

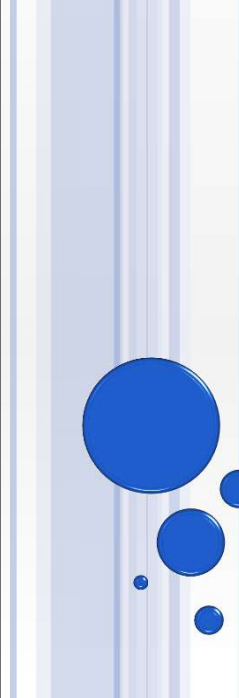


RIPARIAN CONCEPTS

6 April 2026

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(I give up)

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RIPARIAN CONCEPTS

- A. Introduction
- B. Public Trust Doctrine
- C. Navigability
- D. Terms
- E. Riparian Ownership
- F. Water Actions
- G. Apportionment
- H. Meander Corners
- I. Reliction and Erosion



A. Introduction

Riparian – Of, relating to, or located on the bank of a river or stream; moving water.

Littoral – Of, or relating to, the coast or shore of an ocean, sea, or lake

Riparian right - Collective term for a riparian or littoral right.

Riparian owner – Owner of land abutting a waterway. Ownership may or may not extend under the water.



A. Introduction

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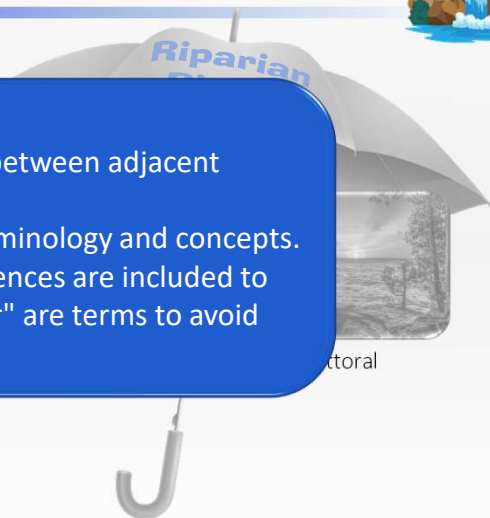
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Warning:
Water law can vary greatly, even between adjacent states.
This presentation covers basic terminology and concepts. A few notable jurisdictional differences are included to illustrate that "always" and "never" are terms to avoid when dealing with riparian rights.





B. Public Trust Doctrine



Black's Law Dictionary

"The principle that navigable waters are preserved for the public use, and that the state is responsible for protecting the public's right to the use."

Roots go back to Roman law: *res communes omnium* "things held in common by all"

Things common to all humans (eg, air, flowing water) could not be privately owned, but they also were not owned solely by the state. The state held them in trust for the public to use.

Adopted in early English common law; specifically addressed in the Magna Carta, 1215:

"(33) All fish-weirs shall be removed from the Thames, the Medway, and throughout the whole of England, except on the sea coast."

Fish-weirs obstructed navigation interrupting moving goods to market



B. Public Trust Doctrine



Article IV of the Northwest Ordinance of 1787 ordinance provides in part:

"...The navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways and forever free, as well to the inhabitants of the said territory, as to the citizens of the United States, and those of any other states that may be admitted into the confederacy, without any tax, impost, or duty therefor..."

Martin v. Lessee of Waddell, 41 US 367 - Supreme Court 1842 first referred to it as a *Public Trust*.

States are primary Public Trust trustees of waters within & abutting their boundaries.

Degree of public protection and lands affected varies between states.

Most states are custodians of waters of *all* waterbodies, navigable or not, but only have ownership of beds of navigable waterways.



C. Navigability



Public Trust Doctrine exerts complete protection of *navigable* waterways.

What is *Navigability*?

Definition of navigability can vary between jurisdictions.

Evolved over time

What uses must it be able to support ?

Must it be able to continuously support that use?

Does it apply to natural waterways only or does it include artificial ones?



Strictly commerce
and transportation



Inclusive:
eg, recreation

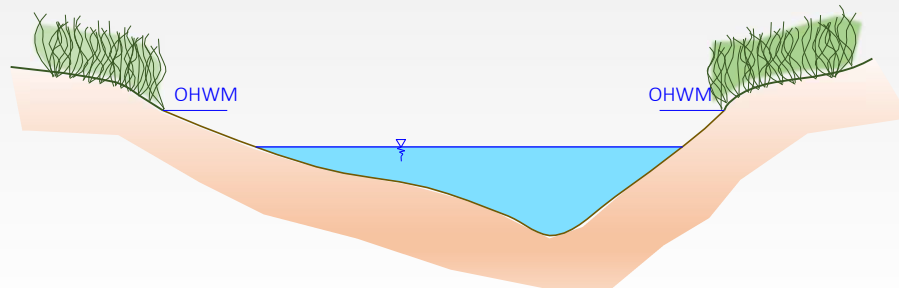


D. Terms



OHWM – Ordinary High Water Mark

1. The point to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation or other easily recognized characteristic.
2. Water surface at high tide for tidal waters.



