

CHAPTER 5 - AGRICULTURAL, NATURAL, AND CULTURAL RESOURCES

66.1001 (2)(e) Wis. Stat.:

Agricultural, Natural and Cultural Resources element. A compilation of objectives, policies, goals, maps, and programs of the conservation, and promotion of the effective management of natural resources such as groundwater, forests, productive agricultural area, environmentally sensitive areas, threatened and endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, metallic and non metallic mineral resources, parks, open spaces, historical and cultural resources, community design, recreational resources and other natural resources.

Section 5.1 Introduction

The agricultural, natural, and cultural resources of the Town of Stockton are some of the most important reasons why people choose to live here. Natural woodlands, wetlands, varied and abundant wildlife, with farmland, all come together to create landscapes rare in Wisconsin.

The residents also understand that natural, historical and cultural resources of the community are part of the rich quality of life that is enjoyed by all who live there.

Section 5.2 Agricultural Inventory

A. Highly Productive Agricultural Soils (from County Conservationist Steve Bradley)

Highly Productive agricultural soils in the Town of Stockton have been identified by using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey, based on highest productivity and lowest degree of limitations for farming (see Map 5.1 Highly Productive Agricultural Soils). Slopes greater than 6% were excluded from the “highly productive” designation (due to potential water erosion), along with small parcels and stony, rough and eroded sites. Highly productive soils in Stockton are listed below.

In an effort to identify the extent and location of important farmlands, the NRCS, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

“Prime farmland” is of major importance in meeting the Nation’s short-and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the USDA recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime Farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustainable high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general,

prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the NRCS.

For some of the soils identified in Table 5.1 as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be “farmland of statewide importance” for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law. *(The above information taken from the USDA Natural Resources Conservation Service website on Prime and Other Important Farmlands)*

*Note: Nitrates and pesticides applied on loamy sand soils will readily leach and contaminate groundwater.

Table 5.1: Prime Soils in Portage County, (from NRCS)

All areas are prime farmland

Bt, Billet sandy loam, 0 to 2% slopes
 DuB, Dunnville, very fine sandy loam, 2 to 6% slopes
 MfB, Mecan loamy sand, 2 to 6% slopes
 MgB Mecan sandy loam, 2 to 6% slopes
 NoB, Norgo silty loam, moderately deep variant, 2 to 6% slopes
 RhA, Rockers loamy sand, 1 to 3% slopes
 RsB, Rosholt loam, 2 to 6% slopes
 Rt, Rosholt loam, loamy substratum, 0 to 2% slopes
 RzB, Rozellville loam, 2 to 6% slopes

Farmland of statewide importance

Ca, Cathro muck
 KrB, Franski loamy sand, 2 to 6% slopes
 LeA, Leloa loamy sand, 0 to 3% slopes
 RfA, Richford loamy sand, 0 to 2% slopes
 RfB, Richford loamy sand, 2 to 6% slopes
 RgB, Richford loamy fine sand 2 to 6% slopes
 RrA, Rosholt sandy loam, 0 to 2% slopes
 RrB, Rosholt sandy loam, 2 to 6% slopes

Prime Farmland if Drained

Oesterle sandy loam
 Oesterle loam, silty subsoil variant
 Point sandy loam, 1-3 percent slopes

Map 5.1 Highly Productive Agricultural Soils

The Wisconsin Farmland Preservation Program allows local governments to preserve important farmlands through local planning and zoning and to provide tax relief to farmers. In order to participate in the tax credit program, land must be covered by a certified exclusive agricultural zoning ordinance, or in lieu of zoning, a long-term farmland preservation agreement.

B. Farming Systems, Demographics, and Land Tenure

The agricultural landscape of the Town of Stockton can best be described as a “coming together” of farming systems. The Town is located in two major farm regions in Wisconsin. First and most prominent is the dairy region. In Wisconsin, dairying is most concentrated in a belt that begins near Hudson (St. Croix County), heads east to Wausau and Green Bay (Brown County), then turns southwest through Fond du Lac, Madison and ends near Dubuque (Iowa County). Wisconsin Department of Agriculture 2002 permit information listed twenty-nine (29) active grade-A dairy farms operating in the Town of Stockton. To the south in Buena Vista, there were twelve (12) farms; to the north in Sharon there were twenty-one (21); to the west in Plover, there were four (4) farms; and in Hull there were two (2) farms; and to the east in Amherst, there were sixteen (16) farms; and in New Hope, there were thirteen (13) farms. The second farming region that Stockton is in is that of fresh vegetable production.

The irrigated sands of the “golden sands” region of Wisconsin lay between Amherst and the Stevens Point area. Stockton is in the middle of this large irrigated plain and there are a number of producers who have scattered vegetable operations within the Town. While no exact acreage numbers are available, the presence of pivot irrigation rigs is one key indicator of vegetable production. There were approximately 29 irrigation pivots in Stockton in 2000. Some of these fields may not be used for vegetable production, but odds are the majority have been used for this industry. The expansion of U.S. Hwy 10 through Stockton may impact some of these rigs, further reducing the production of vegetables in the community.

There were 135 persons employed in an agriculturally related field in the Town of Stockton in 2000 (Table 1.10, Issues and Opportunities section). This represented 8.1% of employment for the Town. This is down substantially from the 1980 figure of 209 persons (22.2%). However, Stockton does have a slightly higher percentage of Ag. related employment when compared to the town average in Portage County of 6.9% for 2000. Decreasing farm employment is not a unique trend by any means. Farm numbers are down wherever you look, while acreage per farm is up. Farm consolidation is a common practice in this industry.

