

## Incorporating ecologically relevant habitat and demographic data in assessment of contaminant risk to wildlife

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Evaluating population-level effects of contamination on wildlife requires specific information on habitat quality, species distribution, and contaminant concentration. Establishing broadly applicable thresholds for risk assessment involves an understanding of the applicability of population models to other similar systems and species. We developed a habitat suitability model for a model toxicological fish species, the sheepshead minnow (*Cyprinodon variegatus*), using data collected over four sampling periods throughout 2007-2008 in Pensacola Bay, Florida. Evaluation of the habitat model using data from other regional areas demonstrated inter-estuarine variability in available habitat and sheepshead minnow distribution. Spatial data layers of oil contamination and habitat model variables were then created for Barataria Bay, Louisiana following the Deepwater Horizon oil spill. We incorporated site- and life-stage-specific effects into a spatially explicit population model to predict distribution of sheepshead minnows throughout the affected area and simulate changes in small estuarine fish species abundance and distribution.