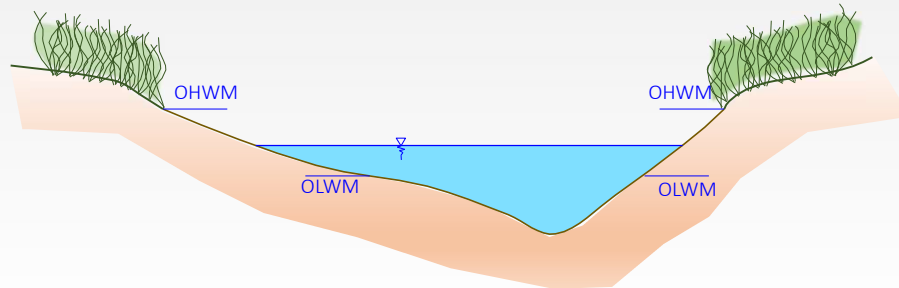


D. Terms



OLWM – Ordinary Low Water Mark

1. The stage to which an inland waterbody recedes under ordinary conditions.
2. Water surface at low tide for tidal waters.



D. Terms

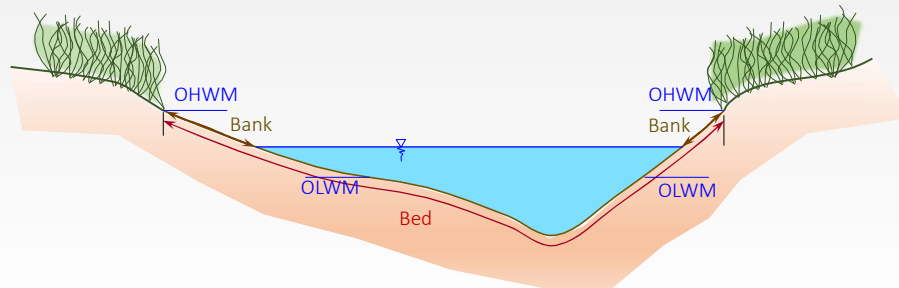


Bed – The ground surface between the OHWM on both sides of a waterway.

Bank – Area between water and OHWM. Right and left banks defined facing downstream.

Shore/shore land

1. Lands lying between the OHWM and OLWM for seas and tidal waters (aka *Tidelands*)
2. Lands below the OHWM for navigable rivers and lakes.





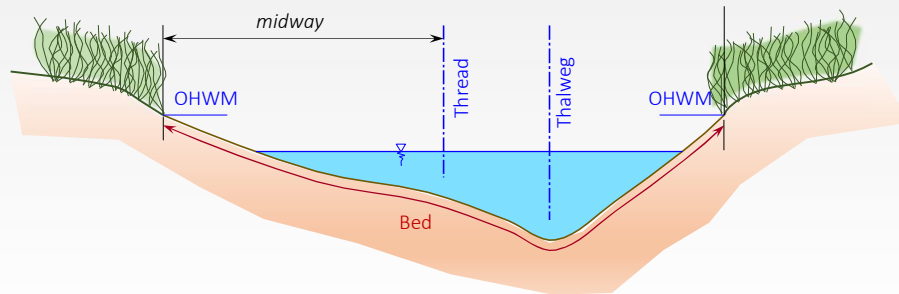
D. Terms



Thread - The centerline of a waterway, equidistant from the OHWM on both sides.

Thalweg (Talweg) – A line along the deepest channel of a waterway.

In some jurisdictions, the thalweg is the waterway centerline, ie, thread.



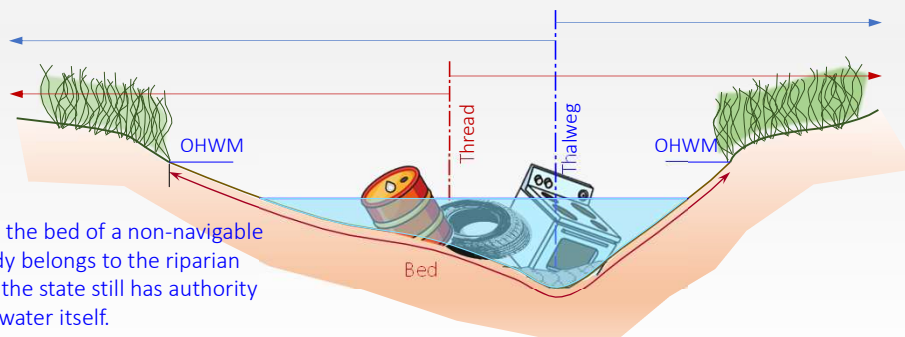
E. Riparian Ownership



Navigability affects bed ownership.

