

Lake Lines

Burnett County Lakes & Rivers Association



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Newsletter Design

Fall/Winter 2007 Issue

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Are Low Water Levels Bad For Lakes?

Adapted from UWEX Lake Tides

The short answer is no. As water levels decrease, very beneficial plants are stimulated to grow along the shore. In fact, one of our state's rarest shoreline plants, Fassett's Locoweed, requires big fluctuations of water levels to grow. This plant is found on six lakes on the planet and all of these lakes are subject to wide fluctuation in water levels. According to aquatic plant expert Dr. Susan Borman, "They are really important for fish spawning and stabilizing sediment. They have whole communities of fish fingerlings and invertebrates associated with them ." If you talk to any fish manager, they say -"At all cost, protect our bulrush and spikerush beds." The plants can be killed by being crushed or cut off. Protecting shoreland areas becomes even more important as lakes see more intensive development patterns.



Bulrushes provide critical spawning areas for bass, crappies & other fish.

According to Ed Slaminski, Department of Natural Resources Water Management Specialist



Seeds from hardstem bulrush growing in Shell Lake's south bay require exposed shoreland for germination and development.

"Manual removal of aquatic plants is only permitted in an area confined to a path 30 feet wide on your shoreline. Anything more than that, or by any other mechanical or chemical means, needs a permit from the Department of Natural Resources." "Disking or dragging exposed lake bed with any type of motorized vehicle is not permitted" explained Conservation Warden, Brian Knepper. In most cases, the plants that are expanding across the lake bed are actually public property, no different than the trees in a federal, state or county forest.



Grading or disturbance of exposed lake bed is restricted. Vegetation in and along Shell Lake's shorelands are important for soil stabilization and the fish and wildlife living in and along the lake.



President's Column

Good fortune smiled on my wife and I this past summer as we were able to travel the Alcan Highway to and from Alaska. For 48 days we traveled the highways, seaways and airways of "The Last Frontier." In Talekeetna, Alaska, their slogan is "Where the Road Ends and Life Begins." There is some truth to this.

The beauty of Alaska, British Columbia, the Yukon, etc. is difficult to describe. It is one that we both hope to see again. The interesting thing, though, as a result of our trip, is the perception that we each noticed. As residents of Northwest Wisconsin, we live in a very beautiful part of the world. Sometimes we take our area for granted. Northwest Wisconsin, its forests, lakes and rivers are gifts to us that others around the world/our country do not have or understand.

Yesterday I gazed out our cabin window at the awesome beauty of North Sand Lake in mid October. It is truly a gift. The natural beauty of Alaska, British Columbia, etc. is awe inspiring, but so is here where we live and play in Burnett County.

Let us not take our gifts for granted. Do your part to keep them as treasurers. Do your part to protect these beautiful natural settings. The Burnett County Lakes and Rivers Association is but a small part of a network of lake associations, government agencies, etc. with hundreds of volunteers working to protect our areas natural resources. Get involved with your lake/river or neighborhood to keep the natural gifts of Burnett County healthy and safe.

Roger Noe, President

Burnett County Lakes & Rivers Association



BCLRA News

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You Don't Know What You've Got 'Til It's Gone



Low Lake Levels in Wisconsin

Adapted by Dave Ferris, Burnett County Conservationist, from UWEX

Why Are Water Levels

So

Caption describing picture or graphic.

Low?

One region in the state where the conversation often turns to "where's the water?" is Northwest Wisconsin. This area includes parts of Burnett,

Douglas, Bayfield, Washburn, and

Sawyer Counties. These counties are particularly susceptible to a lack of water because of a combination of lake type, geography, weather and sometimes human use. This combination of factors has led to particularly low water levels in some of the area lakes.

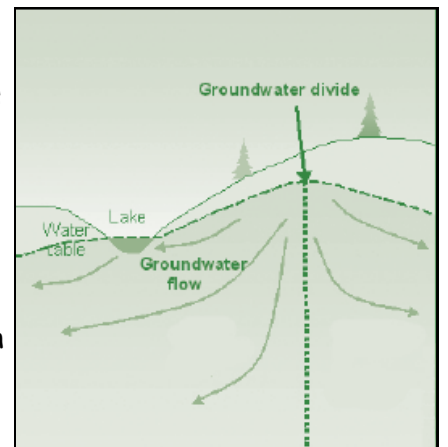


variation of the water table. If the water table is low because of a lack of rain or snowmelt, lake levels can be low.

