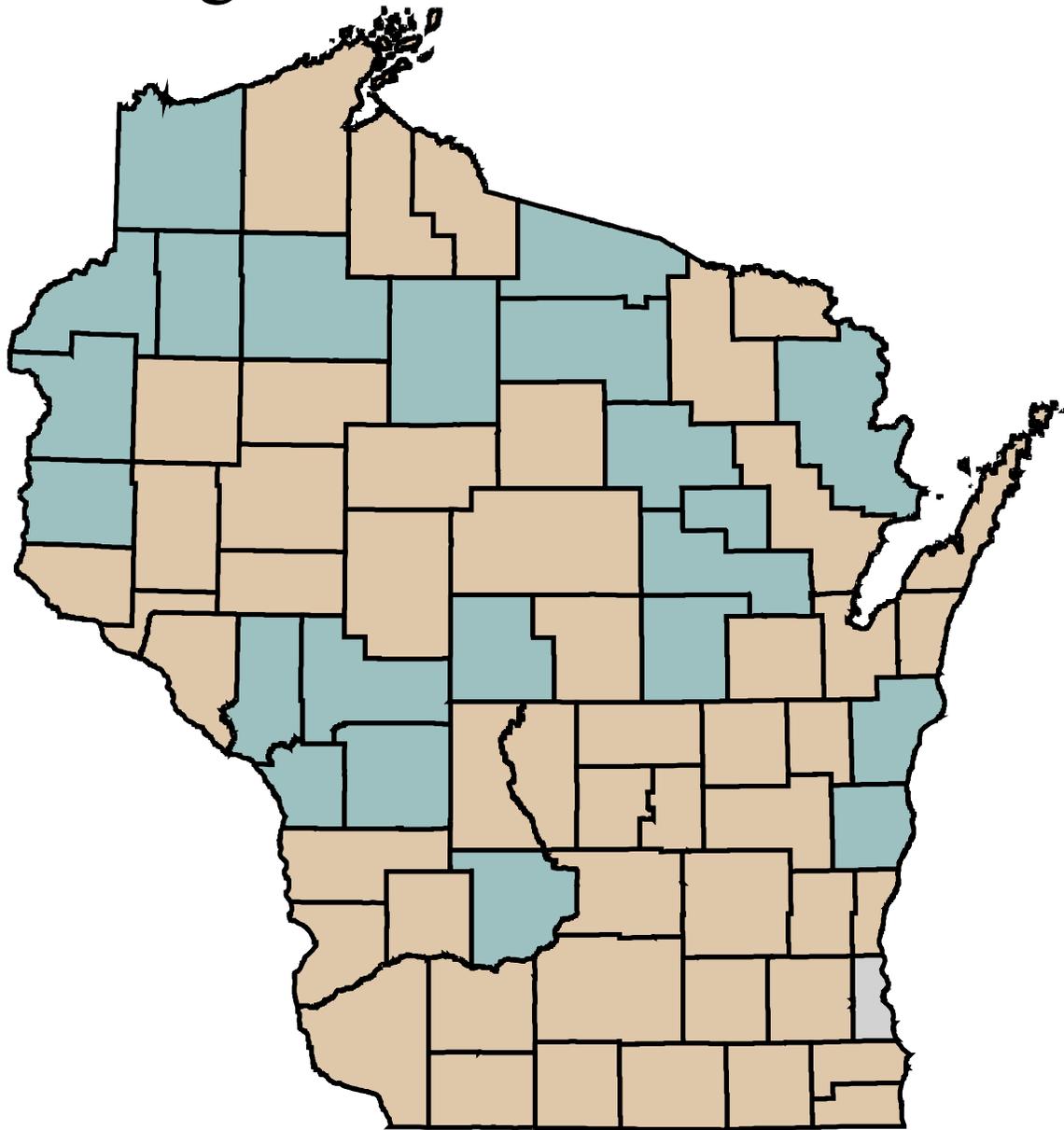


Viewing Access Corridor Standards



-  County is not regulated under NR 115.
-  County requires no more than 30 feet in any 100 feet shall be clear cut.
-  County has more restrictive cutting regulations, such as limiting site to one corridor or allowing only selective trimming.

For more information, contact Carmen Wagner,
WI DNR, Shoreland Zoning Specialist, 608-267-7694.


May 22, 2000
Bureau of Watershed Management

Shoreline Vegetation Protection Issue Summary

MANAGEMENT RATIONALE

Probably no surface water protection tool is as widely recognized or as controversial as shoreline buffer area requirements. A shoreline buffer is an area of undisturbed soils and vegetation (preferably native vegetation) separating development from adjacent waters. Maintaining a shoreline buffer is critical to controlling erosion, reducing runoff and the flow of effluents, sediments and nutrients into surface waters. The effectiveness of a buffer to perform these functions is affected by:

- nature of the pollution (dissolved materials are more difficult to control than those associated with sediment),
- volume of runoff (large flows overwhelm natural detention and infiltration capacity),
- degree and uniformity of slope (channelized runoff with its greater velocities carries more and larger particles),
- surface roughness (surface irregularity slows runoff),
- soil/surface permeability (permeable soils allow infiltration and reduce runoff),
- vegetation stem and root density and stem erectness (roots anchor soils against erosion while dense stands of erect stems slow runoff and filter out particles), and
- buffer width (wide buffers allow optimal buffer function).

Beyond water quality protection, buffers provide a variety of other important benefits including:

- water temperature attenuation,
- habitat for fish, birds and other wildlife,
- areas necessary for reproduction and spawning,
- natural scenic beauty of Wisconsin's waterways,
- visual screening and privacy for people on shore and on the water, and
- increased leisure time and money due to less lawn maintenance.

The two easiest ways to preserve and enhance the functions of a shoreline buffer are maximizing the dimensions of the buffer and minimizing the removal of vegetation from the buffer.

MINIMUM STATEWIDE STANDARDS

Chapter NR 115, Wis. Admin. Code, requires a 35 foot deep shoreline buffer running parallel to the ordinary high-water mark of navigable lakes, rivers and streams. In this buffer area, activities are limited. No more than 30 feet in any 100 feet may be clear-cut; however cutting regulations do not apply to dead, diseased or dying trees and shrubbery. Beyond 35 feet inland, tree and shrubbery cutting shall be governed by the use of sound forestry and soil conservation practices to protect water quality.

RELATED RESEARCH

There is mounting scientific evidence that shoreline buffers and their functions (noted above in management rationale) are not adequately protected by current shoreland zoning

standards that require a 35 foot deep buffer (Bernthal 1998, Castelle 1994, Desbonnet 1994). A review of 52 studies on buffer widths shows that Wisconsin's minimum buffer requirement of 35 feet falls is inadequate to perform many critical functions. This buffer width provides only minimal water quality protection from sediments and nutrients and does NOT provide for: wildlife habitat, water temperature attenuation, or protection of water quality from fecal coliforms and stormwater runoff (Johnson 1992).