Generally, bed of a **non-navigable** waterway belongs to the upland riparian owners.

Ownership extends to thread or thalweg depending on jurisdiction or description wording.



Although the bed of a non-navigable waterbody belongs to the riparian adjainer, the state still has authority over the water itself.

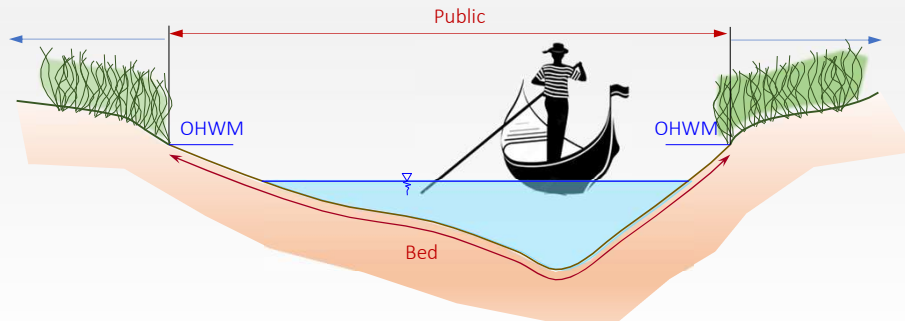


E. Riparian Ownership



Navigability affects bed ownership.

Beds of **navigable** waterways theoretically belong to the public and riparian ownership ends at the OHWM or OLWM.



E. Riparian Ownership

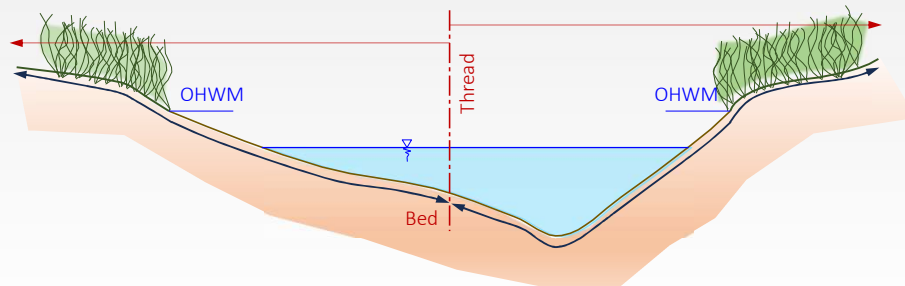


Navigability affects bed ownership.

But that's not universal,

In Wis, for example, navigable **lake** beds belong to the public, but navigable **stream and river** beds belong to the upland riparian owners extending to the thread.

Littoral v. Riparian



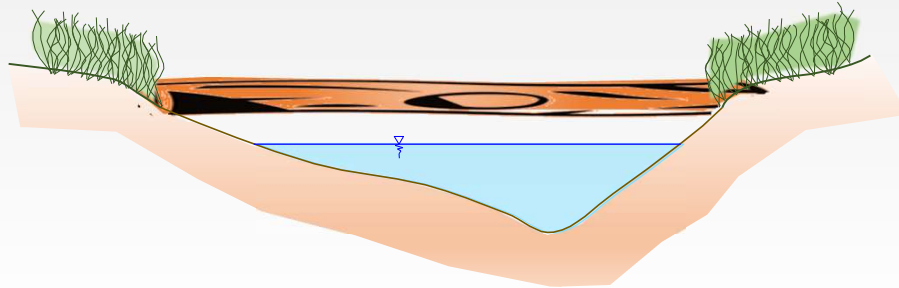
E. Riparian Ownership



Navigability affects bed ownership.

Riparian owner has limited reasonable use of waterbody that does not conflict with public use.

For example: cannot erect barriers across a navigable stream obstructing kayaking.



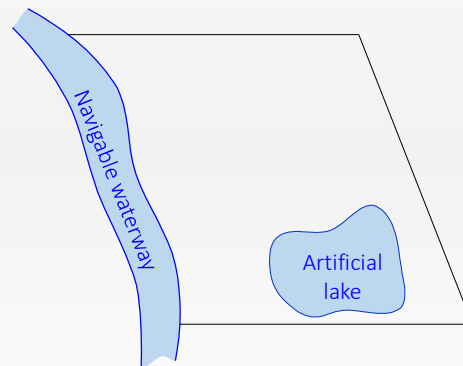
E. Riparian Ownership



What about artificially created navigable waterbodies? Who owns the bed?

