

MANAGING YOUR WATERFRONT

What To Do About Siltation

Our fantasy dream home



**The Problem: Dreams and reality
don't always line up...**

Big lake or small pond, they ALL collect sediment.

**Like the peeling paint on the house, property owners
either ignore the problem or spend money fixing and
maintaining the property.**



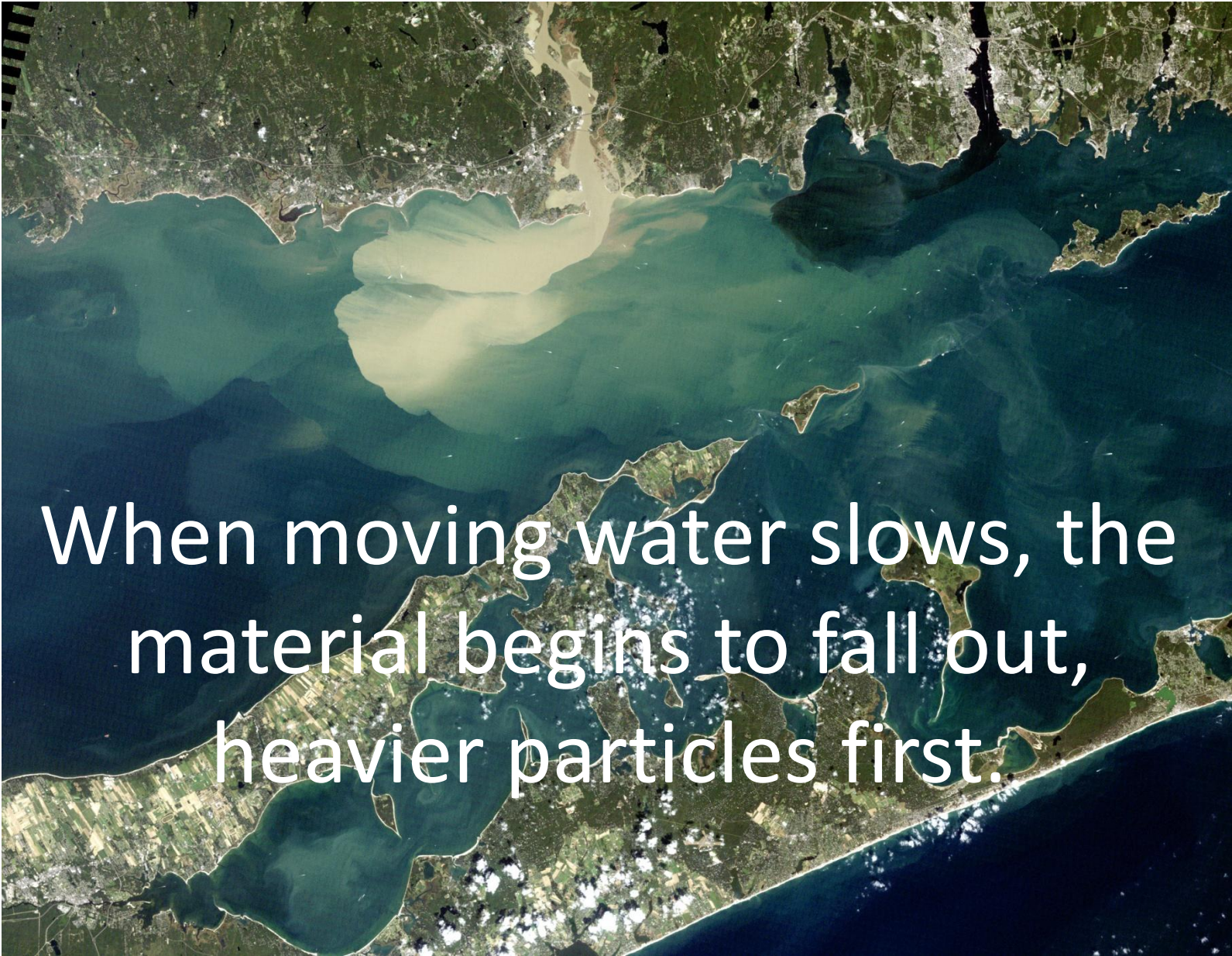
Sediment comes from disturbed soil,
whether from construction sites or ...

Agriculture. Gully-washing rains deposit vast quantities of material into our streams and rivers.







A satellite image of a coastal region, likely the Chesapeake Bay area, showing a large, light-colored plume of sediment or suspended material in the water. The plume originates from the land and extends into the darker blue water. The surrounding land is green and brown, with some urban areas visible. The text is overlaid on the image.

When moving water slows, the material begins to fall out, heavier particles first.









From the bottom of a lake in Kansas



Reasons to dredge:

- Maintain water depth suitable for boating or swimming.
- To help with weed control- many weeds only grow in shallow water.
- To remove sediment for spawning fish.

