

Methodology for Seismic Vessel Tracker

Summary

Oceana's "We're Watching" map displays near real-time activity of vessels capable of conducting seismic airgun blasting for oil and gas exploration. Oceana identified vessels that are affiliated with offshore exploration companies, including those seeking Geological and Geophysical (G&G) permits for oil and gas exploration in the Atlantic Ocean. Using the technology of Global Fishing Watch, Oceana's map displays Automatic Identification System (AIS) data to show where seismic vessels are located over the past 30 days in the Northwest Atlantic Ocean and eastern Gulf of Mexico.

Data Acquisition

Oceana identified vessels owned by or affiliated with offshore exploration companies, including those with G&G permit applications submitted to the Bureau of Ocean Energy Management (BOEM) for the Atlantic Outer Continental Shelf (OCS) Region. The seismic companies with [Atlantic permits](#) currently under review with BOEM include: TGS-NOPEC Geophysical Company, ION/GX Technology Corporation, WesternGeco LLC, CGG Services (US) Inc., Spectrum Geo Inc., Petroleum Geo-Services (PGS) and TDI-Brooks International, Inc.

Oceana identified vessels owned by or affiliated with seismic companies by searching company fleet lists and public holding records. The map displays AIS data from the entire catalog of vessels we found to be owned by or affiliated with seismic companies when they are operating in the northwest Atlantic Ocean or eastern Gulf of Mexico. Vessels displayed may or may not be conducting seismic activity at any given time, but apparent seismic activity can be identified based on the behavior of the vessel. Apparent seismic activity will appear on the map as successive parallel or grid-like lines.



Five of the seismic companies listed above have also submitted [Incidental Harassment Authorizations \(IHAs\)](#) to the National Marine Fisheries Service (Fisheries Service), a necessary step in the approval process for seismic airgun blasting in U.S. waters. These five seismic companies include TGS-NOPEC Geophysical Company, ION GeoVentures (a division of ION/GX Technology Corporation), WesternGeco LLC, CGG Services (US) Inc. and Spectrum Geo Inc. While the Marine Mammal Protection Act entirely prohibits harm to marine mammals, an [IHA](#) is an exemption from this prohibition that authorizes companies to harass (i.e., disturb or injure) for up to one year a "small number" of marine mammals during seismic airgun blasting activities, provided the activities will have a "negligible impact" on the animals. Before BOEM approves any G&G permits, the corresponding IHAs also need to be approved and seismic vessels cannot conduct any seismic blasting until the environmental analysis required under the Marine Mammal Protection Act as well as other statutes, including the Endangered Species Act and the National Environmental Policy Act, is complete. This means that only those vessels authorized by both NMFS (via an IHA) and BOEM (via a G&G permit) are approved to conduct seismic airgun blasting in the specified [survey](#)



[area](#) off the East Coast.

As of May 2018, approximately 140 seismic vessels were identified. Because not all the seismic companies with current permit applications had readily available information about their fleets and the companies that did list vessels may not have publicly disclosed all seismic vessels under their ownership, the data set includes vessels affiliated with additional seismic companies. While the list is neither exclusive nor exhaustive, including vessel information from other companies allows for a more all-encompassing view of potential seismic blasting activity in the Atlantic OCS. For example, if one of the companies with a pending permit application outsources a vessel to conduct seismic airgun blasting, the third party owned vessel may still be captured by the map's database.

Oceana will continue to research and find new vessels owned by or affiliated with seismic companies and add their AIS data to the map. The map will include the most complete and up-to-date information known about the companies that have applied for seismic airgun blasting permits in the Atlantic and offshore exploration companies.

Map Details

The Seismic Vessel layer (colored according to vessel) of this map is the final output of vessel activity drawn from our entire catalog of seismic vessels; however, vessels will only be shown on the map when they are active in the eastern Gulf of Mexico or the Atlantic Ocean. Although AIS regularly streams from these vessels, data shown on the map is roughly 72 hours delayed from real-time transmission. Real-time data for vessels can be viewed at www.marinetraffic.com.

Oil and gas exploration activities have a common visual signature. [Click here](#) to see an example of apparent seismic activity. The Blast Zone layer (solid red line) is the aggregate area covered by all five applications currently submitted to the Fisheries Service for IHAs.

The Areas Off-Limits to Drilling layer (shaded red) shows the regions where the federal government restricted offshore drilling (as of October 2017). Specifically, there is a [Congressional moratorium](#) on oil and gas leasing within most of the eastern Gulf of Mexico (125 miles off the gulf coast of Florida) until June 2022. Additional [areas restricted](#) from drilling are presidential withdrawals under Section 12(a) of the Outer Continental Shelf Lands Act or National Marine Sanctuaries. The EEZ Boundaries layer (solid grey lines) shows the U.S. Exclusive Economic Zone (EEZ), an area that extends from state waters up to 200 nautical miles offshore. The U.S. EEZ is the area in which the United States has sovereign rights over both living and nonliving natural resources.