RECOMMENDED SHORELINE BUFFER WIDTHS
Based on (x) studies

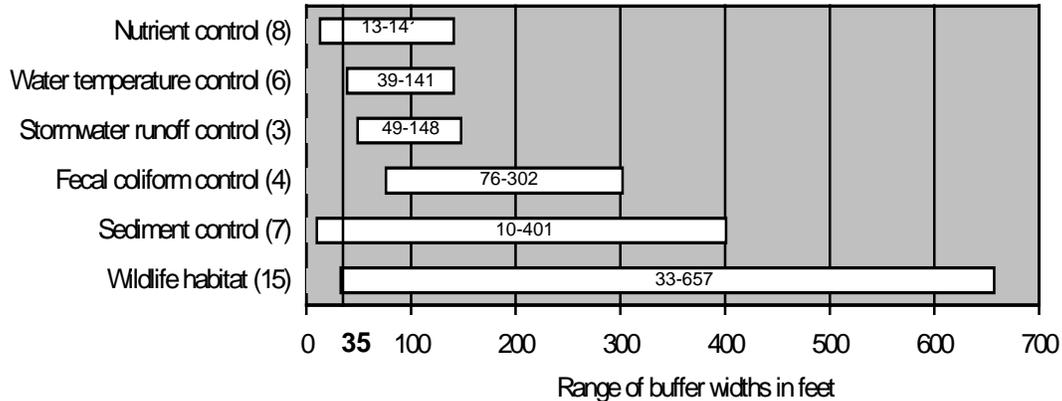


TABLE 1: Johnson 1992

Shoreline plants, green frogs (an indicator species), and song birds were analyzed along developed and undeveloped shorelines in northern Wisconsin. On the developed shorelines:

- green frogs and their habitat are completely eliminated,
- the breeding bird community was typical of suburban areas rather than northern Wisconsin,
- shoreland plant losses result in serious reduction of wildlife habitat quantity and quality, and
- removal of aquatic plants and woody debris reduces the amount of habitat for spawning and young fish (Meyer et al, 1997).

Tree falls have also been shown to decline with shoreline development (Christensen et al, 1996). Tree falls are especially critical in oligotrophic lakes where the downed trees provide near shore aquatic habitat and nutrient inputs. Oligotrophic lakes are low in nutrients and generally do not support large fish populations. The loss of downed trees, and the associated aquatic habitat and nutrients, can adversely impact fish populations in these types of lakes.

MANAGEMENT INITIATIVES – SHORELINE BUFFER SIZE

Many counties had adopted shoreline buffer requirements which more effectively sustain buffer functions than Chapter NR 115, Wis. Admin. Code. One approach is to increase buffer widths for sensitive classes of waters (up to 300 feet). This has been necessary to

accomplish certain buffer objectives (e.g. if one objective of buffers is to control stormwater runoff entering a lake, the research shows that the shoreline buffer size required to accomplish this objective is between 49 and 148 feet wide). Barron County, for example, has increased the size of required buffers to 75 feet on all navigable lakes and streams.

Counties which have adopted water classification often require increased buffer widths on increasingly sensitive classes of waters. In Waupaca County, for example, two-hundred 275 foot buffers are required on the most sensitive waterbodies and 50 foot buffers on the least sensitive waterbodies. Some counties have linked the shoreline buffer size to the shoreline setback (e.g. Waupaca County defines the shoreline buffer width as 25 feet less than the shoreline setback). This approach increases the shoreline buffer size and associated protections while allowing adequate space for heavy construction equipment to operate around the buildings during construction.

MANAGEMENT INITIATIVES - VEGETATION PROTECTION

Current state law requires no more than 30 feet in any 100 shall be clear-cut. This has proven to be largely ineffectual in protecting shoreline vegetation for a variety of reasons. First, this provision only applies to trees and shrubs, and does nothing to protect the herbaceous layers (grasses and flowers) of the buffer area, which perform many of the functions of a healthy buffer. Second, “clear-cut” is never defined in the code, allowing for many different interpretations.

In response to these shortcomings, many counties have revised their ordinance language to describe a shoreline vegetation protection area where land disturbing activities and vegetation removal are prohibited except for a list of specific allowed activities, as described below. The regulatory message is much clearer than for the administrative rule (NR 115) standard, “*This is a no disturbance zone with very limited exceptions.*” Equally important for compliance with new shoreline buffer provisions are the state and local educational efforts, technical assistance and incentives directed at buffer protection and restoration.

Some counties establish “zones” within the shoreland buffer area. Vilas County has a “No Cut Zone” from the ordinary high-water mark to seventy-five feet inland. A “Selective Cut Zone” then runs from seventy-five to three hundred feet for lakes or one hundred and fifty feet for rivers and streams. These regulations apply to trees, shrubs and undergrowth.

Other counties have clearly defined what is meant by the term “clear-cut”. Waushara County defines an area as being clear-cut when 70% of the crown cover or basal area of perennial woody vegetation has been removed. This prevents landowners from claiming their property has not been clear-cut because they left one tree.

MANAGEMENT INITIATIVES –ACTIVITIES ALLOWED WITHIN THE BUFFER

To protect vegetation in the shoreline buffer, some counties have chosen to prohibit cutting of vegetation and land disturbance in the shoreline buffer area except for some or all of the following activities (list taken from Langlade County):

- One viewing corridor for each minimum lot width established by selective pruning and selective removal of trees and shrubbery. Clear cutting, filling, grading and other land disturbing activities are not permitted. Sufficient trees and shrubbery shall be retained to screen development from view from the water but provide a filtered view of the water. The viewing corridor shall be more or less perpendicular to the shore and no more than thirty (30) feet wide in the dimension paralleling the shore,
- One pedestrian access pathway or elevated walkway,
- Shoreline protection activities authorized by a state permit,
- Removal of dead and diseased trees which are a safety hazard or which threaten structures (most dead trees are left in place since they are important habitat for many species of wildlife), and
- Roadways adjacent to permitted stream crossings.

One way to define the extent of cutting allowed in the viewing corridor is to describe the desired result as a performance standard (e.g. screening development) like Langlade County does. Another option is to provide more measurable and enforceable design standards like Oneida County does by requiring that the viewing corridor shall be established by pruning (not to exceed removal of 25% of branches) and selective removal of trees and woody plants, leaving one square foot of cross-sectional area of woody plants at breast height in the viewing corridor. The disadvantage to this more quantitative approach is that it takes staff time to count trees and branches and may not accomplish the objective of the provision.

Other counties allow additional activities within the buffer area including removal of noxious species (e.g. poison ivy), removal of plants that may compromise buffer health (e.g. oak wilt) and removal of trees and shrubs in DNR sanctioned trout habitat improvement projects.

A common concern related to the proposal of new standards for vegetation protection in buffer areas is how it will affect existing lawns. Therefore, it is prudent to specifically address this issue. Langlade County states that lawns of landscaping established prior to adoption of the standards may be maintained but not expanded within the buffer area.

MANAGEMENT INITIATIVES - OTHER OPTIONS

Forest County prohibits the use of fertilizers which contain phosphorus, nitrates or lake damaging chemicals in the shoreland buffer area. This is certainly a laudable goal in protecting water quality, but may be difficult to enforce.

CONSIDERATIONS

- Correlate buffer size with buffer objectives (e.g. if one objective is to control stormwater runoff entering a lake, the research shows that the shoreline buffer size required to accomplish this objective is between 49 and 148 feet wide).
- Consider requiring larger buffers for waterbodies that are more sensitive to pollutants due to small size, limited flushing, sensitive plants or animals, etc.
- Consider linking buffer size to shoreline setback for structures (e.g. buffer width is 25 feet less than shoreline setback).
- Develop a clear definition of what is allowed within the buffer area (e.g. no cutting of vegetation and no land disturbance with a list of specific exceptions).
- Define whether more than one viewing corridor will be allowed for very large lots and what the dimensions of the corridor will be (e.g. no more than 30 feet wide in the dimension paralleling the shore).
- Define the extent of cutting allowed in the viewing corridor by either describing the desired result (e.g. screened view) or how much can be removed (e.g. 25% of branches).
- Consider whether to allow removal of dead or diseased trees if they pose a safety hazard or threaten a structure or will compromise buffer health (e.g. oak wilt). Determine whether to require replanting when a tree or shrub is removed. Decide whether noxious species (e.g. poison ivy) removal from the buffer will be allowed.
- Decide upon the following details for new pathways and elevated walkways: allowed dimensions, allowed land disturbance, whether a construction plan will need to be approved, and whether they will be located within the viewing corridor (minimizes area of vegetation disturbance).
- Determine how existing lawns and expansion of lawns will be addressed.
- Consider providing incentives for restoring buffers (Burnett County example).
- Consider developing educational programs on how buffers benefit lakes and streams.
- Consider compiling a local resource list for buffer restoration: technical assistance, native plant and seed sources, restored sites for viewing, etc.

