

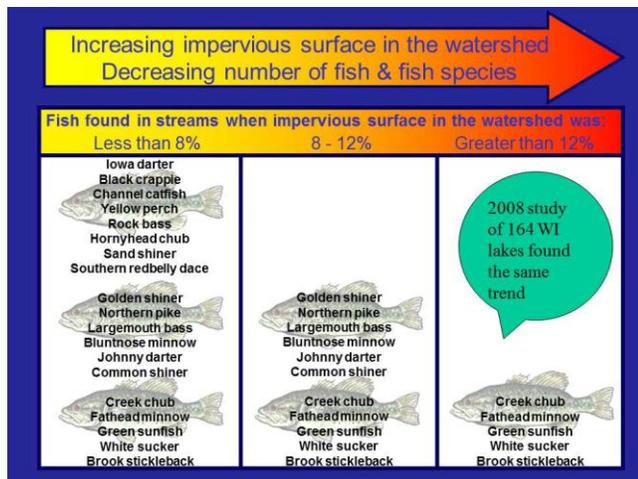
Why does the new shoreland zoning rule limit impervious surfaces like rooftops and driveways?

Why do we have shoreland zoning ?

The Wisconsin legislature adopted shoreland zoning in 1966. Their purposes for shoreland zoning included:

- Protecting spawning grounds and fisheries
- Preventing and controlling water pollution
- Keeping shore cover and natural scenic beauty¹

Why do we have impervious surface limits?



In the 40+ years since the original shoreland zoning rule many scientific studies from around the U.S. showed that hard or impervious surfaces like rooftops and driveways make a big difference in the quality of lakes and rivers. Impervious surfaces prevent water from soaking into the ground and thereby increase runoff that carries fertilizers, pesticides and other pollutants to the lakes and streams. For instance, a parking lot produces 16 times more runoff during a one-inch rainstorm than a meadow of the same size.²

Studies of 47 Wisconsin streams and found that fish populations decline dramatically when more than 8-12% of the watershed is covered with hard surfaces such as rooftops, roads and driveways. Streams with more than 12% hard surfaces have consistently poor fish communities.³ The same trend of poor fisheries with increased impervious surfaces was found in a 2008 study of 164 Wisconsin lakes.⁴ Hard surfaces harm fisheries because:

- Warm runoff from roads and other hard surfaces raises water temperatures and decreases oxygen levels, eliminating some fish species
- Sediment carried in the runoff creates cloudy water, so fish that hunt by sight have a hard time finding dinner
- Sediment covers spawning areas and clogs the gills of some fish

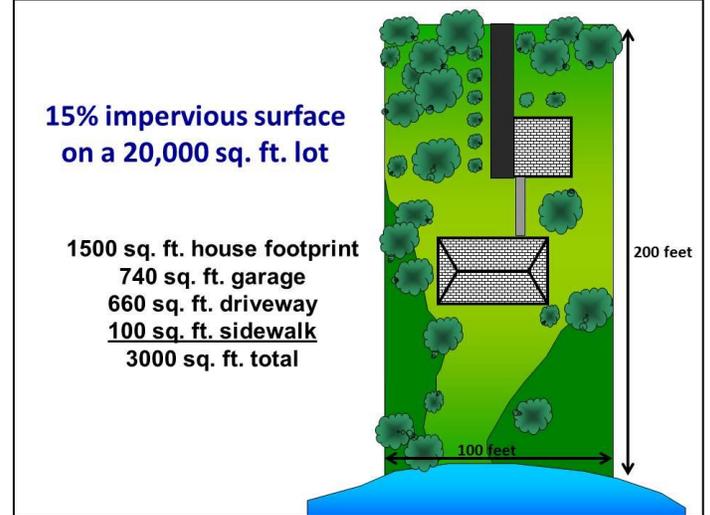


Economic studies during the same timeframe found that to protect waterfront property investments, we need to protect water quality. Not surprisingly, people prefer clean water and will pay more to live on lakes with better water quality. A study of over 1200 waterfront properties in Minnesota found when water clarity changed by 3 feet changes in property prices for these lakes are tens of thousands to millions of dollars.⁵

What does the 2010 shoreland zoning rule say about impervious surfaces?

Within 300 feet of lakes and streams, landowners may:

- Keep the impervious surfaces you have
- Expand impervious surfaces up to 15% of the area within 300 feet of the lake or stream without a permit.
- Expand impervious surfaces between 15% and 30% of the area within 300 feet of the lake or stream with a permit and mitigation.
- An impervious surface is defined in the rule as “an area that releases as runoff all or a majority of the precipitation that falls on it. Impervious surface excludes frozen soil but includes rooftops, sidewalks, driveways, parking lots, and streets unless specifically designed, constructed and maintained to be pervious.”⁶ Counties have some flexibility in how they apply the impervious surface standard.



Ways to work with the impervious surface standard

- **Limit hard surfaces and covered areas** that prevent water from seeping into the ground. When considering additions, decide whether the extra space is really needed. Perhaps you could build up instead of out. Or remove unused impervious surface to balance new impervious surface. Also consider runoff from decks, sidewalks and parking areas.
- **Consider using pervious (porous) building materials** when designing driveways, patios, walkways, and parking areas. A porous surface will absorb water and reduce flows to the lake or stream. Gravel areas become compacted and result in nearly as much runoff as paved surfaces. Pervious pavers are an option for areas that do not have heavy traffic.



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References:

- ¹ Chapter NR 115: Wisconsin's Shoreland Protection Program. <http://legis.wisconsin.gov/rsb/code/nr/nr115.pdf>
- ² Schueler, T. 1994. The Importance of Imperviousness. *Watershed Protection Techniques*, 1(3):100-111.
- ³ Wang, L., J. Lyons, P. Kanehl, R. Bannerman, and E. Emmons 2000. Watershed Urbanization and Changes in Fish Communities in Southeastern Wisconsin Streams. *Journal of the American Water Resources Association*. 36:5(1173-1187); Wang, L., J. Lyons, and P. Kanehl 2001. Impacts of Urbanization on Stream Habitat and Fish Across Multiple Spatial Scales. *Environmental Management*. 28(2):255-266.
- ⁴ Garrison, Paul et al. Implementation and interpretation of lakes assessment data for the Upper Midwest. Final report to the U.S. EPA. Grant No. X7-83254601. November 2008. pp.47-48
- ⁵ Krysel, Charles et al. June 2003. Lakeshore property values and water quality: Evidence from property sales in the Mississippi headwaters region. www.friendscvsf.org/bsu_study.pdf
- ⁶ Chapter NR 115: Wisconsin's Shoreland Protection Program. <http://legis.wisconsin.gov/rsb/code/nr/nr115.pdf>