

Zekiah Watershed

REACHING A TIPPING POINT

By

Shavano Intelligence Systems



Zekiah Watershed

- Classified by the Smithsonian as the “most important ecological area on the East Coast.”
- Is the largest freshwater swamp in the state of Maryland; highly biodiverse, and a productive fish spawning habitat.
- The main stem of the Zekiah is protected as a privately-held “restricted-development rural legacy area”; the northern reaches of the watershed are primarily public lands.

Zekiah Watershed

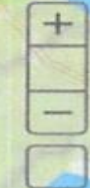
- Tributary streams have lesser protections and are increasingly subject to suburban and industrial development.
- Between 1970-2000, suburban and industrial development was mostly restricted to the extreme western headwaters (Waldorf, La Plata) while the eastern headwater streams remained mostly agricultural-rural.
 - Since the early 2000's, high-density development has or will soon impact nearly all the primary western tributary streams.
 - More dispersed, less-intensive suburban development is also occurring along the extreme eastern tributary streams.

Zekiah Watershed

- Western headwater streams, particularly down stream from Waldorf and La Plata, are showing high to moderate levels of sedimentation, reduced water quality, and less biodiversity.
- The county landfill, private sand and gravel quarries, and the Marant fly ash storage facility also increases watershed pollution and sediment loads.
- Development pressures along the eastern-half of the watershed are beginning to cause increased sedimentation and reduced water quality on several of the once pristine tributary streams.
- Stream vegetation buffers are in place for tributary streams and storm water retention ponds are the new norm for suburban developments along Zekiah headwater streams.

Zekiah Watershed

- While the state and county have protected the Zekiah main stem, additional protections are needed along all headwater streams to avoid a future collapse of the Zekiah watershed ecosystem.
 - Tributary stream buffers should be expanded.
 - Additional protections of tributary streams should be considered across the watershed.
 - Suburban developments along the tributaries should have more open natural spaces between homes.
 - Headwater streams should be more closely monitored by state and county planning and health officials to determine levels of sedimentation, nitrogen, and other pollutants.
 - Industrial site monitoring should continue and be more frequent in order to better assess industry-point pollutants and increased presence of heavy metals.
 - The state and county should consider establishing a public affairs campaign to educate residents to the benefits of a healthy Zekiah.
 - All State and County highways should be signed to indicate to residents and visitors they are entering the Zekiah Swamp Watershed.

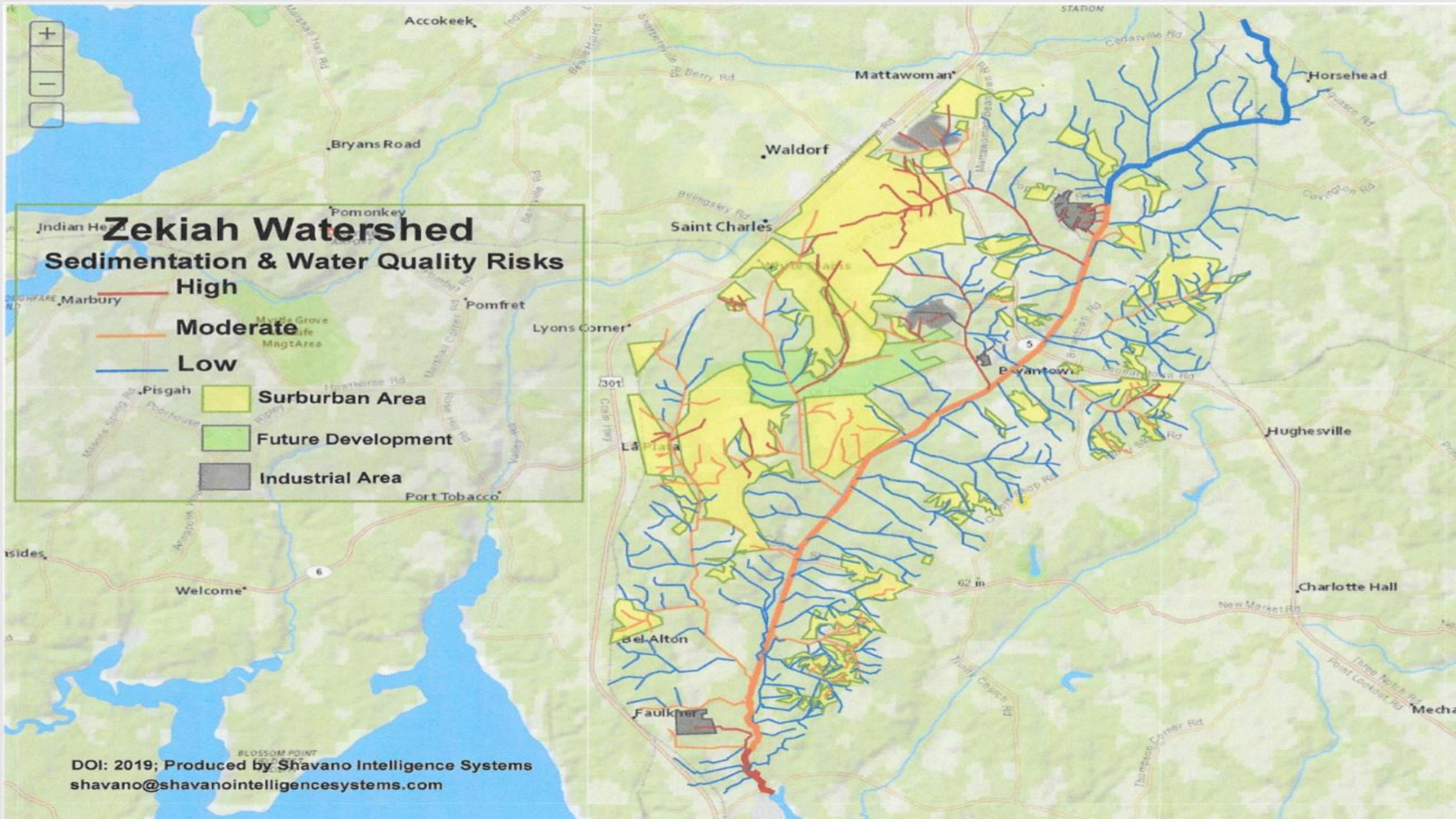


Zekiah Watershed

Sedimentation & Water Quality Risks

- High** (Red line)
- Moderate** (Orange line)
- Low** (Blue line)

- Suburban Area** (Yellow fill)
- Future Development** (Light Green fill)
- Industrial Area** (Grey fill)



Zekiah Watershed Conceptual Model of Exposure of Fish and Macroinvertebrates