A survey of several Wisconsin lakes pointed to a relationship between lake level fluctuations and lake types. Water levels in seepage lakes fluctuated between 2½ and 11 feet, where water levels in other lake types only fluctuated between 1½ and 4 feet. The range of fluctuation in seepage lakes is often greater because they have less water to draw from - their main source of water may be a limited groundwater supply. Other lakes may have a larger water source to draw from, including inflow from streams.

Geography

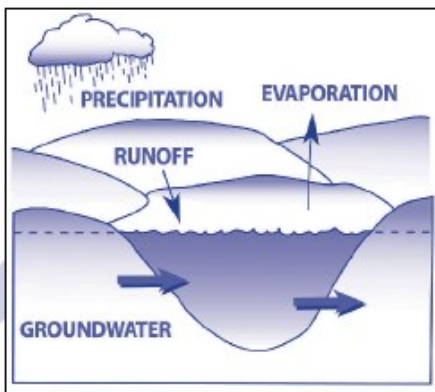
Water always flows from high areas to low areas - this fact plays an important role in lake water levels. From a high point in a landscape, (like a hill top) water flows one way or the other, depending on where it lands. This highest point is called a divide because it is the place where water divides and flows in different directions.



Lake Type

Groundwater is typically out of sight, except where the landscape dips lower than the groundwater - this place is called a lake. A lake whose main

source of water is groundwater, with no inlet or outlet streams, is called a seepage lake. Water levels on seepage lakes can change substantially from season-to-season, and year-to-year, because their water level is a reflection of the ele-



Continued from Page 3

A groundwater divide can be thought of as an underground hilltop, where the groundwater flows in different directions. Lakes close to this high point in the groundwater have less area to draw water from than lakes farther down (the hill).

Weather

Groundwater levels go up and down based on the amount of water that falls on the land. Over the century, there have been significant variations in the annual amounts of rain and snow. Some of the driest years recorded were in the 1930's and again in the 1950's. Recent dry summers and a lack of winter precipitation have some people thinking that we may be in another cycle of dry weather. Many scientists believe that global climate change is also playing a role in weather patterns, which can ultimately affect water levels.

Human Use

Lucky for us in the northwestern corner of Wisconsin there isn't a significant regional groundwater impact. (Please note that any user of groundwater can have a local impact). With little irrigation, municipal water supply wells are the main consumers of groundwater and some of these recharge the local water supply (after filtering, of course) while others discharge to

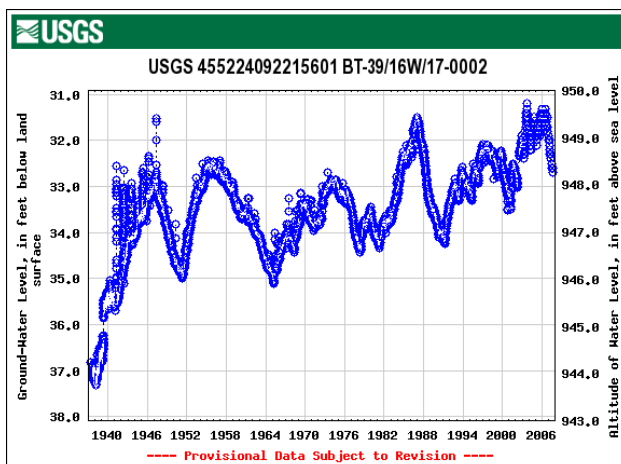
streams and rivers.

While this is good news for the groundwater supply of northwestern Wisconsin, we have to be careful that if and when a large consumer of groundwater proposes to locate in our region, the groundwater withdrawal demand be examined very closely so that it doesn't affect our wetlands, lakes, river or streams as one larger user can impact a very large area.

A Final Word

In conclusion, fluctuating water levels on seepage lakes are normal. Water goes up; water goes down. This natural fluctuation provides periods of both low and high water. Interestingly, our "lows" haven't been very low when compared to previous low water cycles. The later 1980s and early 1990s were lower, the early 1950s even lower yet, and of course, the 1930s which were the lowest according to local records, when local farmers harvested marsh hay from many of the shallowest seepage lakes in the area. So when you put things into perspective water levels are normal. (Note the monitoring well graph in this article).

