

Lake Tomah: A Community Lake

by Bentley Lein and David Sprehn

Lake Tomah was formed in 1937 by the construction of a WPA project dam on the Lemonweir River. The land flooded to create the lake was donated to the City of Tomah by Mr. A.L. Butts. He stipulated that the city control and maintain ownership of a 15-foot-wide strip of land around the entire shoreline, ensuring that Lake Tomah would always be a "community lake."

The lake was shallow from its inception, and over the past half century has accumulated large amounts of nutrients and silt from its 17,000-acre watershed. The resulting silt and aquatic plant growth has caused significant deterioration in lake quality, negatively affected fishing on the lake, and reduced its aesthetic value. To remove aquatic plants, chemical spraying was attempted in the 1960s; spraying was discontinued in 1969 after concluding it was ineffective, cost prohibitive, and environmentally unacceptable.

The community realized it was losing a valuable resource and decided to organize its efforts to save the lake. In 1975, the Lake Tomah Protection and Rehabilitation District was formally created.

The next sixteen years saw countless meetings, numerous studies, and public hearings. Finally, 1991 witnessed the beginning of a \$4.8 million lake restoration and dam replacement project. The extended time frame reflects the fact that Lake Tomah is set within a very complex ecosystem; and as a result, the balancing of humans and nature

has been no small task. The process certainly had its moments of frustration and setbacks as lake committee members sought to comply with state and federal regulations affecting the lake-proper and adjoining wetlands acreage. In 1989 the committee, with community input, finalized a management plan and project proposal for which a dredging permit was approved. At a district special meeting, about 150 voters gave virtuallyunanimous approval for proceeding on a \$3.2 million project. (A local political leader later commented that only a proposal for a cat ordinance had previously drawn that many people to city hall!) Planning and negotiations continued, specifying a dredge disposal site and a host of other details.



In August 1990, Mother Nature took a direct hand. A storm discharged 9 inches of rain in a 4-hour period. Major flooding occurred in the Tomah area. The DNR ordered opening the dam's tainter gate, which controls water level, to avoid major

flood damage in Tomah. This resulted in a lake draw-down only a few months before the district was hoping to start its project. Avoiding a natural disaster had added a new dimension to the Lake Tomah project.

Inspection of the dam found serious problems. The DNR ordered that the dam be replaced, repaired to current standards, or removed. The district and the city faced another million dollar-plus problem. They analyzed their options and hand-carried a grant proposal to DNR: the proposal was accepted.

The local share of the cost to update the dam was about \$1 million. The lake committee and city, as owners of the dam, went back to the public for advice. A lake district special meeting was scheduled for October, 1991.

Over 500 people registered for the meeting, catching the committee off guard. With the sizable congregation waiting, the district commissioners had to delay the meeting until the conclusion of a girls' championship volleyball match with archrival Sparta, so they could move the meeting into the school gymnasium! Following presentations on the proposed project, dam status, and watershed, voters approved lake project bids and authorized dam reconstruction by a 4 to 1 margin.

The final lake restoration plan stresses multiple lake use. To avoid a "bathtub effect," the lake bottom will be varied and contoured to enhance aquatic plantings and maximize fish management. Consideration has been given to wildlife habitat. Site preparation for disposal and haul roads for removal of an estimated 1.2 million cubic yards of sediment are being developed.

Modifications to the dam include a new tainter gate on the existing dam and a new structure with roller gates, an emergency spillway, and "high tech" alarm and deicing systems. The major plan elements are expected to be completed by the winter of 1992-93, with refill beginning with the 1993 spring runoff.

Financing for the project comes from cash reserves, DNR dam grants, and promissory notes. The district has levied a tax for a number of years in anticipation of major projects. Lake committee

members and conservation group volunteers continue to explore local and external resources to meet some special needs such as fishing and wild-life improvement projects.

When asked about his advice to others dealing with complex lake management issues, Dan Frantz, chair of the lake committee, offered these points: Commitment and open-mindedness must go hand-in-hand to create the cooperative spirit needed to accomplish community objectives. While moments of confrontation and misunderstandings did surface, they gave way to compromise and consensus both within the community and as the committee dealt with regulatory agencies.

Frantz also says, "Neat, simple packages seldom solve complex problems. But time, persistence, and commitment of leaders will provide solutions with community support."

