

Sheboygan River AOC Status



Sheboygan River AOC Impairment Overview

Sediment

- **Restrictions on Dredging Activities – removed in 2015**
- Fish Tumors or Other Deformities
- Bird or Animal Deformities or Reproductive Problems
- Restrictions on Fish and Wildlife Consumption
- Degradation of Benthos

Fish and Wildlife Habitat & Populations

- Loss of Fish and Wildlife Habitat
- Degradation of Fish and Wildlife Populations

Water-Quality

- Degradation of Phytoplankton and Zooplankton Populations
- **Eutrophication or Undesirable Algae – removed in 2015**



Past Events

All projects were completed in early 2013.

- One of the first AOCs to achieve this milestone
- Conducting verification monitoring on all BUIs since then.



Impairment Status Checks & Monitoring

Sediment

- Sheboygan fish tumors final report completed at the end of 2018
- Mink collection planning to ramp up in 2020 with scientific collectors permit and to hire on a local trapper
- Fish consumption monitoring to occur in 2020 and 2021
- Waterfowl consumption monitoring collected 30 samples in 2018 and 2019
- Final USGS benthos report in 2019
- BUI data analysis funding allows for performing impairment status checks of ongoing monitoring for the remaining impairments

Fish and Wildlife

- Final report for Habitat Restoration Final Evaluation completed in 2019

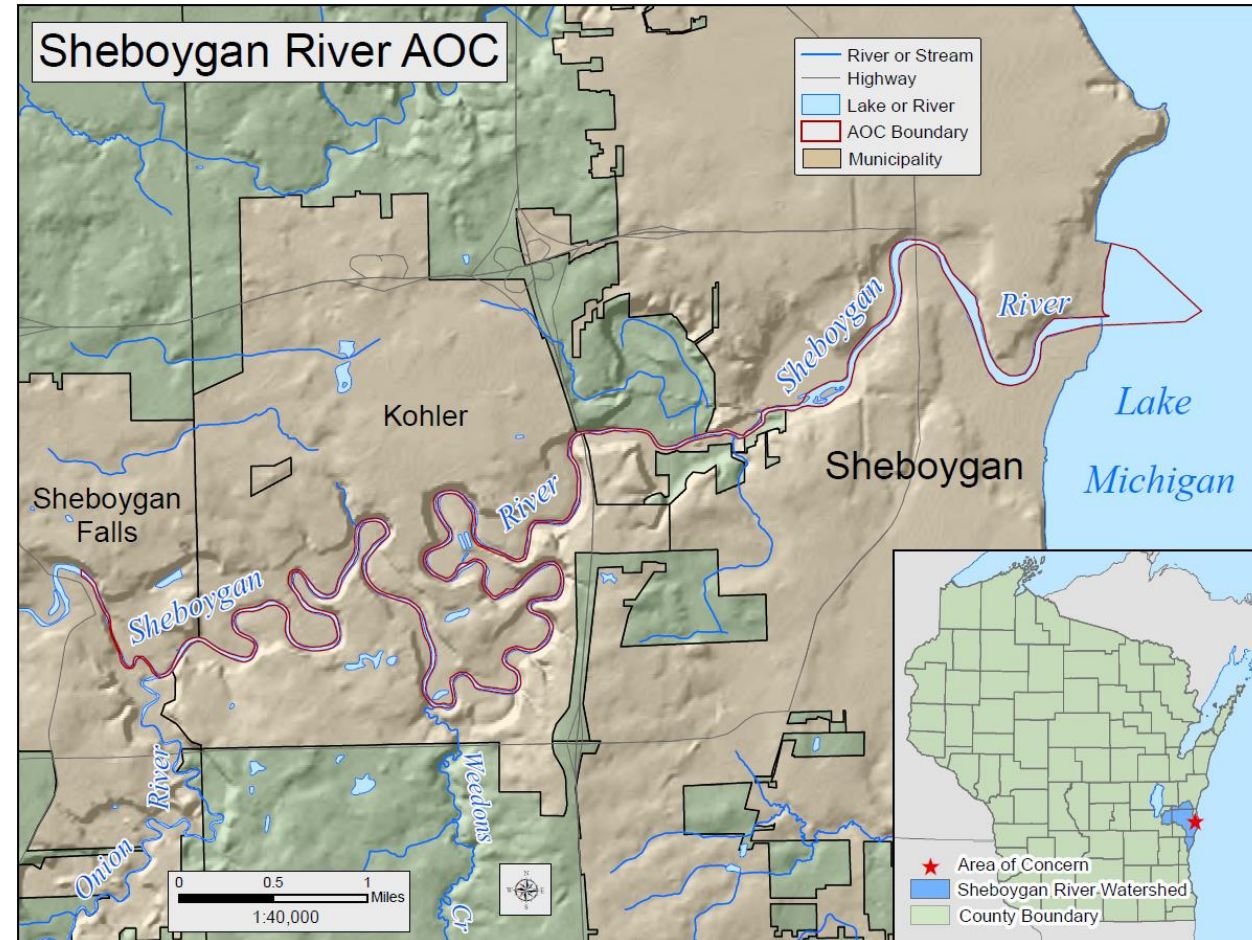
Water Quality

- Final USGS phytoplankton and zooplankton report in 2019

Sheboygan River AOC

Beneficial Use Impairments
(9 of 14 possible)

1. **Restrictions on Dredging Activities**
2. Fish Tumors or Other Deformities
3. Bird or Animal Deformities or Reproduction Problems
4. Restrictions on Fish and Wildlife Consumption
5. Degradation of Benthos
6. Loss of Fish and Wildlife Habitat
7. Degradation of Fish and Wildlife Populations
8. Degradation of Phytoplankton and Zooplankton Populations
9. **Eutrophication or Undesirable Algae**



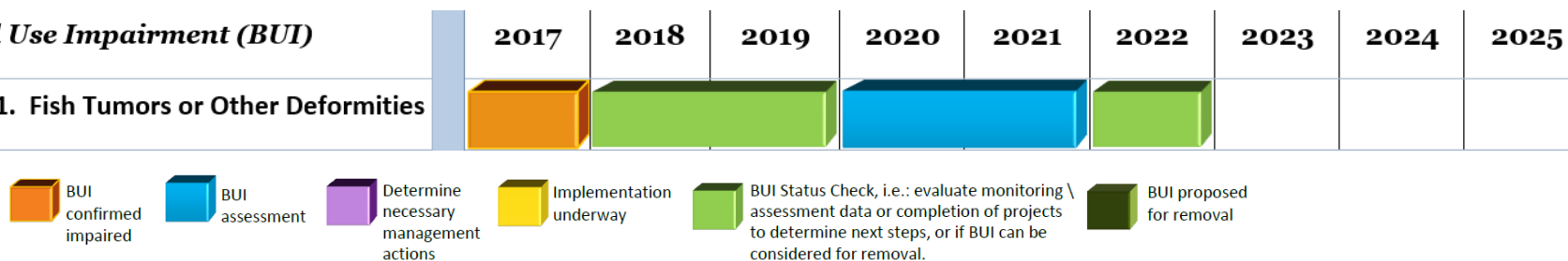
Fish Tumors or Other Deformities

- Sheboygan Sampled in 2017 -> Final report in 2018.
 - Still relatively high levels of neoplastic tumor rates.
- Next Steps: Collecting Samples in 2021



Beneficial Use Impairment (BUI)

1. Fish Tumors or Other Deformities



Bird or Animal Deformities or Reproduction Problems

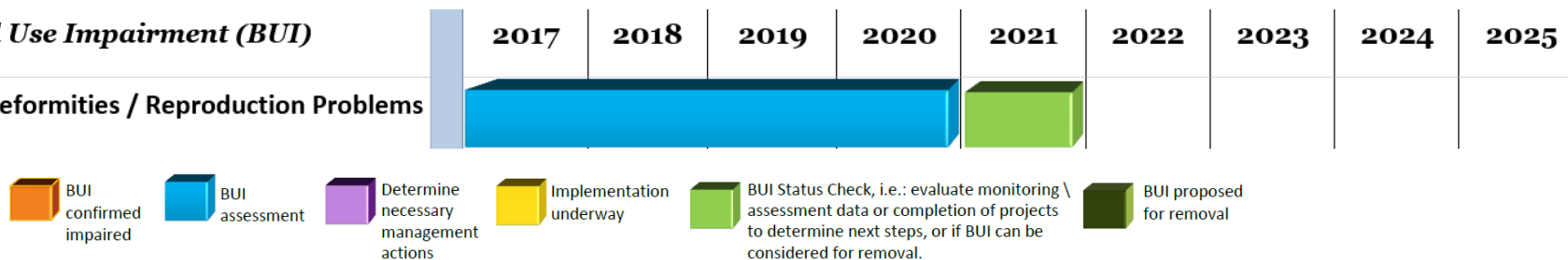
- Ramped up efforts in Spring 2020 for collecting mink as they are sensitive to bio accumulative chemicals and can indicate toxins in the aquatic food chain.
- Next Steps: Revisit target and approaches for next steps based on mink sampling results