The amount of land dedicated to agricultural production does change regularly from year to year. In 2000, the Portage County Planning and Zoning Office analyzed aerial photography for the Town of Stockton to identify active farmland within the Community. The land in farms was broken down by presence of irrigation, 7,748 acres; use for non-irrigated cropland, 11,588 acres; and permanent pasture, 439 acres. Total agricultural acres identified for 2000 were 19,775.

C. Farm Economy and Infrastructure

Because of the lack of farm economy information available at the Town level, a detailed discussion of the farm economy at the Town level is not practical. Please see the complete discussion of the Portage County farm economy in the Agricultural, Natural, and Cultural Resources Chapter of the Portage County Comprehensive Plan.

D. Other Local Influences on Agriculture

The Stockton area has seen some pressure for the development of rural residential properties. This has brought more homes onto the agricultural landscape, increased the potential for conflict, and increased the assessed value of non-farmed lands.

Agricultural lands within Stockton have been identified by the City of Stevens Point for future urban expansion. The Village of Plover's adopted Comprehensive Plan does not identify impacts to the Town of Stockton's agricultural land through 2025.

E. Agricultural Programs

A number of programs are available to agricultural landowners to help achieve desired outcomes ranging from enhancing wildlife habitat to minimizing soil erosion. The following is a partial list from the Natural Resources Conservation Service (NRCS). For more information about these and other programs contact the local NRCS office at 715-346-1325 or the Farm Service Agency at 715-346-1313.

1. Conservation Reserve Program (CRP)

The Conservation Reserve Program, administered through the Farm Service Agency (FSA), is a voluntary program for agricultural landowners. Through CRP, one can receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland. Participants enroll in CRP for 10 to 15 years.

2. Environmental Quality Incentives Programs (EQIP)

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program. It supports production agriculture and environmental quality as compatible goals. Through EQIP, farmers may receive financial and technical help with structural and management conservation practices on agricultural land.

EQIP may pay up to 75 percent of the costs of eligible conservation practices. Incentive payments may be made to encourage a farmer to adopt land management practices, such as nutrient management, manure management, integrated pest management, and wildlife habitat management.

3. Wetlands Reserve Program (WRP)

The Wetlands Reserve Program is a voluntary program to restore and protect wetlands on private property. It is an opportunity for landowners to receive financial incentives to restore wetlands that have been drained for agriculture.

Landowners who choose to participate in WRP may sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limits future use of the land, yet retains private ownership. The landowner and NRCS develop a plan for the restoration and maintenance of the wetland.

The program offers landowners three options: permanent easements, 30-year easements, and restoration cost-share agreements of minimum 10-year duration.

4. Wildlife Habitat Incentives Program (WHIP)

The Wildlife Habitat Incentives Program is a voluntary program for people who want to develop or improve wildlife habitat on private lands. It provides both technical assistance and cost sharing to help establish and improve fish and wildlife habitat.

Landowners agree to prepare and implement a wildlife habitat development plan. The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) provides technical and financial assistance to implement the wildlife habitat restoration practices.

5. Soil and Water Resource Management Program (SWRM-DATCP 50)

The Soil and Water Resource Management Program is administered under state code DATCP 50. The program is designed to conserve Wisconsin's soil and water resources, reduce soil erosion, prevent non-point source pollution and enhance water quality. Cost sharing is provided to qualified applicants who enroll in long-term agreements to help manage practices, such as intensive grazing. For more information, contact the County Land Conservation Department.

6. Priority Watershed Program

The Priority Watershed program is a state program that was created in 1978 to provide financial assistance to local units of government in selected watersheds to address land management activities. The goal of the program is to improve and protect surface and groundwater quality by reducing pollutants from urban and rural non-point sources. Erosion from agricultural operations, stream banks and developing urban areas and runoff from livestock wastes and urban areas are examples of non-point sources of pollution. The Tomorrow/Waupaca River Priority Watershed Program will sunset at the end of 2007.

The three watersheds identified by the Wisconsin Department of Natural Resources located in the Town of Stockton include the Plover and Little Plover River in the northwest, the Fourmile and Fivemile Creek in the southwest; and the Tomorrow /Waupaca River in the eastern half.

Section 5.3 Agricultural Issues and Conclusions

- A. In 2001 a County-wide survey of resident's attitudes was completed by the Portage County Planning and Zoning Department. The Town of Stockton survey results, in their entirety, are included in Appendix B; the following are Stockton survey responses related to Agriculture.

Survey Question 16: Portage County should work with farmers to identify and protect productive agriculture regions:

Agree/Strongly Agree
83%

Disagree/Strongly Disag.
5%

Survey Question 17: Local units of government in Portage County should address the issue of development in productive agricultural regions by:

	Agree/Strongly Agree	Disagree/Strongly Disag.
17a. Preserving farmland at all costs.	57%	21%
17b. Protecting farmland, but allowing growth in areas not suitable for ag use.	71%	15%
17c. Not protecting farmland, owners develop as they see fit.	13%	71%

Survey Question 18: The rural economy of Portage County should be protected by having growth directed into and around existing developed areas.

Agree/Strongly Agree	Disagree/Strongly Disag.
70%	11%

B. The following issues and conclusions related to agriculture were identified through public hearings, open meetings, the planning process, by Town Committees and volunteer working groups.

1. How does the Town support Agriculture?
 - Agriculture is an important part of life and livelihood in the Town of Stockton, and land for farming should be preserved where possible.
 - The Town should encourage best management practices for agriculture.
 - The Town should support niche markets and promote specialty agricultural operations where appropriate.
2. How can the Town allow for development, yet still protect larger tracts of agricultural land or natural resources?
 - Review the lot density option to be developed within the Portage County Zoning or Subdivision Ordinance to determine its usefulness for the Town of Stockton.
 - Based on survey results and discussions throughout the planning process, the Town will use some type of land assessment tool to evaluate agricultural lands within its boundaries.
3. How can the Town help minimize farm/nonfarm conflicts?
 - As our Town grows, potential conflicts exist between farm and non-farm residents concerning agricultural practices and road issues. How can the Town educate its residents about living in a rural community?