Our seepage lakes need both. As noted in a related article in this edition, it's very important for a lake to have periods of low water. This allows all of the plants that are so important to keeping the shoreline stable (which protects your cabin/home/investment from erosion) while providing great habitat for aquatic life that live in the zone where land and water meet. Ninety percent of all lake life is born, raised, and fed there. So if you enjoy fishing, if you enjoy the call of the loons, if you enjoy the ducks, if you enjoy the croaking of the frogs, let this area flourish as it has for



The difference between these two closely related species are not as black and white as their common names imply, but they do have distinct features and preferences. Black crappies are generally darker than white crappies. Both species have black spots, but the black crappie has many more in a mottled pattern on the back and sides. White crappies tend to be paler and have spots arranged in loose, narrow bands running down their sides.

Both crappies are found in Wisconsin but because the black crappie has a more northern range, it is much more abundant in the state than the white crappie. The white crappie is more abundant in the southern United States than the black crappie. In southern Wisconsin, both species may exist in the same water bodies.

White crappies are more tolerant of muddy water than black crappies. Black crappies more often inhabit lakes and river backwaters while white crappies are found more in slow-moving river channels. Both species have a preference for open water instead of taking shelter in weed beds like many other panfish.

Crappies are members of the sunfish family (Centrarchidae), which also includes bluegill, pumpkinseed, and largemouth and smallmouth bass. Crappies fall into the general panfish category because they are small fish (rarely larger than a foot long in Wisconsin) sought primarily for food. Still, crappies do provide anglers considerable sport. While crappies are not known as great fighters at the end of the line, catching crappies takes a certain finesse because they have a very thin membrane around their mouths. Many an angler has lost a good-sized "papermouth" by using too much force setting the hook.

Identification

Crappies are not just black or white. Both species have olive-colored backs—though white crappies tend to be a bit lighter—with blue, green and black spots on their silvery-white sides. Black crappies have greenish-yellow bellies while white crappie's bellies are more yellowish-white. However, because color and pattern may vary depending upon the water clarity, season and the age of an individual fish, it is not the most accurate method of identification.

A more reliable, though still not infallible, way to tell the black and white crappie apart is by the dorsal (back or

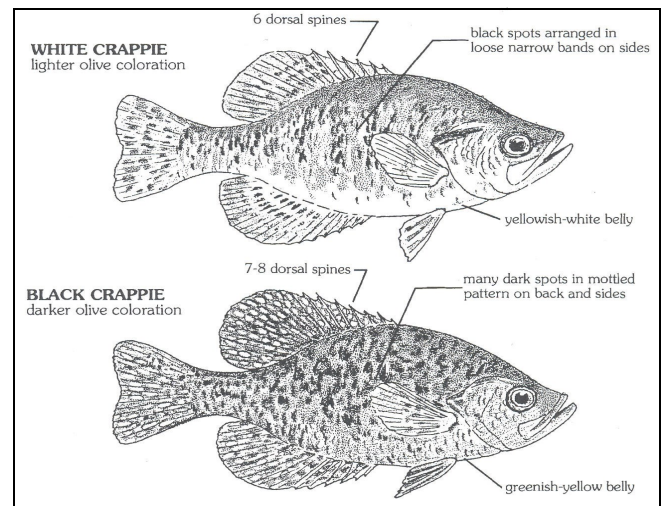
Common names

Black crappie: crappie, calico bass, strawberry bass, speckled crappie, papermouth, grass bass

White crappie: crappie, silver crappie, ringed crappie,

top) fin. Like all sunfish, crappies are spiny-ray fish, meaning their dorsal fins have spines (rigid supports) and rays (flexible supports). Crappies actually have two dorsal fins, but they are connected and appear as one. The black crappie usually has 7 or 8 spines while the white crappie normally has only six.

Crappies are very thin, perhaps the thinnest of all sunfish. The black crappie is a bit deeper-bodied than the white crappie. It's possible for crappies to reach 18



inches in Wisconsin, but 8 to 10-inch crappies are much more common.

Habits and Habitats

Although black and white crappies reside in some of the same waters (such as the Mississippi, Wisconsin and Fox rivers and their tributaries and backwaters), black crappies prefer clearer, quieter water than white crappies. White crappies flourish in warmer, siltier, more turbid (containing suspended solids) water. Black crappies are common in the clear, cool lakes in Wisconsin's

Lakes, Rivers, and Comprehensive Planning: What does it mean to you?

