

Deepwater Horizon: Natural Resource Damage Assessment Toxicity Testing Program

Select Publications

Aquatic Toxicity

- 2020 Bridges, K.N., M.M. Alloy, L. Damare, I. Palmer, H.P. Forth, J. Morris, J.A. Stoeckel, and A.P. Roberts. Planktonic fiddler crab (*Uca longisignalis*) are susceptible to photoinduced toxicity following in ovo exposure in oiled mesocosms. *Environmental Science and Technology*. 54(10): 6254-6261.
- 2019 Vignier, J., A. Volety, P. Soudant, F. Chu, A.N. Loh, M. Boulais, R. Robert, J. Morris, C. Lay, M. Krasnec. Chapter 8 - Evaluation of the Toxicity of the Deepwater Horizon Oil and Associated Dispersant on Early Life Stages of the Eastern Oyster, *Crassostrea virginica*. In *Evaluating Water Quality to Prevent Future Disasters*. S. Ahuja, ed, Separation Science and Technology. Vol 11. Academic Press, pp 169-198. Available: <https://www.sciencedirect.com/science/article/pii/B9780128157305000089>
- 2018 Morris, J.M., M. Gielazyn, M.O. Krasnec, R. Takeshita, H.P. Forth, J.S. Labenia, T.L. Linbo, B.L. French, J.A. Gill, D.H. Baldwin, N.L. Scholz, and J.P. Incardona. Crude oil cardiotoxicity to red drum embryos is independent of oil dispersion energy. *Chemosphere* 213:205–214. Available: <https://www.sciencedirect.com/science/article/pii/S0045653518316588>.
- 2018 Boulais, M., J. Vignier, A.N. Loh, F.L.E. Chu, C.R. Lay, J.M. Morris, M.O. Krasnec, A. Volety, and F.L. Chu. Sublethal effects of oil-contaminated sediment to early life stages of the Eastern oyster, *Crassostrea virginica*. *Environmental Pollution* 243:743–751. Available: <https://www.sciencedirect.com/science/article/pii/S0269749118307693>.
- 2018 Bridges, K., C.R. Lay, M.M. Alloy, M.L. Gielazyn, J.M. Morris, H.P. Forth, R. Takeshita, C. Travers, J.T. Oris, and A.P. Roberts. Estimating incident ultraviolet (UV) radiation exposure in the Northern Gulf of Mexico during the *Deepwater Horizon* oil spill. *Environmental Toxicology and Chemistry*. Available: <https://doi.org/10.1002/etc.4119>
- 2018 Bridges, K., M. Krasnec, J.T. Magnuson. J.M. Morris, M.L. Gielazyn, J.R. Chavez, A.P. Roberts. Influence of variable ultraviolet radiation and oil exposure duration on survival of red drum (*Sciaenops ocellatus*) larvae. *Environmental*

Toxicology and Chemistry. Available:
<https://setac.onlinelibrary.wiley.com/doi/abs/10.1002/etc.4183>.

