

Lesson 2: VEGETATION – IT’S DOING A JOB

Smooth grit leaving bottom ¼ of bed empty. Set slope at 8 turns above level using hitch jack.

Starting at one inlet, trace an S channel (2 bends)

Using large scoop excavate channel all the way down to pan



Trace an S-shaped channel.



Dig out the channel with scoop.

Install vegetation mats on either lower or upper bend (you might ask audience to tell you which one to protect with vegetation because either one will work). Put down lowest mat first and successively lap mats as you work toward inlet end of trailer. Bury leading edge of upper mat to secure against flow. Note that some mats fit outside of bend and others the inside.

At the upper ends scoop out enough grit to bury the leading edge of each mat and anchor with a rock. Otherwise the current will cut under the mat on the upper ends, especially on the outside of the channel. Sprinkle grit over the mats to make the window screen less obvious.

Place one house on outside of each bend to simulate desirable home sites, overlooking the water.



Set one house to fall in the river when bank cutting occurs.

“Mr. Jones has cut down all the trees and cleared the brush along his section of the creek.”

“Mr. Smith leaves his streamside areas natural.” “Where would you rather live, in Mr. Jones’ house or Mr. Smith’s house?”

Note: If you place Mr. Smith’s house where you rebuilt the bank from the last run-through, it will surely fall in the creek.



Install screen wire for vegetation to hold both sides of upper or lower bend.



Start one pump and open to full flow.

Start one pump and open valve fully. Install brush and tree signs.

“See how Mr. Jones’ creek banks are starting to get undercut? His banks don’t have the deep root structure to hold the bank in place anymore. Too bad he didn’t leave the trees and brush in place like Mr. Smith.”

Cutting continues until bank collapse causes Mr. Jones’ house to fall in creek.

Note: If necessary, use rocks on opposite side of creek to focus flow against Mr. Jones’ bank.



Arm the bank with junk cars. Note this does not protect the house for long.



Junk cars are not the same as stream bank protection

After significant bank cutting occurs, install junk cars to simulate futile attempt to stop bank cutting. Install junk car sign. Increase flow or crank up hitch jack if faster undercutting of cars is desired.

“Junk cars and other homemade solutions are not a good idea. Trash on the banks will become trash in the creek when water attacks the bank around it. Trash in the creek may block the creek causing flooding and more damage of banks. If the junk cars deflect the flow, they will cause erosion somewhere else.”

Install hot and cool water signs in middle of streambed, using short PVC pipe sections as stands.

“Notice how Mr. Jones’ stream has widened out compared to Mr. Smith’s? They were both the same width to start.”

“Because the stream flow is shallower and there are no longer any trees for shade, the water heats up. Game fish can no longer live or reproduce here.”

For free-standing display, such as at a fair, it is not necessary to rebuild the entire model when the house falls into the river. Just rebuild the eroded bend and place one house on the area that previously collapsed. You can also impress the audience by moving the vegetation mats to the other bend and watching the previously stable bend erode.

Show flip chart illustrations to reinforce points made in the lesson.



Flip Chart: Roots hold the bank like rebar holds concrete

“More trees or brush might have prevented this!”

Conclusion:

“Clearing streamside brush or letting cattle overgraze creek banks causes the bank to become unstable. You’ve got to keep that root structure on the creek to protect the banks against cutting.”