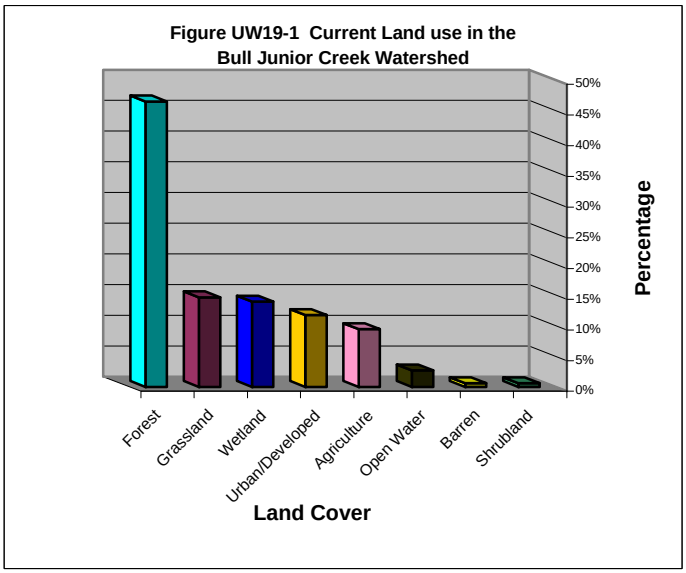
BULL JUNIOR CREEK WATERSHED (UW19)

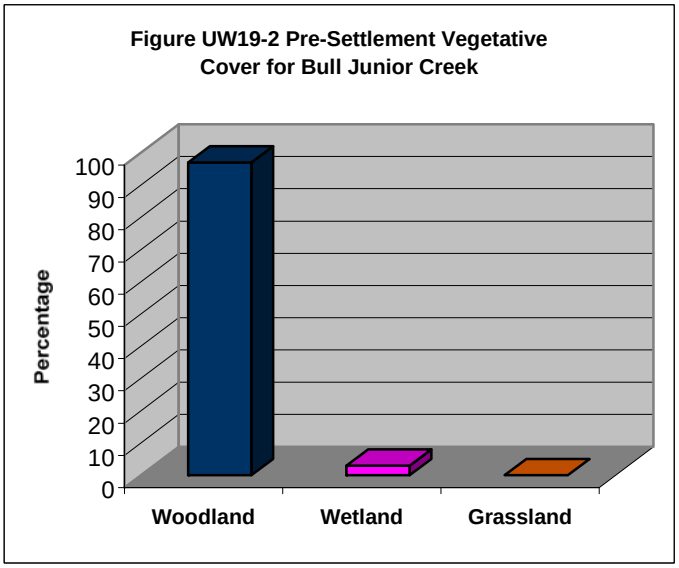
WATERSHED SUMMARY

The Bull Junior Creek Watershed (Map UW19) is located in Marathon County. Very little information is available concerning water usage problems in the watershed. This watershed was ranked using the Nonpoint Source Priority Watershed Selection Criteria. Based on surface and ground water data, the overall ranking is low. With such a high-density population, a water management plan should be developed to protect and improve the ground and surface water in this watershed.



POPULATION DEMOGRAPHICS

This watershed is the second smallest of all 29 watersheds in the basin, with only 51 square miles. The population has increased in the last thirty years from 9,863, in 1970 to 16,039 in 2000. The population density in Bull Junior Creek Watershed is the largest in the Central Wisconsin Basin with 314 people per-mile (North Central Wisconsin Regional Planning Commission, 2000, Wisconsin Department of Administration, 2000).



Pre-settlement records indicate woodlands dominated the land use in this watershed (Figure UW19-2). Currently, half of the forests still exist today, however grasslands, urban developments, and wetlands comprise the remaining land use (Figure UW19-1). A small amount of agriculture is being incorporated into the landscape but a significant amount (Enterprise Information, 1998).

WATERSHED STREAMS

All streams in this watershed are classified as forage fishery. It is unknown if these streams are fully, partially, or not meeting their biological use potential. Further investigation is needed to answer that question. A summary of known information of the streams is listed in Table UW19-1. Figure UW19-3 indicates total number of stream miles in the Bull Junior Creek Watershed.

WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM PROGRAM (WPDES)

Table UW19-2 summarizes the WPDES found in Bull Junior Creek Watershed.

Foremost Farms – Rothschild

Cheese manufacturing facilities throughout Wisconsin and one source in Iowa send the Rothschild plant concentrated whole whey and whey that has had the protein removed. The whey and whey permeate liquids are then further concentrated and either dried as animal feed or centrifuged to harvest the lactose crystals. The lactose crystals can be purified and packaged for edible pharmaceutical use. The wastewater from cleaning and sanitizing the whey processing equipment is discharged to flow and pH equalization basins. After equalization, the wastewater flows to a large fixed growth biological treatment system. The treatment system also receives vacuum pump seal water and about 180,000 gallons per day of water evaporated out as the whey is being concentrated. The treatment system bacteria decompose the whey residues in the wastewater. Phosphorus and the degrading bacteria (treatment system sludge) are separated out before the clarified water is discharged to the Wisconsin River.

Figure UW19-3. Total number of stream miles in the Bull Junior Creek Watershed.

Exceptional Resource Waters = 0.0
(ERW or Cold I)

Outstanding Resource Waters = 0.0
(ORW or Cold II)

Cold III = 0.0

Warm Water Sport Fishery = 0.0
(WWSF)

Warm Water Forge Fishery = 32.0
(WWFF)

Limited Forage Fishery = 0.0
(LFF)

Limited Aquatic Life = 0.0
(LAL)

Unknown Classification = 4.0
Total of Stream Miles = 36.0
Number of Streams / Ditches= 8

William's Pipeline

This terminal is used for bulk storage and distribution of petroleum products. Water that could potentially be discharged under WPDES permit includes petroleum contact water, tank bottom water and hydrotest water. These are collected by the facility in its collection system. Periodically, when the water holding tank is full, it will be discharged (approx 2-8 times per year). During the discharge, the flow rate will be approx 20-30 gallons per minutes (gpm) or the maximum discharge would be 12,600 gallons per event, which is the capacity of the holding tank. The discharge will only occur during the warmer months of the year. A mobile water treatment system is used and the water sampled prior to discharge to groundwaters of the Wisconsin River Drainage Basin. William's Pipline currently hauls all contaminated water off site for treatment and discharge outside of Wisconsin.

Wisconsin Public Service – Weston 1 & 2

Weston 1 & 2 is a 2 unit, 135 Mwe, coal fired power plant located near Rothschild, Wisconsin and is adjacent to the newer larger plant referred to as Weston 3. Discharges are to the Wisconsin River and groundwater from the ash ponds. The ash ponds receive wastewater from the following processes: bottom ash sluice water, demineralizer backwash water and miscellaneous plant and equipment drains. A large majority of the surface water discharge is cooling water from the condenser.

Wisconsin Public Service – Weston 3

This plant is also a coal fired electricity generating plant. It has a rated capacity of 321.6 MW. It may seem disproportionate that the Weston 1&2 plant has a capacity of 85 MGD while the larger Weston 3 generating station only has a capacity of 2 MGD of wastewater. This is because the deicing water intake is entirely contributed to the Weston 1&2 plant flow, but both plants use the water.

GROUNDWATER

The Bull Junior Creek Watershed contains municipal wells for five municipalities (Table UW19-3). These wells are characteristically high yielding wells drawing from shallow sand and gravel aquifers.

The Kronenwetter Sanitary District #2 has two wells located in the watershed that provide water for their system. The water is of excellent quality with nitrate concentrations ranging from 1.04 ppm to 2.08 ppm. Iron and manganese concentrations are very low and no other contaminants have ever been detected. Fluoride is added to reduce the potential for dental cavities and chlorine is used to safeguard against bacterial growth. This is a fairly new system, with construction completed in 1997. A comprehensive Well Head Protection Program is in effect and the numerous private wells, which were located throughout the district, are either permitted or properly abandoned.

The City of Mosinee has a total of five wells, two of which are located in this watershed. Wells 1 and 2 are shallow sand and gravel wells with an average well capacity of 300 gpm. The water has a low pH, which can be aggressive to common plumbing materials such as lead and copper. For this reason, sodium hydroxide is added to increase the pH and stabilize the corrosive nature of the water. In addition, polyphosphates are added to further inhibit corrosion. Chlorine is also added to safeguard against bacterial growth. Nitrates are low, ranging from 1.81 ppm to 2.05 ppm and iron and manganese are not a problem. These wells will be included in a Well Head Protection project that is currently underway.

