

1 **California Land Surveyors Association**

2012 LS REVIEW
Water Boundaries
March 27, 2012

2 Introduction

“What are boundaries is a matter of law; where they are is a matter of fact” – Justice Wheeler, 1856
Today’s goal: to provide you with some basic tools to recognize fundamental water boundary issues that could appear on the LS exam.

3 Outline

- PART I - THE BASICS
- PART II - TIDAL, NAVIGABLE:
Oceans; Bays; Rivers
- PART III - NON TIDAL, NAVIGABLE:
Rivers; Lakes
- PART IV - NON TIDAL, NON NAVIGABLE:
Streams; Ponds; Lakes
- PART V - OTHER BOUNDARY SITUATIONS:
Marshlands; Swamp & Overflowed lands, Islands
- PART VI - REFERENCES & OTHER USEFUL INFORMATION

4 PART I – THE BASICS

5 PART I – THE BASICS

Historical Discussion, important dates
1542 – California under Spanish dominion
1775 – USA born, jurisprudence adopted from English common law
1820’s – California under Mexican dominion
1846-1848 – Mexican-American War
1848 – February 2, Treaty of Guadalupe Hidalgo between US & Mexico
1850 – September 9, California admitted to Union on equal footing doctrine

6 PART I – THE BASICS

Case Law discussion
Much of water boundaries guidelines (and land boundaries, for that matter) come from a basic rule that is refined by court decisions

General citation format:
Smith v. Jones (2012) 1 Cal.App.5th 100, 110-115 *Plaintiff v. Defendant or Appellant v. Respondent*
(Date)
Volume-Reporter-Page, page(s)
Possible additional notation

7 PART I – THE BASICS

Definitions - General water boundary classifications
lacustrine – of or pertaining to lakes
riparian – of or pertaining to rivers
littoral – of or pertaining to oceans or the sea

8 PART I – THE BASICS

Definitions – Tidal parameters
National Tidal Datum Epoch (NTDE) – 19-year interval, currently 1983 – 2001
Metonic cycle – 18.6 year astronomic cycle
Diurnal – one high, one low occurring daily
Semi-diurnal – generally two highs, two lows occurring daily, generally of equal magnitude
Mixed – generally two highs, two lows of unequal magnitude occurring daily
Neap – less pronounced tides occurring during 1st and 3rd quarter of the moon – quadrature
Spring – more pronounced tides occurring during new and full moon – conjunction and opposition

9 PART I – THE BASICS

Definitions – Tidal datums
MHHW – Mean Higher High Water: average of only higher high waters over 18.6 years

MHW – Mean High Water: average of all high waters over 18.6 years
MTL – Mean Tide Level – median between MHW & MLW
MSL – Mean Sea Level – average of hourly water heights over 18.6 years
MLW – Mean Low Water – average of all low waters over 18.6 years
MLLW – Mean Lower Low Water – average of all lower low waters over 18.6 years

10 PART I – THE BASICS

Definitions – Land Forms

Tidelands – lands covered and uncovered by the daily wash of the tides; land between MHW & MLW
Submerged lands – lands generally covered by the daily wash of the tides; land below MLW
Uplands – land above tidelands
Littoral lands – land bounded by the shore of the ocean or sea
Bight – large, curved inlet along coast
Headlands – steep crag or cliff jutting into the sea, generally defining bay or bight
Swamp lands – saturated, but not covered, with water, unfit for agriculture without drainage
Overflowed lands – annually or periodically subject to natural flooding, unfit for agriculture without drainage or levees
Marshlands – generally salt marshes, but similar in nature to swamps
Island – body of land extending above and completely surrounded by water at ordinary high water

11 PART I – THE BASICS

Definitions – Physical Characteristics

Alluvion – flow of water against land; expansion of land due to deposition of material
Alluvium – gravel, sand, silt, and clay sediments deposited by water due to reduced velocity
Thread – center of main channel midway between two banks; but...also defined as that line which would provide access to owners on both sides during low water
Thalweg – “downway”; route a boat would take downstream; route water would take at very low flow
Median line – a line midway between banks (high or low)
Medium filum aquae – middle thread of water

12 PART I – THE BASICS

Definitions – Changes

Natural, gradual, imperceptible – happening in a natural, gradual manner, and not perceptible
Artificial, sudden, perceptible – due to man-made construction of effect, in a short time and recognizably different in a short time.
All of the criteria for determining the rate of change of water boundaries is HIGHLY subjective, and courts have come to different conclusions under specific cases for the same criterion.
Any discussion involving the above change criteria must be preceded by a presumption, or qualification, of what your terms mean, and the possible alternatives.