BIBLIOGRAPHY

Bernthal, T. W. 1998. *Effectiveness of Shoreland Zoning Standards to Meet Statutory Objectives: A Literature Review and Policy Implications*. PUBL-WT-505-97, Wisconsin Dept. of Natural Resources, Madison, WI

Castelle, A. J., A.W. Johnson & C. Conolly. 1994. Wetland and stream buffer size requirements – A review. *Journal of Environmental Quality* 23:878-82.

Christensen, D. L., B. J. Herwig, D. E. Schindler & S. R. Carpenter. 1996. Impacts of residential lakeshore development on coarse woody debris in north temperate lakes. *Ecological Applications* 6(4):1143-49.

Desbonnet, A. et al. 1994. *Vegetated Buffers in the Coastal Zone: A Summary Review and Bibliography*. Coastal Resource Center, Rhode Island Sea Grant, University of Rhode Island, ISBN 0-938-412-37-x, 71 pp.

Meyer, M. et al, 1997. *Shoreland Zoning Regulations Do Not Adequately Protect Wildlife Habitat in Northern Wisconsin*. Final Report – UFWWS State Partnership Grant P-1-W, Segment 17. 73 pp.

Johnson, A.W. & D.M. Ryba. 1992. *A Literature Review of Recommended Buffer Widths to Maintain Various Functions of Stream Riparian Areas*. King Co. Surface Water Management Division. Seattle, WA 29 pp.

Abbreviations used in the following table are:

AS = Accessory structures
Bldgs. = Buildings
BR = Black River
Btwn = Between
CUP = Conditional use permit
DBH = Diameter at breast height
Dev't = Development
DNR = Department of Natural Resources
Exten. = Extension
HWM = High-water mark
Improv't = Improvement
L. MI = Lake Michigan
Max. = Maximum
Min. = Minimum
Nat. = Naturally
NSO = Nonstructural Setback Overlay
OHWM = Ordinary high-water mark
PS = Principal structure
Req. = Require
SC = St. Croix Riverway
Sdyards = Sideyards
s.f. = Square feet
SRA = Shoreline Recreation Area

SSO = Structural Setback Overlay
Struct. = Structures
VAC = Viewing Access Corridor
Veget. = Vegetation
WL = White Lake (Shawano County)
WL = Wild Lakes (Douglas County)
ZA = Zoning Administrator