<https://en.wikipedia.org/wiki/Mink>

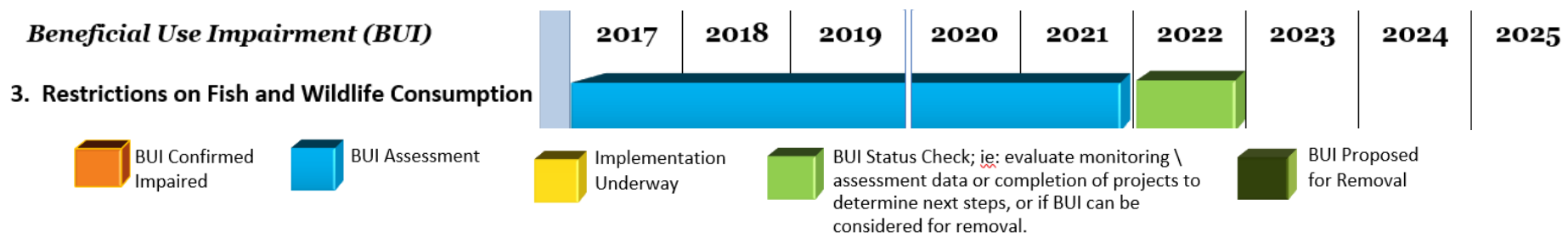
Beneficial Use Impairment (BUI)

2. Bird/Animal Deformities / Reproduction Problems



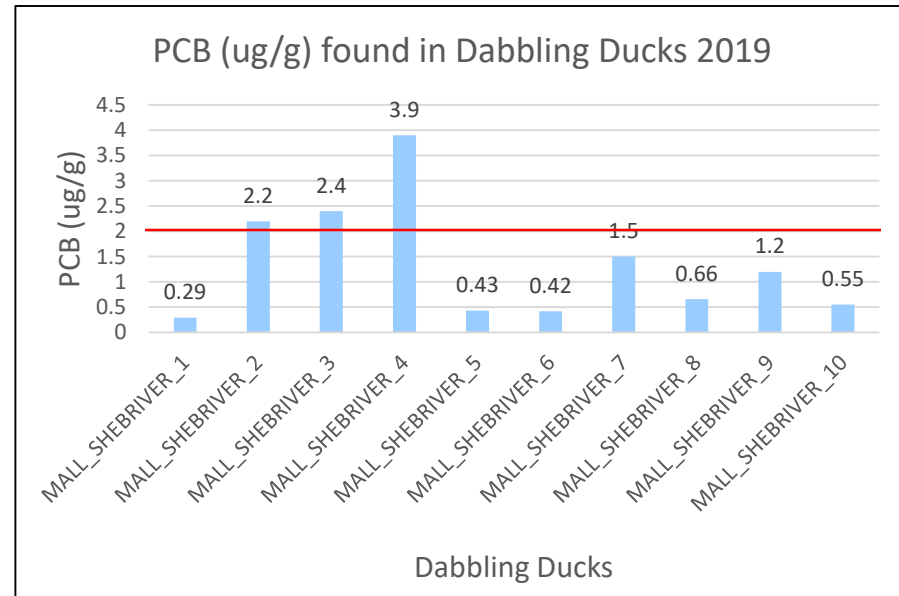
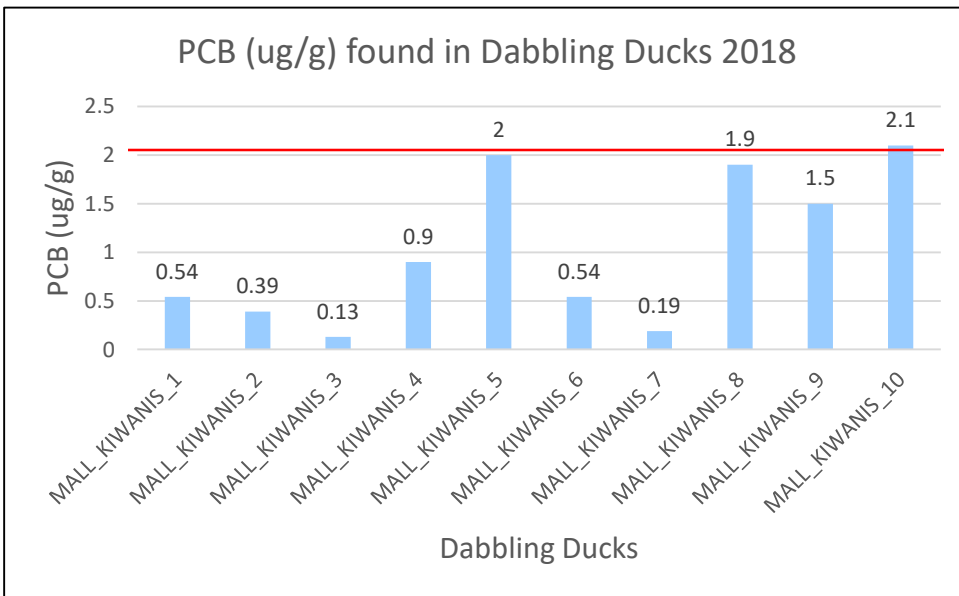
Restrictions on Fish and Wildlife Consumption