Dredging may be the only solution
to maintaining property value and
to recover the reasons the
property was purchased in the first
place.

DREDGING:
moving earth
under water.

Dredging has been around for a long time



The Portland District, Corps of Engineers, uses the 24-inch hydraulic pipeline dredge Wahkiakum for work on the Willamette and Columbia Rivers in Oregon. Non-propelled, she has a steel hull with a length of 194 feet. Her beam is 38 feet. She was built in 1913 by Portland Iron Works. She has a crew of 52 men.

Types of equipment

This mechanical bucket dredge is working in New York Harbor.



An abandoned gold dredge in Alaska





One of the world's largest hydraulic dredges working to build the islands of sand in Dubai.



Solving the problem:

easy as 1 2 3

(and a couple of decisions to make)

1) Determine the scope of the project

Big job



Or small job



2) Locate contractor appropriate for the job.



3) Write check

Those pesky decisions:

What will be done with the spoil?

Where to put it at least temporarily?

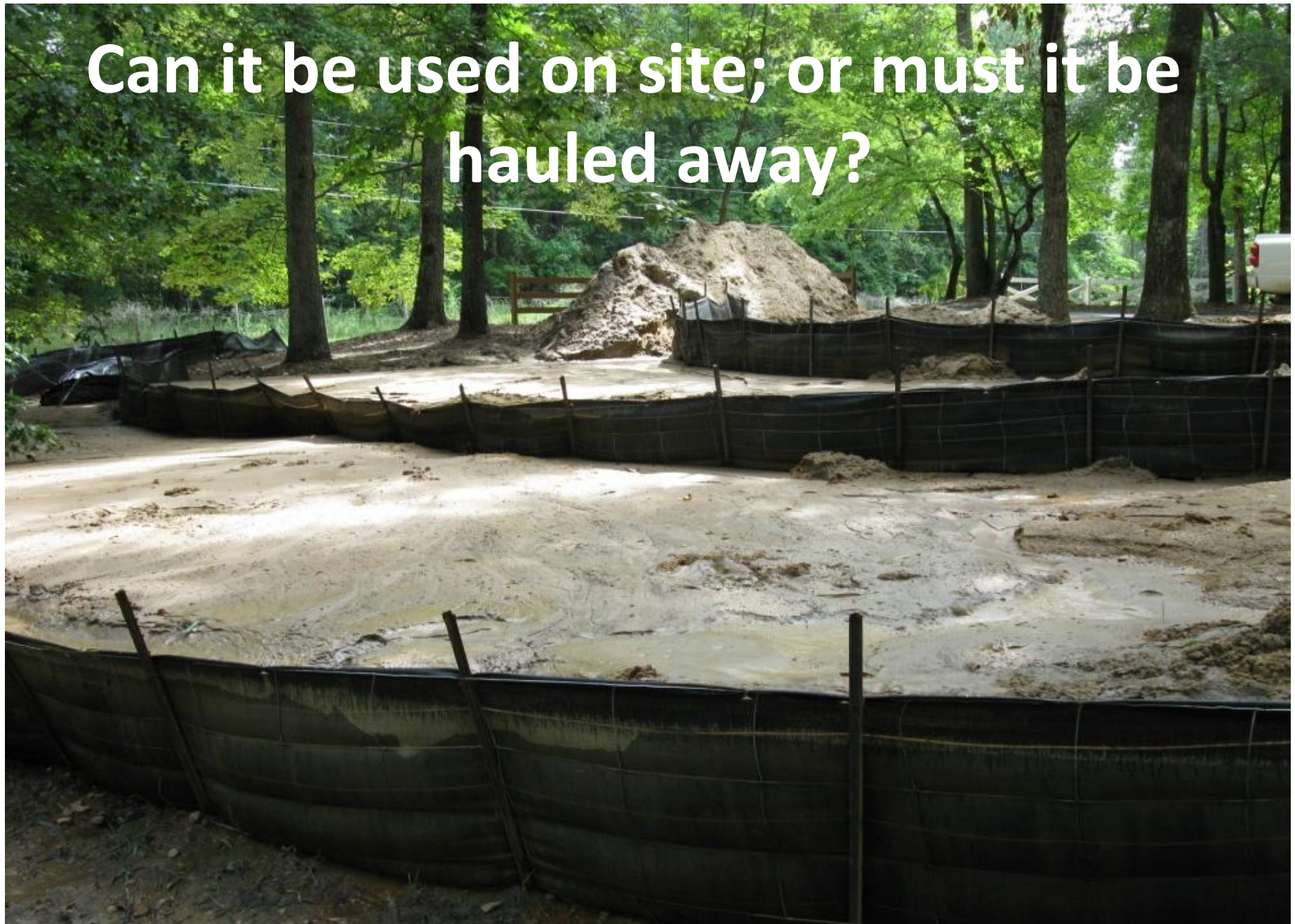
The dilemma over the spoil



Along the Alaska coast



Can it be used on site; or must it be hauled away?