Shoreline Vegetation Protection Standards

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Adams	Tree Cutting Zone	Strip paralleling shoreline and extending 35' inland from all points along OHWM.	No more than 30' in any 100' may be clear cut to the depth of the 35' area. Remaining 70% must screen cars, bldgs., etc.	Clear cutting in VAC only. Does not apply to removal of dead, diseased, or dying trees, which is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Ashland	Tree & Shrubbery Cutting Area	35' strip paralleling shoreline from the normal HWM	Within any 100' length of strip no more than 30% shall be clear cut to depth of strip.	In remaining 70%, cutting is limited to preserve natural beauty & to control erosion.	CUP req. for clear cutting on >20% slopes. W/i cutting area, no permit req. if following accepted forest man't practices.
Barron	Tree & Shrubbery Protection Area	Strip paralleling shore & extending 75' inland from normal highwater elevation.	No more than 30% of VAC shall be clear cut & max. opening to be 30' for every 100' of shore.	No clear cutting exc. in VAC & dead, dying, etc. trees. Additional may be allowed for bldg. purposes.	Natural shrubbery to be preserved as far as practicable & screen bldgs., & if removed, replaced w/ equally effective veget.
Bayfield	Shoreland Forest Cover Removal Strip	Buffer strip paralleling shoreline & extending 35' inland from OHWM.	No more than 30% (max. 30' wide) of the shorecover shall be cut or removed from buffer strip in every 100' along OHWM.	Does not apply to removal of dead, dying or diseased trees. Cutting & removal w/i strip shall be as minimal as practicable.	Landscape cleared areas with w/ grasses & other species known to retard runoff & prevent erosion w/o excessive fertilizers.
Brown	Tree cutting zone along shore	Strip paralleling the shoreline and extending 35' inland from OHWM of shoreline.	Max. 30% of strip (along HWM) clear cut to depth of strip & cutting should create a max. opening of 30' for every 100'.	Removal of dead, diseased or dying trees & shrubs at discretion of owner. Remaining 70% screen cars, bldgs., etc from water.	Preserve natural shrubs as practicable, and if removed, replace w/ equally effective vegetation/shrubs at owner's expense.
Buffalo	Tree & Shrubbery Cutting Regulation Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100', as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, diseased or dying trees or shrubs at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Burnett	Shoreline Vegetation Protection Area	From OHWM to a line 25' less than required setback, but a minimum of 35' deep from OHWM.	1 VAC 30' wide w/ limited tree removal, pruning & mowing. Req. 30' btwn. adjoining VAC.	No clear cutting permitted in shoreline vegetation protection area.	Normal maintenance of existing vegetative buffers incl. limited pruning & mowing beyond 35' of OHWM.
Calumet	Tree Cutting & Shrubbery Removal Regulation Area along Shore	Strip paralleling shoreline & extending 35' inland from normal HWM of shoreline.	No more than 30% of length of strip along normal HWM may be clear cut to depth. Max. opening 30' for every 100' of shore.	Removal of dead, diseased or dying trees at discretion of owner. Remaining 70% screen cars, dwellings, etc. from water.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Chippewa	Tree & Shrubbery Cutting Regulation Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100', as measured along OHWM, may be clearcut to 35' depth.	Removal of dead, diseased or dying trees or shrubs at discretion of owner.	Natural trees and shrubs shall be preserved - only dead, dying or diseased trees may be removed from remainder of 35' area.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Clark	Tree & Shrubbery Cutting Regulation Area	Strip paralleling shoreline and extending 35' inland from all points along OHWM.	No more than 30' in any 100' as measured along OHWM can be clear cut to depth of 35' strip.	Removal of dead, diseased or dying trees or shrubs at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Columbia	Tree & Shrubbery Protection Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' area.	Removal of dead, dying or diseased trees at discretion of landowner. DNR shorecover removal improving trout habitat ok.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Crawford	Tree & Shrubbery Protection Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' area.	No clear cutting except in VAC. Removal of dead dying, or diseased trees & shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Dane	Tree & Shrubbery Cutting Regulation Area	Strip paralleling shoreline & extending 35' inland from OHWM of shoreline.	No more than 30' in any 100' as measured along OHWM may be clear cut to depth of 35' strip.	Removal of dead, diseased or dying trees or shrubs at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Dodge	Tree Cutting Regulation Area	Strip of land 35' wide from OHWM.	No more than 30' in any 100' shall be clear cut.	Remaining 70' in 100' must have sufficient cover to screen cars, bldgs., etc. as seen from water & control erosion.	Not addressed in county's shoreland zoning ordinance.
Door	Shoreland Vegetation Preservation Area.	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30% of length of 35' wide strip shall be cleared to depth of strip & max. 30' wide openings in any 100'.	Remaining 70% of strip shall screen view of vehicles, bldgs. & struct. from water & control erosion.	No clearing w/i 10' of neighbor's lot line. Beyond 35' inland, clearing >10,000 s.f. req. qualified forester approval.
Douglas	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Class 1 & 2=Strip 35' inland from normal high waterline. Class 3 & WL=Strip 50' inland.	1, 2 & 3=No more than 30' in any 100' shall be clear cut. WL=No more than 30' may be selectively cut 50' inland from OHWM.	Tree & shrub cutting governed by effect on water quality & in accordance w/ accepted management practices.	Natural shrubbery shall be preserved as far as practicable.
Dunn	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & 35' deep from OHWM.	No more than 30' in any 100' may be clear cut to the depth of the 35' area.	No clear cutting w/i buffer except in VAC. Dead, diseased, or dying trees/shrubs removed at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Eau Claire	Shoreland vegetation cutting area	W/i 35' of normal HWM	No more than 30' in any 100' shall be clear cut.	Dead, dying or diseased veget. removed at discretion of owner. Selective cutting of veget. in remaining 70' may be allowed.	Selective cutting not to result in shoreland erosion & provide sufficient cover to prevent sedimentation.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Florence	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & 35' deep from OHWM.	No more than 30' in any 100' may be clear cut to the depth of the 35' area.	No clear cutting w/i buffer except in VAC. Dead, diseased, or dying trees/shrubs removed at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Fond du Lac	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling the OHWM & extending 35' inland from OHWM of shoreline.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' strip.	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Forest	Vegetative Protection Area	First 35' of area from the water's edge landward.	No more than 30' in any lot or 30' in any 100' along OHWM cleared to 35' strip. Clear cutting prohibited exc. for PS, etc.	Regulations do not apply to removal of dead, diseased, or dying trees or shrubs & silvicultural thinning upon recommendation of a forester.	Fertilization of shore yards w/i 75' from OHWM prohibited unless free of nitrates, phosphates & lake damaging chemicals.
Grant	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' area.	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Green	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip of land 35' wide inland from OHWM.	No more than 30' in any 100' measured along OHWM may be clear cut.	Regulations do not apply to removal of dead, diseased or dying trees or shrubbery.	Not addressed in county's shoreland zoning ordinance.
Green Lake	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area paralleling OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Iowa	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland along OHWM.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' area.	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Iron	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip 35' inland from OHWM.	No more than 30' in any 100' shall be clear cut.	Cutting governed by consideration of effect on water quality & in accord w/ accepted forestry management practices.	Not addressed in county's shoreland zoning ordinance.
Jackson	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip 35' inland from OHWM.	No more than 20' in any 100' along OHWM shall be clear cut to depth of 35' strip (BR=30' in 200').	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Jefferson	Tree Cutting Regulation Area on shoreland.	Strip paralleling shoreline & extending 35' inland from normal HWM of shoreland.	No more than 30% of length of strip shall be clear cut to depth of strip & openings max. 30' for every 100'.	Removal of dead, diseased, or dying trees at discretion of landowner. Remaining 70% shall screen cars, bldgs., etc.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Juneau	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling the shoreline & extending 35' inland from OHWM of shoreline.	No more than 30' in any 100', as measured along OHWM, shall be clear cut to depth of 35' strip.	Removal of dead, diseased, or dying trees or shrubs is at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Kenosha	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Within 100' of the OHWM of all navigable waters.	No more than 30' in any 100' measured along OHWM shall be clear cut.	Prohibited exc. for home & park site dev't, access roads, paths, timber stand improv't, trimming & dead tree removal.	Not addressed in county's shoreland zoning ordinance.
Kewaunee	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 50' inland along OHWM.	No more than 30' in any 100' as measured along OHWM may be clear cut to depth of 35' area.	Removal of dead, dying, diseased trees or shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
La Crosse	Tree & Shrubbery Cutting Regulation Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' (BR=20' in 200') along OHWM may be clear cut to depth of 35' area.	Removal of dead, diseased or dying trees at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Lafayette	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland along OHWM.	No more than 30' in any 100', as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, dying, diseased trees or shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Langlade	Vegetation Protection Area = zone of native vegetation incl. ground covers, shrubs & trees	1=from OHWM to 100' & 30' sdyards 2=from OHWM to 75' & 20' sdyards 3=from OHWM to 50'	1 VAC 30' wide for each min. lot width. Selective pruning & removal for filtered view. No clear cutting, grading, etc.	Removal of dead/diseased or safety hazards permitted. No clear cutting allowed in buffer.	Maintenance of existing lawns can continue; however they may not be extended.
Lincoln	Tree & Shrubbery Cutting Regulation Area	Strip paralleling shoreline & extending 35' inland from OHWM of shoreline.	No more than 30' in any 100' along OHWM shall be clear cut to depth of 35' area.	Removal of dead, dying or diseased trees at discretion of landowner.	Not addressed in county's shoreland zoning ordinance.
Manitowoc	Tree Cutting and Shrubbery Removal Regulation Area	Strip paralleling shoreline & extending 35' inland from OHWM of navigable waters.	Not addressed in county's shoreland zoning ordinance.	Removal limited to lesser of 30% of frontage or 30' strip at OHWM. Max. opening 10' wide from outward exten. of branches.	Not addressed in county's shoreland zoning ordinance.
Marathon	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 35' inland from OHWM or 1/2 req. setback for special zoning permit.	No more than 30% of length of 35' strip shall be clear cut to depth of strip. Max. opening=30' on any 100' of shore.	Clear cut in VAC & remaining 70% tree removal & pruning limited to dead, diseased or dying trees & shrubs.	Remaining vegetation shall screen uses on landward side of strip as seen from land & water opposite the shore.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Marinette	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 50' inland along OHWM.	No more than 30' of trees & shrubs in any 100' may be clear cut to 50' depth area. No single clear cut >10' wide.	Removal of dead, dying, diseased trees or shrubs at discretion of landowner.	Use selective cutting (exc. in VAC) to provide screening, prevent erosion, retard flow of pollutants, & preserve nat. beauty.
Marquette	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 35' inland from normal HWM of shoreline.	No more than 30% of length of strip (max. 30' in every 100') along normal HWM shall be clear cut to depth of strip.	Removal of dead, dying, diseased trees or shrubs at discretion of owner. Remaining 70% to retard runoff & prevent erosion.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Menominee	Vegetation Protection Area	Area btwn. OHWM & building setback line from the water.	1 VAC - Clear cut 30' in 100' to 35' depth. Remainder selectively prune or thin to allow screening.	Does not apply to removal of dead, dying or diseased trees. ***Discretion needed to prevent oak wilt. May req. permit.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Monroe	Limited Tree Cutting Area	Strip parallel to shoreline & extending 35' inland from OHWM.	1 VAC - max. 30% of length of strip (max. 30' wide along OHWM), may be clear cut to depth of strip.	Removal of dead or dying trees at discretion of owner.	Vegetation min. 15' tall to screens cars & struct. Openings max. 10' wide from outward extension of branches.
Oconto	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip of land 35' wide inland from OHWM.	No more than 30' in any 100' of frontage may be clear cut.	Cutting reg. do not apply to dead, diseased or dying trees & shrubs. Clear in VAC only, remainder selective cut.	Selective cutting leave sufficient trees to screen landward uses, maintain shore, retard pollutant flow & protect aesthetics.
Oneida	Shoreline Vegetation Protection Area	Buffers 35' from, and runs parallel to, the OHWM	1 VAC 30' wide/100' frontage or if <100' frontage, 30% width. Screen development, but provide filtered view.	Remove tree if dead, dying, diseased, or safety hazard. Replace tree w/ min. 1" DBH. No clear cutting.	No new lawns, unnatural or non-native landscapes. Prune for health/renewal of tree/shrubs (max. 25% of tree crown).
Outagamie	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 50' inland from OHWM of surface waters.	Max. 30% trees selectively cut or clear cut w/i strip & the 30% shall not create a clear cut to water's edge >30' in 100'.	Max. 30% of trees w/i strip selectively cut or clear cut. Removal of dead, dying or diseased trees at owner discretion.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Ozaukee	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' measured along OHWM may be clear cut to depth of 35' area.	Removal of dead, diseased or dying trees or shrubs at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Pepin	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shore & extending 35' inland along OHWM.	No more than 30' in any 100', measured along OHWM, shall be clear cut to depth of 35' strip.	No clear cutting except in VAC. Removal of dead, dying or diseased trees or shrubs at discretion of owner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Pierce	Shoreland Vegetation Area	Requirements apply to any cutting of trees or shrubbery w/i shorelands.	No more than 30% (max. 30' in any 100') of 35' wide strip along shoreline shall be cleared to its depth.	If >35' inland of OHWM, clearing 10,000 s.f. or more of any single lot in any one calendar year requires prior approval from a qualified forester as sound forestry practice.	Remaining 70% of 35' wide strip shall have sufficient cover to screen vehicles, bldgs. & struct. seen from water, & control erosion.
Polk	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip of land extending 35' inland along OHWM.	No more than 30% (max. 30' wide) along OHWM shall be clear cut to depth of strip.	Removal of dead or diseased trees or shrubbery at discretion of landowner.	Remaining 70% screen cars & struct. (trees min. 15' tall) & max. clear cut opening of 10' btwn. outward exten. of branches.
Portage	Tree & Shrubbery Cutting Regulation Area	Strip paralleling shoreline & extending 35' inland from OHWM of shoreline.	No more than 30' in any 100', as measured along OHWM, shall be clear cut to depth of 35' strip.	Removal of dead, dying or diseased trees at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Price	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' along OHWM may be selectively cut to 35' depth. No clearing w/i 35' of lot lines.	No clear cutting. Removal of dead, dying, or diseased trees if safety hazard. Any other clearing req. ZA approval.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Racine	Tree Cutting & Shrubbery Clearing Regulation Area	Lakes=300' (50+ acres) or 200' (<50 acres). Streams=100' (nav.) or 50' (others). L. MI=SSO & NSO.	No more than 30' in any 100' along OHWM may be cut to 35' depth.	Cutting & clearing prohibited in buffer exc. home site dev't, roads, trimming, dead tree removal, & approved timber plans.	Any req. yard or landscaped area shall be kept free of debris & plant materials in healthy, growing condition.
Richland	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 35' inland from all points along OHWM of shoreline.	No more than 30' in any 100' along OHWM shall be clear cut to depth of 35' strip.	Removal of dead, dying or diseased trees & shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Rock	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 35' inland along OHWM of shoreline.	No more than 30' in any 100' along OHWM shall be clear cut to depth of 35' strip.	Removal of dead, dying or diseased trees & shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Rusk	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM	No more than 30' in any 100' may be cleared to 35' depth.	Removal of dead, dying or diseased trees at direction of landowner, or trees that pose threat of falling on struct.	County recommends a planting plan in areas previously cleared prior to issuance of land use or sanitary permits.
St. Croix	Tree Cutting Regulation Area	Strip paralleling shore & extending 35' inland. SC=w/i 200' of OHWM & 40' of bluff.	No more than 30% of strip, max. 30' wide, shall be clear cut to depth. No VAC in SC district.	Does not apply to removal of dead, dying or diseased trees. In SC, does not apply to same trees if safety hazard.	Remaining 70% of strip shall have sufficient cover to screen cars, AS, etc. from water. In SC, may prune trees, shrubs, etc.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Sauk	Tree & Shrubbery Removal Regulation Area	Strip paralleling shoreline & extending 35' inland from OHWM of shoreline.	Max. 25% of length along OHWM clear cut to depth of strip & max. 50% of total length. Max. opening is 25' wide in any 100'.	Removal of dead or dying trees at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Sawyer	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM	VAC=30' of shoreline 35' deep. May be clear cut. On contiguous frontage, 30' separation of uncut area btwn. adjacent VACs.	Clear cut in VAC only. Does not apply to dead, dying or diseased trees which can be removed at discretion of owner.	Not addressed in county's shoreland zoning ordinance.
Shawano	Shoreline Protection Area	Area parallel to OHWM & extending 35' inland. WL=area bounded by OHWM & 25' <setback.	No more than 30' in any 100' clear cut to depth. WL=1 VAC w/ selective cutting 30' wide at OHWM & 15' wide at landward edge.	Removal of dead, dying or diseased trees at discretion of landowner. WL=same trees if safety hazard & no clear cutting.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Sheboygan	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Strip paralleling shoreline & extending 50' inland from OHWM of surface waters.	Selective cut max. 30% of trees w/i strip or create clear cut crossing (max. 10' wide) to water's edge.	Removal of dead, dying or diseased trees at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Taylor	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland along OHWM.	No more than 30' in any 100', as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, dying or diseased trees or shrubs at discretion of owner. Clear cut in VAC only.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Trempealeau	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland from OHWM.	Not more than 30' in any 100' along OHWM may be clear cut. BR=no more than 30' for every 200' may be clear cut.	Removal of dead, dying or diseased trees or shrubs at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Vernon	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland along OHWM.	No more than 30' in any 100', as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, dying or diseased trees or shrubs at discretion of owner. Clear cut in VAC only.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Vilas	Shoreline Vegetation Area	No Cut (trees, shrubs, undergrowth) w/i 75' OHWM. Select Cut btwn. 75' & 300' lake (150' stream)	1 Shoreline Recreation Area for each lot. SRA = 30' wide & 35' deep. Select cutting to create if not naturally present.	No clear cutting w/i 300' lake or 150' river/stream exc. w/i 30' of bldgs., septic systems & roads. Removal of dead, dying & diseased trees at owner's discretion.	Not addressed except to limit tree removal & to preserve as far as practicable natural undergrowth.
Walworth	Tree Cutting, Shrubbery Clearing, and Earth Movement Regulation Area	Strip of land 35' wide inland from OHWM.	No more than 30' in any 100' or same portion of a smaller lot shall be clear cut. Patios must be within this area.	Provisions do not apply to removal of dead or diseased trees.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.