Section 5.4 Agricultural Goals, Objectives, and Policies

A. Goal

Preserve agricultural lands where appropriate, and maintain local conditions that support the Town’s agricultural economy.

B. Objectives

1. Identify areas of Stockton with active agricultural operations.
2. Encourage agricultural practices that protect air, soil, water and wildlife resources, and reduce farm/non-farm conflicts.
3. Promote agriculture that is appropriate with existing topography and which protects the quality of surface and groundwater resources, including minimizing the loss of soil or agricultural chemicals to ground and surface water, as well as, the proper location and maintenance of on-site sewage systems associated with residential development.
4. Support farmers who identify niche markets suitable for their operations.

C. Policies

1. The Town will use some type of land assessment tool to evaluate agricultural lands within its boundaries prior to the first plan update.
2. Support the Right-to-Farm laws (Wis. Stat. 823.08) and agricultural operations from nuisance claims by working with organizations and agencies to educate the public regarding operations and activities of the agricultural community and expectations of living near or adjacent to agricultural uses (common agricultural practices, odor, noise, dust, etc.).
3. Work with Portage County Planning and Zoning and the Portage County Board of Adjustments to support new and existing agricultural operations and their practices within the zoning limits.
4. Encourage and promote lot density and/or cluster development to help preserve agricultural operations and rural character of the Town.
5. Encourage farmers to work with agencies and organizations to develop and implement farm plans, procedures and Best Management Practices that help protect surface and groundwater, riparian lands and minimize field and feedlot runoff into surface waters.
6. Support farmers participating in the farmland preservation program to have their land classified exclusive agriculture, consistent with state law.

Section 5.5 Natural Resources Inventory

Natural resources in the Town serve as the foundation for resident's physical and economic well-being – from groundwater quality to land suitability for agricultural, residential, or commercial development. According to the results of the 2001 Comprehensive Planning and Zoning Survey, Town residents favored managing the natural resources that support and sustain them.

This section will describe the existing natural resources inventory and state the issues, goals, objectives, and policies that were identified by the Town of Stockton Smart Growth Committee, open meeting process, public participation and adopted by the Town of Stockton Plan Commission, and Town Board.

A. Geomorphology

The land surface in the Town of Stockton has been shaped largely by glacial activity. During the glacial age, the continental ice sheet advanced across the eastern half of the Town, moving in a southerly and westerly direction. Minor advances and retreats of the ice front formed as series of north-south moraines, as ice-transported sediments were dumped near the forward edge of the ice sheets. These moraines are comprised of a wide variety of unsorted materials picked up by the advancing ice sheets, some from local bedrock and some from areas further east. The Arnott moraine marks the western limit of glacial advance in the Town. The other major moraine is the Hancock moraine locally known as Custer Ridge.

As the ice sheets eventually retreated, massive volumes of melt water flowed westward, toward the Wisconsin River. The moraines acted as dams, creating temporary reservoirs for the large volumes of sediments carried by the melt waters. The melt waters eventually cut channels through the various moraines, which acted as drainage outlets. Thus, sand and gravel were deposited to the west of each moraine, creating a series of outwash plains. In some areas, portions of the moraines were partially buried by outwash deposits.

In contrast to the well-sorted and stratified sand and gravel of the western outwash plains, the eastern half of the Town is comprised of unsorted deposits, know as till. This till was deposited directly by glacial ice sheets and consists of clay, sand, gravel, and boulders, all intermingled. Soils in the Town can be grouped into six soil associations:

- **Richford-Rosholt-Billett Association:** Well-drained, nearly level to gently sloping soils, occurring in the western half of the Town. These soils are formed in glacial outwash plains of sand and gravel. Most of this association is used for irrigated vegetable crop production.
- **Kranski-Coloma-Mecan Association:** Deep, excessively drained soils, occurring on hills and moraines in the central part of the Town. These soils are formed in deep sand or glacial till. Soils of this association are uses for crops and pasture, or woodlands on the steeper slopes.
- **Wyocena-Rosholt-Mosinee Association:** Well-drained, gently to very steeply sloping soils, occurring in the northeast and southeast parts of the Town. These soils are formed in loamy deposits and glacial till or outwash. This association is used for crops, or pasture and woodlands on the steeper slopes.

Map 5.2 General Soils

Map 5.3 Topography

Map 5.4 Surface Water, Wetlands, and Floodplains

- Point-Dancy-Mosinee Association: Well-drained to somewhat poorly drained, gently sloping soils, occurring along the Arnott moraine in the western part of the Town. They are formed in loamy deposits and materials weathered from underlying rock. Most of these soils are used as woodlands.
- Roscommon-Meehan-Markey Association: Poorly to very poorly drained, nearly level soils, occurring in the northwest part of the Town, in conjunction with the Jordan Marsh. These soils are formed in loamy or organic materials over sand. Most of this association is used for wildlife habitat or has been drained for crops.
- Markey-Seelyeville-Catho Association: Very poorly drained, nearly level soils that formed in organic deposits over sandy and loamy deposits.

Soil testing by a certified soil tester is strongly recommended for more detailed, site-specific information.

B. Surface Water, Wetlands, and Flood plains (Map 5.4)

1. Surface Water

The major surface water bodies that are present in the Town of Stockton are Lake Thomas, Bear Lake, and Adams Lake. These lakes are located in the southeastern part of the Town. Other surface water features in the Town include Bear Creek, Little Plover River, Lost Creek and Tomorrow River.