Vessels Identified as Affiliated with Seismic Companies

Vessel Name	International Maritime Organization (IMO) Number
AKADEMIK FERSMAN	8313958
AKADEMIK LAZAREV	8408985
AKADEMIK SHATSKIY	8407010
AKADEMIKNEMCHINOV	8409032
AMAZON WARRIOR	9662394
AQUILA EXPLORER	8107115
ARTEMIS ANGLER	9181467
ARTEMIS ARCTIC	9207510
ARTEMIS ATLANTIC	8604034
ATLANTIC EXPLORER	8610667
BARBAROS HAYREDDIN P	9538103
BGP CHALLENGER	9441532
BGP EXPLORER	9441544

BGP PIONEER	8709951
BGPP ROSPECTOR	9545986
BIN HAI 512	7800289
BINHAI 517	9181780
BOA GALATEA	9418860
BOA THALASSA	9418858
CAROLYN CHOUEST	8875384
CGG ALIZE	9178159
CGG AMADEUS	9174933
DAMON CHOUEST	8701973
DISCOVERER	7623928
DISCOVERER 2	9079315
DONG FANG KANTAN 1	9417385
DONG FANG KANTAN 2	9397418
DONG FANG MING ZHU	8883032
EUROPEAN SUPPORTER	9126584
FAIRFIELD CHALLENGER	8428571
FAIRFIELD NEWVENTURE	8851522
FLAMBOYAN	8223256
FUGRO AMERICAS	9713753
FUGRO BRASILIS	9627423
FUGRO DISCOVERY	9152882
FUGRO ENTERPRISE	9473585
FUGRO EQUATOR	9627411
FUGRO EQUINOX	9572305
FUGRO FRONTIER	9701657
FUGRO GALAXY	9583445
FUGRO GAUSS	7824883
FUGRO MERIDIAN	8101331
FUGRO NAVIGATOR	8725539
FUGRO PIONEER	9701645
FUGRO PROTEUS	9675860
FUGRO SEARCHER	9504011
FUGRO SUPPORTER	8518364
GECO EMERALD	9043079
GEO ARCTIC	8409018
GEO BARENTS	9252503
GEO CARIBBEAN	9401219
GEO CASPIAN	9525560
GEO CELTIC	9376995
GEO CORAL	9492579
GEO DETIC SURVEYOR	8661707
GEO EXPLORER	8107921
GEO HINDSAGAR	7806075

GEO PACIFIC	8408973
GEOLOG DM NALIVKIN	8119039
GEOWAVE COMMANDER	9183867
GEOWAVE VOYAGER	9381299
HAI YANG SHI YOU 707	9740718
HAI YANG SHI YOU 708	9576480
HAI YANG SHI YOU 719	9250440
HAI YANG SHI YOU 720	9567829
HAI YANG SHI YOU 721	9714525
HAI YANG SHI YOU 760	9778167
HAI YANG SHI YOU 770	9739068
HARRIER EXPLORER	7807380
HAWK EXPLORER	8316857
HUGIN EXPLORER	9366005
MEIYO	8904719
MGS SAGAR	8501074
MUNIN EXPLORER	8915782
NAN HAI 502	7804807
NEPTUNE NAIAD	9219719
NIKOLAY TRUBYATCHINS	8705010
NORDIC EXPLORER	8517449
NORTHERN EXPLORER	8606460
OCEAN ENDEAVOUR	8402008
OCEAN EUROPE	9386550
OCEAN FORTUNE	9742431
OCEAN OBSERVER	8511275
OCEAN PEARL	9125140
OCEAN STARR	7333195
OCEANIC CHALLENGER	9194115
OCEANIC CHAMPION	9085211
OCEANIC ENDEAVOUR	9399521
OCEANIC SIRIUS	9459565
OCEANIC VEGA	9459553
ODIN FINDER	7031761
OGS EXPLORA	7310868
ORIENT EXPLORER	8409020
OSPREY EXPLORER	8416906
PACIFIC FINDER	9548495
PGS APOLLO	9378228
POLAR DUCHESS	9378216
POLAR DUKE	9378204
POLAR EMPRESS	9687370
POLAR MARQUIS	9190298
POLARCUS ADIRA	9610183



POLARCUS ALIMA	9538139
POLARCUS AMANI	9610171
POLARCUS ASIMA	9538127
POLARCUS NAILA	9538098
PROFESSOR KURENTSOV	7406136
PROFESSOR RJABINKIN	8504923
RAMFORM ATLAS	9629897
RAMFORM SOVEREIGN	9390460
RAMFORM STERLING	9413303
RAMFORM TITAN	9629885
RAMFORM VALIANT	9165023
RAMFORM VANGUARD	9188714
RAMFORM VIKING	9165035
SAMUDRA RATNAKAR	9639581
SANCO SPIRIT	9429936
SANCO STAR	9410313
SANCO SWIFT	9630494
SANCO SWORD	9662100
SEA EXPLORER	7504249
SEA SURVEYOR	7813901
SHI YAN 2	8832497
SHIGEN	9178630
STRAIT EXPLORER	8023096
VANTAGE	9242704
VENTURER	8510673
VERITAS VIKING	9173599
VIKING VANQUISH	9165554
VIKING VISION	8907034
VOYAGER EXPLORER	9319052
VYACHESLAV TIKHONOV	9538115
WAVES 7	9714185
WESTERN NEPTUNE	9187514
WESTERN PATRIOT	9050448
WG AMUNDSEN	9452969
WG COLUMBUS	9452945
WG COOK	9488554
WG MAGELLAN	9452957
WG TASMAN	9488542
WG VESPUCCI	9452971
ZEPHYR 1	8408997

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