County	Ordinance "Term"	Buffer Dimensions	Viewing Access Corridors	Tree and Shrubbery	Buffer Maintenance
Washburn	Shoreline Vegetation Protection Area	From OHWM to line 25' less than req. shoreline setback.	1 VAC per lot w/ selective pruning & removal. Setback 10' from lot line. Max. 30' wide. If VAC nat. occurring, must use.	No clear cutting. Selective removal & pruning for VAC. Must screen dev't. Remove dead/diseased trees if safety hazard.	Can remove noxious veget. which pose health/safety threat (i.e. poison ivy). Can't remove trees, shrubs & ground cover.
Washington	Tree & Shrubbery Cutting Regulation Area on Shoreland.	Area parallel to OHWM & extending 35' inland along OHWM.	No more than 30' in any 100', as measured along OHWM, may be clear cut to depth of 35' area.	Removal of dead, dying or diseased trees or shrubs at discretion of owner. Clear cut in VAC only. Must use accepted forest management & soil conservation practices.	Preserve natural shrubbery as far as practicable, & if removed, replaced w/ equally effective vegetation in retarding runoff, preventing erosion, etc.
Waukesha	Tree & Shrubbery Cutting Regulation Area	Area parallel to OHWM & extending 35' inland from OHWM.	No more than 30' in any 100' along OHWM may be clear cut to depth of 35' area.	Removal of dead, diseased or dying trees at discretion of landowner.	Natural shrubbery shall be preserved as far as practicable, and if removed, replaced w/ equally effective vegetation.
Waupaca	Vegetation Protection Area.	Area bounded by OHWM & line 25' < shoreline setback or 35' from OHWM, whichever is greater.	1 VAC per lot w/ PS. 30' wide paralleling shore. Shoreline rec. area w/i VAC. Selective pruning & removal to create.	No clear cutting. Dead, dying, diseased trees (safety hazards) & nuisance exotic spp. remove & replace w/ native substitute.	Clear cutting, grading & other land disturbances not permitted. Lawn OK in shoreline rec. area.
Waushara	Woody Perennial Vegetation Removal Area	Within 35' of OHWM (60' of OHWM on Class I, II, & III trout streams).	No more than 30' in any 100' along OHWM shall be clear cut to 35' (or 60') depth of strip.	Can remove dead, dying or diseased woody perennial veget. or improve trout habitat in Class I, II or III streams.	Clear cut=removal >70% of crown cover or basal area of perennial woody vegetation.
Winnebago	Tree & Shrubbery Cutting Regulation Area.	Strip 35' inland from OHWM.	No more than 30' in any 100' shall be clear cut in 35' strip.	Clearing for home & park site dev't, road access, trimming, dead tree removal etc. if max. 30' in any 100' clear cut.	Not addressed in county's shoreland zoning ordinance.
Wood	Tree & Shrubbery Cutting Regulation Area.	Strip paralleling shoreline & extending 35' inland from OHWM.	No more than 30% of length of strip, max. 30' wide, may be clear cut.	Removal of dead, dying or diseased trees or shrubs at discretion of landowner.	Remaining 70% shall have sufficient cover to screen cars, dwellings, AS, etc. from water.