A recent two year study of 29 water bodies in Portage County was conducted by the University of Wisconsin-Stevens Point and the Portage County Land Conservation Office. Three lakes in the town of Stockton were studied including Lake Thomas, Bear Lake and Adams Lake. Key information is listed below. Additional details on these lakes can be obtained from the Stockton Town Hall office as well as from the above-mentioned agencies.

Lake Thomas and Bear Lake are classified as shallow soft water seepage lakes. Water enters Lake Thomas and Bear Lake from groundwater, runoff and precipitation. Water exits the lakes to groundwater. The fluctuation of the groundwater table significantly impacts the water level in these lakes. Shallow lakes are considered Wisconsin gems due to their unique aquatic life. Soft water seepage lakes are more susceptible to runoff contamination since they have no river system coming into or going out of it.

Adams Lake is a drainage lake; water enters Adams Lake from groundwater, one intermittent inlet on the north side of the lake, runoff and precipitation. Water exits Adams Lake through the outlet (Bear Creek) at the east end of the lake and through groundwater.

These lakes are becoming eutrophic due to increased nutrients from runoff and stirred up phosphorous rich sediment. Water clarity is poor. Eutrophic lakes become weedy and/or have frequent algae blooms. Winterkill of fish is much more common under these conditions.

To maintain health of these shallow lakes, they need different management than deep-water lakes. Boat traffic can damage plant beds that protect the quality of shallow lakes. Damage is direct due to cutting and tearing out of plant material with

propellers or indirect via stirring up the lake sediment that clouds water and reduces light to plant growth. Shallow lakes need large areas of appropriate vegetation to remain healthy. Large scale harvesting of plants and chemical treatment of plants can damage shallow lakes much more than a deep lake. Shallow lakes are not appropriate for high-speed recreation or large boat motors even at wake speeds. As sediment is re-suspended, phosphorus that was absorbed by sediment particles become available for plant use and studies have shown an increase in algae and nuisance levels of aquatic plant growth. Eurasian Water Milfoil is overtaking Lake Thomas, according to the studies. Efforts should be taken to ensure that this invasive plant does not migrate to the other lakes. DNR and the County Land Conservation Department are available for assistance.

The Town of Stockton is located within the Waupaca River, Plover and Little Plover River, watersheds. A watershed can be defined as interconnected areas of land draining from surrounding ridge tops to a common point such as a lake or stream junction with a neighboring land area. Fluctuations in surface water elevations are more evident in Stockton due in part to its close proximity to the groundwater divide.

2. Wetlands

Wetlands are areas covered by shallow water or subject to intermittent flooding and slow drainage. Wetlands provide habitat for wildlife, reduce runoff and soil erosion, help maintain the water quality of nearby lakes and streams, and play an important role in the groundwater regime. Certain wetlands can also be productive for farming with improvements such as drainage, or can be developed for cranberry production with improvements such as ditching and flooding.

Based on wetland inventory mapping completed by the Department of Natural Resources (DNR) in 1983, there are approximately 1,000 acres of wetlands in the Town of Stockton. The majorities of these wetlands are forested or have a scrub-type vegetative cover. The largest concentration of wetlands is located in the northwest corner of the Town, associated with the Jordan Marsh. Other significant wetlands are located along the Little Plover River and Bear Creek. Below is a description of the general types of wetlands in the Town of Stockton:

- Forested wetlands: includes bogs and forested floodplain complexes that are characterized by trees 20 feet or more in height such as, tamarack, white cedar, black spruce, elm, black ash, and silver maple.
- Scrub/shrub wetlands: These wetlands, which include bogs and alder thickets, are characterized by wood shrubs and small trees such as tag aster, bog birch, willow and dogwood.
- Emergent/wet meadow consists of areas that may have saturated soils more often than having standing water. Vegetation includes sedges, grasses and reeds as dominant plants, but may also include blue flag iris, milkweed, sneezeweed, mint and several species of goldenrod and aster.

Approximately 55% of the wetlands in the Town are regulated/protected under Portage County's Zoning Ordinances, either by the Shoreland-Wetland District* or by the Conservation District. The remaining 45% of the wetlands in the Town are currently unprotected by either of these zoning districts.

- * Note: Portage County's Shoreland/Wetland Zoning Ordinance regulates the use of certain wetlands in the Town, as mandated by Wisconsin Administration Code NR115. This Ordinance regulates only those wetlands within 300 feet of navigable rivers and streams (or to the landward side of the flood plain), and within 1,000 feet of navigable lakes, ponds and flowages. The U.S. Army Corps of Engineers also regulates the use of numerous wetlands, under Federal authority.

3. Floodplains

A floodplain is the land area immediately adjoining a stream, which periodically stores or carries flood waters. In addition to this vital role, floodplains often provide valuable wildlife habitat. A floodplain is comprised of the flood fringe and the floodway. During a regional flood, the flood fringe is the area of standing water, while the floodway is the area of rapidly flowing water. The only floodplain in the Town of Stockton is limited to a narrow corridor of flood fringe, along the Tomorrow River. There is no designated floodway within the Town.

Floodplain development in Portage County is regulated in accordance with Wisconsin Administration Code NR 116 and the County's Floodplain Zoning Ordinance. These regulations allow certain types of construction within the flood fringe under specific conditions, but prohibit new construction within the floodway.

C. Groundwater

All Town residential water use comes from groundwater sources, and therefore protection of this resource for quantity and quality is vital. Depth to water table, soil texture and permeability all play a role in determining the negative effects near-surface pollutants may have on water quality.