- 2018 Damare, L., K. Bridges, T. Curran, B. Soulen, M. Alloy, H. Forth, C. Lay, J. Morris, J. Stoeckel, and A. Roberts. Photo-induced toxicity in early life stage fiddler crab (*Uca longisignalis*) following exposure to *Deepwater Horizon* oil. *Ecotoxicology* 27(4):440–447. Available: <https://link.springer.com/article/10.1007/s10646-018-1908-6>.
- 2018 Mager, E.M., C. Pasparakis, J.D. Stieglitz, R. Hoenig, J.M. Morris, D.D. Benetti, and M. Grosell. 2018. Combined effects of hypoxia or elevated temperature and *Deepwater Horizon* crude oil exposure on juvenile mahi swimming performance. *Marine Environmental Research* 139:129-135. Available: <https://www.sciencedirect.com/science/article/pii/S0141113618301818>.
- 2018 Morris, J.M., M. Gielazyn, M.O. Krasnec, R. Takeshita, H.P. Forth, J.S. Labenia, T.L. Linbo, B.L. French, J.A. Gill, D.H. Baldwin, N.L. Scholz, and J.P. Incardona. 2018. Crude oil cardiotoxicity to red drum embryos is independent of oil dispersion energy. *Chemosphere* 213:205–214. Available: <https://www.sciencedirect.com/science/article/pii/S0045653518316588>.
- 2018 O'Shaughnessy, K.A., Forth, H., Takeshita, R. and Chesney, E.J., 2018. Toxicity of weathered *Deepwater Horizon* oil to bay anchovy (*Anchoa mitchilli*) embryos. *Ecotoxicology and Environmental Safety* 148: 473-479.
- 2017 Alloy, M., T.R. Garner, K. Bridges, C. Mansfield, M. Carney, H. Forth, M. Krasnec, C. Lay, R. Takeshita, J. Morris, S. Bonnot, J. Oris, and A. Roberts. 2017. Co-exposure to sunlight enhances the toxicity of naturally weathered *Deepwater Horizon* oil to early lifestage red drum (*Sciaenops ocellatus*) and speckled seatrout (*Cynoscion nebulosus*). *Environmental Toxicology and Chemistry* 36(3):780–785. doi: 10.1002/etc.3640. Available: <http://onlinelibrary.wiley.com/wol1/doi/10.1002/etc.3640/full>.
- 2017 Bayha, K.M., N. Ortell, C.N. Ryan, K.J. Griffitt, M. Krasnec, J. Sena, T. Ramaraj, R. Takeshita, G.D. Mayer, F. Schilkey, and R.J. Griffitt. 2017. Crude oil impairs immune function and increases susceptibility to pathogenic bacteria in southern flounder. *PLoS ONE* 12(5): e0176559. Available: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0176559>.
- 2017 Brown-Peterson, N.J., M.O. Krasnec, C.R. Lay, J.M. Morris, and R.J. Griffitt. 2017. Responses of juvenile southern flounder exposed to *Deepwater Horizon* oil-contaminated sediments. *Environmental Toxicology and Chemistry* 36(4):1067–1076. doi: 10.1002/etc.3629. Available: <http://onlinelibrary.wiley.com/doi/10.1002/etc.3629/full>.

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- 2017 Forth, H.P., C.L. Mitchelmore, J.M. Morris, and J. Lipton. 2017. Characterization of oil and water accommodated fractions used to conduct aquatic toxicity testing in support of the Deepwater Horizon oil spill natural resource damage assessment. *Environmental Toxicology and Chemistry* 36(6):1450–1459. doi: 10.1002/etc.3672. Available: <http://onlinelibrary.wiley.com/wol1/doi/10.1002/etc.3672/full>.
- 2017 Forth, H.P., C.L. Mitchelmore, J.M. Morris, C.R. Lay, and J. Lipton. 2017. Characterization of dissolved and particulate phases of water accommodated fractions used to conduct aquatic toxicity testing in support of the Deepwater Horizon natural resource damage assessment. *Environmental Toxicology and Chemistry* 36(6):1460–1472. Available: <http://onlinelibrary.wiley.com/wol1/doi/10.1002/etc.3803/full>.
- 2017 Garner, T.R., M.A. Hart, L.E. Sweet, H.T.J. Bagheri, J. Morris, J.A. Stoeckel, and A.P. Roberts. 2017. Effects of Deepwater Horizon spill oil on the migration and survival of marsh periwinkle snails (*Littoraria irrorata*). *Environmental Science and Technology* 51(15):8757–8762.
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- 2017 Mager, E.M., C. Pasparakis, L.S. Schlenker, Z. Yao, C. Bodinier, J.D. Stieglitz, R. Hoenig, J.M. Morris, D.D. Benetti, and M. Grosell. 2017. Assessment of early life stage mahi-mahi windows of sensitivity during acute exposures to Deepwater Horizon crude oil. *Environmental Toxicology and Chemistry* 36(7):1887–1895. doi: 10.1002/etc.3713. Available: <http://onlinelibrary.wiley.com/doi/10.1002/etc.3713/full>.
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Avian and Wildlife Toxicity