The Village of Rothschild has three wells located within the watershed near the outlet of Lake Wausau. All three wells, located in close proximity to each other are highly productive. They range in capacity from 450 gpm to 875 gpm. All three wells are run to a central treatment plant for volatile organic removal with packed tower aeration. Dry cleaning wastes leaking from the village sewer system contaminated all three wells with tetrachloroethylene and trichloroethylene concentrations above the maximum contaminant levels. The well water is routed through the aerators and then dropped into a clearwell where chlorine is added. The water is then pumped into the distribution system with sodium hydroxide and fluoride added as the water leaves the clearwell.

Some gasoline products have also been detected in the raw water and a number of cleanups at area gasoline stations have been on going for many years.

Well 4, the most productive well, was only used sparingly in the past due to the elevated concentrations of manganese. A manganese removal plant is currently under construction to allow the village to use this well capacity in their system. Nitrate concentrations are slightly elevated at a combined concentration of 2.9 ppm.
The village adopted a Wellhead Protection ordinance to protect their well field from additional contamination sources.

The City of Schofield has two shallow sand and gravel wells located within the watershed ranging in production from 750 to 875gpm. The water quality from Wells 2 and 4 is very good with only fluoride added for dental benefits. The city has ample well capacity to meet their current and future needs. The nitrate values are showing some external influence and range from 3.49 ppm to 4.39 ppm. Some very small quantities of volatile organic compounds have been detected in these wells, but an ongoing clean-up up gradient of these wells should eliminate the source of these detects. The city does not practice a formal Well Head Protection Program.

The Village of Weston has four wells located in this watershed and a fifth well is currently under construction. These wells are again shallow sand and gravel wells producing anywhere from 580 gpm to 900 gpm. Capacity in two of the wells is often reduced over time due to plugging of the screen from iron and manganese as well as iron bacteria. Polyphosphates are actually injected down Well 2, near the bowls, to help keep the screen and pump bowls clean. The water is corrosive and sodium hydroxide and polyphosphates are injected to stabilize the water. Fluoride and chlorine are also added. Wells 3 and 4,

located in an industrial park area, were contaminated with volatile organic compounds (VOC) and are treated with air strippers. Well 4 was offline for many years while groundwater clean-up activities were put into operation. This well was again activated and has been free of VOC contamination for the past two years. Nitrate levels indicate some human interference with concentrations ranging from 1.49–3.23 ppm. A Well Head Protection program is in effect.

The Central Wisconsin Groundwater Center of the University of Stevens Point conducted well water samples in every watershed in the Central Wisconsin Basin for Nitrates and Triazine. In Bull Junior Creek watershed 69 wells were tested for traces of nitrates, of the 69 wells tested, 1.4 percent of them were over the allowable 10 parts per million for safe drinking water. Of the 1.4 percent of the wells that are over 10 parts per million, none of the wells contained nitrate concentrations greater than 20 parts per million.

There was one well tested for triazine in the Bull Junior Creek watershed, the concentration in that well was below 0.1 parts per billion. It is strongly recommend that if a test result comes back above 1 part per billion of triazine the well should be tested further for total concentrations of atrazine to insure safe drinking water.

Well within this watershed typically utilize the sand and gravel aquifer, and few granite wells are constructed in the Southern and Western portions of this watershed. Wells located along the Wisconsin River have been found to produce significant quantities of water. Many of these wells also produce water with very high iron and manganese concentrations.

WATERSHED RECOMMENDATIONS

1. Fish and Aquatic Habitat Staff should conduct baseline monitoring on watershed streams.

Table UW19-1 Bull Junior Watershed Marathon County Square Miles: 51 Stream Miles: 36 NPS Streams Rank: Low

Stream Name	Length (miles)	Codified Use	Biolgical Use (Existing)	Biological Use Potential	SUPPORTING USE FULLY-PART-NOT-THR/MILES	303(d) Listed Water	Assess. Categ. M E U	Trend	Integ Indic	Integ Status	Data Level[i]	PROBLEMS SOURCE//IMPACT	COM N R	REF.
Bull Junior Creek T27NR07ES28 WBIC: 1435000	19.0	DEF	WWFF/0-19[e]	Same[f]	UNK/19.0		E	U					R	8,26
Ceder Creek T28NR07ES35 WBIC: 1437300	6.0	DEF	WWFF/0-6.0[e]	Same[e]	UNK/6.0		U	U						44
Little Bull Junior Creek T28NR09ES31 WBIC: 1435600	1.0	DEF	WWFF/0-1.0[e]	Same[e]	UNK/1.0		U	U						44
Sampon Creek T27NR08ES08 WBIC: 1435200	6.0	DEF	WWFF/0-6.0[e]	Same[f]	UNK/6.0		U	U						26
4 Unnamed Creeks	4.0													

Table UW19-2. Bull Junior Watershed Marathon County Wisconsin Pollution Discharge Elimination System (WPDES) Program

Facility	Permit No./ Expires	Industrial Or Municipal	Receiving Stream/ Classification G = groundwater	Q710 of Receiving Stream	Design Flow (MGD)	Variances	Phosphorus Limit	Facility Plan Candidate? Y/N	Waste Load Allocation	Recommendations
Foremost Foods – Rothschild	0003875 31 March 2004	I	G & Wisconsin River, WWSF	911	0.812	None	1.0 mg/l	No	Yes	
William's Pipeline	0049093 31 March 2005	I	G	NA	0.0126	None	NA	No	No	Continue remediation of contaminated groundwater
Wisconsin Public Service – Weston 1&2	0003131 31 Dec 2000	I	G & Wisconsin River, WWSF	911	85	None	NA	No	No	
Wisconsin Public Service – Weston 3	0042765 30 June 2001	I	Wisconsin River WWSF	911	2	None	1.0 mg/l	No	NA	

Table UW19-3. Bull Junior Watershed. Marathon County. NPS Groundwater Rank: High

Municipal Water Supply Data

Kronenwetter — Sanitary Survey Date 1997 — Population 2010 — PWSID 73717006 — Ave. Day Use 160,000 Gallons

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
1	1	LI607	Yes	Sand & Gravel	90'	60'	60'-90'	700	2.08	Cl, Fl	Yes	<1200'	No	No
2	2	KO361	Yes	Sand & Gravel	80.5'	55.5'	55.5'-80.5'	420	1.04	Cl, Fl	Yes	<1200'	No	No

Mosinee — Sanitary Survey Date 1997 — Population 4054 — PWSID 73701595 — Ave. Day Use 600,000 Gallons

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
1	1	BG305	Yes	Sand & Gravel	60'	40'	40'-60'	320	1.81	Cl, PO4, pH	No	1615'	No	No
2	2	BG306	Yes	Sand & Gravel	60'	40'	40'-60'	285	2.05	Cl, PO4, pH	No	1630'	No	No

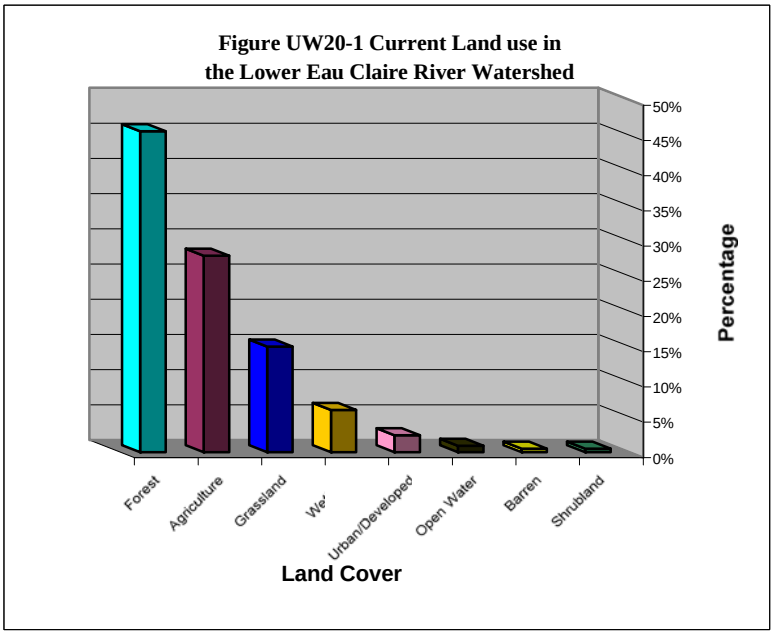
Weston — Sanitary Survey Date 2000 — Population 9200 — PWSID 73701639 — Ave. Day Use 1.4 MGD (MGD = Million Gallons per Day)

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
2	2	BG314	Yes	Sand & Gravel	70'	55'	55'-70'	658	3.1	Cl, Fl, pH, PO4	Yes	2798'	No	No

LOWER EAU CLAIRE RIVER WATERSHED (UW20)

WATERSHED SUMMARY

The Lower Eau Claire River Watershed (Map UW20) is located in Marathon County. Agriculture comprises 50 percent of the landuse in this watershed. The most significant problems in the Lower Eau Claire River Watershed are associated with livestock activity and streambank erosion. The townships of Wausau and Easton in the Lower Eau Claire River Watershed have soil erosion rates that range from 3.2-3.4 tons/acre/year (Kaatz, 1988). These townships rank 10th and 12th of 42 townships evaluated for soil loss.



