

Gulf of Mexico Oil Spill

By Chuck Andersen

HOW DOES THE CURRENT SPILL RANK AMONG HISTORICAL OIL SPILLS?

- The Gulf of Mexico oil spill is very large, but not among the largest spills in history
- The spill is now the largest in U.S history
- A similar accident in the gulf off Mexico was the 2nd largest in history (Ixtoc I)
- Ixtoc I spilled as much or more oil every day and gushed from June 1979 to March 1980
- Gulf oyster production was down after the Ixtoc I spill for up to four years.
- Finfish and shrimp landings appear to have been minimally impacted by the Ixtoc I oil spill

COMPARISON TO HURRICANE KATRINA OIL SPILLS

- Many oil spills occurred in the same general area of the gulf due to Hurricane Katrina
- The total of all Katrina related spills in 2005 was about the same as the first 30 days of the BP oil spill
- Most of the Katrina spills were in shore and harder to clean up
- Many of the Katrina spills were more refined oil and more toxic
- Gulf oyster production was impacted significantly in the 2005/2006 season, and was low in 2007 and 2008
- Gulf shrimp production was down in the 2005/2006 season
- Gulf shrimp production set a record in 2006/2007
- The loss of shrimp production in '05/'06 was mostly from the loss of boats
- Minimal impact to finfish and non oyster shellfish harvests

HOW IS THE OIL CLEANED UP IN THE OCEAN - BY MAN?

- Boom containment, then skimmers and vacuums suck up oil
- Absorbent booms
- Surface burning
- Biological agents added to the water to speed natural breakdown
- Dispersants to aid natural breakdown by breaking the oil into smaller parts
 - smaller oils droplets breakdown faster naturally

HOW IS THE OIL CLEANED UP IN THE OCEAN - BY NATURE?

- Oil is a natural substance and breaks down naturally in many ways
- Up to 40% of the oil evaporates in the first 24 hours
- The most dangerous volatiles evaporate within 24 hours
- Wind and waves disperse some oil into smaller droplets
- Smaller oil droplets have more surface area and are eaten faster by bacteria
- Small amounts of this type of oil will dissolve into the water
- Emulsification (water absorbs into the oil making a sticky "mousse")

HOW IS THE OIL CLEANED UP IN THE OCEAN - BY NATURE?

- Slow natural processes eventually clean the oil
- Biodegrading. With time, bacteria eat and breakdown oil into water and carbon dioxide
- Photo-oxidation. Sun and air work slowly over time
- Tar balls and emulsified mousse are very slow to breakdown, but do breakdown over time
- Tar balls are more of a nuisance and are minimally toxic, if at all
- The entire process takes years, but much of the oil is cleansed within months

HOW IS THE OIL CLEANED ON BEACHES/IN ESTUARIES?

- Oil on beaches can be removed by shovels and earth movers
- Oil in wetlands, marshes, and shallow estuaries are best left alone
- Over time, natural processes breakdown the oil
- Natural cleansing is less damaging than human actions to clean these areas

IMPACTS TO OYSTERS

- The biggest impact by far is to oysters

- Oyster beds will be closed as in shore areas are affected by oil
- Oysters can be killed by the oil, but most usually survive
- Oysters will not be harvested from affected areas
- Oyster production in the gulf could be down an estimated 25% to 75% this fall/winter
- 2011 gulf oyster productions could be close to normal if the oil leak is stopped soon
- Gulf oyster production in 2012 and 2013 could be off an estimated 10% to 25%

IMPACTS TO SHRIMP

- Gulf shrimp prices are up significantly due to speculation
- Gulf shrimp availability has been affected minimally to date
- Louisiana is in season, and white shrimp production will be affected this summer
- Texas and Florida are offseason
- Texas produces primarily brown gulf shrimp (August through March season)
- Texas may or may not be impacted this season by the oil spill
- Gulf shrimp is a seasonal crop and rebounds quickly

IMPACTS TO OTHER SEAFOOD

- Minimal impacts are expected to gulf finfish production (snapper, grouper, flounder, tuna)
- Finfish do not absorb much oil and can purge or metabolize oil compounds quickly
- Some shellfish also do this
- The biggest concern is oil in estuaries where juvenile species develop
- Could have some impact on future year harvests of some finfish and shellfish

SEAFOOD SAFETY

- Precautionary fishing area closures will keep boats away from oil areas
- 32% of U.S. gulf waters are currently closed for fishing (as of June 4)
- FDA and National Marine Fisheries Service (NMFS) are training state and local inspectors from all gulf states
- A second wave of training will be conducted by universities and state agencies
- Boat and plant personnel will be trained to identify even slight oil "tainting"
- Seafood will be tested throughout the gulf to ensure no tainted or adulterated seafood is sold
- The gulf US seafood supply will be safe

Sources include:

- Managing Seafood Safety after an Oil Spill (NOAA document 2002)
- NOAA Website
- NMFS Website
- LSU media center
- Natural Oil Seeps and the deepwater Horizon disaster, Boston University May 31, 2010
- Personal interviews with Dr Russ Miget and Dr Michael Haby, Texas A&M Corpus Christi
- Research of historical seafood production published by NOAA / NMFS