13 PART I – THE BASICS

Definitions – Loss

Erosion – slow, natural and imperceptible movement of material away from a bank or shore
Avulsion – sudden and perceptible separation of bank or shore from the adjoining land mass
Submergence – the obscuring of land by raising of water or lowering of land
Construction – the removal of land from a bank or shore, by or due to artificial, man-made means

Definitions – Gain

Accretion – the slow, natural and imperceptible movement of material upon a bank or shore
Reliction – the adding of land to a bank or shore by the recession of waters
Re-emergence – the appearance of land that had previously disappeared from a bank or shore
Construction – the addition of land to a bank or shore, by or due to artificial, man-made means

14 PART I – THE BASICS

Definitions – Navigability

Navigability –
[Waters] must be regarded as public navigable [waters] in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. – *Bishel*
[Navigability] depends on the fact, if it be a fact, that the stream in its natural and ordinary condition affords a channel for useful commerce. – *Bohn*

Notwithstanding that navigability is another very subjective criterion of water boundaries, the threshold for navigability has been set very low as courts have applied very broad tests.

15 PART I – THE BASICS

Definitions – Title

Other Sovereign Recognition –
Generally seen where there are Spanish missions (21) or Spanish Presidios (4), Pueblos (4) or Mexican Ranchos (100's) with watercourses, the original grants or patents under which title is held must be reviewed for the limitations or expansion of water boundary issues and/or public trust easement issues.

16 PART I – THE BASICS

Definitions – Title

Public Trust Doctrine –
The State holds certain lands and/or rights over lands in trust for the people of the state as a result of its sovereign ownership of navigable waters.
RE: PURPOSES – The Public Trust easement is reserved to the people of the State of California for the purposes of navigation, commerce, fishing, recreation, and/or retention in its natural condition. This renders private ownership as “naked” title, or title without any concomitant practical use.
RE: TIDELANDS - ...Because the basis of the public trust easement is the original title to the tidelands on statehood, the state does not have a public trust easement over tidelands where the private title was derived from an original Mexican land grant and confirmed by a federal patent.
This extends from OHWM to OLWM, even on non-tidal, navigable waters.
Any grant from the state to private ownership is subject to the public trust easement.

Public Trust Lands –
Tidelands, whether private or public ownership; land adjacent to shoreline of non-tidal navigable waters between OHWM and OLWM.

17 PART I – THE BASICS

Definitions – Metrics

Geographic mile – One minute of latitude at the equator, or approx 6,076 feet.
Nautical mile – same as geographic mile
Statute mile – 5,280 feet
League – three nautical miles at sea; three statute miles on land; 1/20 degree latitude at equator
Fathom – six feet
River mile – mileage on a river starting upstream and increasing downstream, as a boat would travel
Left Bank – the bank of a river on the left as a boat would travel
Right Bank – the bank of a river on the right as a boat would travel
World Bank – the place your money passes through as it heads for the drain

18 PART I – THE BASICS

Definitions – Boundary

OHWM vs MHWL
The Ordinary High Water Mark (OHWM) or sometimes Ordinary High Tide Line (OHTL), is a term of art. It denotes a legal and title boundary of land bordered by tidal waters. It is recoverable and acquired on the ground through location of various physical characteristics, flora and possibly fauna, and has a contemporaneous character tied to the title in which it occurs.
The Mean High Water Line (MHWL) is a term of science. It is recoverable by reference to a tidal datum plane referenced to some vertical datum. It is visualized and acquired on the ground by determining the location of the intersection of a tidal datum plane with the shore of land bordered by tidal waters.
Both these lines may be coincident...or not.
ALTHOUGH BOTH THESE LINES ARE DEPENDENT ON WATER LEVELS, they denote the boundary of *land* between two separate titles.

19 END

PART I – THE BASICS

20 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

21 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**
Map of water boundaries

Thanks, Roy...

22 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**
The Rules – Civil Code 670
(670.) The State is the owner of all land below tide water, and below ordinary high-water mark, bordering upon tide water within the State; of all land below the water of a navigable lake or stream; of all property lawfully appropriated by it to its own use; of all property dedicated to the State; and of all property of which there is no other owner.