This watershed was ranked using the Nonpoint Source Priority Watershed Selection Criteria. Based on ground and surface water data, the overall ranking was medium, establishing a priority for future grant eligibility through the Nonpoint Source Program.

POPULATION DEMOGRAPHICS

The Lower Eau Claire River Watershed has the second highest population in the basin with 28,146, which makes up 9 percent of the entire basins population. The population projections indicate a one percent increase over the next 15 years (North Central Wisconsin Regional Planning Commission, 2000, Wisconsin Department of Administration, 2000).

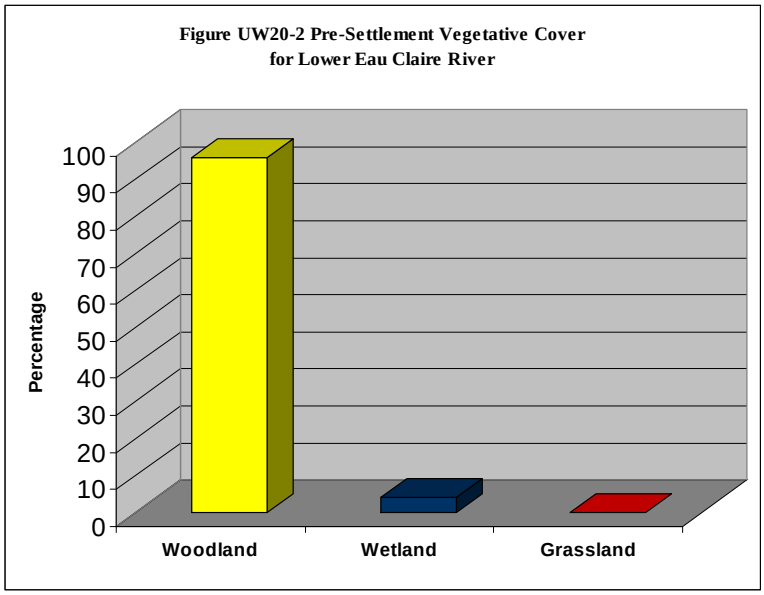


Figure UW20-2 depicts the watershed land use before this watershed was settled. In contrast to the original vegetative cover, the current land use is not only dominated by woodlands but agriculture, grassland, and wetlands are mixed into the landscape (Figure UW20-1) (Enterprise Information, 1998).

WATERSHED STREAMS

A summary of watershed streams is listed in Table UW20-1. Figure UW20-3 indicates total number of stream miles in the Lower Eau Claire River Watershed.

Big Sandy Creek
Biotic index sampling on Big Sandy Creek at different times has shown very good and excellent water quality.

East Branch Big Sandy Creek
Biotic index sampling in 1990 indicated good water quality.

Eau Claire River (Lower)
The old Holtz - Krause Landfill lies within 1,000 feet of Pils, Horseshoe and Cemetery sloughs, all of which are navigable. Pils and Horseshoe sloughs are physically connected to the Eau Claire Flowage, which is an impoundment of the Eau Claire River. Contaminated groundwater discharges to these sloughs. Biotic index sampling on the Eau Claire River at different times has shown fair, good and excellent water quality. In addition, non-metallic mining sites are found along the lower portions of Eau Claire River.

Little Sandy Creek
Biotic index sampling in 1978 indicated fair water quality. A 1990 biotic index sample indicated good water quality.

Mole Brook
Mole Brook is classified as a Class I and III trout stream. A comprehensive survey of Mole Brook identified poor habitat conditions over much of the stream due to cattle grazing. Cattle are severely damaging Mole Brook and having a definite adverse impact on its ability to support trout. At one time Mole Brook was most likely a good quality brook trout stream. A biotic index sample collected in fall 1979 indicated fair water quality. A 1990 biotic index sample indicated good water quality.

Prahl Creek
Biotic index sampling in 1990 indicated good water quality.

Figure UW20-3. Total number of stream miles in the Lower Eau Claire River Watershed.

Exceptional Resource Waters = 2.2
(ERW or Cold I)

Outstanding Resource Waters = 3.8
(ORW or Cold II)

Cold III = 0.0

Warm Water Sport Fishery = 47.2
(WWSF)

Warm Water Forge Fishery = 52.7
(WWFF)

Limited Forage Fishery = 0.0
(LFF)

Limited Aquatic Life = 0.0
(LAL)

Unknown Classification = 43.0
Total of Stream Miles = 148.9
Number of Streams / Ditches= 32

Skulen Creek
Biotic index sampling in 1990 indicated poor water quality.

WATERSHED LAKES

A summary of watershed lakes is listed in Table UW20-2.

WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM PROGRAM (WPDES)

Table UW20-3 summarizes the WPDES found in Lower Eau Claire River Watershed.

Village of Brokaw
The Village of Brokaw now operates an activated sludge system. A trickling filter system was recently (April 2000) removed and replaced with the activated sludge system. The design life is until the year

2020, major improvements occurred in 2000 and the average daily flow is 18,600 gallons a day with a BOD load of 119 (#/day), Treatment types: activated sludge.

City of Wausau
The city of Wausau operates an activated sludge plant in the City. The design life is until the year 2011, major improvements occurred in 1991 and the average daily flow is 8.2 million gallons a day with a BOD load of 17,000 (#/day).

Lignotech
Lignotech USA, Inc manufactures lignosulfonate chemical products from spent sulfite liquor, a waste product from calcium based sulfite pulping of wood. Lignotech's products are used as dispersing agents, binders, sequestering agents and humectants in the construction, textiles, oil-drilling and animal feed industries. Weyerhaeuser, a pulp and paper mill located adjacent to the Lignotech facility, supplies most of the spent sulfite liquor that Lignotech utilizes as raw material.

Wausau-Mosinee Papers – Brokaw Mill
Wausau-Mosinee Papers in Brokaw operates a sulfite pulp and paper mill and produces color printed-paper for commercial uses. Wastewater is treated in aeration basins and clarifiers.

Weyerhaeuser
Weyerhaeuser manufactures sulfite pulp and uncoated fine paper. This results in the average discharge of 8.7 MGD to the Wisconsin River. Water is treated, clarification and aeration, before being discharged. Sludge is pumped to a Zimpro process before it is dewatered and hauled to a landfill.

GROUNDWATER

The Village of Brokaw has two wells that supply water for domestic use (Table UW20-4). They also have two additional wells that supply the local paper mill with production water for their paper making process.

Both of the domestic supply wells are shallow sand and gravel wells that produce about 150 gpm each. Both wells have extremely high levels of manganese, which are treated at a central location. The water is first run through an aerator and then injected with potassium permanganate, chlorine and sodium hydroxide. After a detention period, the water is then pumped through pressure iron filters out into the distribution system.

Although nitrate concentrations are low at 0.65 ppm, groundwater contamination is a problem in the Village. Even with a comprehensive Well Head Protection Program, the village still had to shut down their Well 1 due to groundwater contamination by sulfite liquor from the paper mill. The village is now in the process of trying to replace this well. The sand and gravel aquifer where the village is located is very prolific near the Wisconsin River. However as you leave the valley, the granite bedrock rises rapidly, limiting the area in which a well can be developed. Unfortunately, the paper mill also located their sludge storage cells within this same valley, severely limiting potential well sources.

The City of Schofield has one of their three wells located in this watershed. Well 3 is a highly productive shallow sand and gravel well yielding 750 gpm. This well, located in an industrialized area, has concentrations of volatile organic compounds above the maximum contaminant level. An air stripper that discharges to a ground storage reservoir provides treatment. Chlorine and fluoride are also provided at this location. The nitrate concentration in this well is 3.43 ppm indicating some influence from the surrounding area. Well Head Protection is not provided at this well.

The City of Wausau has two wells located in this watershed although Well 8 has not been used for many years and is scheduled for abandonment. Well 3 is a shallow sand and gravel well producing about 1350 gpm. The water in this well contains elevated concentrations of iron and manganese and is therefore

routed through a central lime softening plant, which removes the iron and manganese. Volatile organic chemicals have also been identified in this well and are treated with an air stripper prior to filtration.

Once the water reaches the plant; alum, lime and flocculent enhancing polymers are added in a mixing chamber. The flocculated particles are settled out in the clarifier units and the decanted water is recarbonated, fluoridated, routed to sand filters and then discharged to a clearwell where it can be pumped to the customers. Sodium hypochlorite and ammonia are mixed to form chloramines to maintain a protective residual within the clearwell and the distribution system.

Sodium silicates are also added to produce a protective coating in the plumbing systems to reduce the leaching of lead and copper into the water.

The combined nitrate level leaving the plant is 0.93 ppm. The city has a Well Head Protection program and is looking into a Groundwater Guardians chapter to further educate the public on the importance of protecting our groundwater resource.

