

Juel Tide Gates... What's in it for Agricultural Interests?

A Juel tide gate can be operated to allow as little or as much tidal backflow as desired. It is very simple to adjust the tide gate. The tide gate can be set to allow no backflow at all when needed. Temporarily disabling backflow at a tide gate may be necessary at times to maximize the in-channel storage when there is a substantial amount of runoff in the forecast and there is a sequence of tides that are not favorable for drainage. The backflow that is allowed to pass through the tide gate is limited such that the water stays within the drainage ditches and does not spill onto the surrounding fields.

Let's say I'm a farmer. What is gained by installing a Juel Tide Gate and allowing limited tidal flushing? What's in this for me?

1. A Juel tide gate is virtually indestructible, it operates reliably, it requires minimal maintenance, and it is fail-safe. No worries.
2. Tidal flushing suppresses the vegetation in channels and drainage ditches. With a traditional top-hinged flap gate (that does not leak), the drainage system upstream from the tide gate can become dry and choked with vegetation during the growing season. With a Juel Tide Gate, the channels and ditches are filled and drained daily with the tide. Most plant seeds cannot germinate under these conditions. Relatively weed-free ditches do not require maintenance and carry more flow than weed-choked ditches
3. Tidal flushing eliminates stagnant water which reduces mosquito breeding habitat.
4. Tidal flushing reduces the rate of accumulation of sediment in ditches and channels. The ebb pulse flushes sediment downstream.
5. Tidal flushing will increase the volume of water that flows out on the ebb tide - the "ebb flow pulse". This daily pulse of water scours material and enlarges the ebb channel downstream from the tide gate. A larger ebb channel increases the amount of flow that can pass through the tide gate during low tides.
6. Traditional flap gates can be partially buried with sediment when they remain closed for extended periods of time.
7. A side-hinged flap gate opens wide with very little flow. This reduces the head loss at the flap gate and increases the conveyance capacity of the tide gate. Traditional heavy top-hinged flap gates reduce flow conveyance. More conveyance means better drainage.
8. With a Juel tide Gate, trash racks are not needed because floating debris passes easily. There is no trash rack to clean and also no head loss through the trash rack.
9. Floating debris accumulating in the ebb channel downstream from the tide gate can impede the operation and flow from the flap gate. The daily tidal pulse will tend to flush logs and debris downstream and away from the flap gate.
10. The control mechanism is completely fail-safe. If any part breaks, the tide gate does not allow any backflow at all. Flood protection is not compromised.

11. The drainage system's capacity is increased while helping to save salmon. You will truly help to save the planet. It's win-win!
12. Traditional flap gates can be targets for eco-sabotage. Cast iron is very brittle and can be shattered. The broken flap gate in the photo below was likely the result of vandalism.



Photo 1 - Broken 60" flap gate

The cost for a replacement cover the 60" Waterman cast iron flap gate shown in the photo above is \$5,566.00. Besides being indestructible, a Juel Tide Gate is fish friendly. Environmentalists and fish love my tide gates. There is no reason to sabotage them.

13. Aluminum flap gates have been stolen and presumably sold for scrap. Juel tide gates are made with copolymer and 316 stainless steel or 304 stainless steel.

Summary:

In addition to improving water quality and providing fish passage, a Juel Tide Gate with the VBFGT^M control mechanism improves drainage and provides a number of benefits to the area drained by the tide gate. A Juel Tide Gate with the VBFGT^M control mechanism provides flood protection, improved drainage, and a better environment for fish and wetlands.

- The tide gate will be closed when necessary to prevent flooding
- The channel's conveyance capacity is increased by the regular tidal flushing
- Fish passage and improved water quality are improved