

Region SCR County Jefferson Report Date 8/1994 Classification LAL
 Water Body: Duck Creek, drainage ditch
 Discharger: Spacious Acres Mobile Home Comm. WWTP

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

- Naturally occurring pollutant concentrations prevent the attainment of use
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met
- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
- Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use
- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses
- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

Supporting Evidence in the report (include comments on how complete/thorough data is)

- Biological Data (fish/invert)
- Chemical Data (temp, D.O., etc.)
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map
- Other: slides

Historical Reports in file:

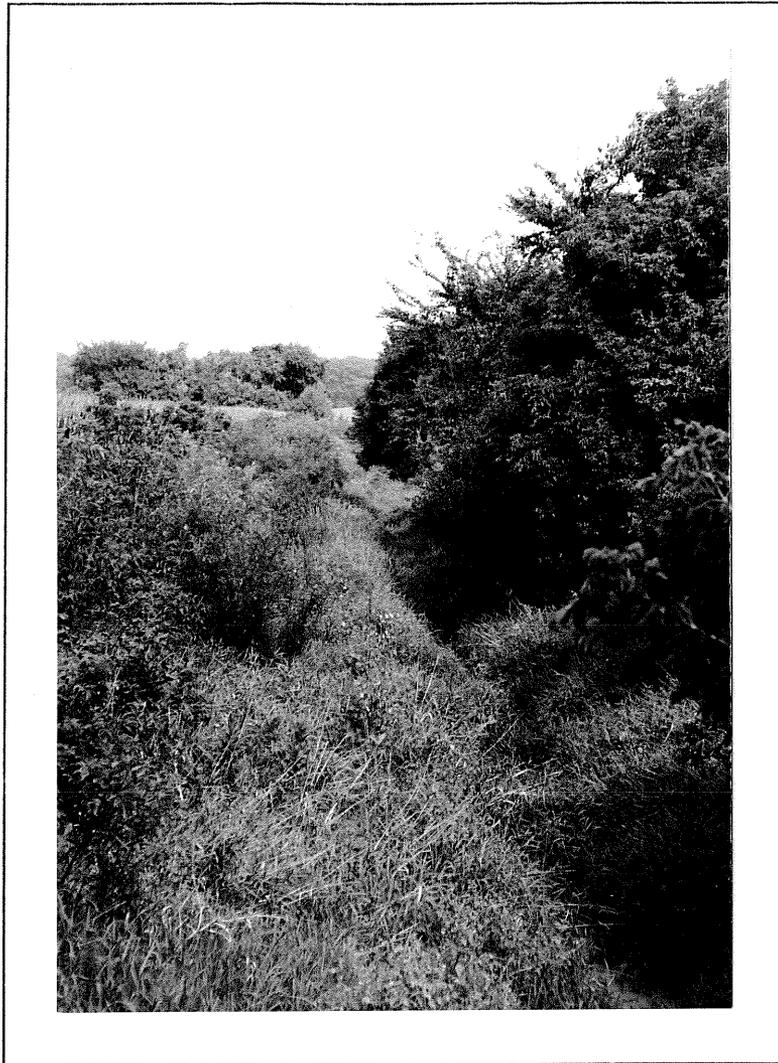
- 8/1994 - Dave Marshall
- 7/1985 - Dave Marshall

Additional Comments/How to improve report:

- LAL - ag. drainage ditch (?)
- minimal data to support class'n
- check w/ region on class'n

STREAM CLASSIFICATION OF AN UNNAMED DITCH BELOW
SPACIOUS ACRES MOBIL HOME COMMUNITY
T 7 N - R 16 E, Jefferson County, Wisconsin

August, 1994



Unnamed Drainage Ditch

Wisconsin Department of Natural Resources

A drainage ditch arises a short distance from the Spacious Acres Mobil Home Community wastewater treatment facility and flows west and south for approximately 3 miles until the confluence with Duck Creek. The drainage ditch is part of an agricultural drainage district. Based on the USGS Oconomowoc West Quadrangle and Jefferson County Soil Survey maps, flow in the ditch is intermittent but probably wet most of the year due to seepage from wetlands and hydric soils. Based on the unnatural stream characteristics of the agricultural drainage ditches, the appropriate use category is *Limited Aquatic Life (LAL)*. Low gradients coupled with low flows and low dissolved oxygen levels in the ditches will limit aquatic communities to only a few very tolerant species.

