FISHERIES

Tensions flare over electric fishing in European waters

European Parliament calls for total ban of a technique that saves fuel and reduces damage to marine life

By **Erik Stokstad**

Bottom trawling is one of the most destructive types of fishing, decried for churning up massive swaths of sea bed and leaving dead sea urchins, mollusks, and other creatures in its wake. In the North Sea, Dutch fishing vessels are substituting a subtler technique for this brute-force method: using short bursts of electricity to get flatfish out of the sediment and into nets. But they are stirring up just as much controversy.

Dutch fishing companies say pulse trawling is less damaging to marine ecosystems and saves energy. But fishing groups in other EU countries are increasingly angry about competition from the Dutch pulse trawlers. And a coalition of environmental organizations worries about harm to nontarget marine life. Other nongovernmental organizations, including Greenpeace Netherlands, say pulse trawling has promise and that ending it now would penalize the fishing industry for innovating.

"A train of emotion is now going full speed," says Marloes Kraan, an anthropologist at Wageningen Marine Research in IJmuiden, the Netherlands. And it appears likely to accelerate: On 16 January, the European Parliament voted to ban the technique as the first step in negotiations with the European Commission and member states over a large package of fisheries reforms. A ban, or even a major reduction in pulse trawling, would be a huge blow to the Dutch fishing industry.

Most bottom trawlers drag a net, held open by a wide metal beam, across the bottom to catch shrimp or fish. Trawlers targeting flatfish, such as sole or plaice, also use dangling iron chains to scare them out of the sediment. The beam and chains disturb or kill many bottom-dwelling organisms, the nets catch unwanted species, and all the tugging requires a lot of diesel.

Pulse trawlers, by contrast, barely touch the bottom because they use bursts of low-voltage electricity to catch flatfish, particularly Dover sole (see graphic, right). After the current briefly cramps their muscles, they try to flee, and many end up in the net. Because sole are more susceptible to electricity than other species, pulse trawling reduces bycatch. And the gear is lighter and can be towed slower, so the boats burn half as much fuel. "We catch with a lesser environmental impact and greater economic returns," says Pim Visser of VisNed, a trawling trade group in Urk, the Netherlands. He credits the gear with saving many fishing companies from bankruptcy.

Encouraged by initial studies, the Dutch government in 2006 successfully lobbied the European Commission to allow 5% of each country's fleet to use pulse trawling, exempting them from the European Union's 1988 general ban on electrical fishing. By 2009, Dutch companies had embraced the opportunity. As demand grew, they received additional licenses for reducing bycatch or for research, with the condition that they provide detailed data on their catches. Now, 75 vessels—about 28% of Dutch trawlers—use pulse gear. Fishing companies outside the Netherlands fish for sole, too, but don't specialize in it; as a result, few have invested in the expensive technology.

BLOOM Association, an environmental group in Paris, argues that the research and bycatch licenses are illegal and a guise for commercial fishing, and that pulse trawling puts small-scale fishing at an even bigger disadvantage than conventional trawling does. BLOOM advocates catching flatfish with gillnets, stationary curtains of netting that have a much lower bycatch rate than either kind of trawling and do less damage to the sea floor. "There shouldn't be any use of electric current," says BLOOM Director Claire Nouvian. "We've got enough evidence to know this is nonsense."

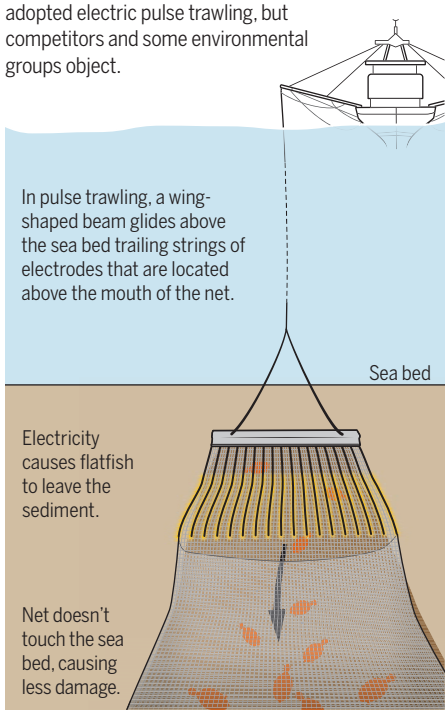
Scientists have so far found little evidence that the electrical currents cause serious harm. Last year, a working group with the International Council for the Exploration of the Sea (ICES) highlighted harm to large cod and whiting as the only known irreversible effect. Although not many cod are accidentally caught by pulse trawlers, about 10% of them suffer vertebral fractures and hemorrhages when their muscles overcontract from the shocks. Initial laboratory research on other organisms has not shown lasting, serious effects, but the ICES group says questions remain, for instance about the effects on sharks and rays.

Nevertheless, "We know enough to continue with pulse trawling in the present context," says Adriaan Rijnsdorp, a fisheries biologist at Wageningen Marine Research and a co-chair of the ICES working group. But he says a decision on the future of pulse trawling should wait until 2019, when a 4-year, EU-funded research program on ecological impacts, which he coordinates, is due to wrap up.

Any decision will have to be agreed on by the European Parliament, the commission, and member states, in this case represented by their fisheries ministers. The commission has proposed removing the cap on licenses in the southern North Sea, where pulse trawling now occurs; other areas could follow after further studies. The ministers, by contrast, would de facto remove licenses beyond the 5% limit of a country's fleet, which would force most Dutch vessels to give up pulse trawling. A compromise in which the technique is greatly curtailed is the most likely outcome, says Irene Kingma, director of the Dutch Elasmobranch Society in Amsterdam, which promotes the study and conservation of sharks and rays. "There might be carnage within the Dutch fishing sector," Kingma says. "And if they change back to beam trawling, we have all the environmental problems from that." ■

A charged approach

Many Dutch fishing vessels have adopted electric pulse trawling, but competitors and some environmental groups object.



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