Waterbodies created on private land are not subject to public bed ownership.

Nor are the waters subject to public use.



E. Riparian Ownership

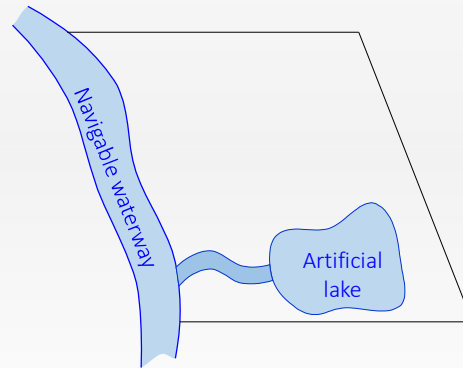


What about artificially created navigable waterbodies? Who owns the bed?

Waterbodies created on private land are not subject to public bed ownership.

Nor are the waters subject to public use.

However, if the artificial waterbody is connected to a navigable waterway, it can be subject to public use.



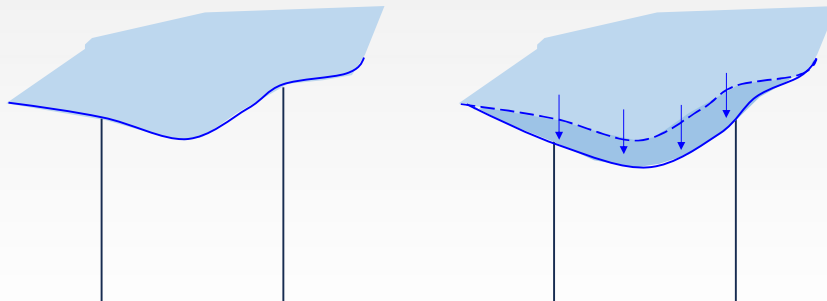
F. Water Action



1. Boundary

Water as a property boundary is a natural monument.

Under certain conditions, water is the *only* monument that can legally change position over time changing ownership extent.





F. Water Action



2. Movement

a. Reliction: The *gradual and imperceptible* movement of water uncovering previously submerged land.

Also known as *dereliction*.

b. Avulsion: The *sudden* relocation of a waterbody either by a catastrophic event or rapid erosion.

3. Land

a. Erosion: Land area removal caused by water action.

b. Accretion: Gradual land area increase due either to reliction or soil deposits

c. Alluvium: Deposited material.



F. Water Action



4. Effect on Ownership

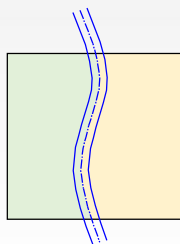
a. A sudden change *does not* affect ownership: Avulsion.

Example: non-navigable stream.

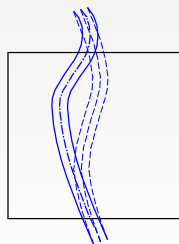
[A] Ownership extends to thread/thalweg.

[B] Heavy storms, bank collapses causing stream location to shift.

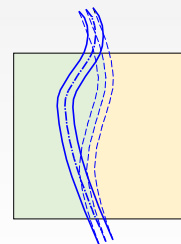
[C] Ownership does not change: extends to original thread/thalweg location



[A]



[B]



[C]



F. Water Action



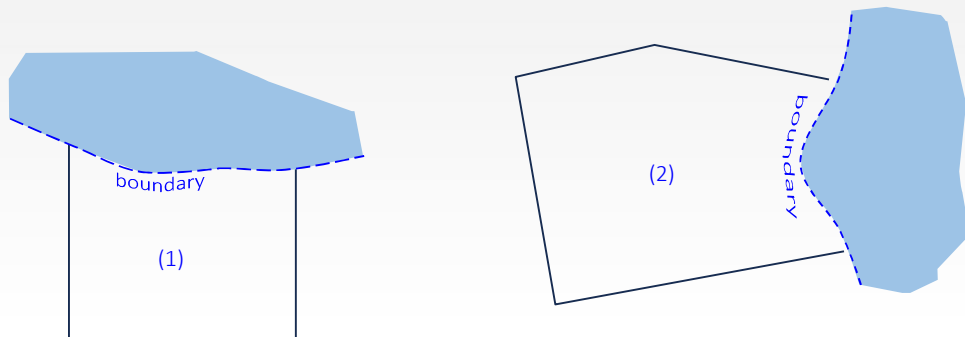
4. Effect on Ownership

b. Slow imperceptible changes *do* affect ownership extent.

There are a few types of slow imperceptible changes:

- (1) Water naturally recedes over time uncovering land – ownership expands
- (2) Water level gradually increases submerging land – ownership decreases.

Water boundary change must be **permanent**.