Bentley Lein is Monroe County UW-Extension Resource Agent, and David Sprehn is UWEX Assistant State Program Leader for Community, Natural Resources, and Economic Development.

Last Call Conventioneers!

Don't forget to register for the Wisconsin Lakes Convention at the Holiday Inn in Stevens Point on March 13-14.

Send registration fee of \$30 per person (extra banquet tickets \$15 each) payable to <u>UW-Extension</u> to:

Pat Blondheim, UWEX, College of Natural Resources, University of Wisconsin, Stevens Point WI 54481 (715/346-2116)

Stevens Poi	nt WI 54481 (715/346-2116)	
Name		-
Address		
Lake	County	



Reformed Habits Transform Lake

by Ann Ciske

Wisconsin's 10,000-year-old water legacy has left us smug. We have watched the water shortage problems facing the rest of the world with a certain detachment.

In a secluded part of Shawano County, tucked between the Stockbridge Munsee and Menominee reservations, lies Big Lake--a modest 60-acre lake with a mix of full-time, seasonal, and weekend residents who enjoy the lake, wildlife, and natural beauty of the area.

Property owners became concerned that they might lose a healthy lake when Eurasian milfoil began to spread. The Big Lake Association contacted the DNR for help in developing a long-range plan. The plan included control of sanitary waste. The Shawano County sanitarian assisted with the first all-lake action. Each private sanitation system was brought up to Wisconsin State Code. After perk testing, three types of systems were approved for use: holding tanks, mounds, and septic systems.

A holding tank was to be our new system. At first, all we saw were \$\$\$ dollar signs, because of the frequent pumping needed. After the tank was installed, we found there was a way to keep costs down: water conservation was the answer. A lot of effortless techniques saved dollars and helped our lake.

It isn't necessary to let the water run continuously while brushing one's teeth. We placed dish pans in the kitchen sink to catch excess water, then used that water and dish washing water to keep the bushes and flowers watered. Realizing that the toilet did not need to be flushed with every use was probably the hardest change. We remembered that as children we didn't bathe or shower each day, but could wash up and whenever possible use special biodegradable soap or shampoo. What

little laundry we accumulated we took home with us. We are amazed to find how much water had been wasted. Our concerns about having a holding tank were unfounded.

Three years have now passed. Every individual sanitary system at Big Lake has been brought up to code. Minimum use of fertilizer is promoted. Big Lake is part of the UW-Stevens Point water testing program; water turbidity is checked weekly, May through September. Reports are recorded at the DNR Lake Management Office in Madison. Our lake will remain healthy for our grandchildren, because as individuals and as a group we care and take action.

Ann Ciske is a resident of Big Lake.

Do you have other suggestions about using less water on your lake? With your help, we'll run an article on conservation hints. Drop Lake Tides a note!

Games People Play

How do you teach people the value of a clean environment? A fun, challenging game is a good start. "Lake games" teach youth and adults how to balance decisions related to water pollution, personal values, and economics. In the games, a bucket of water representing the lake gradually becomes polluted and depleted. Players assume roles ranging from tourist to industrialist to homeowner. The games are designed to increase awareness about lake use. They help show the competing demands of tourists, boaters, lake homeowners, industry, and anglers. They also help people realize that we are all responsible for how water is used--or abused.

Both young people and adults learn that decisions on how to manage and protect lakes are difficult and require compromises. The Lake Game for Adults is ideal for lake associations and other groups that are trying to make decisions about lake management. The Lake Game for Youth is similar, but has roles more appropriate for young people. Single copies are free from Minnesota Sea Grant, Room 302, 1518 Cleveland Ave N, St. Paul MN 55108 (612/625-1253).

What's In A Name?

by Arden Bierman

<u>Juglans cinera</u> (Jupiter's nut) is the scientific name for the Butternut tree. The nut kernel is so delicious, rich, and oily that the name of oil-nut has sometimes been given to this tree.

The tree's range extends from Quebec down through the northeastern sections of the United States. It is one of the few edible nut trees that grows in any abundance this far north. Butternut trees are found wild in the Nicolet National Forest and were probably noted near Butternut Lake when it was given its name.