The confluence of the drainage ditch and Duck Creek is located in the NE $\frac{1}{4}$, Section 4, T6N-R16E. Duck Creek originates approximately three miles above the confluence, at Goose Lake, and flows southwest to the confluence with the Bark River. A short distance below Goose Lake at the CTH F bridge, the flow in Duck Creek was measured at 0.1 cfs on August 25, 1994. Mudminnows were observed at the site and the dissolved oxygen level was only 3.1 mg/l at 11:20 a. m. The temperature was 21.5 degrees C and the oxygen saturation was 36%. Duck Creek supports a diverse fisheries, including the lake chubsucker (*Erimyzon sucetta*) which is a **Wisconsin Special Concern Species**. Table 1 contains a list of fish species identified as part of the Fish Distribution Study.

Prepared by Dave Marshall

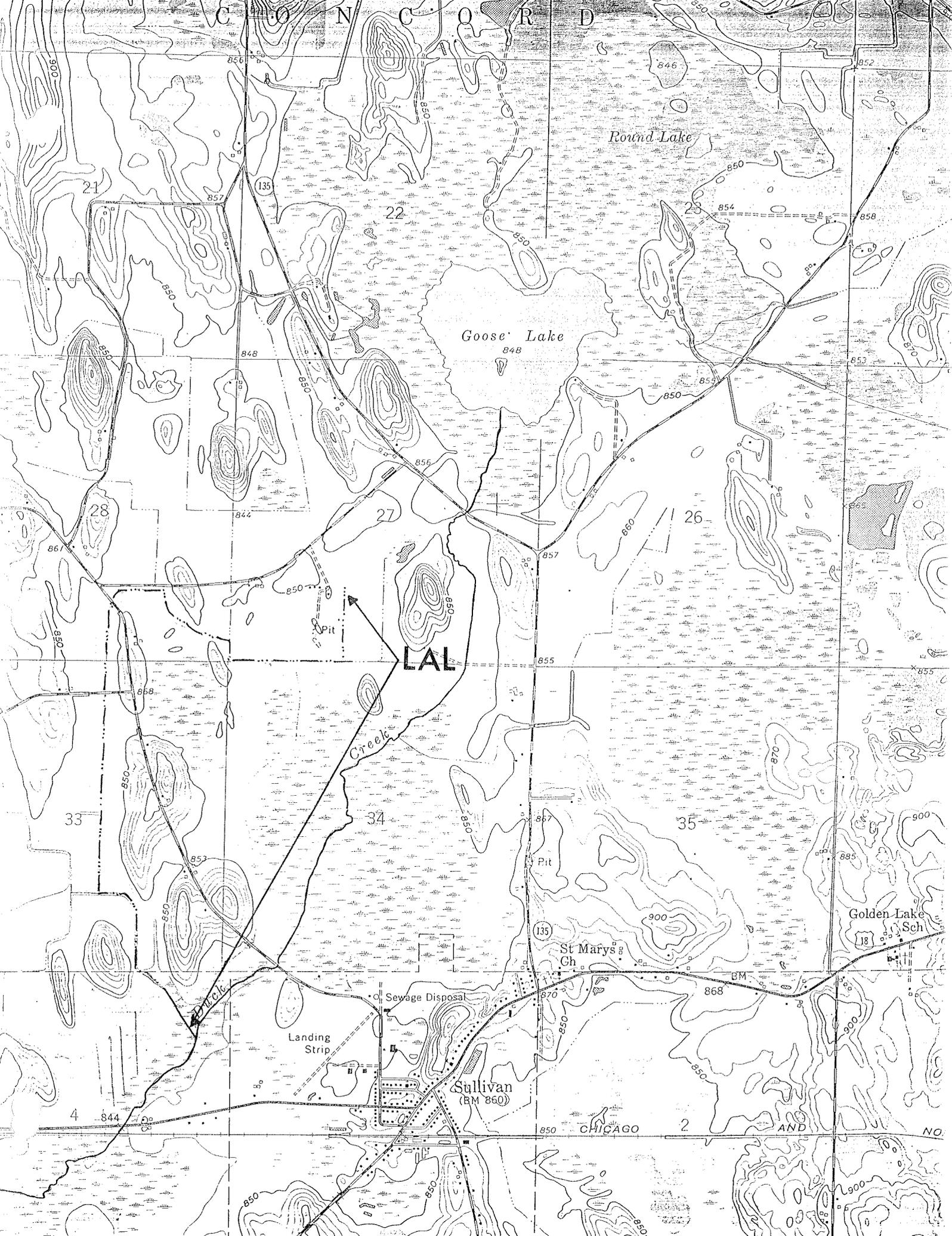
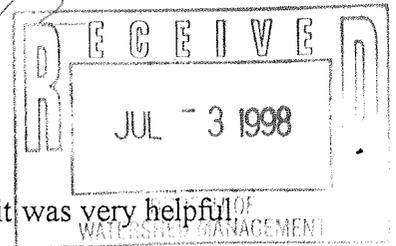