Shoreline Vegetation Protection Ordinance Language

BURNETT COUNTY

4.4 (2) Removal of Shoreline Cover

There shall be a shoreline vegetation protection area on each parcel which shall extend from the ordinary high water mark to a line 25 feet less than the required setback for structures, but in no case, less than 35 feet landward from the ordinary high water mark. Within this area, vegetation removal (including trees, shrubs and groundcover) and land disturbing activities are prohibited with the following exceptions:

- (a) One viewing/access corridor more or less perpendicular to the shore and no more than 30 feet wide may be established. Limited tree removal, pruning and mowing will be permitted. Clearcutting, filling, grading and other land disturbing activities are not permitted in this area. On contiguous frontage, there shall be a 30 foot separation of uncut area between adjoining view corridors.
- (b) Limited pruning and mowing will be allowed in the area greater than 35 feet from the ordinary high water mark.
- (c) Pedestrian access, walkways, pathways, and stairways must be located in the access/viewing corridor and also subject to section 4.4(1)d, unless such location is not feasible due to steep slopes, wet soils, or similar limited conditions.
- (d) Pier, wharf and lift placement must also be confined to waters immediately adjacent to viewing/access corridor unless such location is not feasible due to steep slopes, wet soil, or similar limiting conditions.
- (e) Normal maintenance of existing vegetative buffer strips.

DOOR COUNTY

5.09 Shoreland vegetation.

- (1) Purpose. The purpose of these requirements are to preserve shoreland vegetation in order to:

- (a) Protect the scenic beauty of the shoreland in Door County.
 - (b) Abate soil erosion along the shoreline.
 - (c) Reduce the flow of effluent, sediments, and nutrients from the shoreland to surface water.
- (2) These requirements apply to any cutting of trees and shrubbery in the shorelands.
- (3) Requirements.
- (a) Cutting less than 35 feet inland. Except as provided in par. (c), tree and shrubbery cutting in an area parallel to the ordinary high water mark and extending 35 feet inland from all points along the ordinary high water mark shall be in accordance with the following provisions:
 - 1. No more than 30% of length of this 35-foot wide strip on any lot shall be cleared to the depth of the strip. Such clearing shall not result in openings of more than 30 feet in any 100 feet nor create a cleared opening in this strip greater than 30 wide and no opening shall be allowed within 10 feet of the neighbor's lot line.
 - 2. In the remaining 70% length of this 35-foot wide strip, cutting shall leave sufficient cover to screen vehicles, buildings, and structures seen from the water; and to control erosion.
 - (b) Cutting more than 35 feet inland. Except as provided in par. (c), in shoreland which are more than 35 feet inland of the ordinary high water mark, the clearing of 10,000 square feet or more of any single lot in any one calendar year shall require the prior approval of a qualified forester as a sound forestry practice as defined in NR 46.02 or NR 46.15, Wis. Admin. Code.

FOREST COUNTY

5.18.4 (2.) Fertilizing of Shore Yards Prohibited. Within 75 feet required set back from the OHWM, lawn, garden, farm and forestry fertilizers shall not be applied to the soil unless specifically free of nitrates, phosphates and lake damaging chemicals.

LANGLADE COUNTY

17.30 (6) **VEGETATION PROTECTION AREA.** There shall be a shoreline vegetation protection area on each lot which shall extend from the ordinary highwater mark to a line which is 25 feet less than the required shoreline setback for structures.

Within this area the removal of trees, shrubs and groundcover, filling and land disturbing activities are prohibited with the following exceptions:

* * *

- (d) Removal of dead and diseased trees which are a safety hazard or which threaten structures.
- (e) Establishment of one viewing corridor for each minimum lot width by selective pruning and selective removal of trees and shrubbery. Clear cutting, filling, grading and other land disturbing activities are not permitted. Sufficient trees and shrubbery shall be retained to screen development from view from the water but provide a filtered view of the water. The viewing corridor shall be more or less perpendicular to the shore and no more than 30 feet wide in the dimension paralleling the shore.

* * *

These provisions are not intended to prevent the maintenance of lawns or landscaping established prior to April 21, 1998. However, such lawns or landscaping may not be extended contrary to the provisions of this section. In shoreland areas located beyond the vegetation protection area, tree and shrub cutting shall be governed by consideration of the effect on water quality, natural beauty and sound forestry practices and soil conservation practices.

* * *

CLASS DEVELOPMENT STANDARDS			
ISSUE	CLASS 1 WATERS (sensitive, mostly undeveloped lakes & streams)	CLASS 2 WATERS (less sensitive, partially developed lakes & all other rivers & streams)	CLASS 3 WATERS (mostly developed lakes)
Vegetation Protection Area (no cut or land disturbance)	Within 100' of OHWM & 30' both sideyards	Within 75' of OHWM & 20' both sideyards	Within 50' OHWM
Shore Protection Structures	Riprap or Bioengineered only		All with state permit

ONEIDA COUNTY

9.52 VEGETATION PROTECTION AREA AND CUTTING OF TREES AND WOODY PLANTS

A. Natural vegetation on land abutting lakes and streams protects scenic beauty, controls erosion, provides wildlife habitat, and reduces flow of effluents and nutrients from the shoreland into the water. To preserve these desirable features of

the shoreline, there shall be maintained a shoreline vegetation protection area on each lot abutting a lake or stream which shall extend to 35 feet from, and parallel to, the OHWM.