Finished seawall backfill



Sometimes there is room on site to spread and stabilize the dredged material.

Before

After



Best Management Practices, or BMPs
are the guidelines used by contractors for environmental protection.



CONTAINMENT OPTIONS (for hydraulic dredging):



Some type of sediment “pond” must be constructed to separate the solids from the water. Here are two options.



Some jobs require the use of dewatering plants

Others employ geo-textile bags



Some locations require creativity



Anatomy of a dredging job



The contractor should employ BMPs in order to secure the permit.



Actually pumping the material and making the water deeper sometimes is the easy part.









After being filtered multiple times, the water returns to the lake. Though stained, the water has very little material left in it. Only a skim of sediment will be left on the bottom inside the turbidity curtain once it settles.



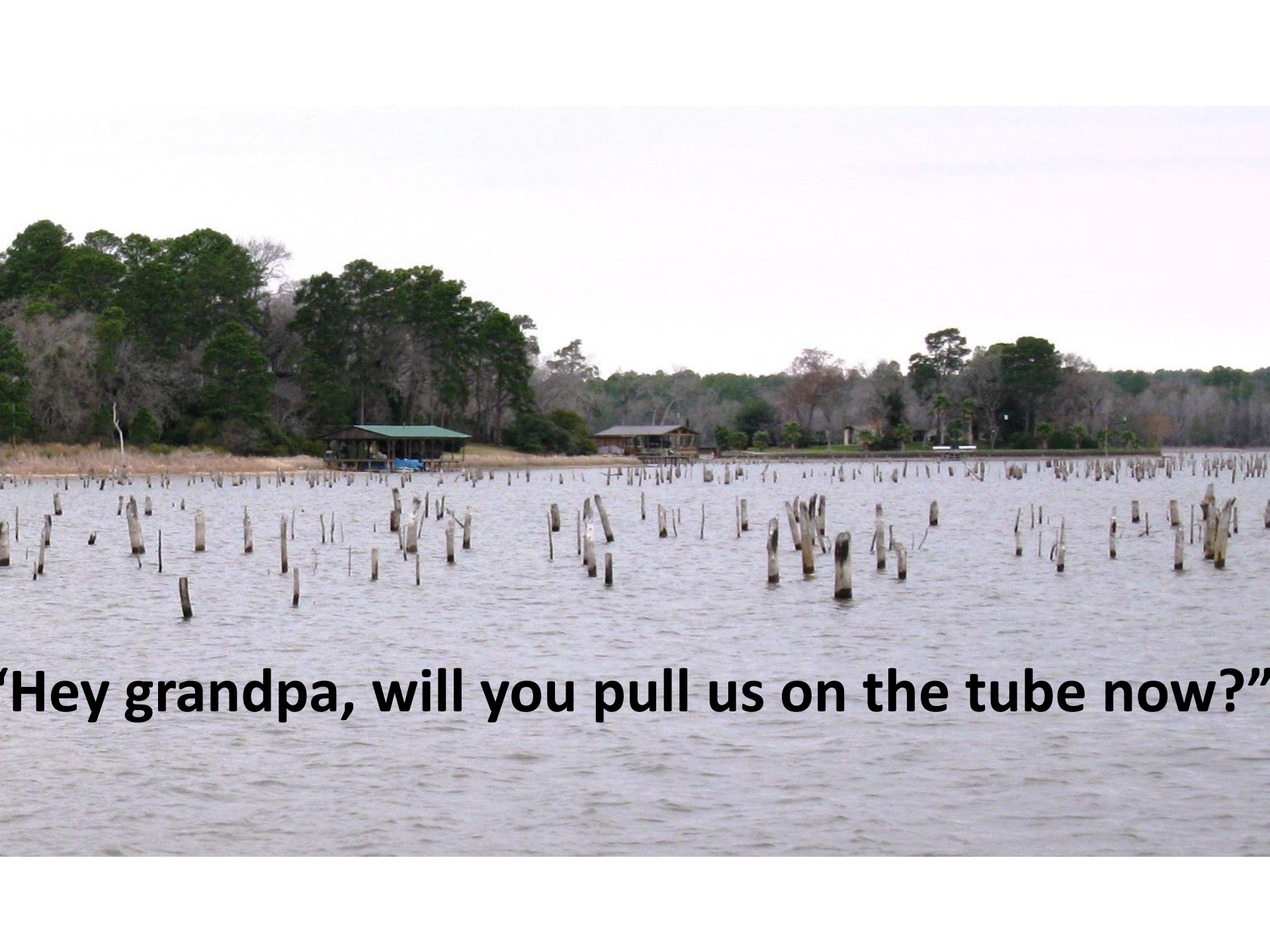
A successful job leaves the lake cleaner, the lake managers pleased,
the customer smiling and the contractor with two more nickels to rub
together.