Table 1: FISHERIES OF DUCK CREEK, JEFFERSON CO.

Common Name	Scientific Name
Central mudminnow	<i>Umbra limi</i>
Grass pickerel	<i>Esox americanus</i>
Stoneroller	<i>Campostoma</i>
Hornyhead chub	<i>Nocomis biguttatus</i>
Golden shiner	<i>Notemigonus crysoleucas</i>
Common shiner	<i>Notropis cornutus</i>
Blacknose shiner	<i>N. heterolepis</i>
Spotfin shiner	<i>N. spilopterus</i>
White sucker	<i>Catostomus commersoni</i>
Lake chubsucker	<i>Erimyzon sucetta</i>
Northern hog sucker	<i>Hypentelium nigricans</i>
Golden shiner	<i>Moxostoma erythrurum</i>
Black bullhead	<i>Ictalurus melas</i>
Yellow bullhead	<i>I. natalis</i>
Brown bullhead	<i>I. nebulosus</i>
Rock bass	<i>Ambloplites rupestris</i>
Rainbow darter	<i>Etheostoma caeruleum</i>
Johny darter	<i>E. nigrum</i>
Yellow perch	<i>Perca flavescens</i>

Diane Figiel - WT/2



Diane

Thanks for the information you sent me on the Duck creek classification; it was very helpful.