- Sheboygan Sampled in 2018 -> Present (and through 2020) for waterfowl consumption
 - Still relatively high levels of PCBs in ducks and low levels of PCBs in geese
- Next Steps for Waterfowl: Continue to collect waterfowl consumption samples in 2020 with USDA-APHIS
- Next Steps for Fish: Monitoring to occur in 2020 and 2021 (splitting AOC up – lower/upper)



Restrictions on Fish and Wildlife Consumption

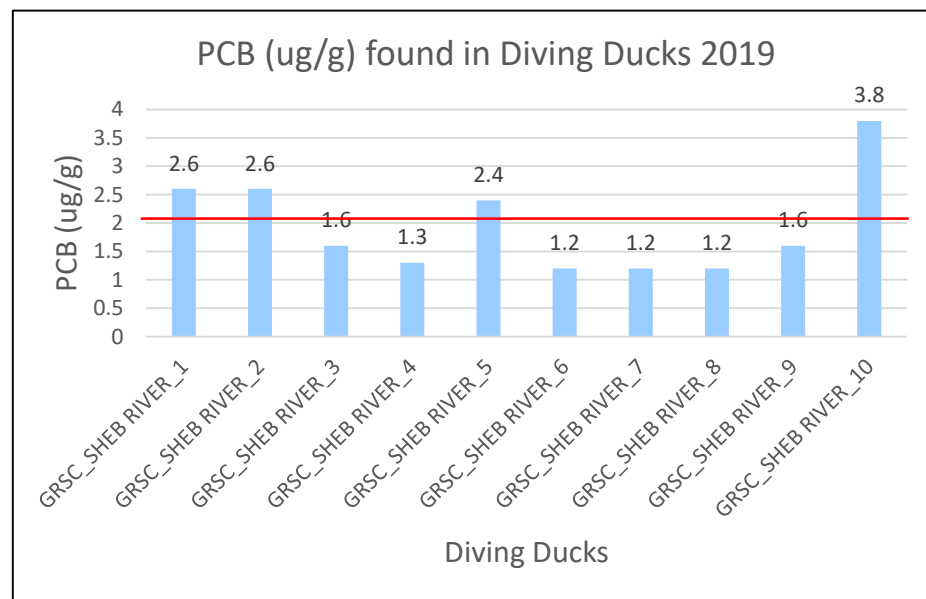
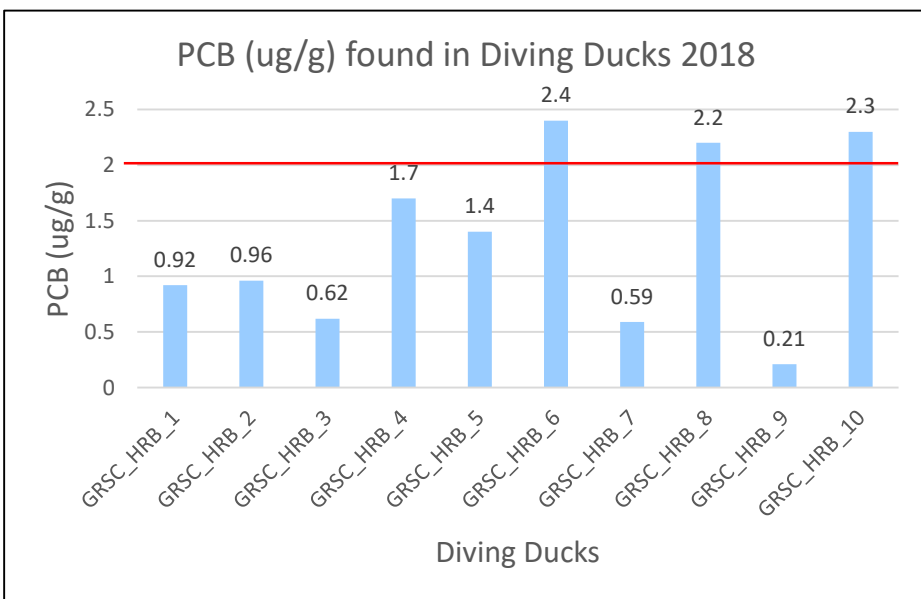
PCB (ug/g)
Minimum Detection Limit (0.04)
Unlimited Consumption (< 0.05)
No more than 1 meal/week (0.05 - 0.22)
No more than 1 meal/month (0.22-1.0)
No more than 6 meals/year (1.0-2.0)
No Not Eat (> 2.0)



