BENTON COUNTY

BCMC

MOSQUITO CONTROL

Enough of These Anopheles

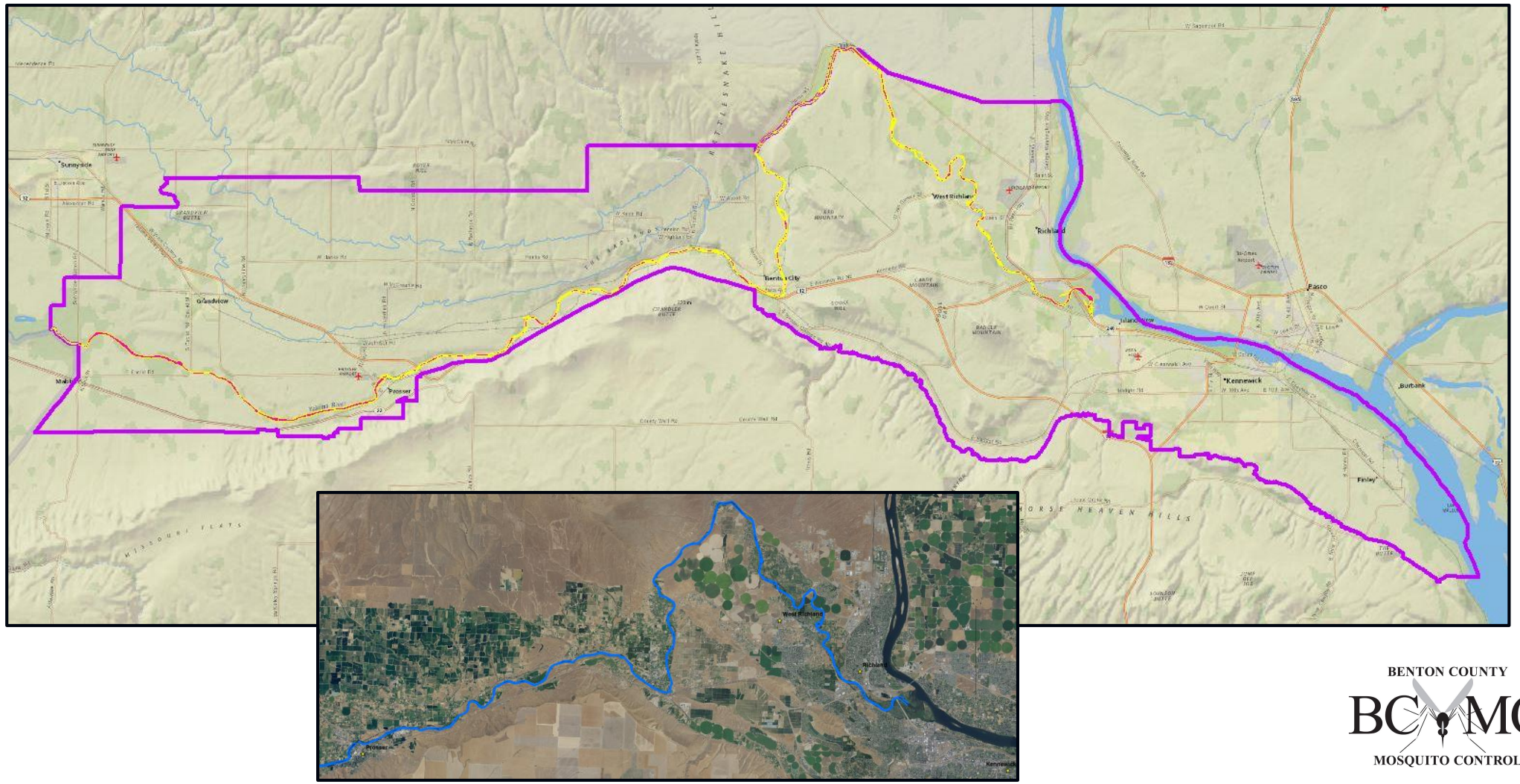
January 19, 2021

Valent BioSciences. LLC
Summit
"Solutions for Floodwater
Mosquito Control"

Stephen Ingalls
Field Supervisor
BCMC

“A River Runs Through It”

Benton County Mosquito Control (portions of Benton and Yakima Counties)



