collapse altogether by mid-century.

A WTO fisheries deal is being touted by the Bush administration as one of the most important potential "deliverables" of the troubled Doha global trade talks as it seeks to win Democrat support for a renewal of trade negotiating authority to conclude the round by the end of this year.

In April the US House of Representatives introduced a resolution calling for the elimination of fishing subsidies that promote overfishing, and a strong declaration of support was expected from leading senators.