- Dabbling ducks include mallards, teals, pintails, and shovelers

Restrictions on Fish and Wildlife Consumption

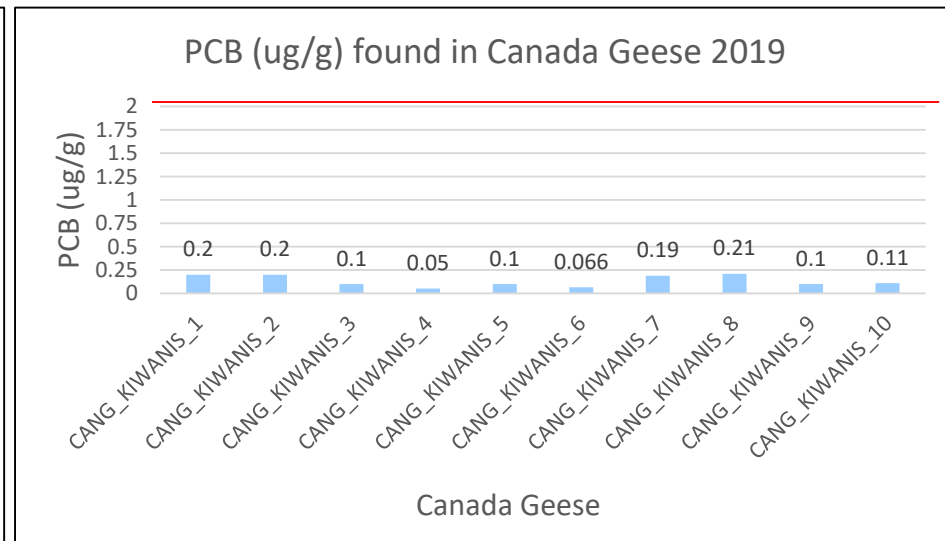
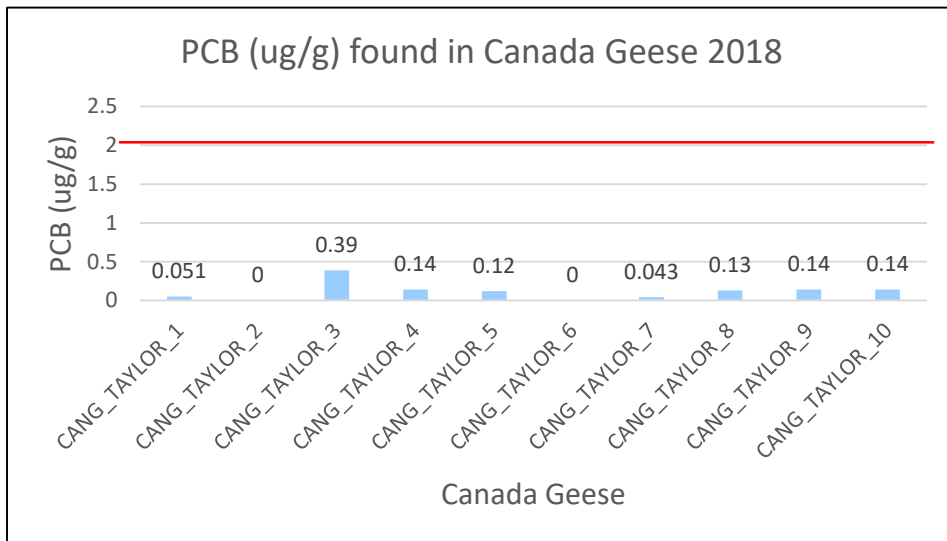
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- Diving ducks include mergansers, scaups, and goldeneyes