23 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

- The Rules – Civil Code 830
- **(830.)** Except where the grant under which the land is held indicates a different intent, the owner of the upland, when it borders on tide water, takes to ordinary high-water mark; when it borders upon a navigable lake or stream, where there is no tide, the owner takes to the edge of the lake or stream, at low-water mark; when it borders upon any other water, the owner takes to the middle of the lake or stream.

- 24 **PART II – TIDAL, NAVIGABLE BOUNDARIES**
High seas extend seaward from a line 3 nautical miles from LWM
The marginal seas extend seaward 3 nautical miles from the LWM
Inland waters extend from the marginal seas to the OHWM
Upland owners take to the OHWM

- 25 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**
 - The Rules – Code of Civil Procedure 2077
 - 2077. Section Two Thousand and Seventy-seven. The following are the rules for construing the descriptive part of a conveyance of real property, when the construction is doubtful and there are no other sufficient circumstances to determine it:
One--Where there are certain definite and ascertained particulars in the description, the addition of others which are indefinite, unknown, or false, does not frustrate the conveyance, but it is to be construed by the first mentioned particulars.
Two--When permanent and visible or ascertained boundaries or monuments are inconsistent with the measurement, either of lines, angles, or surfaces, the boundaries or monuments are paramount.
Three--Between different measurements which are inconsistent with each other, that of angles is paramount to that of surfaces, and that of lines paramount to both.
Four--When a road, or stream of water not navigable, is the boundary, the rights of the grantor to the middle of the road or the thread of the stream are included in the conveyance, except where the road or thread of the stream is held under another title.
Five--When tide water is the boundary, the rights of the grantor to ordinary high-water mark are included in the conveyance. When a navigable lake, where there is no tide, is the boundary, the rights of the grantor to low-water mark are included in the conveyance.
Six--When the description refers to a map, and that reference is inconsistent with other particulars, it controls them if it appears that the parties acted with reference to the map; otherwise the map is subordinate to other definite and ascertained particulars.

- 26 **PART II – TIDAL, NAVIGABLE BOUNDARIES**

- 27 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

- 28 PHASES OF THE MOON
PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

- 29 Neap & Spring Tides:
Full Moon: 03.08.2012
Last quarter: 03.14.2012
New Moon: 03.22.2012
First quarter: 03.30.2012

SPRING -----

MHHW = 5.22'

MHW = 4.93'

MLW = 0.50'

MLLW = 0.10'

ALL -----

MHHW = 4.94'

MHW = 4.44'

MLW = 0.90'

MLLW = 0.10'

NEAP -----

MHHW = 4.83'

MHW = 4.11'

MLW = 1.18'

MLLW = 0.14'

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES


30  Unmoving Plane meets a moving landform:

Plane of MHTL as it intersects the shoreline or bank

Ordinary: "...usual' or 'ordinary' high water mark.' By that designation we mean the limit reached by the neap tides..." - *Teschmacher*

Ordinary: "...point at which the plane of average high tide meets the land..." - *Kent*

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

31  Lands held "in trust by the state for the people" can be transferred.

But they are held by the grantee subject to the "public trust".

Those public rights are not extinguished.

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

32  **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

- SUBMERGED LAND CASES
 - *United States v. California*, 32 US 19 (1949)
 - *United States v. Louisiana*, 339 US 699 (1950)
 - *United States v. Texas*, 339 US 707 (1950)
 - SUBMERGED LANDS ACTS –
 - Public Law 31, 67 Stat. 29 (1953)
- The United States, in the Submerged Land Cases, claimed in court the lands extending 3 geo miles from OLW, and from other various baselines; bays, bights, etc
- The United States, in the Submerged Lands Act, granted these lands to the States, "...to confirm and establish the titles of the States to lands beneath navigable waters within State boundaries and to the natural resources within such lands and waters, to provide for the use and control of said lands and resources, and to confirm the jurisdiction and control fo the United States over the natural resources of the seabed of the Continental Shelf seaward of State boundaries..."
- The definition of navigable waters extended from MHT seaward 3 geographical miles.

33  **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

Recognition of other sovereign rule
Treaty of Guadalupe Hidalgo (February 2, 1848)
Provided for the recognition and preservation of grants from prior sovereign (Mexico) to rightful grantees.
Confirmation of grants required survey and map by US.
Grants were made to and along "the shore", or to "the bay"
The boundary between federal and upland owner, as it pertains to Mexican Law, is the "line of highest tides" which if recognized by US surveys would have eliminated riparian character for lands between HHW and OHW due to intervening private or public interest.
The extension of Mexican Grants to OHW preserved riparian character of bona fide Mexican Grants.
However....

