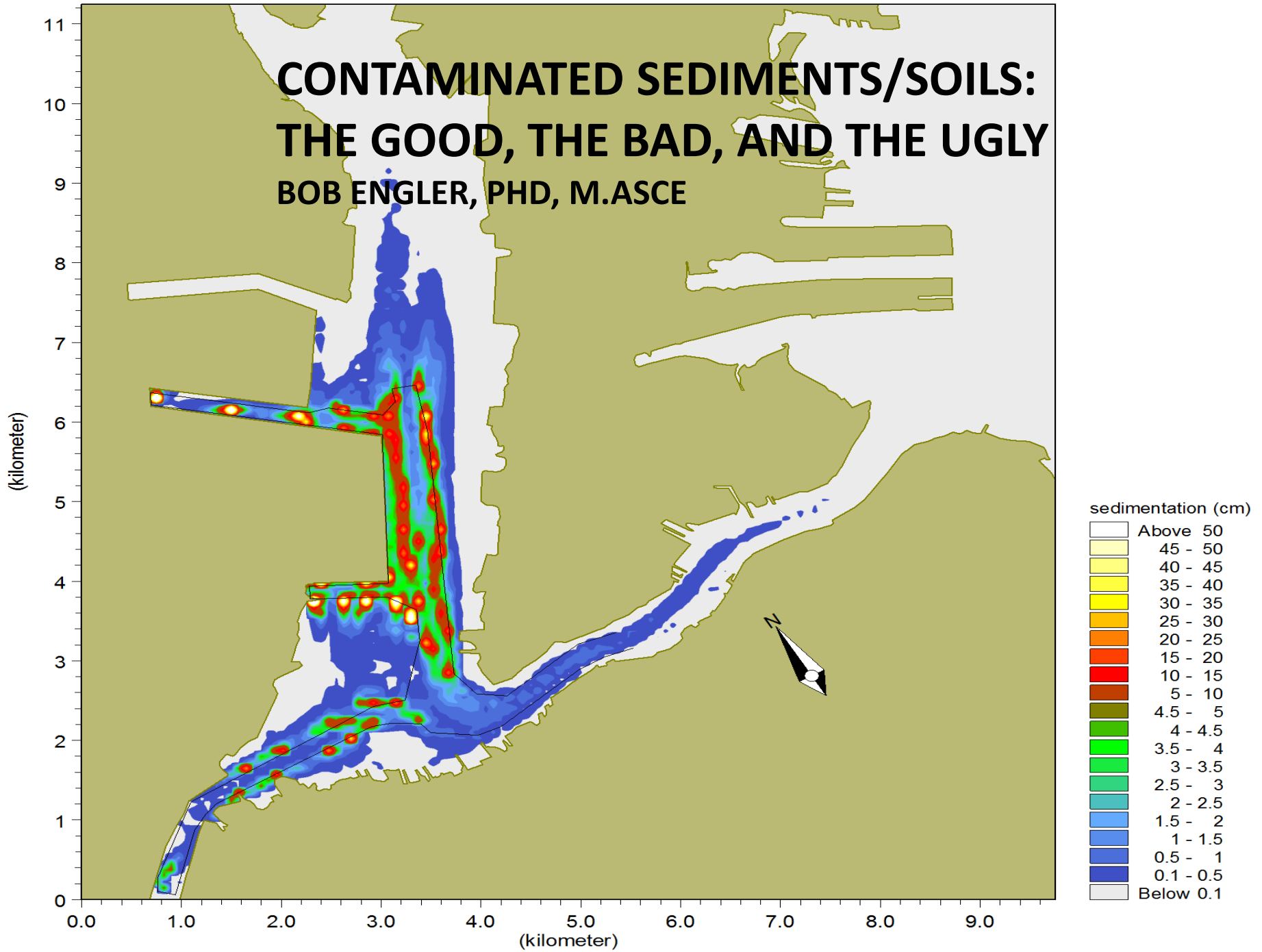


CONTAMINATED SEDIMENTS/SOILS: THE GOOD, THE BAD, AND THE UGLY

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Scale 1:67800

The Good:

- There are at least 60 years of developing technologies for contaminated soils and 40 years for sediments regarding **identification, assessment and management.**

The Good: (cont.)

- Analytical **identification** technologies exceed the capability to interpret the data.
- **Assessments** range from numerical standards to comparative risk assessment to remote sensing that often exceeds the knowledge of the average practitioner/regulator.
- **Management** include-Dig , transport, and bury (solidification/stabilization) – 1950's radionuclide contaminated soils; 2010 unsuitable sediment contamination. (Have we learned much?)

The Bad:

- The regulations and implementation guidance have been under development for 40 years.
 - Soils – USDA, USDOE, USEPA and States.
 - Sediments-USACE (mediocre), USEPA (as written good, as practiced bad). States (really bad)

The Bad: (cont.)

- Litigation – Lawyers serve as technical advocates for the plaintiff and defendant while judges (or juries) reach technical decisions – without any technical expertise.
- Costs
 - Navigation Dredging \$0.50 - \$240 per cu. yd.
 - Superfund - \$240 cu. yd and out of sight.
 - 1 Acre x 3 ft = about 4842 cu. Yds = about 5000-6000 tons (mechanically dredged)

The Ugly:

- Remediation technologies;
 - Least offensive/least used/least costly
 - **MNR**
 - Most offensive/most used/most costly
 - **removal/treatment/transport/store**
 - Most effective – toss up
 - Least effective - toss up

The Ugly: (cont.)

- Modeling- decisions based on model output alone are usually wrong.
- Remote Sensing – bathymetry (there is no bright line)
- Recognize and quantify errors.
- Personal biases among regulators, academicians & practitioners.
- Natural Resource Agencies – Thou Shall Not!

Is There Any Hope?

- There's plenty of technical guidance and experience available.
- Know limits of technology.
- More consistent regs. and implementation technology?
- Consistent regulatory oversight?

Is There Any Hope? (cont.)

- Meaningful/achievable cleanup end points
- Recognition that nature has a role
- Acceptance that all solutions are imperfect

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