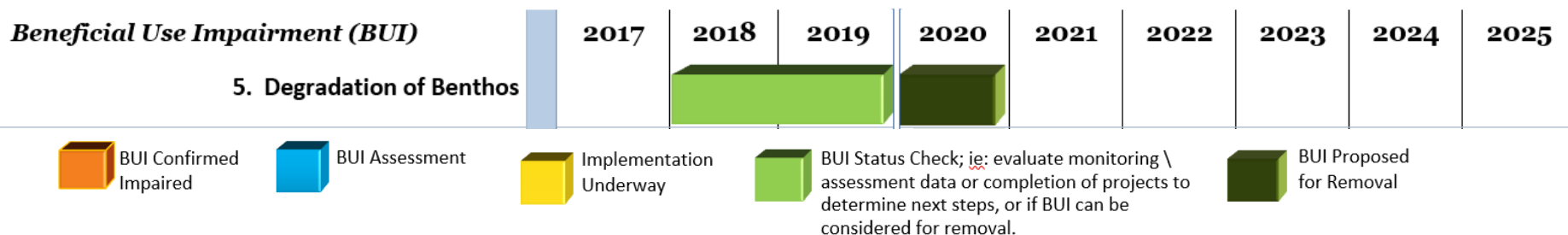
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Degradation of Benthos

- Final Report published in 2019
 - USGS report confirms that everything looks good.
 - From preliminary conversations with the US EPA Technical Review Lead, the target has been met.
 - Once sediment toxicity report is finished, it will be used in an impairment removal package.
- **Proposed Removal in 2020**



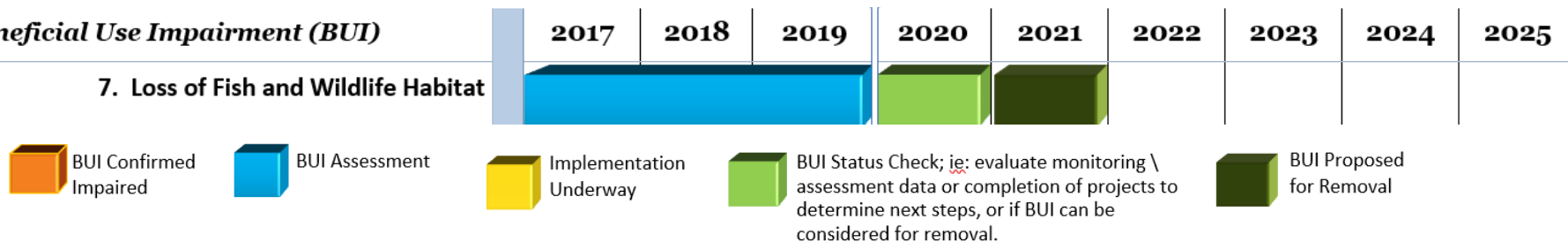
Loss of Fish and Wildlife Habitat

- Habitat Restoration Final Report Completed in 2019
 - Provided recommendations to support removal that the targets and goals in F&W Plan have been met
- **Proposed Removal in 2021**