F. Water Action

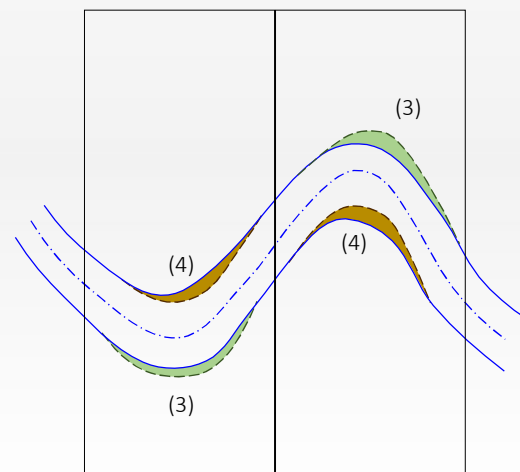


4. Effect on Ownership

b. Slow imperceptible changes *do* affect ownership extent.

There are a few types of slow imperceptible changes:

- (3) Erosion over time removes land – ownership decreases
- (4) Soil deposited by moving water – ownership increases



G. Apportionment



1. Riparian Ownership

When land is gained or lost by water actions, it rarely affects just a single property.

Apportionment is a method by which land gained is divided among the affected parcels along **navigable** waterbodies.

There is no single universal apportioning method.

There are a few different methods.

Which to apply depends in large part on the waterbody type, shape, or size.

In some cases, a combination of methods may be reasonably applied.

Apportionment is **not** an exact science:

Two surveyors applying the same method may have different results.

Following are some of the more common methods.



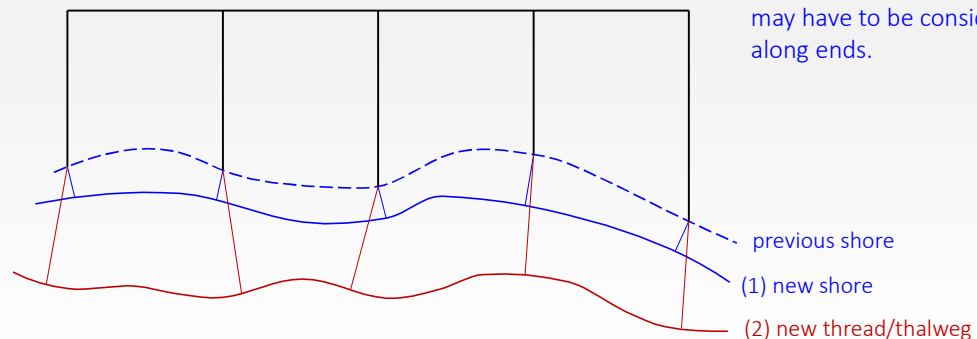
G. Apportionment



1. Streams

a. Perpendicular Method - project lines perpendicular to either

- (1) new shoreline
- (2) new thread/thalweg



Senior/Junior relationships may have to be considered along ends.



G. Apportionment

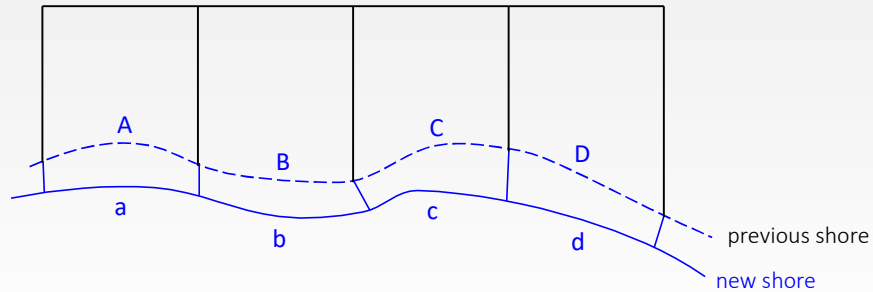


1. Streams

b. Proportion: Based on lengths of original and new shorelines.

$$a = A(L_{\text{Old}}/L_{\text{New}}), \text{ etc.}$$

$L_{\text{Old}}, L_{\text{New}}$: old and new shoreline lengths



G. Apportionment



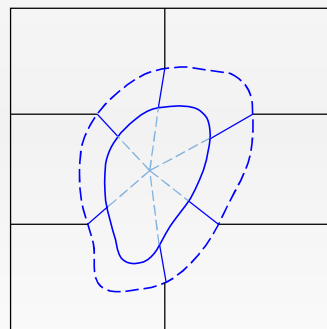
2. Lakes

a. Round Lake Method; aka Pie Method

Applicable to lakes that are roughly circular.

A "center" point is selected and property lines are projected to its direction.

Center point location is one which adds a roughly proportional amount of area to each property.