34  **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

Public Trust as it pertains to other sovereign rule
If there are tidelands within an original Mexican land grant confirmed by patent, and such a public easement was not part of original confirmation, then no public trust exists.
"...We hold that California cannot at this late date assert its public trust easement over petitioner's property, when petitioner's predecessors-in-interest had their interest confirmed without any mention of such an easement in proceedings taken pursuant to the Act of 1851. The interest claimed by California is one of such substantial magnitude...this interest must have been presented in the patent proceeding or be barred.

Accordingly, the judgment of the California Supreme Court is reversed..." – *Summa Corp.*

35 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

Shoreline changes: GAIN –

The Rules – Civil Code 1014

(1014.) Where, from natural causes, land forms by imperceptible degrees upon the bank of a river or stream, navigable or not navigable, either by accumulation of material or by the recession of the stream, such land belongs to the owner of the bank, subject to any existing right of way over the bank.

36 **Shoreline changes: GAIN**

Rules of Engagement

☞ The general rule is gradual and imperceptible incurs gain or loss

1. accretion, natural: the gradual and imperceptible deposition of material to the bank or shore

a) land so formed is added to that of the owner of the bank.

b). title to riparian land passes title to accreted land unless contrary intent is indicated

c) Federal law provides for accretions to be owned along navigable shore,but....

d) California cases have provided for state ownership if a substantial time elapses between original survey and entry (unjust enrichment of landowner).

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

37 **Shoreline changes: GAIN**

2. accretion, artificial: deposition of land due to works of man

a) California does NOT recognize general rule of accretion for beds of waters below OHWM or OLWM.

b) Artificially created land next to tidal waters is belongs to the state, the owner of the underlying bed.

c) Public trust ownership of the bed cannot alienate the trust easement from trust lands,but....

d) distance may matter. Public Trust Doctrine permits loss of public trust property by natural accretion, but not by artificial accretion. If, as in a 1995 case, the artificial means of accretion or erosion are sufficiently distant, that may render the erosion or accretion "natural" and so may deprive the state of the accreted lands.

3. reliction: the exposure of land by gradual receding of water

a) land so "formed" is added to that of the riparian or littoral owner

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

38 **Shoreline changes: LOSS –**

Rules of Engagement

☞ The general rule is gradual and imperceptible incurs gain or loss

1. erosion, natural: the gradual and imperceptible removal of material from the bank or shore

a) riparian or littoral owner loses land

- b). title to riparian or littoral land passes exposure to erosion of land unless contrary intent is indicated
- 2. erosion, artificial: the removal of land due to works of man
 - a) will not change water boundaries, but the boundary remains in the last natural location
- 3. submergence: the gradual and imperceptible loss of land through rising of waters (the reverse of reliction)
 - a) boundary changes with change in water line; loss of land to riparian or lacustrine owner (not littoral?)

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

39 **Shoreline changes: LOSS and GAIN**

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

40 **PART II – TIDAL, NAVIGABLE WATER BOUNDARIES**

Shoreline changes: LOSS OR GAIN BY AVULSION–

The Rules – Civil Code 1015

(1015) If a river or stream, navigable or not navigable, carries away, by sudden violence a considerable and distinguishable part of a bank, and bears it to the opposite bank, or to another part of the same bank, the owner of the part carried away may reclaim it within a year after the owner of the land to which it has been united takes possession thereof.

41 **Shoreline changes: LOSS OR GAIN BY AVULSION**

Rules of Engagement

☞ The general rule is sudden and perceptible do NOT incur gain or loss

1. avulsion: the sudden removal of land from a bank or shore by force or change and *attachment to another*; tearing away, separation

- a) avulsion will not cause loss of land from riparian or littoral owner
- b) the "avulsed" owner can recover land so separated within year

.....Jane does not loose her property now bisected by new channel

2. the change in direction or location of water moves riparian banks or shore away from former riparian or littoral owner and that owner ceases to be a riparian owner

.....Joe is no longer has riparian property!

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

42 **Shoreline changes: LOSS OR GAIN BY AVULSION**

PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

43

END
PART II – TIDAL, NAVIGABLE WATER BOUNDARIES

44 **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**

45












PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES

46 **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**

What you want to know...the general rule is:

- The Rules – Civil Code 830
- (830.) Except where the grant under which the land is held indicates a different intent, the owner of the upland, when it borders on tide water, takes to ordinary high-water mark; when it borders upon a navigable lake or stream, where

there is no tide, the owner takes to the edge of the lake or stream, at low-water mark; when it borders upon any other water, the owner takes to the middle of the lake or stream.