In the mid-1980s, a large mature butternut tree blew down near the Butternut Road in the Nicolet National Forest. A squirrel lost 10 gallons worth of hard work when we liberated his cache of butternuts near the downed tree. The US Forest Service (USFS) took the nuts to their nursery to start seedlings. In 1987 and 1988, our Butternut-Franklin Lakes Association and the USFS inaugurated a joint effort to plant the young trees. Wire enclosures were made so that the deer would not eat the sweet bark and leaves before the trees were established.

The association continued the planting of butternut trees by purchasing trees and offering them to members at cost. Most members now have two or more trees growing on their property. In 1991, the Butternut-Franklin Lakes Foundation purchased seedlings as a gift for the Nicolet National Forest. Property owners were given tree-planting instructions and asked to plant in open, but sheltered, areas of the forest. Seventy-seven trees were planted in 1991 and the project will continue in 1992.

Butternut Lake was named for the tree that once grew here in abundance. We hope that our planting of butternut trees will carry on as a tradition to our children and grandchildren--a legacy of butternut trees near these beautiful lakes that carry their name.

Arden and Mary Bierman are residents on Butternut-Franklin Lakes, and are active in the local lake association, its Foundation, and WFL.

Butternut Frosting

Here is a recipe you might try, it you are lucky enough to have some butternuts (as well as someone with a strong arm to crack them). Particularly good on spice cakes. Makes enough to fill and frost a 3-layered cake.

Combine 2 cups firmly packed brown sugar, 3/4 cup milk, and 1/8 tsp. salt in a 3 quart heavy sauce pan. Bring to a boil over medium heat, stirring constantly, until the sugar dissolves. Cover and let boil for 2-3 minutes. Uncover; scrape sugar down from sides of the pan. Continue to boil over medium heat until the softball stage, stirring only if it starts to burn. Remove from heat; add 2 1/2 tbsp. butter and 2-4 cups powdered sugar, stirring constantly (if too thick use whipping cream to get a frosting consistency). Add 1 tsp. vanilla and 1 cup chopped butternuts.

Consider planting native trees and plants near your lake shore. Trees can be purchased from private nurseries, so check catalogs. They may also be purchased from the National Arbor Day Foundation, whose purpose is the planting and conservation of trees. Their address is: National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City NE 68410. Also, some natural plant nurseries offer native species. For a listing, call Bob Korth at Lake Tides at 715/346-2192.

Southeast Lakes Conference

The planning for this year's events has already begun. Be sure to mark your calendar. The conference will be held in West Bend on October 17, 1992. There will be sessions offering you assistance and knowledge since..."It's Up to You to Keep it Blue." Contact Harry Hein, 5388 W Lake Dr, West Bend WI 53095 (414/644-5746).



Cause and Effect

by Tim Rasman

The condition of Wisconsin's waters has changed dramatically in a relatively-short period of time. In the past 200 years, tremendous changes have occurred as humans became attracted to lakes. We began to develop the shorelines, essentially creating small cities on lakes. River systems were impounded, creating shallow lakes that became deposition sites for large drainage areas. This kind of development has culminated in the predicaments we face today.

The attraction to build, recreate, and live on our lakes has reshaped the watershed. Shoreline development has removed vegetation that buffered and purified the runoff water entering our lakes. Our life-styles demonstrate our reluctance to move out of the immediate drainage area, which would give our lakes a needed chance to breathe.

It's surprising how much abuse a lake can take year after year and still bounce back. Lake aging processes have been accelerated by human use. We have grossly increased the amount of sediment and nutrients entering our lakes. The chemicals we bring into the immediate drainage area of our lakes often become a source of pollution. Think for a minute about the gallons of oil and gasoline we use to power our boats and the fertilizers and chemicals we use on our manicured lawns. Then road salt, antiquated septic systems, shoreline development and poor construction practices, paint, solvents—the list goes on. The "final port of call" for a lot of this material is the bottom of our lakes.

* * * * *

One of the most apparent signs that a lake is aging is an increase in aquatic plants. A combination of physical, chemical, and biological factors contributes to the growth of aquatic plants in our lakes. When the plants restrict our recreation and become a nuisance, some of us are willing to go to great expense and effort to remove them--often without

thinking about the impact on the health of the lake. Sometimes the cure we impose is worse than the ailment.