The sand and gravel aquifer of the sand plain region of Central Wisconsin provides one of the most abundant sources of groundwater in the State. The aquifer potential throughout most of the Town of Stockton is estimated at more than 1,000 gallons per minute. Large volumes of groundwater are utilized by area farmers for irrigated vegetable crop production. Pumping from large wells may result in a drawdown of the water table and dry up streams and wetlands, which occurred on the Little Plover River in 2005 and 2006.

Groundwater quality is a major concern throughout Portage County. There are many potential causes of groundwater pollution, including contaminants from municipal, agricultural, industrial and residential sources. The sand plain region is particularly vulnerable to groundwater contamination because of the coarse-textured, highly permeable soils, which allow pollutants to leach downward into the groundwater. Agricultural irrigation increases the rate of leaching.

While groundwater contamination has been most evident in areas immediately adjacent to pollution sources, more distant aquifers down-gradient from pollution sources are also susceptible to contamination due to the transfer of pollutants via groundwater movement. Pollutants travel in long plumes from contamination sites to discharge in a well or surface water body.

National and local research, including the County's Groundwater Management Plan, indicates lot size is a critical factor in preventing groundwater pollution from on-site sewage systems. Specifically, the traditional ½ acre lots formerly used in many parts of Portage County in previous years have been found to provide insufficient area to prevent degradation of groundwater quality. **Larger lot sizes of approximately two acres are needed to minimize potential problems in the future.** On average the nitrate nitrogen discharged from a single family private sewage system can contaminate the groundwater up to the health standard beneath a 1¾ acre lot.

Groundwater contamination resulting from agricultural chemicals and fertilizers can be reduced through the use of farming techniques, frequently referred to as "Best Management Practices" (BMP's). However, research has determined that these BMP's may not be adequate to reduce contaminants below the Environmental Protection Agency (EPA) maximum contaminant levels.

The Wellhead Protection Map 5.5 identifies the approximate boundaries of those municipal well recharge areas that extend into the Town of Stockton. The recharge area for a particular well field is the area of the aquifer that contains all the groundwater which could eventually enter the well(s). Major portions of the well recharge areas for the City of Stevens Point and the Villages of Plover, Whiting and Amherst lie within the Town of Stockton. **Thus, land use activities in the Town may have a direct or indirect impact on the public drinking water supplies for over 50% of the County's residents.**

The various recharge areas have been further defined in terms of "Time of Travel" (TOT) distances. TOT's reflect the distance a contaminant can travel in a given period of time, and are useful in identifying lands within the recharge areas for wellhead protection purposes. The shorter the TOT, the greater the need to protect that area. The immediate area around a well field, commonly known as the cone of depression, requires the highest degree of protection. The second highest priority for wellhead protection is generally assigned to the 5 year TOT.

Portage County, in conjunction with its various municipalities, has adopted a Wellhead Protection Ordinance, which is used to protect municipal well recharge areas. In addition, the City of Stevens Point, the Village of Plover, and the Village of Whiting have purchased specific lands within their 5 year TOT to protect their well fields.

All current and future land uses in the Town of Stockton depend on a supply of usable groundwater. While quantity available is of primary importance to the irrigated agricultural and sand and gravel extraction sectors, adequate quantities of low contaminant drinking water are necessary for all other developments.

1. Nitrates (from County Water Quality Specialist Ray Schmidt)

The most frequently occurring and widespread groundwater problem in the Town of Stockton is the presence of elevated levels of nitrates in private wells. Recent studies suggest that intensive agricultural activities are responsible for the highest nitrogen concentrations, but that in localized areas septic tanks and residential fertilization also contribute significantly to the problem. Contamination of municipal wells has also occurred in the Villages of Plover, Whiting, and Amherst.

Map 5.5 Well Head Protection Map

Map 5.6 Nitrate Results from Stockton Wells

Map 5.7 Atrazine Prohibition Areas

Several areas of the Town, primarily west of County Road J, have historically shown high levels of nitrate nitrogen (NO₃), above the 10 parts per million (ppm) drinking water standard, (see Map 5.6) and detectable levels of several pesticides. Approximately half of the wells in the Town have water quality results in the County database. The County database is a compilation of sample results from the County Lab, DNR Groundwater Retrieval Network (GRN) database, Department of Agriculture, Trade and Consumer Protection (DATCP) database, UWSP Environmental Task Force (now Water Environmental Analysis Lab (WEAL)) database.

Areas down-gradient from irrigated fields show the highest levels of NO₃, with many wells above 30 parts per million. As areas not previously developed are converted to residential uses, drinking water quality becomes a primary concern. Since research has shown that in some areas it is impossible to grow certain crops (i.e. potatoes) without contaminating the groundwater above the NO₃ standard, it should be expected that high levels of NO₃ will be encountered in these areas. If development with private wells is allowed in these areas, drinking water treatment costs should be considered as part of any development proposal or plans.

Pesticide detects, usually those above health standards, are usually associated with higher NO₃ levels; NO₃ in groundwater is used as an indicator of pesticide presence in wells. The higher the NO₃ levels the greater the likelihood of pesticides in the wells.

2. Atrazine prohibition areas

The Wisconsin Department of Agriculture, Trade and Consumer Protection is responsible for protecting Wisconsin's groundwater from contamination by pesticides and fertilizers. Their authority to restrict the use of a pesticide that is contaminating groundwater at levels above health-based standards is found in the Wisconsin Groundwater Law, Chapter 160 of the Wisconsin Statutes, and by department rule in ATCP 31, Groundwater Protection Program.

The US Environmental Protection Agency is continuing to research the health effects of atrazine in water. At this time studies show that drinking water that contains atrazine will not cause immediate sickness or health problems (acute toxicity). However, consuming low levels of atrazine over time may cause health problems (chronic toxicity). The EPA is also concerned that atrazine may be an endocrine disruptor which can cause unintentional hormone-like activity in the body.