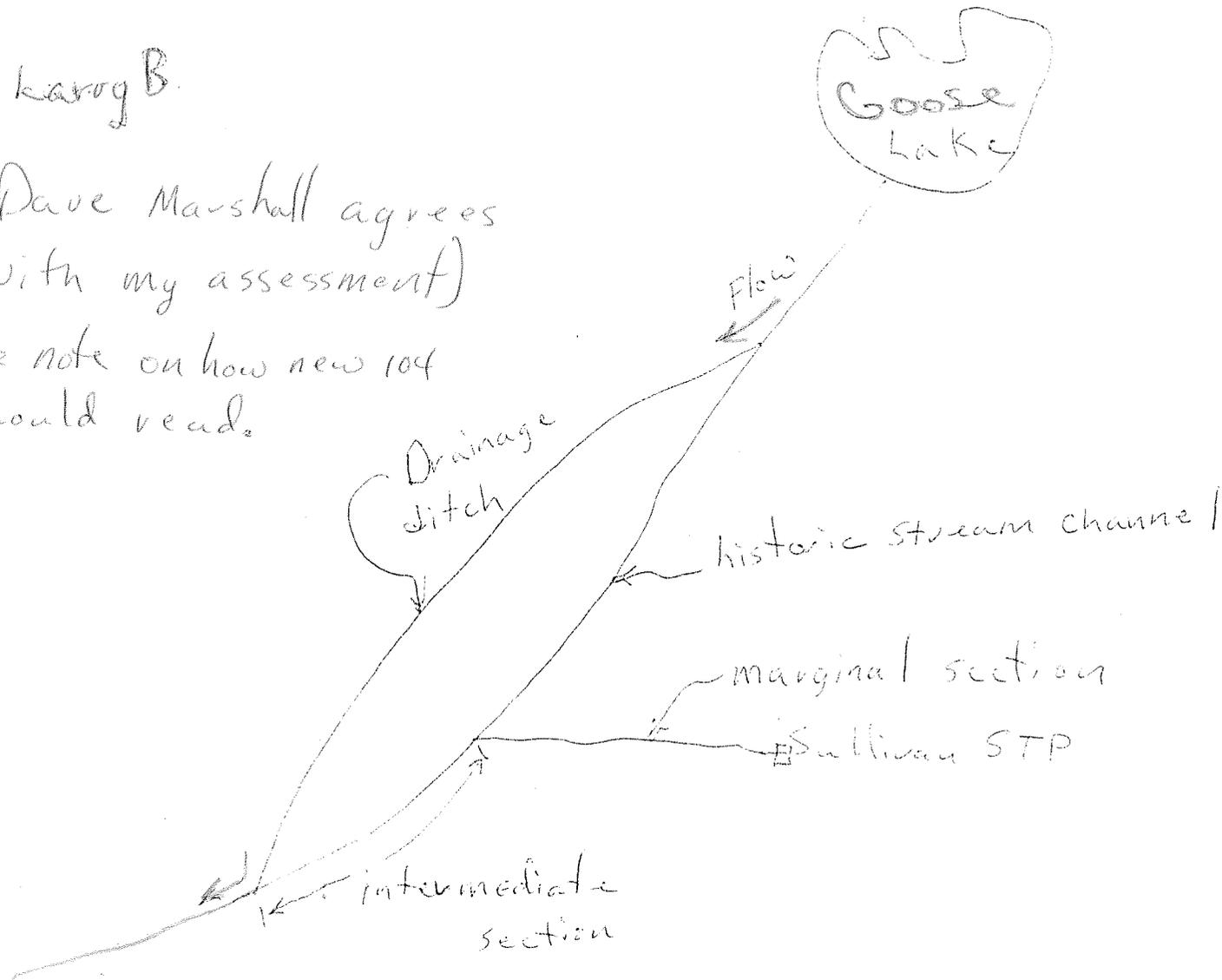
Duck Creek in eastern Jefferson county flows from Goose Lake south to the Bark River. An agricultural drainage ditch now takes much of the flow rather than the historic stream channel. Currently the Village of Sullivan wastewater treatment plant discharges to a marginal stream which in turn discharges to the historic stream channel of Duck Creek which at some point theoretically joins the main flow carried by the drainage ditch. This chunk of the former channel is identified as a variance water in the existing NR 104. I have included a sketch to help clarify the situation.

By way of review, the draft 104 would remove the variance under Item 45 Table 3 (see yellow highlighting on attachment 1) that reads "Duck Creek from the effluent ditch downstream to juncture with northerly drainage ditch." You told me that removing this was based on Dave Marshall's 1985 report. I don't think that the intent of Marshall's 1985 memo would be to remove this variance. I think Dave is calling the FAL stream the main flow of Duck creek which is, in part, a drainage ditch parallel to the former channel. Dave even clarifies this in his report. (See the blue highlighted area on attachment 2.)

Karog B.

(Dave Marshall agrees with my assessment)

* See note on how new 104 should read.