By Mike Kornmann - Community Development Agent, UW Extension Burnett County

Comprehensive planning in a nutshell is a forum to discuss issues facing your community, town, and lake/river and develop strategies to address those issues. Some of you may have had experiences with zoning when building a home or addition. Comprehensive planning is not zoning. Comprehensive planning is a blue print for what a community should like at some point in the future. Zoning is just one of many tools that can be used to achieve that blue print or vision. State legislation has been passed that affects how communities plan for the future. Comprehensive planning may affect our waterways, how they are developed and how they are protected.



Wisconsin's past planning practices required only "master" plans for cities and villages but not counties or towns. The plans were also only to be adopted by the plan commission and not by the city council or village board. One of the complaints about land use decisions in Wisconsin was that decisions did not have to follow or be consistent with the plan. For example if the plan said an area should be a residential use, it may still end up zoned manufacturing. These "inconsistent" decisions made many people, businesses and organizations very unhappy. You can imagine if you were planning to build a retirement home on a piece of property and an industrial park turned up nearby you might be a little upset.

In 1999, a unique coalition of development interests, environmentalists, and others rallied to support land use planning reform. The result was the Comprehensive Planning Law which requires most units of government to adopt a comprehensive plan and make decisions "consistent" with the plan by January 1, 2010. The law also adopted a

definition of a comprehensive plan which includes nine elements: issues and opportunities, housing, economic development, agriculture/natural-cultural resources, transportation, land use, utilities and community facilities, intergovernmental cooperation, and implementation. Also required is a written public participation plan. Public participation needs to be more than just a public hearing at the end of the process. The public must be included from the beginning to the end of the process.

Burnett County adopted a land use plan in 1998. That plan created the lakes classification system on which most of the lakeshore zoning is based. The Shoreline Incentive Program which rewards shoreland owners with a property tax credit for preserving was also developed from that plan. Recently, the Burnett County Board of Supervisors applied for a grant through the Wisconsin Dept. of Administration to develop a comprehensive plan for Burnett County. If the grant is awarded, the planning process will begin in the spring of 2008. Goals, objectives, and strategies will be developed for each of the required nine elements. The Burnett County Comprehensive Plan is coordinated by the Burnett County Comprehensive Planning Committee. The content of the plan will be developed by the committee and input from the public.

You can get involved by participating in public meetings, written comments, staying informed through the comprehensive planning web page, or communicating with your county board supervisor. For more information, feel free to contact me at 349-2151, mike.kornmann@ces.uwex.edu, or visit <http://burnett.uwex.edu>.

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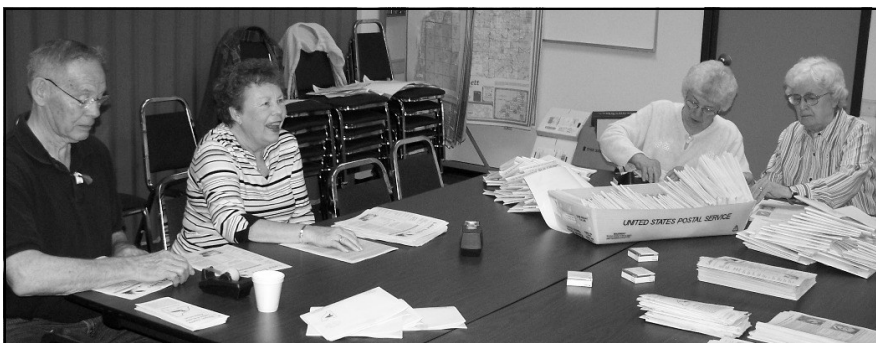
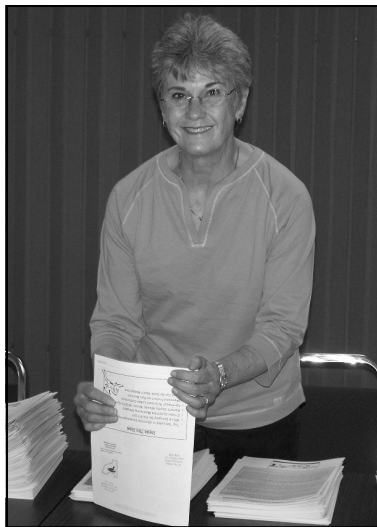
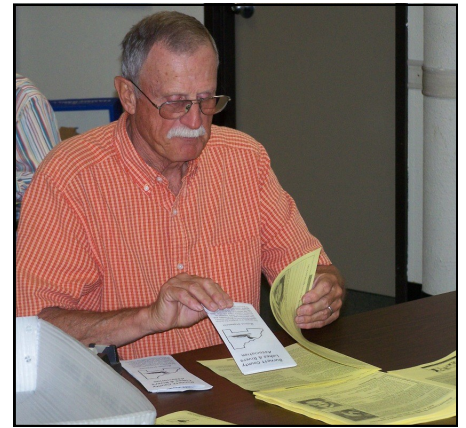
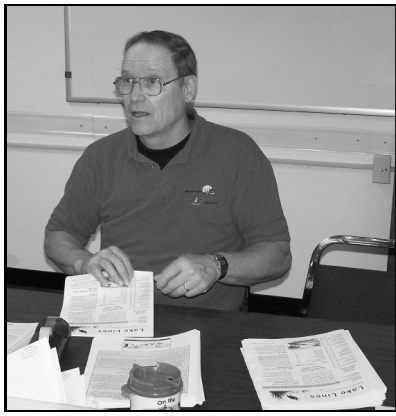