The rules for restricting the use of atrazine and other pesticides in Wisconsin are part of ATCP 30 - Pesticide Product Restrictions, and the County maps showing the locations of the prohibition areas can also be found in ATCP 30 - Appendix E.

Atrazine has been detected in some wells within the Town of Stockton but most fall below the preventive action limit (PAL) of 0.3 parts per billion (ppb), while none have been found above the health standard of 3.0 ppb. A prohibition area has been defined within the Town due to excessive levels found in wells in neighboring Towns.

Approximately 640 acres of land in the northeastern portion of Town of Stockton are within the prohibition area for a well located in the Town of Sharon. (Map 5.7, Atrazine Prohibition Areas).

Groundwater follows subsurface gradients, in much the same way as surface water follows land contours. The highest subsurface gradient represents the groundwater divide, from which groundwater flows to opposite sides.

The groundwater divide for Portage County splits the Town of Stockton along a north-south line approximately one mile east of Cty Rd J, following the Hancock Moraine. Groundwater flows generally eastward and westward from this divide. The land east of the divide is part of a larger watershed where the groundwater flows primarily to the east and southeast, draining into Lake Michigan and eventually into the Atlantic Ocean. Groundwater west of the divide flows generally to the southwest into the Wisconsin River and eventually into the Gulf of Mexico. Knowing the direction of groundwater flow can be very helpful when determining proper siting of well and on-site waste systems.

Since fresh precipitation is introduced into the groundwater system near the divide, groundwater in this area will be the first to improve following more careful application of fertilizers and pesticides practiced in recent years. The areas down-gradient from irrigated fields that are farthest from the divide will likely take the longest to show improvements in NO₃ and pesticide levels.

D. Nonmetallic Mining Resources / Sand and Gravel Extraction

The central portion of the Town of Stockton contains a large, high-quality supply of sand and gravel (See Map 5.8). This has resulted in numerous sand and gravel extraction operations in the Town over many years. It is currently estimated that 8 of 11 major pits in Portage County, either currently active or intermittently active, are located in the Town of Stockton.

Readily accessible sources of sand and gravel are needed for roads and other types of construction. The Town of Stockton works with sand and gravel extraction operations to up keep and maintain roads to current industrial road standards. The gravel operations should work with the Town of Stockton and Portage County to maintain and beautify the boundaries of their extraction areas to keep down dust, noise, land use conflicts, and for safety reasons as well as reclaim the spent portions of their pits according to NR 135.

Sand and gravel extraction operations are regulated under the County's Zoning Ordinance as special exception uses in the Agricultural and Industrial Districts. Special exceptions uses require a public hearing before the County's Board of Adjustment, at which time specific conditions of operation are typically applied to the proposed use. The Stockton Town Board has been proactive in recommending more stringent conditions of operation to the Board of Adjustment than have traditionally been required.

As part of NR 135, Wisconsin Administrative Code, Portage County adopted a Nonmetallic Mining Reclamation Ordinance in June of 2001. The purpose is to establish a local program to ensure the effective reclamation on nonmetallic mining sites. Please see Ordinance for complete detail. Table 5.2 below is a listing of nonmetallic mining operations in the Town of Stockton, along with date of their reclamation plan. The Town currently has about 750 acres of active nonmetallic mining operations.

Map 5.8 Non-Metallic Mining Resources and Pits

Map 5.9 Forested Areas

Table 5.2: Town of Stockton Nonmetallic Mining Operations

Owner / Name of Pit	Operator	Reclamation Plan	Acres
Sonnentag Family Limited Partnership / Custer pit*	County Concrete Cooperation	May 2004	97
DL Gasser Construction / Gaser Pit	Milestone Materials	March 25, 2004	80
Portage County Highway Department**	Portage County Highway Department	----	----
Mathy Construction / Sommers Pit	Milestone Materials	March 31, 2004	94
Larry Stuczynski	Stuczynski Trucking and Excavating Inc.	May 28, 2004	135
Wimme Sand and Gravel Inc.	Wimme Sand and Gravel Inc.	May 20, 2004	260
Jerold Fahner	Jentex Group LLC	November 25, 2003	30
E A Perzinski and Sons	Milestone Materials	October 31, 2003	54

Source: Portage County Planning and Zoning Department

* County Concrete owns and operates 370 acres, current operations are limited to 97 acres

**Currently not active / no permit required

E. Wildlife Habitat and Forested Areas

When people think about wildlife, birds, fish, and mammals most likely come to mind. It is important, however, to consider all organisms that make up an ecosystem in order for that system to continue providing the maximum benefit to humans and the environment. Town residents recognize the fact that human beings play a role in protecting or restoring, as well as, degrading or destroying wildlife and its habitat. They also recognize that it will be very difficult to preserve all ecosystems in the Town from human encroachment or interaction.

The biggest threats to wildlife are loss of habitat quality and quantity. These threats can be attributed primarily to fragmentation, invasive species, and pollution. Fragmentation refers to the loss of large, contiguous sections of land through land splits into smaller parts. Invasive species, both plant and animal, tend to out compete or prey on native species also altering the native ecosystem. Pollution can lead to habitat degradation and cause birth defects and increased mortality rates in animal species. Habitat areas are important for providing food and cover for nesting, brooding, and sheltering. Farmland is one type of habitat that also provides food, as well as travel corridors between wetlands and woodlands.

Woodlands, forested lands, and herbaceous cover and shrub lands, account for a large percentage of land which is identified as wetlands as described earlier in this chapter. Loss of these habitat types can threaten the viability of certain species. Woodlands that exist now are primarily due to an inability to sustain successful agricultural practices. See Map 5.9.

