



SIX DEGREES OF PHARMACOLOGY

Game ranks researchers by proximity to field's founder.

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DIGITALGLOBE

SNAPSHOT

Ghosts of destruction

A set of contrails behind close-flying jets? Orderly raking in a muddy zen garden? A phalanx of harvesters on a giant prairie?

No: this is an image of shrimp trawlers (see inset) off the coast of China. The long plumes of sediment churned up by their nets — 'mudtrails' — are a highly visible sign of the disturbance to sea-bottom ecosystems that they leave in their wake.

Conservation ecologist Kyle Van Houtan of Duke University in North Carolina, and fisheries expert Dan Pauly of the University of British Columbia in Vancouver, have identified many such mudtrails in satellite images available through Google Earth. From the Gulf of Mexico to Malaysia, remote-sensing imagery captures details ranging from the

number of trawl nets dragged behind a boat to the white dots of seabirds flocking nearby to feast off the unwanted bycatch that is dumped overboard.

This particular image was taken by the QuickBird satellite on 20 February 2003, off the coast of Jiangsu province near the mouth of the Yangtze River; ten trawlers cover each square kilometre of ocean.

Van Houtan and Pauly are now working with Quickbird, Landsat and other satellite data to quantify exactly how much sediment is churned up by these boats to try to get a handle on the toll taken by fishing. Repeated trawling, they say, can permanently modify the seabed and alter the ecosystem for creatures living in the upper metres of the ocean.

"Imagining is one thing, but imaging is something else," says Van Houtan. "When we see an image, it really crystallizes the impacts and an attitude towards the sea." ■