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Continued from Page 5

North Woods—habituate where white crappies are not found.

Crappies like open water but they also like structure, such as submerged stumps and logs, rocks and rocky ledges, deep pools in rivers, and emergent aquatic vegetation if it is not too dense. Crappies have been known to do well in lakes with large carp populations. By opening up dense plant growth, carp create the open water crappies prefer. Crappies are also more tolerant of the turbid conditions carp create by roiling, or stirring up, water. Because of this association, some anglers blame crappies for changes in fish population which are actually more attributable to carp and the environmental factors which favor carp.

Crappies feed on small aquatic organisms called zooplankton, and aquatic insects and insect larvae that live on or near such structures. Crappies have numerous gill rakers (comblike structures within the gills) that enable them to filter large amounts of food from the water. These small food items make up almost all of the diet of small crappies, and can make up a major portion of larger crappie's diets during part of the year. However, older crappies feed primarily on small fish like minnows and immature bass, sunfish and perch.

A gregarious fish, crappies travel and feed in loose schools for much of the year. They are also migratory fish, changing habitat in response to temperature, oxygen, seasons and available food. Crappies inhabit shallows during their spring spawn, moving to deeper water during the summer. They are found at varying depths during the winter. Although crappies are tolerant of low levels of dissolved oxygen in water, they still seek out oxygenated water. In the summer, this means they are often found in the thermo cline (a depth at which water temperature changes rapidly), where the water is cooler but still contains dissolved oxygen.

Life cycle

Crappie spawning activity peaks in May and June when water temperatures are between 61 and 68 degrees, though spawning may continue into July. Like other sunfish, crappies are nest builders but they are perhaps the least particular in their nest-building habits.

Crappies search out nest spots in deeper water than any other sunfish—between 1.5 to 6 feet deep or deeper. This is another reason why crappies can coexist with carp. Crappies are not disturbed by carp as much as other sunfish that build their nests closer to shore. Crappies usually nest in colonies that may include as many as 35 nests, 3 inches to 6 feet apart. Males construct disc-shaped nests near emergent vegetation using their caudal fins like brooms to sweep away silt and debris. Unlike bluegills and pumpkinseeds that are meticulous in their nest construction, crappies spend little time building their nests, which when finished, may be just barely discernible from the surrounding area.

Males aggressively defend their nests, chasing and biting at intruders. A female may be chased away several times before the male will admit her for spawning. When a pair does spawn, they swim in circles around the nest until they come to rest with their bellies touching and pushing against each other. Both fish quiver as the female releases her eggs and the male releases his milt (sperm). This process is usually repeated several times over several hours. Females may spawn with more than one male and may produce eggs several times during the spawning period. An individual female produces several thousand to several hundred thousand eggs depending upon her age and size. Following spawning, males guard the eggs until they hatch in one to two days at optimum temperatures of 65 to 70 degrees. Crappie fry (newly hatched fish) congregate in large schools in shallow wa-