Options for landowners to protect habitat can be accomplished by working with a land trust to place a conservation easement on the property. The easement is usually donated but it can be purchased through the WI Stewardship Fund or other resources. For more information contact the local land trust (North Central Conservancy Trust) or the WI Department of Natural Resources.

1. Threatened and Endangered Species

Known rare and endangered animal species identified by the Wisconsin Natural Heritage Inventory (NHI) that are located within the Town of Stockton include a number of species. Please see the Department of Natural Resources web page for a detailed listing of species (<http://dnr.wi.gov/org/land/er/>). Some or all of these species may be located within the Town of Stockton.

F. Air Quality

The following information comes from the WI DNR and the Environmental Protection Agency:

A few common air pollutants are found all over the United States. These pollutants can injure health; harm the environment and cause property damage. The Environmental Protection Agency calls these pollutants criteria air pollutants because the agency has regulated them by first developing health-based criteria (science-based guidelines) as the basis for setting permissible levels. These pollutants include: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, and lead.

One set of limits (primary standard) is designed to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; another set of limits (secondary standard) is intended to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. A geographic area that meets or does better than the primary standard is called an attainment area; areas that don't meet the primary standard are called non-attainment areas.

All of Portage County including the Town of Stockton is listed as an attainment area by WI DNR.

G. Natural Resources Programs & Potential Preservation Sites

Portage County Land Preservation Fund (PCLPF)

This county fund was established in fall of 2003 to identify and protect natural, cultural, historic and/or agricultural areas in Portage County. Land can be preserved through donations, conservation easements or land purchase. The PCLPF Committee reviews applications on a regular basis for funding and sends recommendations to the Portage County Parks Committee for final approval. Contact: Portage County Parks Director at 715-346-1433.

Land Legacy Fund of Portage County

The Land Legacy Fund was established in the fall of 2004 as a private fund within the Community Foundation of Portage County. The primary purpose of the fund is to supplement and complement the activities of Portage County's Land Preservation Fund to identify and protect natural, cultural, historic, and/or agricultural areas in Portage County by acquiring land and/or conservation easements. The secondary purpose is to work with other organizations in or near Portage County to purchase land and conservation easements that protect natural, cultural, historic and/or agricultural areas in or near Portage County. Contact The Community Foundation of Portage County at 715-342-4454.

Plover River Alliance

The Plover River Alliance is a private non-profit organization and fund working to preserve the Plover River in Portage County through conservation easement donations or purchases. They work with landowners to create permanent buffer strips of 300 ft. or more. They have secured funds from private sources and from the Wisconsin Stewardship Fund. Contact The Community Foundation of Portage County at 715-342-4454.

Wisconsin Stewardship Fund

The Wisconsin Stewardship Program was established in 1989 to preserve significant land and water resources for future generations and to provide the land base and recreational facilities needed for quality outdoor experiences. The fund acquires land and easements for conservation and recreation purposes, developing and improving recreational facilities and restoring wildlife habitat. The fund provides 50% match grants to local governments and non-profit organizations for eligible projects. Contact for the West Central Region is in Rhinelander: 715-365-8955. The Nonprofit Grant Manager is in Madison at 608-267-0496.

Partners in Wildlife

The Wisconsin Karner Blue Butterfly Habitat Conservation Plan (HCP), approved in September 1999, guides the management and monitoring of Karner blue butterfly occupied land in Wisconsin. The HCP is based on a legal agreement between the U.S. Fish and Wildlife Service, the Wisconsin DNR, and an array of public and private land managers. Cost sharing is available up to 100% for approved habitat restoration. Contact: WI DNR Landowner Contact Specialist 608-334-2967 or the U.S. Fish & Wildlife Service, Endangered Species Coordinator, Green Bay at 920-465-7415.

North Central Conservancy Trust

The North Central Conservancy Trust (NCCT), established in..., is a community-based nonprofit land conservation organization that works with local landowners in Marathon, Portage, Wood, Adams, Waushara, Lincoln, and surrounding counties to protect and preserve the natural resources of their property. Their goal is to help reserve significant portions of this natural heritage for the benefit of present and future generations.

Frank Hornberg Chapter of the Trout Unlimited

Founded in 1992, representing the cold-water resources of Portage and Wood Counties, the chapter's primary focus is restoring and enhancing trout habitat in our area. The membership is comprised of men and women from all walks of life who share an interest in cold water fisheries and the improvement of these delicate resources. Reversing the degradation that has affected many of our trout streams has always been the primary focus of this group.

Since its formation, the chapter has been actively engaged in direct, hands-on stream restoration projects. These efforts have brought about tremendous positive changes on sections of a number of trout streams in central Wisconsin.

The chapter has been widely recognized for its accomplishments in cold water conservation and has been presented with awards from the Wisconsin Council of Trout Unlimited as well as the Wisconsin Department of Natural Resources.

The chapter has worked closely with other conservation and environmental organizations, working to protect our natural resources not only at the local level but at the broader, state level as well.

Section 5.6 Natural Resources Issues

A. In 2001 a County-wide survey of resident’s attitudes was completed by the Portage County Planning and Zoning Department. The Town of Stockton survey results, in their entirety, are included in Appendix B; the following are Stockton survey responses related to Natural Resources.

Survey Question 19: City/Village/Town should make an effort to identify and protect the following:

	Agree/Strongly Agree	Disagree/Strongly Disag.
19a. Woodlands	83%	4%
19b. Wetlands and Floodplains	80%	5%
19c. Open Spaces	64%	7%
19d. Lakes, rivers and streams	92%	2%
19e. Endangered species habitat	75%	8%
19f. Parkland, existing and future	76%	6%

B. Natural resources are important to the residents of the Town of Stockton. The following natural resources issues were identified through Public Hearings, Open Meetings, the planning process, by Town Committees and volunteer working groups.