The Central Wisconsin Groundwater Center of the University of Stevens Point conducted well samples in every watershed in the Central Wisconsin Basin for Nitrates and Triazine. In the Lower Eau Claire River watershed 226 wells were tested for traces of nitrates, of the wells tested, 3.1 percent had nitrate concentration over the allowable 10 parts per million for safe drinking water. Of the 3.1 percent of the wells that are over 10 parts per million, 0.4 percent of the wells contained nitrate concentrations greater than 20 parts per million.

There was one well tested for triazine in the Lower Eau Claire River Watershed, the concentration in that well was below 0.1 parts per billion. Well below the standards for drinking water limitations in the state of Wisconsin. It is strongly recommend that if a test result comes back above 1 part per billion of triazine the well should be tested further for total concentrations of atrazine.

WATERSHED RECOMMENDATIONS

1. Fish and Aquatic Habitat Staff should conduct baseline monitoring on watershed streams.

2. Lower Eau Claire Watershed should be considered a priority for future grant eligibility under the State Nonpoint Source Pollution Abatement Program.

3. Fish and Aquatic Habitat Staff should follow non-wadable protocol to assess the distribution of Black Redhorse in the Eau Claire River.

Table UW20-1 Lower Eau Claire River Watershed Marathon County Square Miles: 173 Stream Miles: 148.9 NPS Stream Rank Medium

Stream Name	Length (miles)	Codified Use	Biolgical Use (Existing)	Biological Use Potential	SUPPORTING USE FULLY-PART-NOT-THR/MILES	303(d) Listed Water	Assess. Categ. M E U	Trend	Integ Indic	Integ Status	Data Level[i]	PROBLEMS SOURCE//IMPACT	COM N R	REF.
Big Sandy Creek T28NR08ES09 WBIC: 1437900	20.0	DEF DEF	WWSF/0-10.3[e] WWFF/10.3-20[e]	Same	UNK/20.0		E	U		VG - E	B,H		N	8,44,161
Eau Claire River T28NR07ES13 WBIC: 1437600	30.9	DEF	WWSF/30.9[e]	Same	UNK/30.9		E	U		F, G, E	B,H,P, C	LF/TOXINCS NMM	R	8,151,143,95, 161,201
E. BR. Big Sandy Cr. T29NR09ES18 WBIC: 1438700	8.0	DEF	WWFF/8.0[e]	Same	UNK/8.0		E	U		G	B,H		N	8,44
Jim Moore Creek T29NR07ES24 WBIC: 1469900	6.0	DEF	WWSF/6.0[e]	Same	UNK/6.0		E	U					R	8
Lentz Creek T29NR7ES12 WBIC: 1470200	3.0	DEF	WWFF/3.0[e]	Same	UNK/3.0		E	U					R	8,44
Little Sandy Creek T28NR8ES02 WBIC: 1438100	10.0	DEF	WWFF/10.0[e]	Same	UNK/10.0		E	U		G	B,H,P		N	8,25,161
Mole Brook T28NR09ES08 WBIC: 1439400	6.0	Cold ERW	Cold II/0-3.8[e b] Cold I/3.8-6[eb]	Same	PART/3.8 PART/2.2		M	U		G	B,H,P	PSB/HAB.SED.	R	8,153, 41,161,6
Prahl Creek T29NR08ES25 WBIC: 1438400	7.0	DEF	WWFF/7.0[e]	Same	UNK/7.0		E	U		G	B,H,P		N	44
Sampson Creek T28NR08ES25 WBIC: 1438000	6.0	DEF	WWFF/6.0[e]	Same	UNK/6.0		E	U					R	25
Silver Creek T28NR08ES03 WBIC: 1439100	3.0	DEF	WWFF/3.0[e]	Same	UNK/3.0		E	U					N	44
Skulen Creek T30NR10ES33 WBIC: 1440100	6.0	DEF	WWFF/6.0[e]	Same	UNK/6.0		E	U		P	B,H,P		R	44
Stony Creek T29NR10ES17 WBIC: 1470000	1.0	DEF	UNK/1.0	UNK/1.0	UNK/1.0		U	U						8
Unnamed Creek T29NR09ES27 WBIC: 1439700	5.0	DEF	UNK/5.0	UNK/5.0	UNK/5.0		U	U						8
19 Unnamed Creeks	37													

Table UW20-2. Lower Eau Claire River Watershed. Marathon County NPS Lake Rank: Medium

Lake Name	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Clay Pond T28NR09ES21 1439300			10.0	24	SE		1C			No					
Eau Claire Flowage T28NR07ES12 1437800		BR	184.0	10/4	DG	404.0	2A	52.6	None	No	NPS,URB/HAB,SED NUTS				

Table UW20-3. Lower Eau Claire River Watershed. Marathon County Wisconsin Pollution Discharge Elimination System (WPDES) Program

Facility	Permit No./ Expires	Industrial Or Municipal	Receiving Stream/ Classification G = groundwater	Q710 of Receiving Stream	Design Flow (MGD)	Variances	Phosphorus Limit	Facility Plan Candidate? Y/N	Waste Load Allocation	Recommendations
Village of Brokaw	0022136 31 March 2004	M	Wisconsin River WWSF	911 cfs	0.07	None	NA	No	Yes	None
Wausau WWTP	0025739 30 Sep 2004	M	Wisconsin River (Lake Wausau) WWSF	911 cfs	8.2	None	1 mg/l	No	Yes	None
Lignotech	0003450 30 June 2001	I	Weyerhaeuser Wisconsin River WWSF	911 cfs	4.25	None	NA	No	Yes	None
Wausau Mosinee Papers (Brokaw Mill)	0003379 15 April 2001	I	Wisconsin River WWSF	911 cfs	17.5	None	2.0 mg/l	No	Yes	None
Weyerhaeuser – Rothschild	0026042 31 March 1999	I	Wisconsin River WWSF	911 cfs	12	None	1.6 mg/l	No	Yes	Resolve nutrient effluent problem

Table UW20-4. Lower Eau Claire River Watershed. Marathon County NPS Groundwater Rank: High

Municipal Water Supply Data

Brokaw — Sanitary Survey Date 1996 — Population 186 — PWSID 73701078 — Ave. Day Use 50,000 Gallons

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
1	200	BG290	Yes	Sand & Gravel	92'	62'	62'-92'	150	0.65	A, I, pH, Cl	Yes	1594'	No	No
6	200	IX101	Yes	Sand & Gravel	85'	63'	63'-85'	125	0.65	A, I, pH, Cl	Yes	1365'	No	No

Rothschild — Sanitary Survey Date 1997 — Population 5146 — PWSID 73701617 — Ave. Day Use 600,000 Gallons

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
3	200	BG307	Yes	Sand & Gravel	89'	49'	49'-89'	660	2.9	V, Cl, Fl, pH	Yes	1754'	No	No
4	200	BG308	Yes	Sand & Gravel	75'	54'	54'-75'	875	2.9	V, Cl, Fl, pH, I	Yes	2856'	No	No
5	200	BG309	Yes	Sand & Gravel	65'	45'	45'-65'	450	2.9	V, Cl, Fl, pH	Yes	2048'	No	No

Schofield — Sanitary Survey Date 1997 — Population 2420 — PWSID 73701628 — Ave. Day Use 620,000 Gallons

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
2	2	BG310	Yes	Sand & Gravel	100'	65'	65'-100'	750	4.39	*Cl, Fl	No	1893'	No	No
3	3	BG311	Yes	Sand & Gravel	80'	60'	60'-80'	750	3.43	V, Cl, Fl	No	2644'	No	No
4	4	BG312	Yes	Sand & Gravel	72'	52'	52'-72'	875	3.49	*Cl, Fl	No	2856'	No	No

Wausau — Sanitary Survey Date 1999 — Population 38777 — PWSID 73701023 — Ave. Day Use 5.4 MGD (MGD = Million Gallons per Day)

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
3	300	BG326	Yes	Sand & Gravel	95'	50'	50'-90'	1350	0.93	L, V, Cl, Fl, S	Yes	2508'	No	No
8	8	BG330	Yes	Sand & Gravel	97'	67'	67'-97'	unused	?	Not Used		2493'	No	No

