PROPOSED:

2D POTOMAC RIVER SPILL MODEL

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POTOMAC BASIN SPILL RESPONSE

ICPRB staff receive notification (24/7!)

Spill model generates travel times & peak concentrations

Downstream utilities are notified

When reporting a spill to ICPRB, please provide the following:
1. Name and telephone number;
2. Location of spill, including
   a) name of affected stream and
   b) street address and/or latitude and longitude;
3. Identity of spill material; and
4. Estimated quantity of material spilled (total mass or volume or discharge rate).

CURRENT SPILL MODEL(S)

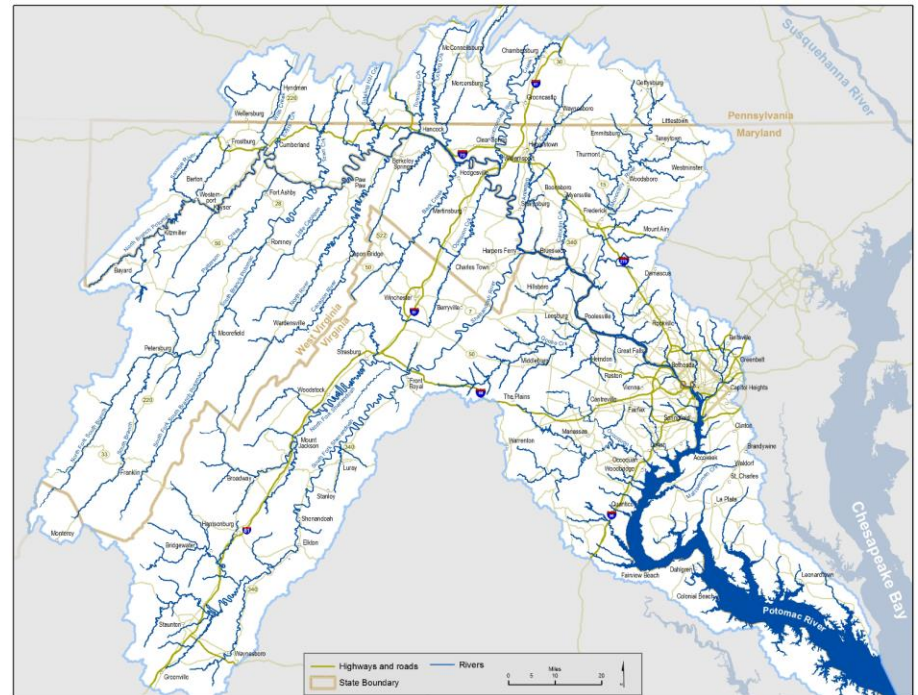Simulate longitudinal transport of dissolved contaminants (1D)

- ICPRB's spill model
- RiverSpill
- IC Water

Strengths

- Few data needs
- Quick results

Limitations

- Do not simulate floating contaminants
- No info provided on transverse migration