- 2018 Harr, K., D. Reavill, K. Deak, S. Murawski, and R. Takeshita. 2018. Generation of red drum (*Sciaenops ocellatus*) hematology reference intervals with a focus on identified outliers. *Veterinary Clinical Pathology*. Available: <http://onlinelibrary.wiley.com/doi/10.1111/vcp.12569/full>.
- 2017 Alexander, C.R., M.J. Hooper, D. Cacula, K.D. Smelker, Caleshia S. Calvin, Karen M. Dean, Steve J. Bursian, Fred L. Cunningham, Katie C. Hanson-Dorr, K.E. Horak, J.P. Isanhart, J. Link, S.A. Shriner, and C.A.J. Godard-Codding. 2017. Reprint of: CYP1A protein expression and catalytic activity in double-crested cormorants experimentally exposed to Deepwater Horizon Mississippi Canyon 252 oil. *Ecotoxicology and Environmental Safety*. 146: 68-75.
- 2017 Bursian, S.J., K.M. Dean, K.E. Harr, L. Kennedy, J.E. Link, I. Maggini, C. Pritsos, K.L. Pritsos, R.E. Schmidt, and C.G. Guglielmo. 2017. Effect of oral exposure to artificially weathered Deepwater Horizon crude oil on blood chemistries, hepatic antioxidant enzyme activities, organ weights and histopathology in western sandpipers (*Calidris mauri*). *Ecotoxicology and Environmental Safety*. 146: 91-97.

- 2017 Bursian, S.J., C.R. Alexander, D. Cacela, F.L. Cunningham, K.M. Dean, B.S. Dorr, C.K. Ellis, C.A. Godard-Codding, C.G. Guglielmo, K.C. Hanson-Dorr, K.E. Harr, K.A. Healy, M.J. Hooper, K.E. Horak, J.P. Isanhart, L.V. Kennedy, J.E. Link, I. Maggini, J.K. Moye, C.R. Perez, C.A. Pritsos, S.A. Shriner, K.A. Trust, and P.L. Tuttle. 2017. Reprint of: Overview of avian toxicity studies for the Deepwater Horizon Natural Resource Damage Assessment. *Ecotoxicology and Environmental Safety*. 146:4-10.
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- 2017 Takeshita, R., Sullivan, L., Smith, C., Collier, T., Hall, A., Brosnan, T., Rowles, T. and Schwacke, L., 2017. The Deepwater Horizon oil spill marine mammal injury assessment. *Endangered Species Research*. 33: 95-106.
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- 2017 Wallace, B.P., Brosnan, T., McLamb, D., Rowles, T., Ruder, E., Schroeder, B., Schwacke, L., Stacy, B., Sullivan, L., Takeshita, R. and Wehner, D., 2017. Effects of the Deepwater Horizon oil spill on protected marine species. *Endangered Species Research*. 33: 1-7.

Additional publications are pending.

Presentations available online

Morris, J.M., M. Krasnec, C. Lay, H. Forth, R. Takeshita, J. Lipton, and M. Gielazyn. 2016. Post-Settlement Conclusions of the Trustee Toxicity Testing Program Conducted in Support of the Deepwater Horizon Natural Resource Damage Assessment. 37th Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC), Orlando, FL. November 6–10. Recorded presentation available:

<http://setac.sclivelearningcenter.com/index.aspx?PID=9484&SID=224566>

Reports available online

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Garner, T.R., A.P. Roberts, M.A. Hart, J.A. Stoeckel, and J.M. Morris. 2016. Migration and Survival of Marsh Periwinkles (*Littoraria irrorata*) Exposed to *Deepwater Horizon* Oil. Prepared by University of North Texas, Denton, TX; Auburn University, Auburn AL; and Abt Associates, Boulder, CO, for National Oceanic and Atmospheric Administration Assessment and Restoration Division, Seattle, WA. January 7. Available: in Section 5.12.2 Technical Reports:

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Forth, H.P., D. Cacela, J.M. Morris, A. Pyayt, S. Cheemalapati, H. Wang, and K.R. Konnaiyan. 2015. Measurement of Slick Thickness by Light Attenuation. Technical Report. Prepared by Abt Associates, Boulder, CO and the University of South Florida for National Oceanic and Atmospheric Administration Assessment and Restoration Division, Seattle, WA. August 31. Available: in Section 5.12.2 Technical Reports:

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