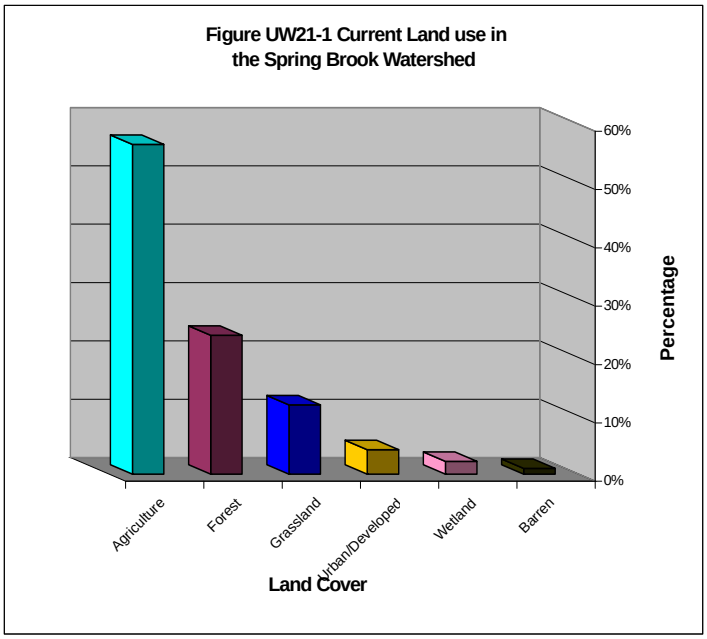
Weston — Sanitary Survey Date 2000 — Population 9200 — PWSID 73701639 — Ave. Day Use 1.4 MGD (MGD = Million Gallons per Day)

Well	Entry Point	Unique Well No.	Well Const. Report	Geology	Well Depth	Casing Length	Screened Interval	Capacity (gpm)	Nitrate (ppm)	Treatment	Wellhead Protection	Calculated Fixed Radius	Flood Plain	Wetland
1	1	BG313	Yes	Sand & Gravel	78'	68'	68'-78'	586	3.23	Cl, Fl, pH, PO4	Yes	3218'	No	No
3	200	BG315	Yes	Sand & Gravel	92'	72'	72'-92'	904	1.49	Cl, Fl, pH, PO4	Yes	2644'	No	No
4	200	BG316	Yes	Sand & Gravel	83'	63'	63'-83'	914	1.49	Cl, Fl, pH, PO4	Yes	3316'	No	No

SPRING BROOK CREEK WATERSHED (UW21)

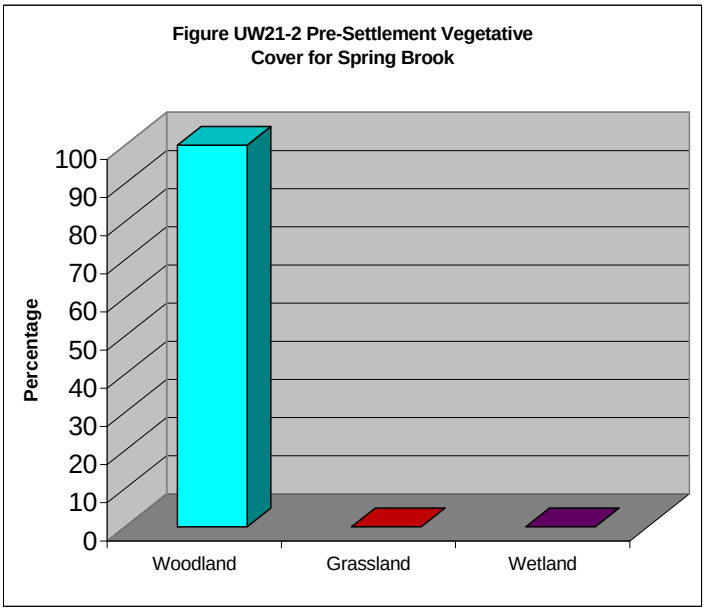
WATERSHED SUMMARY

The Spring Brook Watershed (Map UW21) is located in Marathon and Langlade Counties. Spring Brook flows in a generally southwesterly direction to its confluence with the Eau Claire River in Marathon County. Spring Brook Watershed was divided into four smaller drainage areas. With Spring Brook Creek being the only main source of surface water throughout the watershed and almost 50 percent of this creek is classified as ERW trout waters, maintaining a high water quality is very important to this valuable resource.



Groundwater is the main source of drinking water. Groundwater quality is generally considered good, however groundwater can be susceptible to contamination by human activity. Groundwater is held in thick, permeable layers of soil and rock. The principal aquifer of the Spring Brook Watershed is the sand-gravel aquifer. A few wells reach the deeper Precambrian basement complex, but generally only where the sand and gravel aquifer is very thin or absent, or otherwise, for use as sumps.

Agriculture is important to the area economy, as agriculture comprises over 55 percent of the overall land use in the watershed (Figure UW21-2). The number of farms in both Langlade and Marathon counties has decreased steadily since 1980 however, the average farms size his increased. Total land in farms has decreased by about 7 percent in Langlade County and by 14 percent in Marathon County over the last 20 years.



The watershed was ranked per the Nonpoint Source Priority Watershed Selection Criteria. Based on surface and ground water data, the overall ranking is high, establishing a high priority for future grant eligibility through the Nonpoint Source Program. In 1997, a nonpoint source control plan was approved for the Spring Brook Creek Watershed. The anticipated completion date is December 2008 (Tollard, 1997).

POPULATION DEMOGRAPHICS

The population in Spring Brook Creek Watershed is estimated at 8,944 persons. Most of the watersheds population resides in the City of Antigo. Total watershed population has decreased since 1950, although the population is now starting to bounce back. Regional trends suggest that the watershed population will probably decrease at an average of three percent. Urban

development is not likely to be a major concern within this watershed (North Central Wisconsin Regional Planning Commission, 2000, Wisconsin Department of Administration, 2000).

According to land survey records from the mid-1800s, original vegetation consisted entirely of woodlands (Figure UW21-2). On the other hand, the current land use is comprised of agriculture (57%), forested (24%), grassland (12%), and 4% urban development (Figure UW21-1). The forests decreased in size when farmers started clearing trees for agriculture fields (Enterprise Information, 1998).

WATERSHED STREAMS

A summary of watershed streams is listed in Table UW21-1. Figure UW21-3 indicates total number of stream miles in the Spring Brook Creek Watershed.

Figure UW21-3. Total number of stream miles in the Spring Brook Watershed.

Exceptional Resource Waters = 17.0 (ERW or Cold I)

Outstanding Resource Waters = 0.0 (ORW or Cold II)

Cold III = 0.0

Warm Water Sport Fishery = .5 (WWSF)

Warm Water Forge Fishery = 1.5 (WWFF)

Limited Forage Fishery = 0.0 (LFF)

Limited Aquatic Life = 0.0 (LAL)

Unknown Classification = 0.0
Total of Stream Miles = 19.0
Number of Streams / Ditches= 1

Spring Brook

Spring Brook, a 19 mile long stream, flows southwesterly through Antigo before joining the Eau Claire River in northeast Marathon County. The stream is intermittent in the headwaters and spring-fed in the Antigo Flats area. There are no perennial feeder streams associated with Spring Brook.

Spring Brook is classified as a Class I trout stream for 17 of its 19 miles. The segment of stream not considered Class I trout stream lacks quality habitat, experiences warmer water temperatures, and exhibits poor dissolved oxygen conditions. This stretch of stream is classified as a warm water sport and forage fishery. Spring Brook is not reaching its highest potential use due to pollution form nonpoint sources. Eroding croplands and improperly managed livestock operation are the major sources of nonpoint pollution in the watershed.

WATERSHED LAKES

Antigo Lake

Antigo Lake is 32 acres in size and is comprised of a series of four interconnected basins. Maximum depth is 16 feet with an average depth is 7 feet. The drainage area of Antigo Lake is approximately 34.3 square miles. Spot checks of dissolved oxygen conditions in the lake during algal blooms show super saturated levels above 20 mg/L at the water's surface and under 3 mg/L only a few feet below the surface. These dissolved oxygen levels reveal that the summer algal blooms are having adverse chemical effects on the lake, which in turn effects the lake's fish population (Table UW21-2).

Antigo Lake offers a diverse recreational resource, but has a history of water quality problems including algae blooms, and excess levels of sediment, nutrients and organic matter which limit its use.

WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM PROGRAM (WPDES)

Table UW21-3 summarizes the WPDES found in Spring Brook Creek Watershed.

City of Antigo

This discharging facility has a designed to be used until 2018 and had major improvements made in 1998. The facility was designed to discharge 1.68 MGD, but only an average of 1.44 MGD was discharged in 1999. Activated sludge is the treatment type. The BOD load average in 1999 was 2,260 (#/day).

Antigo Cheese
Cheese factory with wastewater discharges from three outfalls. Outfall 001is condensate of whey that is discharged to City sewers for treatment at the municipal WWTP. Outfall 002 discharges approximately 35,000 gal/day of whey permeate with 20% used as animal feed and 80% landspread on agricultural lands. Outfall 003 discharges approximately 58,000 gal/day of noncontact cooling water to Spring Brook Creek.