G. Apportionment

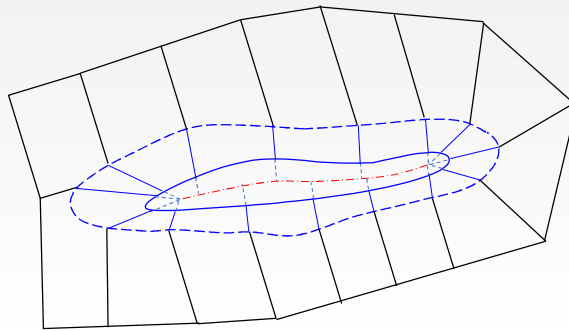


2. Lakes

b. Long Lake Method

This is a variation on the perpendicular stream method.

Along the lake's length lines are projected perpendicular to the thread or new shore,
At the lake ends, the round lake method is used.



H. Meander Corners



1. PLSS Meander Corners (MC)

a. Placed where a regular line intersected a meanderable waterbody.

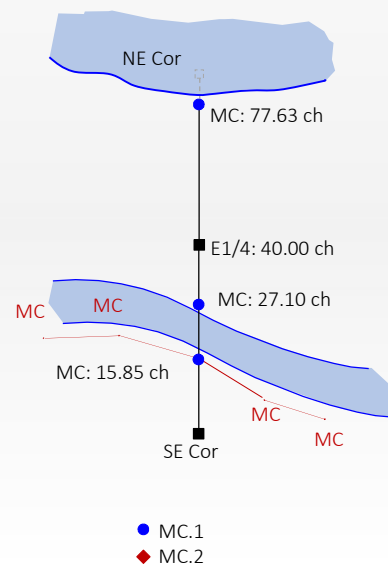
- Can be used to re-est lost corners.
- Can control line *direction*.

Line is a continuation and in cardinal direction.

b. Placed along waterbody.

To map the waterbody

In both cases, the MC is *not* a property corner; waterbody is.



H. Meander Corners

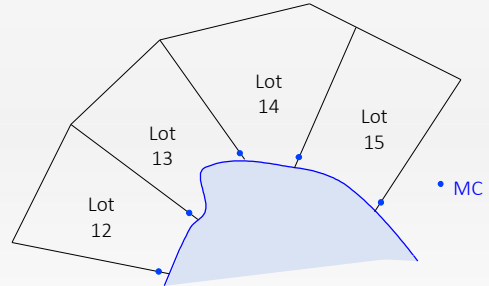


2. Non-PLSS MC

Boundary creation: Surveyors typically set MC on a parcel line that intersects navigable waterbody.

Like PLSS MC.a, these can control line direction *if called*; waterbody is termination

Unlike PLSS MC.a, line through MC is not necessarily a continuation nor restricted to cardinal dir.



H. Meander Corners

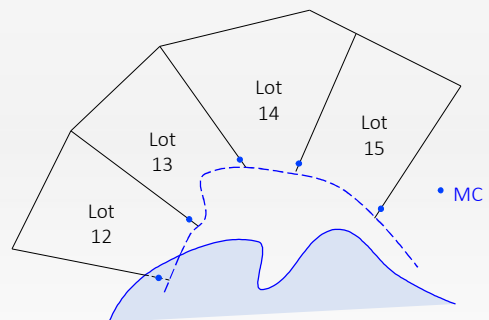


2. Non-PLSS MC

Boundary creation: Surveyors typically set MC on a parcel line that intersects navigable waterbody.

Example: Reliction

Extend property lines straight through MC until they intersect the shore or thread/thalweg?





H. Meander Corners



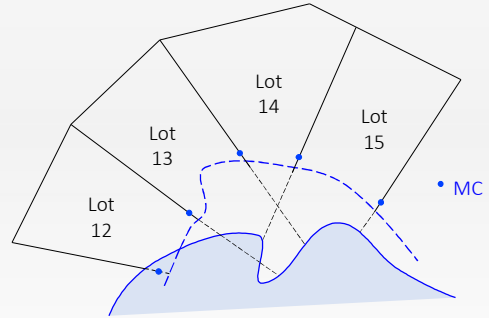
2. Non-PLSS MC

Boundary creation: Surveyors typically set MC on a parcel line that intersects navigable waterbody.

Example: Reliction

Extend property lines straight through MC until they intersect the shore or thread/thalweg?

Based on how the water's edge changes, extended lines might cross.