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The Problem

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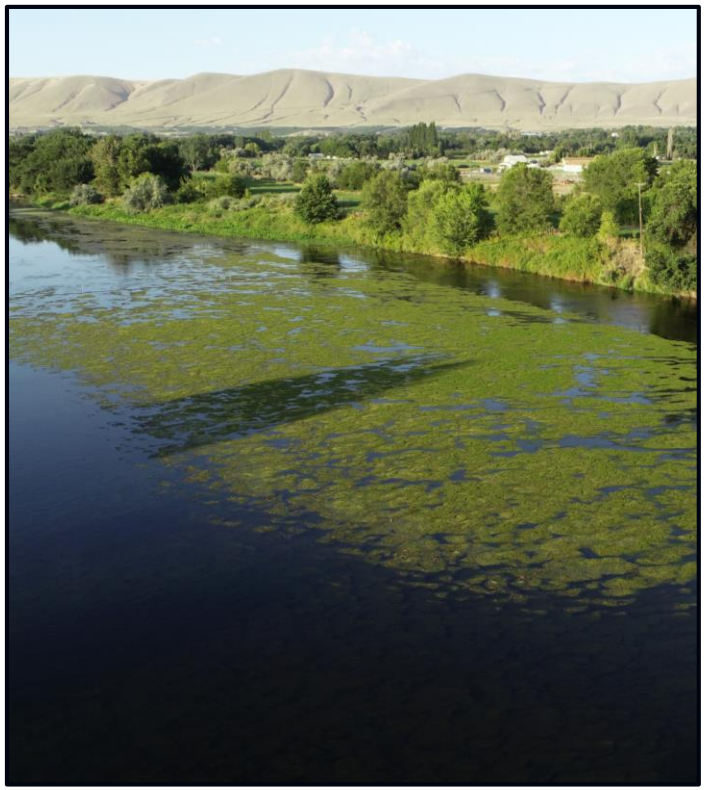
- Water Stargrass growing in the Yakima River creating habitat for Anopheles freeborni



History

- Anopheles freeborni in Benton and Yakima Counties
  - Early spring and fall
    - Overwintering adult mosquitoes relatively cooler water temperatures
      Typical to find <10 in a CO_2 baited trap (1 Night)
- Water Stargrass used to be “rare”
  - Now it is “out of control” and has made a dramatic change our trap collections of Anopheles freeborni
- Local News KNDO – July 22, 2010 – Salmon Biologist, Rachel Little – Benton Conservation District

- Water stargrass is native to the Yakima river, but decades ago, it was considered rare. Now, Little says added nutrients and light have caused water stargrass to grow out of control. She explains, "As we've cleaned up the river and reduced soil erosion, more sunlight gets down through to the river-bed and the plant has taken over. It's a population explosion."

Water Stargrass 2019

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- "Population explosion" of Anopheles mosquitoes and water stargrass
  - >400 Anopheles freeborni in a CO_2 baited trap (1 night)
  - Water stargrass >300' from the shoreline and in many instances growing in the middle of the river

Solutions

- Spraying (larval and adult mosquito control)
  - Highly visible
  - Changing community from agricultural to urban
- Spraying the Stargrass in the river
  - Public concern
  - Funding
- Mechanical harvesting
  - Requires the cooperation of multiple agencies
  - Obtain funding
- Natural event (high water event)

Spraying

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- Aerial applications of VectoBac GS at 10 pounds per acre
  - Along the shoreline
  - Limited results (no appreciable difference from pre and post sampling)
    - Product tended to sink before it was effective
- Applications by Kayak of VectoBac 12 AS at 16 fluid ounces per acre
    - 2-gallon hand can
    - Good results (> 80% control)
    - Spraying 50 miles of river is not feasible
    - Possible aerial applications (drone or WALS with VectoBac WDG)
      - Very visible
      - Salmon in the river

"The area from the Prosser Dam to Duportail Street in Richland was the primary spawning area for fall Chinook in the Yakima River prior to 2001 when water star-grass began encroaching into spawning habitat.

Prior to this, 70% to 80% of the naturally spawning fall Chinook production occurred below the Prosser Dam to Richland. Over the past ten years, 2006-2015, only 18% of the fall Chinook returning to the Yakima River have spawned in the lower river.

WDFW 2015

Physically Removing the Stargrass

- Cooperation among multiple agencies to secure funding for a harvester
- Benton County Conservation District
- Benton County Mosquito Control
- Yakima Basin Fish and Wildlife Recovery Board
- Mid-Columbia Fisheries
- Columbia Irrigation District
- Benton Franklin Public Health
- Barker Ranch
- Washington Department of Fish and Wildlife
- United State Geological Survey
- Army Corps of Engineers
- Washington Department of Ecology
- Benton County Noxious Weed Control Board
- Pacific Northwest National Laboratory
- **Allocation of $250,000 matching grant**
    - **Possibly more in the future**