GROUNDWATER

The Central Wisconsin Groundwater Center of the University of Stevens Point conducted well water samples in every watershed in the Central Wisconsin Basin for nitrates and triazine. In the Spring Brook Watershed 250 wells were tested for traces of nitrates, of the wells tested, 12.0 percent of had nitrate concentration over the allowable 10 parts per million for safe drinking water. Of the 12.0 percent of the wells that are over 10 parts per million, .4 percent of the wells contained nitrate concentrations greater than 20 parts per million.

Of the 9 wells tested for triazine in the Spring Brook Watershed, none of the well tested had concentrations greater then 1 part per billion of triazine. Since triazine can not be used to set standards for drinking water limitations it is strongly recommend that if a test result comes back above 1 part per billion of triazine the well should be tested further for total concentrations of atrazine.

WATERSHED RECOMMENDATIONS

1. Fisheries and Land Staff should determine the cause of excessive plant growth (Reed Canary Grass) below Antigo and evaluate control options and conduct dissolved oxygen studies.

2. Fisheries and Land Staff should continue to pursue land acquisition or leases along the Spring Brook Creek for streambank protection and habitat improvement.

3. Wastewater Staff should conduct site visits to determine if sand and gravel operations are impacting water quality.

4. Watershed Staff should conduct a Nonpoint Source Impact Assessment above County Highway B to assess current conditions.

5. Spring Brook Watershed should remain a high priority for future grant eligibility under the State Nonpoint Source Pollution Abatement Program

Table UW21-1 Spring BrookWatershed Langlade and Marathon Counties Square Miles: 67 Stream Miles: 19 NPS Stream Rank: High

Stream Name	Length (miles)	Codified Use	Biological Use (Existing)	Biological Use Potential	SUPPORTING USE FULLY-PART-NOT-THR/MILES	303(d) Listed Water	Assess. Categ. M E U	Trend	Integ Indic	Integ Status	Data Level[i]	PROBLEMS SOURCE//IMPACT	COM N R	REF.
Spring Brook Creek T30NR10ES27 WBIC: 1440800	19.0	ERW Cold DEF ERW	Cold I/0-11[b] WWFF/11-12.5[e] WWSF/12.5-13[e] Cold I/13-19[b]	Same Cold/1.5 Same Same	UNK/11.0 PART/1.5 UNK/0.5 UNK/6.0	Aq. Toxicity FCA	M	U		VP P G	B,H,P, C	GR.PIT/ URB/ CL/	R	89,90,91,139,153, 161,198

Table UW21-2. Spring Brook Watershed. Langlade and Marathon Counties NPS Lake Rank: Medium

Lake Name	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Antigo Lake T31NR11ES29 1441100	Trout Panfish LM Bass	R	32.0	7/NR	DG	39	2C		NT	DIST	/SED, MAC, WQ				SD Received Plan Grant
1 Unnamed Lake			1.0												

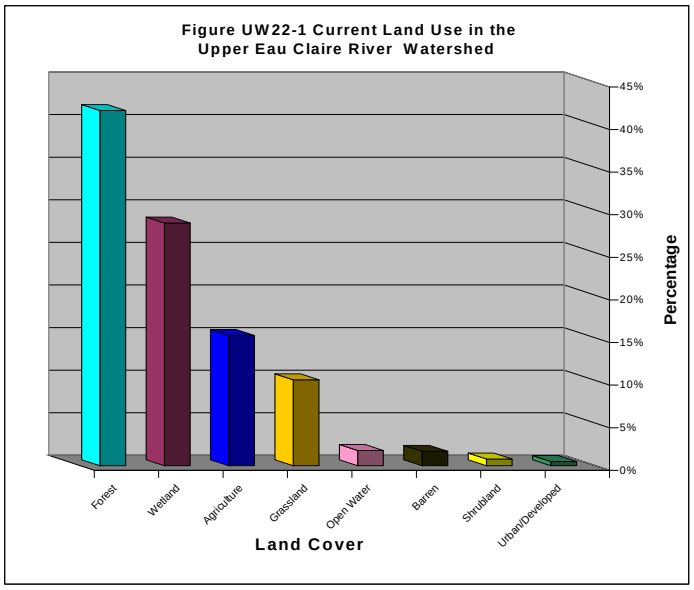
Table UW21-3. Spring Brook Watershed. Langlade and Marathon Counties. Wisconsin Pollution Discharge Elimination System (WPDES) Program

Facility	Permit No./ Expires	Industrial Or Municipal	Receiving Stream/ Classification G = groundwater	Q710 of Receiving Stream	Design Flow (MGD)	Variances	Phosphorus Limit	Facility Plan Candidate? Y/N	Waste Load Allocation	Recommendations
Antigo WWTP, City of (outfall located on ERW)	WI 0022144-6 9/30/03	M	Spring Brook Cr. Full Fish & Aquatic Life, CWS Fishery	2.5 cfs	1.68	No	Yes (1.0 mg/L)	No	NA	None
Antigo Cheese (formerly Craft Cheese) Condensate of Whey Whey Permeate NC Cooling Water	WI 0032794-6 12/31/04 Outfall 001 Outfall 002 Outfall 003	I	(Antigo POTW) G via land application Spring Brook Cr.	2.5 cfs	0.035 0.058	No	No	No	NA	None

UPPER EAU CLAIRE RIVER (UW22)

WATERSHED SUMMARY

The Upper Eau Claire River Watershed (Map UW22) is located in Marathon and Langlade counties. The Upper Eau Claire River Watershed is made up of 214 square miles in the northeastern part of the Central Wisconsin Basin. The most significant problems are associated with the livestock along the major tributaries, and streambank erosion in agricultural portions of the watershed.

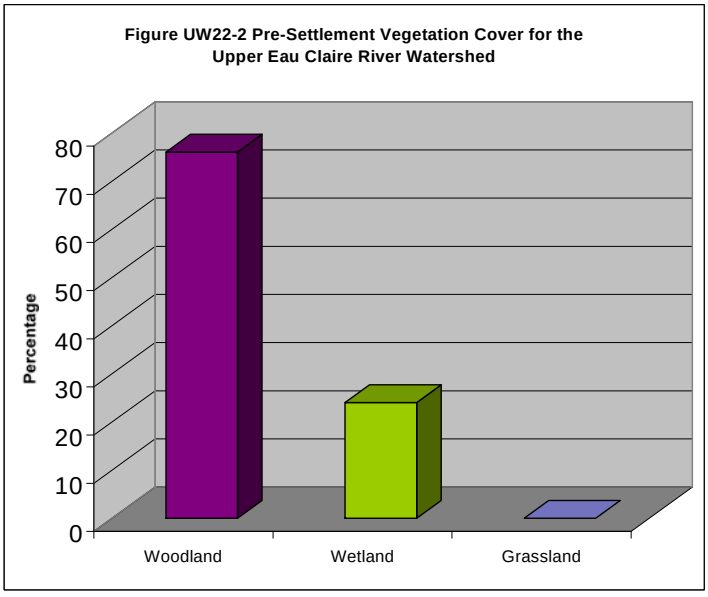


Water quality impacts include siltation/sedimentation from streambank pasturing. Biotic index sampling detected degraded water quality conditions throughout the entire basin.

The watershed was ranked using the Nonpoint Source Priority Watershed Selection Criteria. Based on surface and ground water data, the overall ranking is high, establishing a high priority for future grant eligibility through the Nonpoint Source Program.

POPULATION DEMOGRAPHICS

The overall watershed population consists of 4,545 people, slightly below the basin average of people/square mile ratio. Future projections indicate population will remain steady for the next 15 years (North Central Wisconsin Regional Planning Commission, 2000, Wisconsin Department of Administration, 2000).



Prior to the area being settled, the original vegetation was woodland with a quarter of the land wetlands (Figure UW22-2). The current land use decreases woodlands to just below half of the land and a slight increase in wetlands. In addition, agriculture and grasslands comprises a quarter of the land use (Figure UW22-1). With urban development comprising only two percent of the watersheds current land use, urban sprawl is not a major concern within this watershed (Enterprise Information, 1998).

WATERSHED STREAMS

A summary of watershed streams is listed in Table UW22-1. Figure UW22-3 indicates total number of stream miles in the Upper Eau Claire Creek Watershed.

Figure UW22-3. Total number of stream miles in the Upper Eau Claire River Watershed.

Exceptional Resource Waters = 24.7
(ERW or Cold I)

Outstanding Resource Waters = 59.4
(ORW or Cold II)

Cold III = 6.0

Warm Water Sport Fishery = 11.1
(WWSF)

Warm Water Forge Fishery = 36.0
(WWFF)

Limited Forage Fishery = 0.0
(LFF)

Limited Aquatic Life = 0.0
(LAL)

Unknown Classification = 47.9
Total of Stream Miles = 185.1
Number of Streams / Ditches= 52

East Branch of The Eau Claire River
A survey conducted by Fisheries Management, revealed streambank pasturing and barnyard run-off resulting in added unwanted nutrients and sediments to the river, plus destruction of fish habitat. The branch is classified as both a Class II and III trout stream, and a valuable forage fishery. Sand and gravel operations exist on or near this branch. It is unknown if these operations are having a detrimental impact on water quality and fish habitat.