Beneficial Use Impairment (BUI)

7. Loss of Fish and Wildlife Habitat



Degradation of Fish & Wildlife Populations

- Habitat Restoration Final Report Completed in 2019
 - Provided recommendations to support that the habitat is viable for the targets and goals highlighted in F&W Plan.
 - Additional studies have been completed to support these claims.
- **Proposed Removal in 2021**



Degradation of Fish and Wildlife Populations

Study Name (Project ID in SWIMS)	2017	2018	2019	2020	2021
1. Herptiles Survey (GL00E01312_sub5.b3)	[Blue bar]			[Green bar]	
2. Breeding Bird Survey (GL00E01312_sub5.b4)	[Purple bar]				
3. Bat Survey (GL00E01312_sub5.b5)	[Red bar]		Study results indicate that impairment remains, but is due to White Nose Syndrome in the region.		
4. Mussel Survey (GL00E01312_sub5.b6)	[Blue bar]	[Purple bar]			
5. Tree Swallows Monitoring (GL00E01312_sub5.b15) ^D	[Blue bar]	[Purple bar]			
6. Mink Survey and Contaminant Monitoring (GL00E01312_sub5.b10) ^D	[Blue bar]				
7. Fish Community Assessment (GL00E01312_sub5.b1)	[Blue bar]	[Purple bar]			
8. Macroinvertebrate and Aquatic Habitat Assessment (GL00E01312_sub5.b2) ^B	[Blue bar]	[Purple bar]			
9. Camp Y-Koda Volunteer Monitoring for birds, bats, frogs, toads, and mussels	[Blue bar]				



BUI Assessment in progress (eg: sampling underway, literature review in progress).



Assessment completed. Results indicate population is not impaired.



Overall BUI Status Check; ie: evaluate all verification monitoring & assessment data to determine next steps, or if BUI can be considered for removal.



Assessment completed. Results indicate that impairment remains.

^D – also applies to bird & animal deformities BUI.

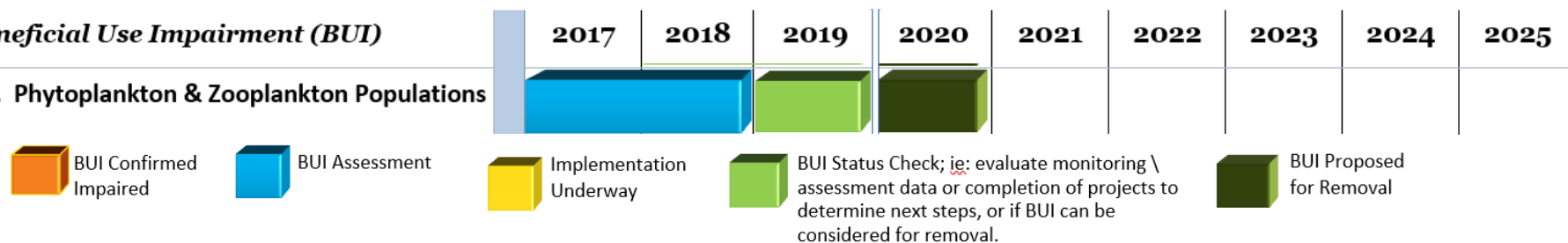
^B – also applies to benthos BUI.

Degradation of Phytoplankton and Zooplankton Populations

- Final Report published in 2019
 - USGS report confirms that everything looks good.
 - From conversations with the US EPA Technical Review Lead, the target has been met.
- **Proposed Removal in 2020**

Beneficial Use Impairment (BUI)

6. Phytoplankton & Zooplankton Populations



Beneficial Use Impairments (9 of 14 possible)

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9. **Eutrophication or Undesirable Algae**

*4 more
upcoming
proposed
removals*

Upcoming Milestones



- Sheboygan AOC RAP Update – August 2020 Public Comment Period
- Proposed impairment removals
 - 2020
 - Benthos
 - Phyto/Zooplankton
 - 2021
 - F&W Populations
 - F&W Habitat

Gather Feedback and Input

- Form an Advisory Committee from the previous Technical Advisory Committee members
 - Haven't met since 2017
 - Provide a status update
 - Present results from verification monitoring and proposed next steps for the impairments that are proceeding towards removal