1. Vegetation removal, excavating, filling and land disturbing activities within the vegetation protection area are prohibited with the following exceptions:
 - a. Construction permitted under Section 9.51 (A) shall be confined to the viewing area. Such structures which existed prior to May 19, 1999, shall be allowed to remain.

* * *

- c. Shoreline protection activities authorized by a state permit and erosion control measures approved by the County Land Conservation Department which are designed to remedy significant existing erosion problems.
- d. A tree, or portion thereof, may be removed for one or more of the following reasons:
 1. The tree, or portion thereof, is dead.
 2. The tree is a safety hazard to person or property.
 3. The tree removal is for the purpose of preventing the spread of disease to other trees.

Whenever a tree is removed, it shall be replaced with another tree as defined in Section 9.130 and having a minimum DBH of 1 inch.

- e. Viewing areas in compliance with the following restrictions:
 1. Each viewing area shall not exceed 30 feet in width. Walkways and lifts shall be confined to a viewing area unless otherwise allowed elsewhere under subsection 9.52 (A.) (1.) (b.) above.
 2. No more than one viewing area shall be allowed in any 100 feet of frontage, or 30% of the lot width on lots less than 100 feet.
 3. Viewing areas shall be established by pruning (not to exceed removal of 25% of live branches) and selective removal of trees and woody plants, leaving one square foot of basal area in the viewing area. Preference shall be given to retaining healthy trees and native trees. Sufficient natural trees and woody plants shall be retained to screen development from view of the water while

providing a filtered view of the water from the lot during the summer season.

4. Clear cutting, filling, grading and other land disturbing activities are prohibited in a viewing area unless permitted under subsection 9.52 (A.) (1.) (c.) above or Sec. 9.51 (C.) (4.).
- f. Pruning of trees and woody shrubs outside of the viewing area for the health and/or renewal of vegetation. Such pruning shall not result in removal of more than 25% of the living crown of a tree, nor jeopardize the health and natural shape of a tree or shrub.

* * *

2. The following are restrictions within the vegetative protection area:
 - a. Timber harvesting. On parcels over five acres in size, limited harvesting is permitted, provided that an equivalent of 60 feet of basal area per acre of residual trees five inches and greater diameter at breast height (DBH), and at least 2.2 feet of basal area per lineal 50 feet of shoreline frontage, must remain after harvest.
 - b. Landings or slash piles are prohibited.
 - c. Establishment of new lawns and unnatural or non-native landscaping is prohibited.
3. In the shoreland area outside the vegetation protection area, trees and woody plants may be cut in accordance with accepted forest best management practices and sound soil conservation practices which protect water quality.

OUTAGAMIE COUNTY

16.24 SHORELAND TREE AND SHRUBBERY CUTTING. (1) Regulating tree and shrubbery cutting along the shoreline is necessary to protect scenic beauty, control erosion, and reduce effluent and nutrient flow from the land. These provisions shall not apply to dead, diseased or dying trees at the discretion of the landowner or to silvicultural thinning upon the discretion of an official forester of the State or County.

(2) Tree and shrubbery cutting in a strip paralleling the shoreline and extending 50' inland from all points along the ordinary high watermark of the surface waters shall be limited with the following provisions:

(a) No more than 30% of the trees within the strip shall be cut by selective cutting or by creating a clear cut crossing of this strip down to the water's edge nor shall the 30% create a clear cut to the water's edge which exceeds 30' in any 100' in width.

(b) Natural shrubbery shall be preserved as far as practical and, where removed, it shall be replaced with other vegetation that is equally effective in retarding runoff, preventing erosion and preserving natural beauty.

PRICE COUNTY

6.0 REMOVAL OF SHORE COVER.

6.1 PURPOSE. The purpose of tree and shrubbery cutting regulations applicable to the shoreland area is to protect aquatic and shoreline wildlife habitat, scenic beauty, control erosions and reduce effluent and nutrient flow from the shoreland. The provisions shall not apply to the removal of dead, disease or dying trees which present a safety hazard, or to silvicultural thinning upon recommendation of a forester.

6.2 SHORELINE CUTTING. Tree and shrubbery cutting in an area parallel to the ordinary highwater mark, and extending 35 feet inland from all points along the ordinary highwater mark, shall be limited with the following provisions:

6.21 No more than 30 feet as measured along the ordinary highwater mark, may be selectively cut to the depth of the 35 foot area. Unless otherwise approved by the Zoning Administrator, clearing will not be allowed within 35 feet of the lot lines.

6.22 Natural shrubbery shall be preserved as far as practicable and, when removed, it shall be replaced with other vegetation that is equally effective in retarding runoff, preventing erosion and preserving natural beauty.

VILAS COUNTY

ARTICLE VIII: REMOVAL OF TREES AND SHORE COVER

8.1 Applicability.

This Article applies to the removal of trees and vegetation on shoreland properties.

Note: General Restrictions on Tree Removal are set forth in Section 5.13 of the Vilas County General Zoning Ordinance.

8.2 Permitting Requirements.

A. General.

1. All tree cutting exceeding the limitation of Section 8.3 requires a Shoreland Alteration Permit from the Vilas County Zoning Office.
2. Tree cutting more than 10 acres in a shoreland area also requires that the owner provide notice to the Vilas County Clerk's Office.

B. Exceptions.

1. Shoreland Alteration and Zoning Permits are not required when logging is performed on public lands (State, Federal, county and Town) or managed lands in compliance with a Forest Law Program, or where cutting is performed by governmental bodies or public utilities.
2. This Article shall not apply to removal of dead, dying or diseased trees or shrubbery.

8.3 Limitations on Removal of Trees and Shore Cover.

A. Preservation of Trees and Vegetation.

Except as set forth in this section, natural shrubbery, trees and undergrowth shall be preserved as far as practicable on all shoreland properties, and if removed, it shall be replaced with vegetation that is equally effective in meeting the objectives of this Ordinance.

B. Prohibition of Clear Cutting.

Clear cutting shall be prohibited within 300 feet of a lake or within 150 feet of a river or stream other than for the following areas and purposes:

1. For the placement and maintenance of a building with in thirty feet (30') of each exterior wall.
2. For the installation of a private septic system.
3. For the construction of a twenty feet (20') wide roadway from a public road or easement to the principal structure. Such roadway may not encroach on any setback.
4. For the thirty feet (30') x thirty-five feet (35') shoreline recreation area described in this section.

C. No Cut Zone

Except as set forth in other Articles of this ordinance, no removal of trees, shrubs, or undergrowth is permitted within 75 feet of the OHWM of a lake or stream.

D. Select Cut Zone

Select cutting of trees between 75 feet and 300 feet from the OHWM of a lake or between 75 feet and 150 feet of the OHWM of a stream is permitted under the following conditions:

1. A basal area of 60 square feet per acre, DBH, evenly distributed shall be maintained.
2. Natural shrubbery, trees, and undergrowth shall be preserved as far as practicable within the select cutting areas.
3. The maximum slash height permitted shall be 24 inches.