In the past, Lake Tides has discussed options for managing plants. They can be divided into two categories: physical and chemical. Physical means are becoming more popular. We realize this is less intrusive when done according to a well-defined plan. Channels are immediately opened and nutrients (plant materials) are removed from the water. Chemical methods have proven to have drawbacks. First, they aren't selective. Native plants are removed along with nuisance plants. Removal of all plants opens up the possibility for the invasion of the opportunistic exotics such as Eurasian milfoil. Everyone loses when this occurs, especially the aquatic life. Concern also exists about the short- and long-term impact chemicals have on the environment.

Permits are required for the use of herbicides in waters of the state. More information can be obtained on the management of aquatic plants from DNR district aquatic plant managers. They can provide you with a variety of methods for managing plants along with chemical fact sheets that point our environmental concerns for the use of herbicides approved for aquatic use. DNR has statutory authority to supervise the chemical treatment of waters of the state under §144.025(2)(i), Wisconsin Statutes. Pursuant to its authority, DNR has promulgated rules for this program in Ch. NR 107, Wis. Adm. Code.

Concern over the use of chemicals is so significant in some parts of the state that local government is taking action. On September 25, 1990, the Door County Board of Supervisors passed a resolution requesting that DNR deny the issuance of permits for the use of aquatic chemical herbicides. The resolution also asked that DNR reconsider its policy for the use of aquatic chemical herbicides in all waters of the state. The DNR is regarding this resolution as advisory. Since the resolution, one permit was issued in Door County and the sponsor chose not to use aquatic herbicides.

Native aquatic plants are an essential part of every lake ecosystem. The population and health of

other aquatic life is directly related to the number of aquatic plants in the shallow or littoral area of a lake. Plants provide cover and habitat for fish and wildlife. In many instances, the plants are a direct source of food.

A delicate balance exists between our need for recreation on Wisconsin's lakes and the needs of a healthy, well-balanced aquatic community. The future of this region's lakes depends on what we perceive as our role and responsibilities in the stewardship of these natural systems. We have to ask ourselves what will be the consequences of our thriving lifestyle in the centuries to come.

Tim Rasman is the Inland Lakes Coordinator for DNR's Lake Michigan District.

Fish Inventions

National Wildlife, Dec. 1991

By injecting genes from different species into fish eggs, scientists hope to create water creatures that grow extra quickly or resist disease. Designer fish are not yet farmed commercially, but scientists have developed more than a dozen fish with genes from other species, including:

- northern pike with a cow's growth hormone gene
- carp with growth hormone genes from trout and salmon
- rainbow trout with growth hormone genes from rats
- Atlantic salmon with a flounder's gene for a protein that keeps the fish from freezing
- loach, mud carp, silver crucian carp, and tilapia, among other species, with human growth hormone genes.

Wasting Away

In just one season, Rodney Batt will save more than \$2,000 in garbage fees by composting fish waste at his resort on Cass Lake in north central Minnesota. Batt is using a composting system developed by the University of Minnesota's Sea Grant Program and Extension Service. They developed a simple structure and a process that resort owners and marina operators can use to compost fish wastes. One structure can handle up to 25 five-gallon buckets of fish waste per week.

Sphagnum peat moss is used along with wood chips to compost the fish waste. The resulting compost can be used in about a year and is an excellent soil conditioner.

A manual on how to build the compost structure and manage an odor-free fish compost pile is available from Minnesota Sea Grant. (If you'd like to try out the product first, we've seen it at garden centers.)

Ordering information for <u>Composting Fish Wastes:</u> <u>A Disposal Alternative for Resorts</u> is available from Minnesota Sea Grant, Room 302, 1518 Cleveland Ave N, St. Paul, MN 55108 (612/625-1253).

Great Lakes to Inventory Toxic Air Emissions

Thanks to a grant from the Great Lakes Protection Fund, the Great Lakes Commission and its eight member states will begin developing a regional air toxics emissions inventory--a tool for evaluating the impact of airborne toxic pollutants on the Great Lakes. The atmosphere is a significant source of certain toxic pollutants entering lakes, but additional information on types and quantities is needed to improve pollution control strategies.



