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# Oceanography

Supplementary Materials for

## Functioning of Coastal River-Dominated Ecosystems and Implications for Oil Spill Response: From Observations to Mechanisms and Models

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## Global Oil Production in River-Dominated Ecosystems

Many coastal ocean basins that have significant oil reserves and fisheries production receive high-volume river discharge, which makes extension of CONCORDE methodology and results to other systems viable. Similar coastal river-dominated oceans were selected by identifying the largest deltaic systems by river discharge (taken from Milliman and Farnsworth, 2011) and comparing these to oil reserve estimates. Many large offshore oil reserves are not located in high-volume discharge deltas, so networks of smaller rivers in the near vicinity were evaluated in terms of recoverable barrels of oil (more than 0.5 billion barrels) and

river discharge (in excess of  $1,000 \text{ m}^3 \text{ s}^{-1}$ ). Recoverable oil estimates came from US Geological Survey reports on regional oil availability (USGS, 2015). Oil reserve estimates for each region are from Champman and Khanna (2004). Fifteen discharge rates not included in Milliman and Farnsworth (2011) were taken from individual river studies. Not shown is the Shatt Al-Arab River Delta, which empties into the Persian Gulf and has an estimated oil reserve of 191 billion barrels (mostly terrestrial, but near the river). There may be other applicable sites around the world that are not well documented in the current literature.

## References to Data Sets Used to Generate Figure 7

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