E. Creation of a Shoreline Recreational Area.

1. Except as set forth in ¶ E.2, one shoreline recreational area is allowed on each waterfront lot no larger than thirty feet (30') in width along the shoreline and extending 35 feet in depth from the OHWM. Select cutting of trees and shrubbery is permitted to create a shoreline recreational area if one does not naturally exist.
2. The shoreline recreational area for resorts, hotels or motels, or private clubs shall be no larger than thirty feet (30') in width along the shoreline for each one hundred feet (100') of shoreline frontage for up to three hundred feet (300') of shoreline frontage width, plus an additional ten feet (10') of shoreline recreational area width for each remaining one hundred feet (100') of shoreline frontage width. For the purpose of mitigation only, such shoreline recreational areas may be contiguous or non-contiguous. Shoreline recreational areas shall only be created up to 35 feet in depth from the OHWM.

WASHBURN COUNTY

Section 272 Shoreline Vegetation Protection Area

There shall be a shoreline vegetation protection area on each lot extending from the ordinary high-water mark to a line that is 25 feet less than the required shoreline setback. (See Section 279.2). Within this area the removal of trees, shrubs and ground cover and land disturbing activities are prohibited with the following exceptions:

1. Establishment of one viewing corridor for each lot by pruning and selective removal of trees and shrubbery. Clear cutting, filling, grading and other land disturbing activities are not permitted. Sufficient trees and shrubbery shall be retained to screen development from view from the water but provide a filtered view of the water. The viewing corridor shall be more or less perpendicular to the shore and shall be set back at least ten (10) feet from the side lot line. The 30 foot wide corridor shall be reduced in width proportionally for lots that have less than 100 feet of water frontage. A viewing corridor may not be established where the absence of vegetation provides a similar naturally occurring opening.

* * *

6. Removal of dead and diseased trees which are a safety hazard or which endanger structures and the removal of noxious vegetation which pose a threat to health or safety, (i.e. poison ivy).

Shoreline Vegetation Protection Resources

PRESENTATIONS

Shoreline buffers. (Unknown, 2000). PowerPoint slide show slides illustrates the many benefits of buffers, examples of protected and restored buffers and covers the scientific research. Available from the Land Use Education Center, College of Natural Resources, University of Wisconsin – Stevens Point, 1900 Franklin Street, Stevens Point, WI, 54481 or by phoning (715) 346-3879.

The Living Shore. (17 min.,1998). Video explains the importance of leaving a natural “buffer zone” between lakes and lake owners’ dwellings. It also provides information on selecting and planting shoreline plants. It is available from Wisconsin Association of Lakes, (800) 542-5253 for \$15.00 plus \$2.00 shipping. It also available at many public libraries.

Rivers: Ribbons of Life. (22 minutes, 2000). Video illustrates the importance of land management practices along rivers and explains the critical significance of broader land use decisions within the river’s basin. Available for \$14.50 (includes shipping to MN or WI) from University of Minnesota – Extension Distribution Center at (800) 876-8636. Ask for item number VH-7542.

Saving Our Shorelines. (25 minutes, 2000) Video helps landowners understand why and how they can preserve their shorelines for multiple uses. Available for \$30 from Minnesota DNR at (651)-772-7945.

EDUCATIONAL MATERIALS

A Fresh Look at Shoreland Restoration. (4 pp., 1999) Handout describes the advantages of natural shorelines over urban landscapes. Available from University of Wisconsin – Extension Publications, 45 North Charter Street, Madison, WI, 53715 or by calling (877) 947-7827. Ask for Publication Number GW027. Also available on-line at: [<http://clean-water.uwex.edu/pubs/shore/hirestor.pdf>].

Inland Lakes Sustainability Study Summary. (8 pp., 1997). A summary of *Shoreland Zoning Regulations Do Not Adequately Protect Wildlife Habitat in Northern Wisconsin* also by M. Meyer. Available from Sigurd Olson Environmental Institute at (715) 682-1223.

Lakescaping for Wildlife and Water Quality. (176 pp., no date) Book describes the issues facing waterfront owners who wish to protect their water quality and provides examples of how homeowners have dealt with those concerns. It focuses on native landscaping techniques and provides plant lists and nurseries sources. Available from Minnesota Department of Natural Resources, Minnesota’s Bookstore at (800) 657-3757.

The Point. (2 pp., no date) Excellent story about how the shoreland atmosphere and wildlife habitat can be destroyed by improper development; available on-line at:

[<http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/documents/appendices/App%20k/The%20Point.pdf>].

Restoring Your Shoreland: A guide to Shoreland Planting Packets. (4 pp., 1999) Informational brochure and order form for trees & shrubs for shoreland restoration through local DNR offices. Available at local DNR service centers or by phoning (608) 267-7494.

The Shoreland Friends Guidebook. (48 pp., 2000) A "how-to" guide for county zoning administrators and local groups that wish to educate shoreland property owners about shoreland stewardship practices and related regulations. Contains extensive lists of available publications and resources. Available at:
[<http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/friends.htm>].

Shoreline Buffer Zones and Setbacks. (2 pp., February 1999). Fact sheet illustrates the link between shoreland buffers and setbacks. Available from Wisconsin Association of Lakes, (800) 542-5253 or UWEX, Stevens Point at (715) 346-2116. Ask for fact sheet #5 of the Shoreland Management and Lake Classification Series.

A Tale of Two Lakes. (2 pp., August 1999) Humorous description of the difference between lawns and natural shorelines; available at:
[<http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/documents/appendices/App%20k/TwoLakes.pdf>].

The Water's Edge: Helping fish and wildlife on your lakeshore property. (12 pp., 2000). Brochure focuses on wildlife habitat and impacts of lawns with excellent photos and graphics. Available at local DNR service centers or from Wisconsin Department of Natural Resources, Lakes and Wetlands Section, (608) 266-2244. Ask for publication number PUB-FH-428 00. Also available on-line at:
[<http://www.dnr.state.wi.us/org/water/fhp/fish/pubs/thewatersedge.pdf>].

What is a Shoreland Buffer? (2 pp., 1999). Handout defines a shoreland buffer and its advantages. Available from University of Wisconsin – Extension Publications, 45 North Charter Street, Madison, WI, 53715 or by calling (877) 947-7827. Ask for Publication Number GW028. Also available on-line at:
[<http://clean-water.uwex.edu/pubs/shore/hibuffer.pdf>].

TECHNICAL REFERENCES

Phosphorus Export from a Low Density Residential Watershed and an Adjacent Forested Watershed. (7 pp., 1985). This paper contains information on the runoff quantity (total and peak discharge) and phosphorus export. Article in *Proceedings of the 5th Annual Conference, North American Lake Management Society*, Lake Geneva, Wisconsin, by J. Dennis.

Vegetated Buffers in the Coastal Zone: A Summary Review and Bibliography. (71 pp., 1994). This summary reviews the functions of buffers on inland waters since the

literature on coastal buffers is very scarce. It specifies average buffer sizes necessary for removal of sediment, nitrogen and phosphorus. Coastal Resource Center, Rhode Island Sea Grant, University of Rhode Island, ISBN 0-938-412-37-x.

Urban Runoff: How Polluted Is It? (6 pp., 1992). This paper provides information on the quantity of runoff measured from residential and agricultural lands in Wisconsin as well as the concentrations of pollutants in each. Available from Wisconsin Environmental Resource Center at (608-262-1369).

Grass versus Trees: Managing Riparian Areas to Benefit Streams of Central North America. (11 pp., 2000). Article summarizes the benefits of various management techniques along riparian areas. Article in *Journal of the American Water Resources Association*, 36(4):919-930 by J. Lyons, et al.