Recreational Boating Facilities Program Expanded

The 1991-93 biennial budget bill contained a number of changes in the recreational boating facilities program supervised by the Wisconsin Waterways Commission. Prior to the signing of the budget, the recreational boating facilities program provided 50% cost-sharing assistance to government units (counties, municipalities, and inland lake rehabilitation and protection districts) for the construction of accesses to water and harbors of refuge. Cost-sharing assistance was also provided for the conduct of feasibility studies relative to this construction. With the signing of the budget, several additional components were added to the program.

First, lake associations meeting a series of eight qualifications were added to the list of eligible sponsors. Lake associations interested in requesting financial assistance from the recreational boating program will need to complete an organizational application form that certifies that the association meets the test of "qualified" as defined by the statutes. The definitions are currently being written and should be completed by spring.

The list of eligible project activities was also expanded for inland waters sponsors. The additional project activities are:

1. Acquisition of capital equipment necessary to cut and remove aquatic plants that are aquatic nuisances or that are detrimental to fish habitat. Eligible capital equipment will be limited to cutting devices, barges with propelling motors, conveyors and trailers. Financial assistance to acquire this capital equipment is only eligible when the sponsor has a Department-approved plan to cut and remove aquatic plants. If the equipment is to be used on more than one lake, each lake will have to be covered by an approved weed harvesting management plan. A sponsor may not receive funds for acquiring individual pieces of weed har-

vesting equipment more than once every 10 years.

- 2. Acquisition of aids to navigation and regulatory markers including the ground tackle. Cost sharing assistance will only be available for those markers authorized under a DNR waterway marker placement permit. Sponsors will have to obtain the approval of the Waterways Commission prior to the acquisition of the markers. The cost of repairing, placing, moving, or removing markers is not eligible.
- 3. Dredging of a channel of a waterway to the degree necessary to accommodate recreational watercraft. In a lake, the channel must be defined by aids to navigation, i.e., green and red buoys or black/white centerline buoys. The width of a channel eligible for cost sharing assistance will be limited to 25 feet either side of the centerline of a river or a marked channel in a lake. A sponsor may not receive funds for dredging a channel of a waterway more than once every 10 years.

Funds for the recreational boating facilities program are appropriated by the legislature from the water resources account, an account generated by the formula transfer of excise tax on gasoline used for marine purposes from the Department of Transportation.

Application materials, including organizational applications for lake districts and the outline for the weed harvesting management plan, are available from the community services specialist in each DNR district office. The deadline for applications for projects for the next meeting of the Wisconsin Waterways Commission is March 15, 1992.

For more information, contact Larry Freidig, Wisconsin DNR at 608/266-5897.

1992 Year of Clean Water

Congress has passed and President Bush has signed a resolution proclaiming 1992 as the "Year of Clean Water" and October 1992 as "Clean Water Month."

Bills, Bills, Bills

The following are summaries of some of the bills affecting Wisconsin waters, and their sponsors. We encourage you to share your concerns with your legislators and ask for copies of the bills.

Assembly Bill 74 (Rep. Baldus) Also, Senate Bill 29 (Sen. Berndt) Requires the DNR to promulgate rules regulating the discharge of phosphorus into the state's waters. Would extend DNR authority beyond its current jurisdiction in the Great Lakes Basin.

AB 74 has passed the Assembly. SB 29 has had a hearing in the Senate Environmental Committee.

Assembly Bill 88 (Rep. Van Dreel) Requires a real estate broker or sales person to tell the prospective renter or purchaser in a real estate transaction whether the real estate is located in an area subject to wetland, shoreland, or floodplain ordinances.

Assembly Bill 421 (Rep. Stower) Creates a lake management grant program to provide funding to local entities to protect or improve the quality of water in lakes or lake ecosystems. The grant program would be administered by the DNR. This bill would also increase the amount of money collected from the motorboat gas tax. The money from the gas tax is transferred from the transportation fund to the conservation fund.

Assembly Bill 506 (Rep. Coleman) Currently, a person who wants to enlarge or otherwise affect the banks of bodies of water must obtain a permit from the DNR. This bill would increase the penalty for illegally engaging in this type of activity or for violating the terms of the permit.

Assembly Bill 509 (Rep. Stower) Currently boats may not go faster than the "slow-no-wake speed" on lakes of 50 acres or less. This bill would modify that rule to lakes of 70 acres or less.

AB 509 has had a hearing in front of the Assembly Natural Resources Committee.