Owen Creek
Owen Creek is a Class I trout stream. Biotic index sampling in 1984 showed fairly poor water quality. The old City of Antigo landfill may affect water quality.

West Branch of the Eau Claire River
A stream survey conducted by Fisheries Management indicated streambank pasturing was destroying fish habitat and increasing in-stream sedimentation.

WATERSHED LAKES

The Upper Eau Claire River Watershed contains the highest number of lakes in the Central Wisconsin Basin (Table UW22-2). Many of the lakes are seepage lakes, meaning they do not have an inlet or outlet. Depending on existing water quality conditions, these lakes may be sensitive to increased phosphorus loading. Currently, there is insufficient data to assess trophic conditions.

WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM PROGRAM (WPDES)

Table UW21-3 summarizes the WPDES found in Spring Brook Creek Watershed.

Summit Lake Laundromat
Gray water discharge from self-serve Laundromat. Owner is currently evaluating hold/haul alternatives with landspreading or treatment at municipal wastewater treatment facility being considered. Groundwater discharges are not expected to continue in the near future.

GROUNDWATER

The Central Wisconsin Groundwater Center of the University of Stevens Point conducted well water samples in every watershed in the Central Wisconsin Basin for Nitrates and Triazine. In the Upper Eau Claire River watershed 243 wells were tested for traces of nitrates, of the wells tested, 10.7 percent of them were over the allowable 10 parts per million for safe drinking water. Of the 10.7 percent of the wells that had nitrate concentrations over 10 parts per million, .8 percent of the wells contained nitrate concentrations greater than 20 parts per million.

Of the 18 wells tested for triazine in the Upper Eau Claire River watershed, none of the wells tested had concentrations greater then 1 part per billion of triazine. Since triazine can not be used to set standards for drinking water limitations it is strongly recommend that if a test result comes back above 1 part per billion of triazine the well should be tested further for total concentrations of atrazine.

WATERSHED RECOMMENDATIONS

1. Upper Eau Claire River Watershed should be considered a high priority for future grant eligibility under the State Nonpoint Source Pollution Abatement Program.

2. Fish and Aquatic Habitat Staff should conduct baseline monitoring on watershed streams and lakes.

3. The East Branch of the Eau Claire River from Highway 64 North to T33N R11E Sec. 35 SW ¼ should be considered an Exceptional Resource Water under NR 102.

Table UW22-1 Upper Eau Claire River Watershed Langlade and Marathon Counties Square Miles: 214 Stream Miles: 158.1
NPS Stream Rank: High

Stream Name	Length (miles)	Codified Use	Biolgical Use (Existing)	Biological Use Potential	SUPPORTING USE FULLY-PART-NOT-THR/MILES	303(d) Listed Water	Assess. Categ. M E U	Trend	Integ Indic	Integ Status	Data Level[i]	PROBLEMS SOURCE//IMPACT	COM N R	REF.
Black Brook T31NR10ES29 WBIC: 1445800	10.0	DEF	WWFF/0-10.0[e]	Same	UNK/10.0		E	U					R	8
Clearwater Creek T32NR10ES15 WBIC: 1447000	5.0	ERW	Cold I/0-5.0[b]	Same	UNK/5.0		M	U					R	8,153,4
E. Br. Eau Claire Riv. T31NR10ES28 WBIC: 1442200	36.0	Cold Cold DEF	Cold II/0-12[b] Cold III/12-18[b] WWFF/18-36[e]	Same Same Same	PART/12.0 PART/6.0 PART/18.0		M	U			B,P	GR.PIT/ PSB/NUT,HAB, SED,BY/NUT	R	153,92, 198
Eau Claire River T28NR10ES13 WBIC: 1437600	11.1	DEF	WWSF/0-11.1[e]	Same	UNK/11.1		E	U					R	8,139,143
Owen Creek T30NR10ES01 WBIC: 1441800	7.0	ERW	Cold I/0-7.0[b]	Same	UNK/7.0		E	U		P	B,H,P		N	153,139, 76,161
Sucker Creek T32NR10ES15 WBIC: 1447300	9.0	Cold	Cold II/0-9.0[b]	Same	UNK/9.0		M	U					R	153,139, 93
W. Br. Eau Claire Riv. T31NR10ES28 WBIC: 1445700	32.0	Cold	Cold II/0-32.0[e]	Same	PART/32.0		M	U			B,P	PSB/HAB,SED	R	153,139,4
Unnamed Creek T31NR10ES18 WBIC: 1446000	8.0	DEF	WWFF/0-8.0[e]	Same	UNK/8.0		U	U						8
Unnamed Creek T31NR10ES15 WBIC: 1442300	2.0	Cold	Cold II/0-2.0[b]	Same	UNK/2.0		U	U						153
Unnamed Creek T31NR10ES27 WBIC: 1442100	2.0	ERW	Cold I/0-2.0[b]	Same	UNK/2.0		U	U						153
Unnamed Creek T32NR10ES05 WBIC: 1449200	1.0	Cold	Cold I/0-1.0[b]	Same	UNK/1.0		U	U						153
Unnamed Creek T32NR10ES06 WBIC: 1449300	0.4	Cold	Cold II/0-0.4[b]	Same	UNK/0.4		U	U						153
Unnamed Creek T32NR10ES15 WBIC: 1446900	1.0	Cold	Cold II/0-1.0[b]	Same	UNK/1.0		U	U						153
Unnamed Creek T32NR10ES22 WBIC: 1446800	1.0	Cold	Cold II/0-1.0[b]	Same	UNK/1.0		U	U						153
Unnamed Creek T32NR10ES35 WBIC: 1442400	4.0	ERW	Cold I/0-4.0[e]	Same	UNK/4.0		M	U						153,92
Unnamed Creek T32NR11ES01 WBIC: 1444000	1.0	ERW	Cold I/0-1.0[b]	Same	UNK/4.0		U	U						153

Stream Name	Length (miles)	Codified Use	Biolgical Use (Existing)	Biological Use Potential	SUPPORTING USE FULLY-PART-NOT-THR/MILES	303(d) Listed Water	Assess. Categ. M E U	Trend	Integ Indic	Integ Status	Data Level[i]	PROBLEMS SOURCE//IMPACT	COM N R	REF.
Unnamed Creek T32NR11ES01 WBIC: 1443800	0.2	ERW	Cold I/0-0.2[b]	Same	UNK/0.2		U	U						153
Unnamed Creek T32NR11ES02SESE WBIC: 1443400	0.1	ERW	Cold I/0-0.1[b]	Same	UNK/0.1		U	U						153
Unnamed Creek T32NR11ES01SENE WBIC: 1443600	0.1	ERW	Cold I/0-0.1[b]	Same	UNK/0.1		U	U						153
Unnamed Creek T32NR11ES11NENENW WBIC: 1443200	0.1	ERW	Cold I/0-0.1[b]	Same	UNK/0.1		U	U						153
Unnamed Creek T32NR11ES11NENWSE WBIC: 1442800	0.1	ERW	Cold I/0-0.1[b]	Same	UNK/0.1		U	U						153
Unnamed Creek T32NR11ES11NENWNE WBIC: 1443000	0.1	ERW	Cold I/0-0.1[b]	Same	UNK/0.1		U	U						153
Unnamed Creek T32NR11ES13 WBIC: 1450000	2.0	ERW	Cold I/0-2.0[b]	Same	UNK/2.0		U	U						153
Unnamed Creek T33NR10ES31 WBIC: 1449400	3.0	ERW	Cold I/0-3.0[b]	Same	UNK/3.0		U	U						153
Unnamed Creek T33NR10ES31 WBIC: 1449500	1.0	Cold	Cold II/0-1.0[b]	Same	UNK/1.0		U	U						153
27 Unnamed Creeks	47.9													

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Table UW22-2. Upper Eau Claire River Watershed. Langlade and Marathon Counties NPS Lake Rank: Low