H. Meander Corners



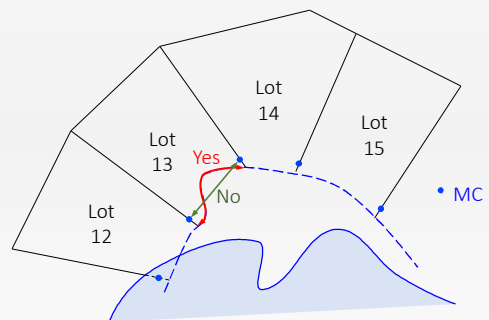
2. Non-PLSS MC

Boundary creation: Surveyors typically set MC on a parcel line that intersects navigable waterbody.

Example: Reliction

Better to use one of the other apportioning methods.

When proportioning, use the shore distances, not distances between MCs





I. Reliction & Erosion

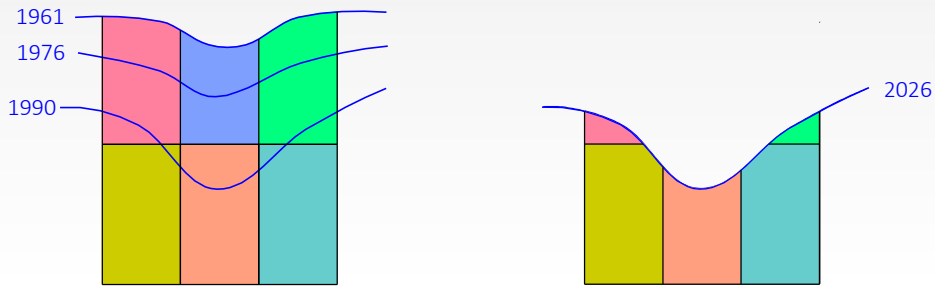


1. Reliction

a. Example One

Over a 29 year period lake depth gradually increases causing shore to move inland. Lake level stabilizes and shore maintains its location through today.

Because this is a permanent change, the parcels are remainders as shown, with one parcel completely gone.



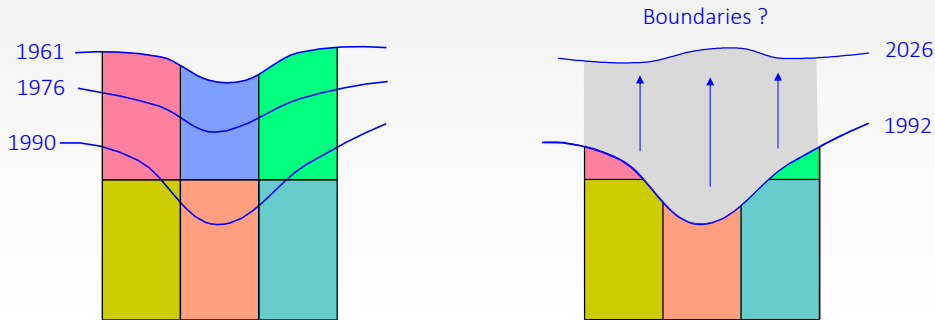
I. Reliction & Erosion



1. Reliction

b. Example Two

Over a 29 year period lake depth gradually increases causing shore to move inland. Is stable for a few years, then lake level slowly decreases causing shore to recede, after which it stabilizes.



I. Reliction & Erosion

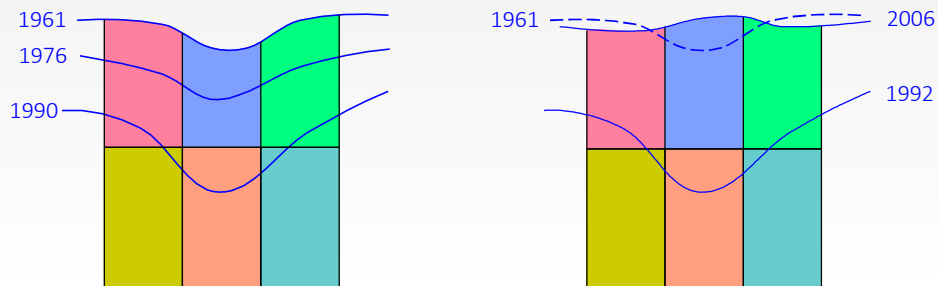


1. Reliction

b. Example Two

Over a 29 year period lake depth gradually increases causing shore to move inland. Is stable for a few years, then lake level slowly decreases causing shore to recede, after which it stabilizes.

Because this is not permanent reliction, the original parcels are recreated with some addition/loss along present shoreline.