Funding Process

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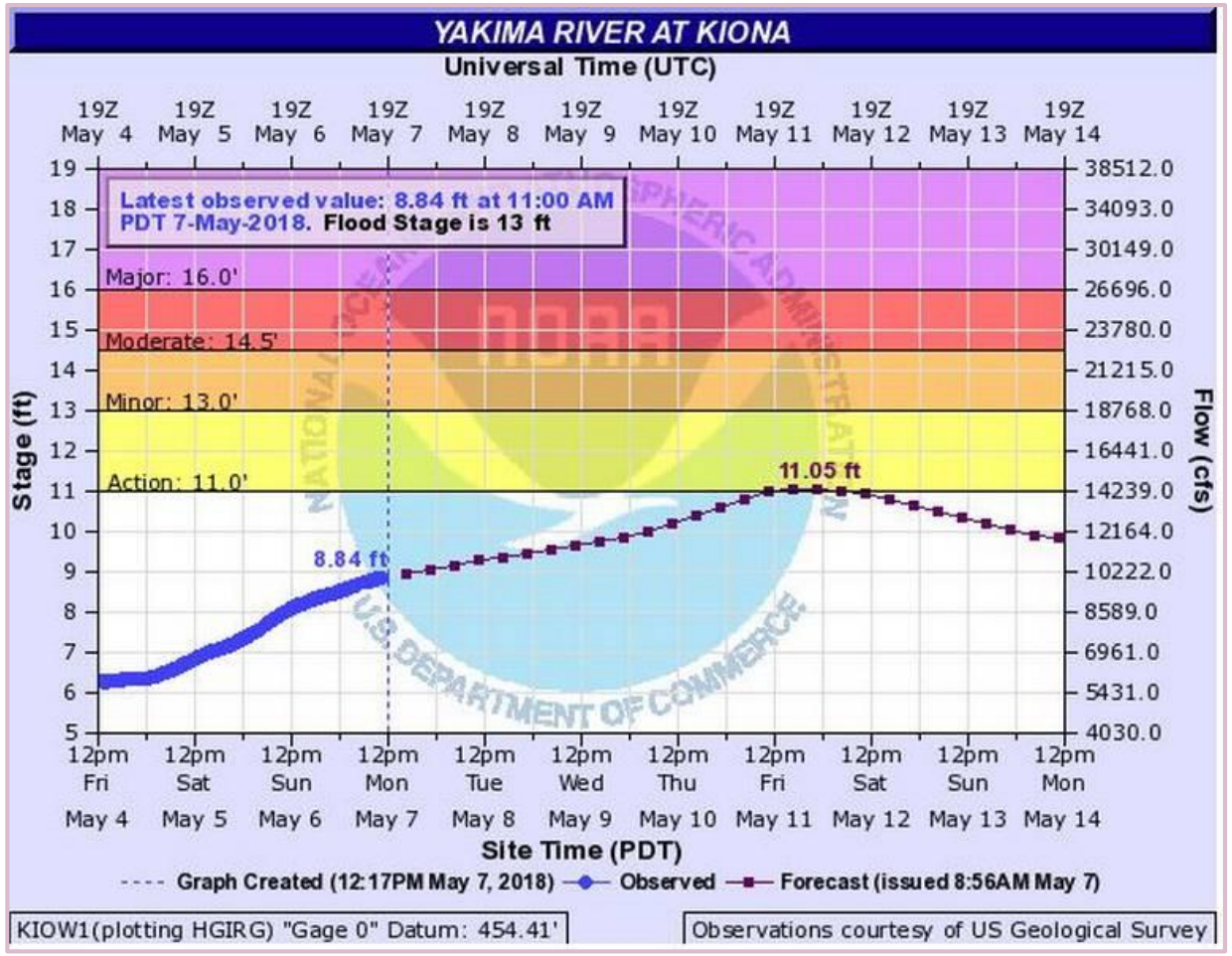
- **Angela Beehler**
- **June 25th, 2019** – Called Benton County Noxious Weed Control Board
- **August 14th** – Attended Benton Conservation District Meeting
- **August 21st** – Farm Bill Meeting at Barker Ranch - Joint Committee on Conservation During Drought
- **October 1st** - Meeting with Sen. Judy Warnick in Moses Lake
- **Early November** – Rep. Brad Klippert and Sen. Sharon Brown
- **November 21st** - Senate Ag, Water, Natural Resources and Parks Committee - *Water stargrass impacts on the lower Yakima Riv*er
- **December 20th** – submitted Capital Budget Request for a harvester
- **March 6th, 2020** – Working on pre-application for a Salmon Recovery Funding Board (SRFB) grant
- **Final funding was from Washington State's capital projects budget ($250,000)**

High Water Event

- August of 2019
  - Dramatic increase in river flow for a few days
  - Destroyed many areas of Stargrass
  - High water events usually occur February - March
  - Sometimes occur in the summer months but they are not predictable



National Weather Service Graph - 2018

Summary

- Spraying the stargrass not feasible
- Spraying in the river on a limited basis might be a part of the solution
  - Applications by drone or boat (kayak)
- Mechanical harvesting may be part of the solution
- High water events are be helpful and perhaps can be planned
- We do not have all the answers yet, but it is clear the problem is here to stay
- None of these solutions will likely work as a sole method of control


THE END