

A few days ago, [Dan posted](#) about some positive EPA achievements. In the same spirit, and since the natural resource agencies get bashed for supposedly over-zealous and ineffective regulation close to as much as EPA does, I wanted to highlight another regulatory success story: turtle excluder devices, often referred to by their acronym, TEDs.



A loggerhead turtle escaping through a turtle excluder device. Photo courtesy of NOAA.

The National Marine Fisheries Service developed TEDs in the early 1980s to reduce the bycatch of threatened and endangered sea turtles by shrimp trawlers in the Gulf of Mexico. The agency tried hard to persuade shrimpers to adopt TEDs as a voluntary measure, but was unable to do so. Finally, in 1987, NMFS issued regulations requiring the use of TEDs. Those regulations were broadened in 1989, and in 2003 NMFS mandated the use of larger TEDs to allow the escape of leatherback and loggerhead turtles.

NMFS has continued to work with industry on design improvements, but TED regulations have remained controversial. Shrimpers blame the devices for reducing their catch by allowing shrimp, as well as turtles, to escape the nets. They see TEDs as contributing to the Gulf's precipitous loss of market share to non-US shrimp sources.

So why are TEDs a regulatory success story?

Two recent publications highlight the significant biological effectiveness and limited economic impacts of TED regulations. TEDs save turtles, and they do so without destroying the shrimping industry.

The Gulf shrimp fishery is responsible for the vast majority of fishery-related sea turtle mortality in U.S. waters. Although the numbers are still significant, Finkbeiner et al report, at 144 *Biological Conservation* 2719 (2011) (doi:10.1016/j.biocon.2011.07.033), that sea turtle bycatch in the Gulf shrimp fishery has fallen 60% overall since the latest TED regulations were adopted. The enlarged TED requirement, adopted in 2003 specifically to benefit leatherback turtles, has fulfilled that aim in spades, reducing leatherback bycatch by an astonishing 98%.

On the other side of the coin, Mukherjee and Segerson report at 26 *Marine Resource Economics* 173 (2011), that TED regulations have not stifled commercial shrimping. They calculate that TED use from 1989 to 2003 cost shrimpers about 2% of their total harvest, much less than the industry has claimed. So, although global competition has reduced the

market share of US-caught shrimp, macro-economic forces rather than regulatory differences have driven that shift.

There are two lessons to carry away from this case study. 1) Regulations can work to save species we value for non-economic reasons, like sea turtles. Most of us would think the Gulf was a less interesting and appealing place to pass on to future generations without its graceful turtles. 2) Preserving a biotically diverse world doesn't have to mean ruining our economy. And by extension, when regulated industries are suffering economically, it's a natural but often misplaced reaction to target regulations. Opponents of regulation often complain that environmentalists are asking them to accept economic pain in return for little demonstrable environmental gain. But the sea turtle example shows that the reality can be just the reverse — economic interests demanding that nature-lovers accept the sacrifice of irreplaceable resources for little demonstrable economic gain.