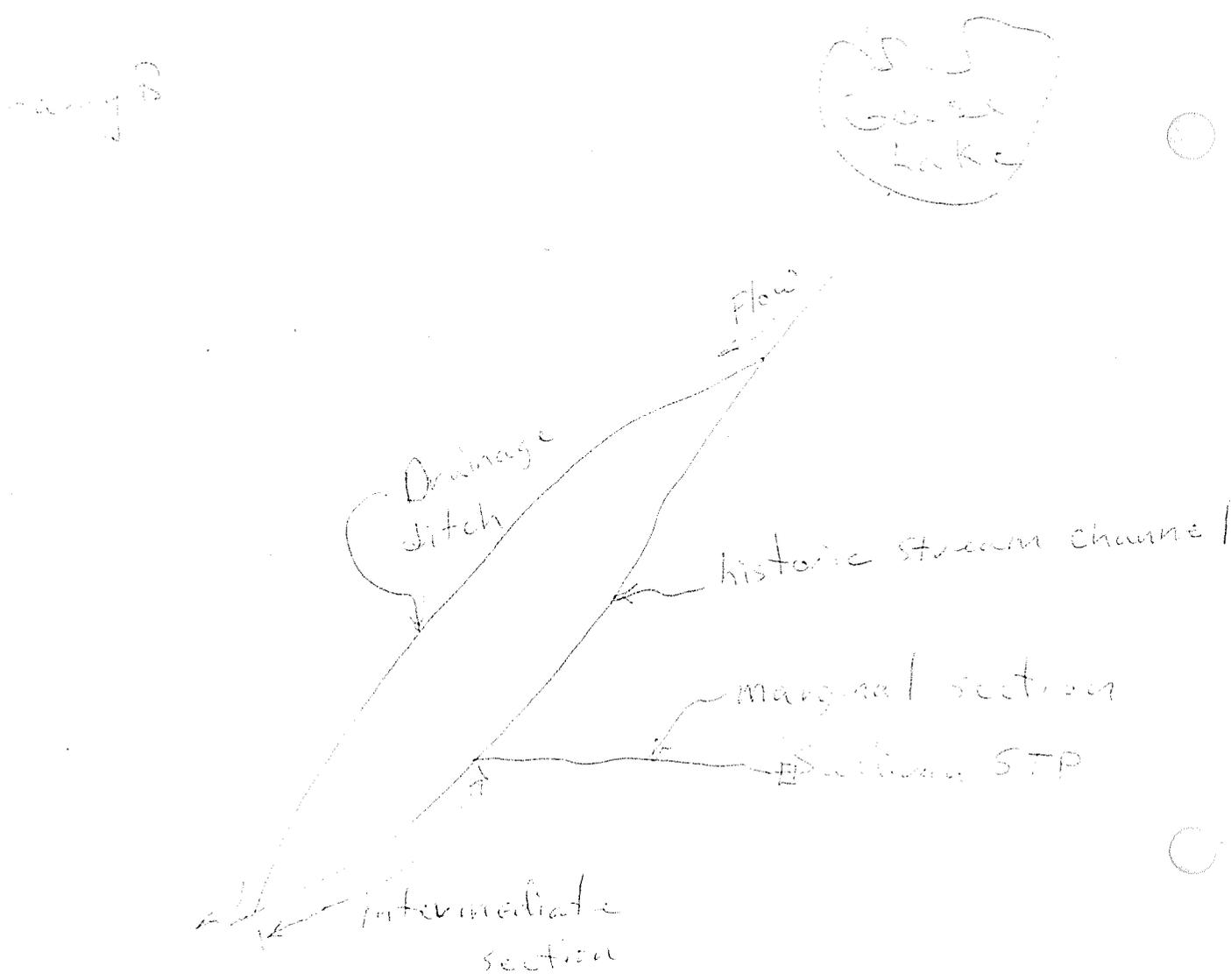


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A Attachment 1

40 WISCONSIN ADMINISTRATIVE CODE

NR 104

31. Brewery (Furnance) Creek (Mineral Point)	Brewery Creek upstream from confluence with Mineral Point Branch	Continuous	II	B (Note: the above limitation shall remain in effect until significant nonpoint source problems can be corrected)
32. Tributary - Blue River (Montfort)	From the Montfort STP downstream to the Blue River	Continuous	I	A
33. Little Grant River (Mount Hope)	From the Mt. Hope STP downstream to the west boundary of Sec. 10, T5N, R4W	Noncontinuous	I	A
34. West Branch Sugar River (Mt. Horeb)	From Mt. Horeb STP downstream to CTH "JG".	Continuous	I	A
35. Tributary - Austin Branch (Orchard Manor)	Drainage from Orchard Manor outfall to Austin Branch	Diffused surface waters	II	Effluent limitations to be determined
36. Oregon Branch - Badfish Creek (Oregon)	From the Oregon outfall downstream to juncture with the Madison Met effluent ditch	Noncontinuous	II	Effluent limitations to be determined
	From this point downstream to CTH "A"	Continuous	I	
37. Swan Creek and Tributary (Orfordville)	Tributary from Orfordville STP outfall to Swan Creek.	Effluent ditch	II	NA
	Swan Creek from confluence with above tributary to Dicky Road.	Noncontinuous	I	A
38. Tributary - Blake Fork (Patch Grove)	Tributary from the Patch Grove STP downstream to Blake Fork	Noncontinuous	I	A
39. Tributary - Honey Creek (Plain)	From the Plain STP downstream to Honey Creek	Continuous	I	Effluent limitations to be determined
40. Randolph Branch - Tributary Beaver Creek (Randolph)	From the Randolph STP downstream to Beaver Creek Tributary	Noncontinuous	II	Effluent limitations to be determined
	Tributary to Beaver Creek upstream from Beaver Creek	Noncontinuous	I	to be determined
41. Tributary-Beaver Dam River (Reeseville)	Tributary from Reeseville STP to confluence with Beaver Dam River	Noncontinuous	I	A
42. Conley - Smith Creek (Ridgeway)	From the Ridgeway STP downstream to the south boundary of Sec. 14, T6N, R4E	Noncontinuous	I	Effluent limitations to be determined
43. Tributary - Rocky Run Creek (Rio)	From the Rio STP downstream to Rocky Run Creek	Noncontinuous	II	B
