Emriver Wavemaker Quick Start Guide

Your Emriver Wavemaker is capable of producing many of the beach forms seen in the real world, including longshore bars and troughs, steps and ripple zones, beach berms and ridges, and terraces. When used with our color-coded media, the wavemaker gives stunning insights into depositional phenomena and stratigraphy.

For best results, place your wavemaker as far downstream in your stream table as possible. In an Em3 or Em4, this will be where the sides of the table start to taper inwards. In an Em2, the perforated baffle of the wavemaker should be 2-3 cm from the standpipe.

Move most of the media to the upstream half of your table, and create a straight or curved channel for a stream. A gently sloping beach face is a good starting point, and there will be considerable media piled up at the upstream end. If you are using the wavemaker in an Em2, remove two 5-gallon buckets of media for best results.

Set the slope of your table to around 1.5 degrees to start. If you have a static base, a 2x4 section of lumber placed on the downstream support works well.

Raise the standpipe to 8-10 cm. Start the pump and begin to fill the table. As the lake and delta begin to form, start the wavemaker on the default settings. Small waves will start to interact with the developing delta right away, and will interact with the stream channel as the water rises. If water starts to splash out of the downstream end of your table, lower the standpipe slightly.

The wavemaker will begin producing beach forms right away, and very complex morphology often takes two hours to fully develop.

Quick Experiments

Raise and lower the standpipe by 4 cm at 15-minute intervals to model a rising and falling tide.

If you have a K500 or Alix controller, run flood hydrographs. If you have a K28 or Crayfish controller, increase the flow every minute for 8 minutes, then decrease the flow over 4 minutes.

Build a barrier island in your model.

Begin with a beach that is diagonal to the wavemaker, or a beach that is very steep on one bank of the stream, and gently sloping on the other. You can also run the wavemaker without a stream at all.

Set up a beach with a narrow entrance to a harbor or back bay that is fed by a stream. What is the best way to protect the entrance?

Use vegetation and riprap or an impervious tide wall to protect the beach on one side of the stream. What happens to the beach on the other side of the stream?

When you are finished, and wish to examine the resulting stratigraphy, turn off the pump and lower the standpipe very gradually to preserve the trough, bar, and ripple patterns. Best results are when the groundwater is allowed to fully drain overnight.