1. How can shallow, soft water lakes’ and other lakes’ health be protected?
2. How can the headwaters of the Little Plover and Tomorrow River watershed be protected?
3. How can ground and surface water be protected from failing septic systems, road construction, residential development and certain agricultural practices?
 - What is the check-and-balance of older septic systems that are not required to report pumping and maintenance to Portage County?
4. Excessive groundwater draws can lower surface water levels. How can surface water levels be maintained while accommodating human activity?
5. How can forest owners be made aware of options for land management?
6. Increasing deer population is causing excessive damage.

Section 5.7 Natural Resources Goals, Objectives, and Policies

A. Goals

1. Identify natural resources throughout the Town.
2. Utilize partnership efforts to protect and enhance natural resources in the Town.

B. Objectives

1. Encourage landowners to use accepted best management practices to protect air, soil, water and wildlife resources.

2. Work towards preservation of environmental resources.
3. Encourage cooperation with Portage County, UW Extension, and DNR to provide educational materials relating to natural resource management.
4. Work together with public and private organizations to protect unique resources in the town.
5. Gravel pits to cooperate with the Town and Portage County for reclamation.

C. Policies

1. Encourage agricultural operations to work with private, government and educational organizations to develop farm plans and procedures that minimize field and feedlot runoff into surface waters.
2. Follow setbacks and use buffers along surface waters for agricultural activities and development as set forth in State Statues.
3. Support the use of retention ponds, buffer strips and other techniques to minimize run-off into surface waters from new developments.
4. Utilize the Conservancy Zoning District to protect important or fragile environmental areas, including navigable lakes and streams, shorelands, wetlands, flood plains and publicly owned lands used for recreation and wildlife management purposes.
5. Maintain rural atmosphere by promoting cluster housing development and density zoning.
6. Monitor non-metallic mining operations through Portage County Ordinances.
7. Support a tipping fee for non-metallic mining operations in the Town for general revenue and infrastructure maintenance.
8. Cooperate with the County and adjoining communities to protect municipal wellhead recharge areas which lie within the Town of Stockton.
9. Work with WiDNR and UW Extension to educate residents, landowners and business about issues threatening the environment.
10. Work with County to educate residents about proper care of septic systems to reduce failure and potential groundwater contamination and support the County 3-year pump ordinance.
11. Work with local land trusts, the Portage County Land Preservation Fund, Land Legacy Fund of Portage County and other funding resources in preserving unique areas in the Town.
12. Work with other governmental units to help prevent spread of invasive plant and animal species and plant and animal diseases.
13. Work with WiDNR and other organizations to help maintain or enhance fish habitat and lake water quality.

Section 5.8 Cultural Resources

Cultural and historic resources often help link the past with the present and can give a community a sense of place or identity. These resources can include historic buildings and structures along with ancient and archeological sites.

Burial sites are one example of a resource that can add to a community's sense of history as well as provide a great deal of genealogical information. Formally catalogued burial sites are protected from disturbance in Wisconsin and are given tax treatment equal to that of operating cemeteries.

A. Cultural and Historic Resources Inventory

Information regarding cultural and historic resources in the Town is constrained by limited financial and human resources. The Town of Stockton has been funding a local residential historian who has been compiling town stories, histories, and photographs. These items are being stored in the old Town Hall (northwest corner of 6th and Custer Rd) and the new Town Hall. See these records for a compilation of Town historical sites, cultural history and Town development since its formation.

Town of Stockton Anniversary Celebration Committee

In August 2005, a group of citizen volunteers came together as the Anniversary Celebration Committee, and began planning a celebration for the Town of Stockton's 150th birthday. The product of their labors was a 50+ page book of photos and stories describing the Town's history, milestones and personalities. To accomplish this, the Committee referenced a diverse number of sources: books, newspapers, Town records, University of Wisconsin – Stevens Point archives, Portage County Historical Society, federal census information, college papers, internet records, and personal memories gathered from current and former residents. Copies of the book are available for purchase at the Stockton Town Hall.

A wide range of historic properties have been documented that help create Wisconsin's distinct cultural landscape. Descriptions of existing locations are identified on the list of historic places by the Wisconsin Historical Society. Keep in mind many of the properties included in this inventory are privately owned and not necessarily open to the public, so please respect the rights of private property owners.

Another source of information comes from the National and State Register of Historic Places. There are currently fourteen sites listed throughout Portage County, however, none of them are located in the Town.

B. Cultural Resource Programs

The Wisconsin Historical Records Advisory Board (WHRAB) works in association with the Wisconsin Historical Society. The Board's activity falls primarily into three areas: it provides guidance and assistance to archives and records management programs in Wisconsin, promotes the value of historical records as keys to our cultural heritage and works through partnerships with statewide organizations whose purpose and goals support that end, and to bring federal grant funds to Wisconsin for improving access and preservation of historical records.

Section 5.9 Cultural Resource Issues

A. In 2001 a County-wide survey of resident's attitudes was completed by the Portage County Planning and Zoning Department. The Town of Stockton survey results, in their entirety, are included in Appendix B; the following are Stockton survey responses related to Cultural Resources.

Survey Question 19: City/Village/Town should make an effort to identify and protect the following:

	Agree/Strongly Agree	Disagree/Strongly Disag.
19g. Historic and cultural resources	73%	6%

B. The following issues and concerns were identified through the planning process:

- Can the cultural and historical sites in the town be preserved if they are privately owned?

Section 5.10 Cultural Resource Goals, Objectives, and Policies

A. Goal

Identify the cultural and historic resources in the Town.

B. Objective

Work with Portage County Historical Society, other organizations and area residents to encourage the identification of cultural and historic resources.

C. Policy

Work with local historians to identify and preserve local Town histories.