I. Reliction & Erosion

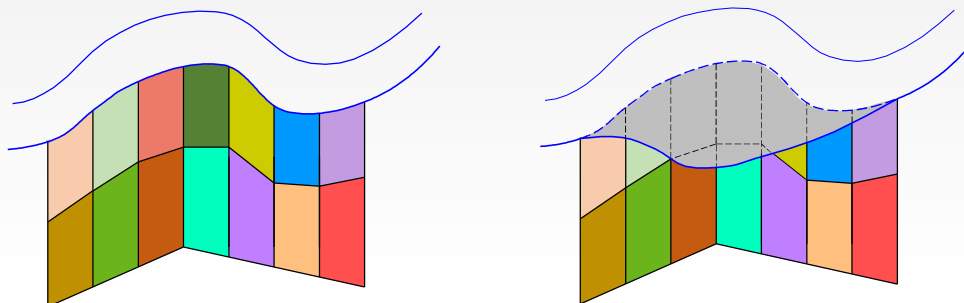


2. Erosion

a. Example One

Over a 21 year period river flow erodes the bank causing shore to move. Bank stabilizes and maintains its position.

Eroded lands are gone, in some cases removing entire parcels, in others leaving behind remnants. Some previously inland parcels now have water frontage.



I. Reliction & Erosion



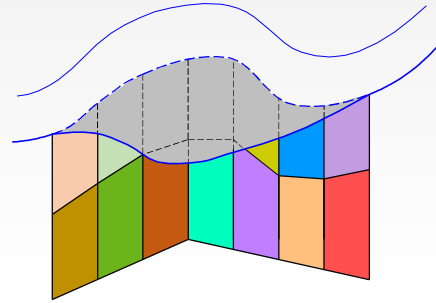
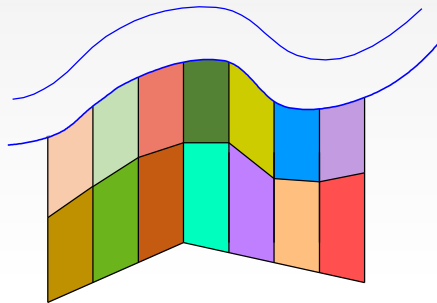
2. Erosion

b. Example Two

Over a 21 year period river flow erodes the bank causing shore to move.

Shore is stable for a few years after which sedimentation begins to accumulate and continues up through today.

Depending on jurisdiction....



I. Reliction & Erosion



2. Erosion

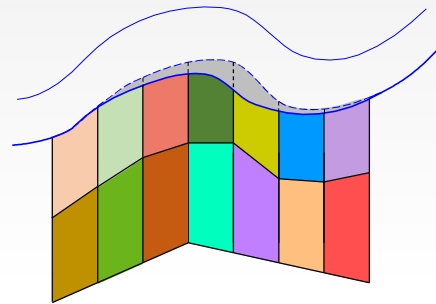
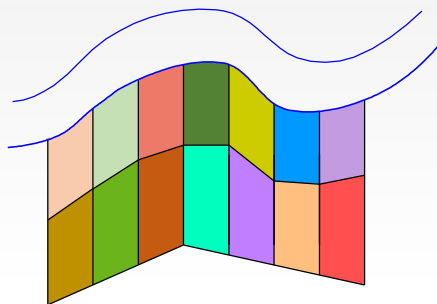
b. Example Two

Over a 21 year period river flow erodes the bank causing shore to move.

Shore is stable for a few years after which sedimentation begins to accumulate and continues up through today.

Depending on jurisdiction....

The original parcel boundaries are recreated to the new shore line.



I. Reliction & Erosion



2. Erosion

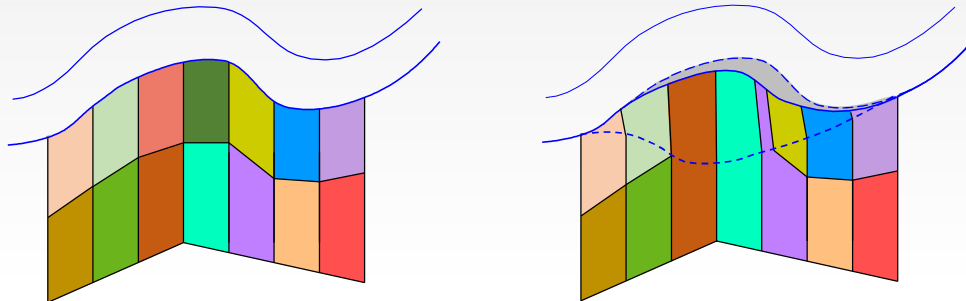
b. Example Two

Over a 21 year period river flow erodes the bank causing shore to move.

Shore is stable for a few years after which sedimentation begins to accumulate and continues up through today.

Depending on jurisdiction....

Alluvium is apportioned to the parcels with frontage on the eroded bank.



RIPARIAN CONCEPTS

Summary

Public Trust Doctrine

Waters; navigable waterways

Navigable v Non-navigable

Terminology

Water movement boundary effect

Sudden vs. Slow & Imperceptible

Apportionment

Meander corners

Reliction and Erosion Examples

Loss; Re-establishment; Acquisition