44. Tributary - Narrows Creek (Sauk Co. Health Care Center)	From the Sauk County Health Care Center STP downstream to Narrows Creek	Noncontinuous	I	A
45. Duck Creek and Tributary (Sullivan)	Tributary from the Sullivan STP to Duck Creek	Effluent channel	II	Effluent limitations to be determined
	Duck Creek from the effluent ditch downstream juncture with northerly drainage ditch in Sec. 5, T6N, R16E	Noncontinuous	I	to be determined
46. Koshkonong Creek (Sun Prairie)	Koshkonong Creek upstream from first bridge above Sun Prairie STP	Noncontinuous	II	Effluent limitations to be determined
	Koshkonong Creek from above location to CTH "T".	Continuous	II	to be determined
47. Badger Mill Creek (Verona)	Badger Mill Creek from road at Verona STP downstream to STH "69".	Continuous	I	A

Register, October, 1985, No. 358

former ~~the~~ stream channel

Attachment 2
STREAM CLASSIFICATION ON DUCK CREEK
ABOVE SULLIVAN, JEFFERSON COUNTY

Wisconsin Department of Natural Resources
Madison Area
February, 1985
Prepared by David Marshall

General Information

Drainage Basin: 012 - Lower Rock
Average Gradient: 4.6 feet per mile
Length: 11.8 miles
Estimated $Q_{7, 10}$: .02 CFS
Classification: FAL-B

Duck Creek is a low gradient, slightly stained stream which flows south from Goose Lake. The lowland stream is almost 12 miles long and has over 3,000 acres of wetlands adjoining it. The wetlands provide a significant buffer from non-point source runoff except for an area that was ditched and diverted from its original channel west of Sullivan. The Village of Sullivan wastewater treatment facility discharges to a tributary of the former stream channel. Since most of the flow has been diverted to the west, the former channel has a variance classification until it intersects with the main flow. Duck Creek eventually flows into the Bark River southwest of Rome.

Fishery Data

The 1968 bulletin "Surface Water Resources of Jefferson County" indicated that Duck Creek only supports forage fish. WDNR fish research data revealed that the stream not only supports forage fish but also supports a surprising sport fishery. Numerous perch and bullheads were identified a short distance below Goose Lake. Downstream, 1.5 miles above the mouth of Duck Creek, a diverse assemblage of intolerant, tolerant forage and sport fish were collected.