PROPOSED:
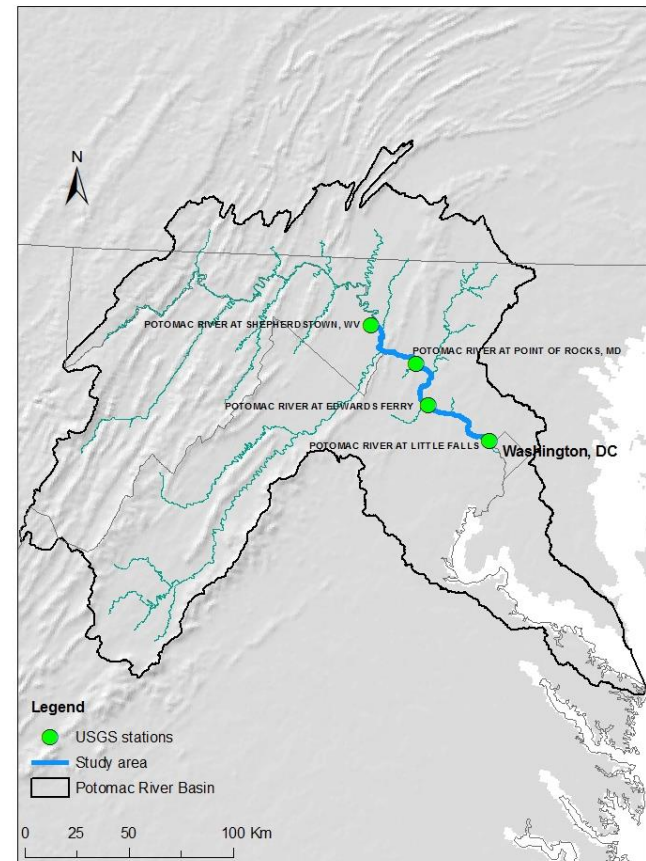# POTOMAC RIVER 2D SPILL MODEL

<u>Objective</u>: Predict longitudinal and transverse transport of floating contaminants in Potomac mainstem

Phase 1

- Collect LIDAR bathymetric data for the Potomac mainstem
- Construct steady flow GNOME* model

Phase 2

- Construct unsteady flow model and couple to to GNOME

*General NOAA Operational Modeling Environment

GNOME

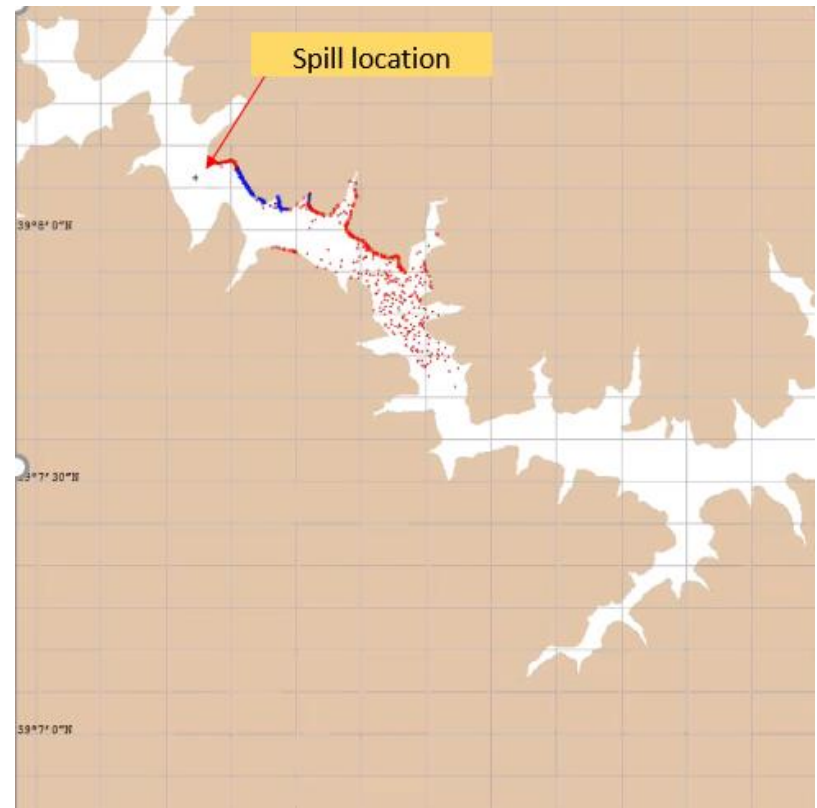From NOAA's Office of Response and Restoration

Predicts fate and transport of oil on water bodies

- Movement due to currents & wind
- Chemical and physical "weathering"

Requires bathymetric data

GNOME steady flow models (ICPRB)

- WSSC's Rocky Gorge Reservoir
- Fairfax Water's Occoquan Reservoir

GNOME simulation of distribution of oil in Rocky Gorge

PROJECT STATUS – EXPLORATORY PHASE

ICPRB & USGS are discussing potential Potomac mainstem LIDAR bathymetry project

- Additional science applications?
- Possibility of broader partnerships?
- Funding sources?

Rocky Gorge bathymetry

Legend
elevation (ft)
DXF_ELEVATION
— 182.000000 - 207.000000
— 207.000001 - 232.000000
— 232.000001 - 252.000000
— 252.000001 - 267.000000
— 267.000001 - 287.000000
☐ shoreline

N

0 0.5 1 2 Km