Lake Name	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Airhole Lake T34NR10ES33 967200	Panfish LM Bass	BR	86.0	10/NR	SE	1.3	1C		NT	No					SD
Alga Lake T33NR10ES14 967500	Panfish	T	11	12	SE	.1	1C		NT	No					SD
Alta Lake T33NR10ES13 968000	Panfish LM Bass	W	10.0	17/NR	SE	.1	1C		NT	No					SD
Anderson Lake T32NR11ES03 968400	Panfish LM Bass N. Pike		33.0	11/NR	SE	1.5	1C		NT	No	/WK				SD
Beaver Lake T33NR10ES09 970500		T	10	7	SE	.1	1C		NT	No					SD
Birch Lake T33NR10ES10 971800	Panfish	W	16.0	14/NR	SE	.1	1C		NT	No					SD
Black Oak Lake T33NR10ES35 1447200	Panfish LM Bass N. Pike	BR	59.0	32/NR	SE	.7	1C		NT	No	/WQ,WK				SD
Bogus Lake T33NR10ES24 1444900	Panfish	NW	13.0	18/NR	DG	7.3			NT	No					SD
Borth Lake T32NR11ES06 973100	Panfish LM Bass N. Pike	BR	33.0	16/NR	SE	.2	1C		NT	No					SD
Bullhead Lake T33NR10ES08 1450800	Panfish	NW	19.0	10/NR	DG	2.9			NT	No					SD
Chub Lake T33NR11ES30 1444700	Panfish	NW	13.0	12/NR	DG				NT	No					SD
Clear Lake T33NR10ES03 977000	Panfish LM Bass	W	88.0	23/NR	SE	.5	1C		NT	No					SD
Crooked Lake T33NR10ES26 978800	Panfish LM Bass N. Pike	BR	14.0	12/NR	SE	.1	1C		NT	No					SD
Deep Wood Lake T33NR10ES14 1445100	Panfish LM Bass Muskie	BR	72.0	10/NR	DG	5.4			NT	Assc.	/MAC				SD
Duck Lake T34NR10ES33 981500	Panfish LM Bass N. Pike		123.0	19/NR	SE	10.1	1C		NT	No					CH

Lake Name Cont.	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Dynamite Lake T33NR10ES05 1451700	Panfish LM Bass N. Pike	No	97.0	22/NR	DG	.8			NT	No					SD
Eagle Lake T33NR10ES21 982600	Panfish LM Bass	W	17.0	21/NR	SE	.1	1C		NT	No					SD
Elder Lake T33NR10ES04 1451600	Panfish	W	11.0	18/NR	DN	.1			NT	No					SD
Evangeline Lake T33NR11ES33 983700	Panfish LM Bass	W	7.0	10/NR	SE	.1	1C		NT	No					SD
Ferguson Pond T33NR11ES36 1444200	Trout		2.0	8/NR	SP	.1	1C		NT	No					SD
Fox Lake T33NR10ES10 985700	Panfish	W	11.0	14/NR	SE	.1	1C		NT	No					SD
Gabriel Lake T33NR11ES33 986300	Panfish LM Bass	R	15.0	8/NR	SE	.1	1C		NT	No					SD
Game Lake T33NR11ES26 986400	Panfish LM Bass	W	21.0	35/NR	SE	.1	1C		NT	No					SD
Greater Bass Lake T33NR10ES11 1445500	Panfish LM Bass N. Pike	BR	246.0	27/11	DG	6.4			NT	Dist.	.	.	.	.	SAD,SD Received Plan Grant
High Lake T33NR11ES27 1444600	Panfish LM Bass N. Pike	W	27.0	18/NR	DN	.2			NT	No					SD
High Lake T33NR11ES31 989900	Panfish LM Bass	W	8.0	27/NR	SE	.2	1C		NT	No					SD
Horseshoe Lake T33NR10ES17 1448600	Panfish LM Bass	DN	12.0	29/NR	DN	.1			NT	No					SD
Indian Lake T33NR10ES23 991900	Panfish LM Bass	BR	15.0	26/11	SE	.1	1C		NT	No					SD
Jack Lake T33NR11ES22 992400	Trout Panfish LM Bass	BR	86.0	38/18	SE	.9	1C		NT	No					SD
Kettle Lake T33NR10ES11 1445200	Panfish LM Bass N. Pike	NW	8.0	14/NR	DG				NT	No					SD
Kimball Lake T32NR11ES06 993800	Panfish LM Bass N. Pike	BR	20.0	17/NR	SE	.1	1C		NT	No	/WK,MAC				SD

Lake Name Cont.	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Lady Lake T33NR10ES01 996600	Panfish LM Bass N. Pike		23.0	24	SE	.1	1C		NT	No					SD Received Plan Grant
Little Partridge Lake T33NR10ES08 999700	Panfish		13	37	SE	.1	1C		NT	No					SD
Little Pike Lake T33NR10ES16 999800	Panfish	W	11.0	16/NR	SE	.2	1C		NT	No					SD
Long Lake T33NR10ES35 1000900	Panfish LM Bass N. Pike	BR	79.0	22	SE	.4	1C		NT	No	/WK				CH
Low Lake T33NR11ES28 1444400		W	12.0	9/NR	DG	.3			NT	No					SD
Lower Bass Lake T33NR10ES36 1002300	Panfish LM Bass N. Pike	BR	89.0	19/NR	SE	.5	1C		NT	No					SD
Lower Clear Lake T33NR10ES25 1002400	Panfish LM Bass	BR	81	20	SE	.3	1C		NT	No	/MAC				SD
Lower Wolf Lake T33NR10ES08 1450600	Panfish		8.0	10	DG	.5			NT	No					SD
North Neva Lake T32NRR11ES10 1007200	Panfish LM Bass N. Pike	NW	13.0	12/NR	SE	.1	1C		NT	No					SD
Noboken Lake T33NR11ES20 1008000	Panfish LM Bass N. Pike	W	27.0	53/NR	SE	.3	1C		NT	No					SD
Ormsby Pond T32NR10ES16 1448800	Trout Panfish LM Bass	R	24.0	6/NR	DG	21.1			NT	No					SD
Partridge Lake T33NR10ES17 1009500	Trout Panfish LM Bass		34	33/NR	SE	.2	1C		NT	No					SD
Pence Lake T33NR11ES25 1010100	Trout	BR	25.0	33/16	SE	.7	1C		NT	No					SD
Perch Lake T33NR10ES10 1010300	Panfish LM Bass SM Bass		19.0	22/NR	SE	.1	1C		NT	No					SD
Perch Lake T33NR10ES22 1010400	Panfish LM Bass	W	9.0	30/NR	SE	.1	1C		NT	No					SD
Peters Lake T32NR11ES01 1011500			10.0	5/NR	SE	.1	1C		NT	No					SD

Lake Name Cont.	Fishery Use	Access	Area (acres)	Max/Mean Depth (Feet)	Lake Type	Watershed Drainage	Phos. Class	TSI Range	Fish Advis.	LMO	Impair Source/Impact	Aquatic Plant Data	Exotics	Self-Help Monitoring	Recommends.
Rogers Lake T33NR11ES34 1014200	Trout Panfish	T	14.0	30/10	SE		1C		NT	No					SD
Saddlebag Lake T33NR10ES17 1448400	Panfish LM Bass		24.0	31/NR	DG	.3			NT	No					SD
South Neva Lake T32NR11ES10 1015200	Panfish LM Bass N. Pike	BR	33.0	26/NR	SE	.2	1C		NT	No					SD
Snag Lake T33NR11ES23 1018400	Panfish LM Bass N. Pike	BR	21.0	23/10	SG	.2			NT						SD
Squaw Lake T33NR10ES23 1019700	Panfish LM Bass	BR	12	20	SE	.1			NT						SD
Sucker Lake T33NR10ES21 1447400	Panfish LM Bass	W	26.0	22/NR	DG	3.4			NT						SD
Summit Lake T33NR10ES02 1445600	Panfish LM Bass Walleye	BR	282.0	26/NR	DG	4.6			Yes						SD
Sunfish Lake T33NR10ES36 1020700	Panfish LM Bass		11.0	14/NR	SE	.1	1C		NT						SD
Susan Lake T33NR10ES14 1021100	Panfish LM Bass	W	23.0	16/NR	SE	.1	1C		NT						SD
Townline Lake T33NR10ES06 1023000	Trout	BR	16.0	35/NR	SE	.1	1C		NT						SD
Typner Lake T33NR10ES26 1023700	Panfish LM Bass		18.0	15/NR	SE	.2	1C		NT						SD
Upper Wolf Lake T33NR10ES08 1450700	Panfish LM Bass		5.0	22/NR	DN	.1			NT						SD
Upper Ventor Lake T33NR11ES25 1176300	Panfish	W	13.0	22/NR	SE	.1	1C		NT						SD
Lower Ventor Lake T33NR12ES30 1176600	Panfish	W	12	19	SE	.1	1C		NT						SD
Water Power Lake T33NR10ES11 1445400	Panfish LM Bass N. Pike	BR	22.0	15/8	DG	5.0			NT		/MAC				SD

Table UW22-3. Upper Eau Claire River Watershed. Langlade and Marathon Co. (WPDES)

Facility	Permit No./ Expires	Industrial Or Municipal	Receiving Stream/ Classification G = groundwater	Q710 of Receiving Stream	Design Flow (MGD)	Variances	Phosphorus Limit	Facility Plan Candidate? Y/N	Waste Load Allocation	Recommendations
Summit Lake Laundromat	WI 0056111-2 8/30/99 (expired)	I	G	N/A	0.005	N/A	N/A	N/A	NA	None