Sometimes, when the water level goes down a bit, sand bars and shallow water are not the only hazards waiting to grab the unsuspecting!







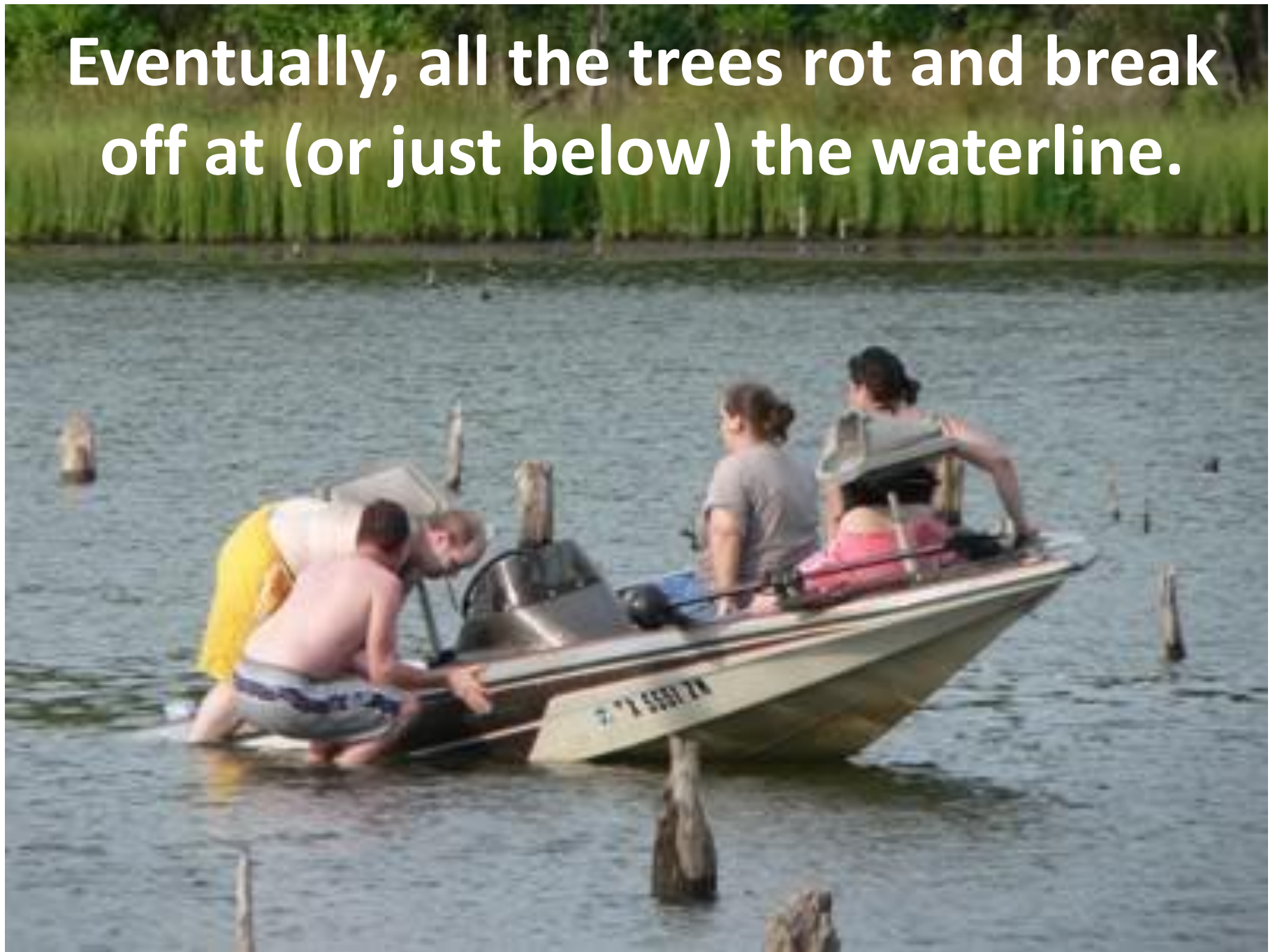
‘Hey grandpa, will you pull us on the tube now?’



Forests were flooded to provide wildlife habitat.



Eventually, all the trees rot and break off at (or just below) the waterline.



Why should we care?





Because they kill people!

**This stump has destroyed it's last prop-
looks like it had quite a career!**





**Ski area or
fish habitat?**

Why not both?

Water depth: 20-25'





Habitat!

From this



To this-

Problem solved!





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