Assembly Bill 724 (Legis. Council) Includes several provisions intended to increase safety for personal watercraft in the state.

AB 724 has had a hearing in front of the Assembly Natural Resources Committee.

Assembly Bill 725 (Legis Council) Increases the registration fee for boats and appropriates the additional revenues raised for state and local activities related to boating safety.

AB 725 has had a hearing in front of the Assembly Natural Resources Committee.

Assembly Bill 727 (Rep. Swoboda) Creates a submerged cultural resource council and a program for the preservation of submerged archeological sites or historic property of the state.

AB 727 has had a hearing in front of the State Affairs Committee.

Senate Bill 122 (Senator Weeden) Creates a definition of personal watercraft: a motorboat powered primarily by a water jet pump that is operated by a person standing, kneeling or sitting on the watercraft (popularly known as "jet skis"). This bill prohibits these watercraft from being operated during the night, from towing people on water skis, from allowing persons under 16 year old to operate, and requires that a personal flotation device be worn by everyone on the craft.

SB 122 has been referred to the Joint Finance Committee.

The Cost of Safe Boating

by Bill Engfer

The Department of Natural Resources is involved in much more than just enforcement. The money received from boating registration and other sources is spread over eight major areas of services to the boating public, local municipalities, counties, and general public that use the waters and have safety interests and concerns. For the 1991-1992 fiscal year, the overhead costs have been reduced from \$307,600 to \$259,100. This is a dollar amount that is taken off the top of all monies before any money is received in the budget.

The need for boating safety efforts has increased statewide due to spiraling use and demands on our waters. The requirements placed on state and local agencies have increased accordingly. State funding for municipal enforcement has increased 150% since 1987 while state funding for all state boating related programs has increased 65%. The demands put on our programs also have expanded over the years, and now that the municipal patrols are at the full 75% funding capacity, the DNR

needs to increase its funding to continue to provide services statewide.

Currently, each warden is allotted a portion of the total hours of a position based on the amount of problems, complaints, accidents, etc., that are occurring in their administrative area (i.e., high use lake or river areas get larger allotments). When a warden goes on patrol, only those hours spent on boating are charged back against the boating fund (eg., 8 hours/day spent half on fish enforcement and half on boating would show up as 4 hours against the fish account and 4 hours against the boating account). This is an efficient manner of paying for only those hours spent on boating. Many hours of free patrol deterrence are received, because if a warden patrols a lake all day checking fishermen and never sees a boating violation or receives a complaint on boating, fish and game money pays for the entire day and visible patrol deterrence was totally free to the boating safety budget.

In the 1991-92 state budget package, the Department of Natural Resources Division of Enforcement asked for a \$200,000 increase in the municipal boat patrol funds. The result was an increase of \$200,000 in the municipal funds to allow for full 75% funding of all municipal patrols starting in 1991. Concerns over funding have continued to be foremost in the Department's mind.

William Engfer is the Boating Law Administrator for Wisconsin DNR, PO Box 7921, Madison WI 53707 (608/266-2141).

Water Facts...

Restaurants in the US serve approximately 70 million meals a day. Every glass of water brought to your table requires another two glasses of water to wash and rinse the glass.

Nearly one half of the world's population lacks access to clean water. It's important that we protect and conserve our water sources.

Banding Alert

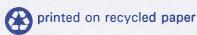
Adult and Juvenile Common Loons have been color-marked in Michigan and Wisconsin. Colored plastic leg bands were used in various combinations on 142 loons in 1991. Anyone observing color-marked common loons, please note date, location, and positions of colored and aluminum bands and notify David Evers, Whitefish Point Bird Observatory, HC 48 Box 115 Paradise MI 49768 (906/492-3596).



When the Rain Burns

It was a Kodak moment. A rare summer evening that should be preserved on postcards and shared with friends. A distant cloud hovered over the lake. Clear sky brightened the horizon and silhouetted the hill and tree spires in artistic bordering. As the sun set, that cloud turned as red-orange as a black spruce campfire. The twists and twirls in the cloud rose in the sky like the chant of a native rain dance. And cool raindrops fell from the fire in the sky to the fire in the lake and burnt my memory forever...

Lowell Klessig





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College of Natural Resources
University of Wisconsin
Stevens Point WI 54481
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