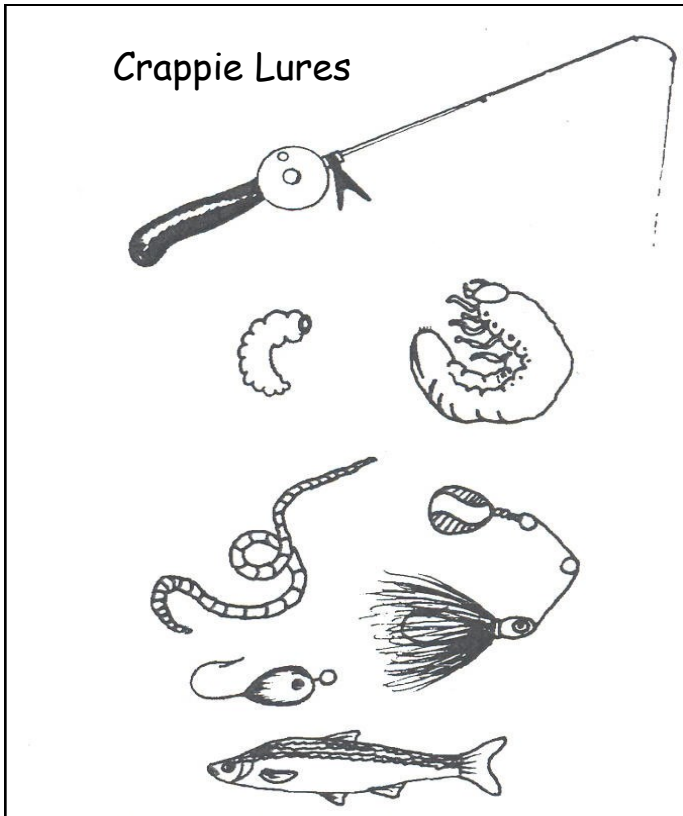
Age (yr)	Length (inches)
1	3.0
3	7.2
5	9.6
10	13.1

ter. Crappies grow fairly rapidly in the first year, reaching 2.5 to 3 inches. Crappies can mature in their second year, though most mature in their third to fourth year. In Wisconsin, most crappies don't live much past their fifth year, grow larger than 12 - 14 inches, or weigh more than a pound.

Additionally, crappie growth rates can be very irregular.

Fisheries biologists refer to all the fish spawned in the same season as a year class. Crappies are known for having very irregular year classes, even within the same lake. Some years, a year class may be smaller than average. Every three or four years the opposite may happen and there will be a year class of larger than average crappies.

The state record white crappie weighed 1-pound, 5 ounces. It came from Petenwell Flowage in Adams



County in 1996. The state record black crappie came from Gile Flowage in Iron County in 1967. It weighed 4 pounds, 8 ounces. The world record black crappie, caught from a canal in Louisiana, weighed 6 pounds; the world record white crappie weighed 5 pounds, 3 ounces and was caught in 1957 in Mississippi.

Fishing for crappies

Crappie fishing is very popular in the spring, when aggressive males will strike at almost anything that comes near their nest. Crappie fishing during the summer and fall is more difficult, as crappies seek out deep holes or deep submerged brush for shelter. Ice

fishing for crappies is also very popular on some lakes, as crappies remain active all winter.

Anglers are almost certain to have their best success near submerged structures. During spring spawning, fish near emergent vegetation close to shore. In summer try deep holes or river channels, especially if you find one with sunken logs or brush piles. Some anglers even refer to these spots as "crappie holes," because of the tendency for crappies to congregate in them. If you have no success in one area, try another spot because crappies move around freely. They can be found at almost any depth from the surface to the bottom, depending upon the season and weather. Crappies feed throughout the day with peaks in the evening and early morning.

Light tackle is almost universally preferred for fishing crappies, which rarely grow larger than 2 pounds. Anglers also use light tackle because of the paper-thin membrane around the crappie mouth; it is easier to rip the hook out of the mouth with heavy tackle. The more sensitive the rod the easier it is to detect a crappie's light bite. Crappies don't strike baits hard; they sort of gently suck the bait into their mouths.

Small minnows, sometimes called "crappie minnows," are the most popular crappie bait, often used in combination with a light jig.

Crappies will also hit on worms, insect larvae and a wide variety of artificial lures such as spinners and spoons. Wet and dry flies are popular when crappies are on their spawning beds. Small, tear shaped hooks make good winter bait used alone or in combination with grubs.

Crappie fishing is currently open year round with a generous bag limit. Check the current Guide to Wisconsin Hook and Line Fishing Regulations for up-to-date information.

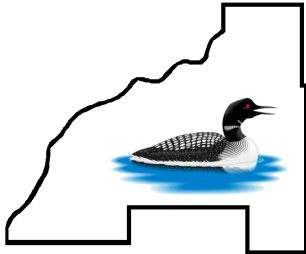
Management

Overpopulation is a major concern with crappies, especially white crappies.

Overpopulation creates competition for food and habitat, often resulting in stunted fish. To help keep populations in check, crappie harvest is encouraged through

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