- 47  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- The Rules – Code of Civil Procedure 2077
 - 2077. Section Two Thousand and Seventy-seven. The following are the rules for construing the descriptive part of a conveyance of real property, when the construction is doubtful and there are no other sufficient circumstances to determine it:
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 Two--When permanent and visible or ascertained boundaries or monuments are inconsistent with the measurement, either of lines, angles, or surfaces, the boundaries or monuments are paramount.
 Three--Between different measurements which are inconsistent with each other, that of angles is paramount to that of surfaces, and that of lines paramount to both.
 Four--When a road, or stream of water not navigable, is the boundary, the rights of the grantor to the middle of the road or the thread of the stream are included in the conveyance, except where the road or thread of the stream is held under another title.
 Five--When tide water is the boundary, the rights of the grantor to ordinary high-water mark are included in the conveyance. When a navigable lake, where there is no tide, is the boundary, the rights of the grantor to low-water mark are included in the conveyance.
 Six--When the description refers to a map, and that reference is inconsistent with other particulars, it controls them if it appears that the parties acted with reference to the map; otherwise the map is subordinate to other definite and ascertained particulars.
- 48  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- The boundary between the state and upland owners of nontidal, navigable rivers and lakes is Mean Low Water Mark (MLWM)
 The State owns bed from LWM.
 Even if a meander line present, ownership still extends to LWM
 The area between HWM and LWM is "shorezone", possibly subject to public trust.
- 49  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- OHWM – OLWM – Public Trust Easement
- 50  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- Location of Low Water Mark:
 Will be based on mean or average or "ordinary" low water level
 Does not need to be the historic low point
 Does not take into account seasonal fluctuations
- 51  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- RE: NAVIGABILITY
 You need to determination *when* water is navigable or non-navigable
 Title depends on condition of navigability on September 9, 1850
- If navigable, boundary is LWM
 - If non-navigable, title to the bed was not transferred to State and remained vested in United States and would be transferred with federal patent
 - If non-navigable, boundary is "middle" (remember CC 830)
- 52  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- Test for NAVIGABILITY: Navigability at law is navigability in fact.
 Conditions for navigability:
- The water need to be "susceptible to navigation"
 - Navigability need not be continuous
 - Navigability need not be in extraordinary or high water levels, but in "ordinary" condition
 - Navigability need not be easy (...nothing ever is...) but can be made in spite of obstructions
- 53  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- RE: Meanders –
- Conveyance along bank of navigable river
 - Meanders along tidal rivers do not affect actual boundary, OLWM is still boundary
 - There still is or may be a public trust easement between OHWM and OLWM!
- 54  **PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- RE: Other Sovereign Recognition –
- The rules for Spanish or Mexican grants are the same as for tidal, navigable waters
- RE: Shoreline Changes
- The rules for Gain or Loss by natural and artificial means are generally the same as for tidal, navigable waters
- 55  **END**
- PART III – NONTIDAL, NAVIGABLE WATER BOUNDARIES**
- 56  **PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES**
- 57  **PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES**

58 **PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES**

What you want to know...the general rule is:

- The Rules – Civil Code 830
- **(830.)** Except where the grant under which the land is held indicates a different intent, the owner of the upland, when it borders on tide water, takes to ordinary high-water mark; when it borders upon a navigable lake or stream, where there is no tide, the owner takes to the edge of the lake or stream, at low-water mark; when it borders upon any other water, the owner takes to the middle of the lake or stream.

59 **PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES**

What you want to know...

- The Rules – Code of Civil Procedure 2077
- 2077. Section Two Thousand and Seventy-seven. The following are the rules for construing the descriptive part of a conveyance of real property, when the construction is doubtful and there are no other sufficient circumstances to determine it:
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Three--Between different measurements which are inconsistent with each other, that of angles is paramount to that of surfaces, and that of lines paramount to both.
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Six--When the description refers to a map, and that reference is inconsistent with other particulars, it controls them if it appears that the parties acted with reference to the map; otherwise the map is subordinate to other definite and ascertained particulars.

60 **PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES**

- Property adjacent to NON TIDAL, NON-NAVIGABLE waters:
 - Ownership to center
 - Center is midway or median
 - There may be a different intent expressed in the instrument of title for the boundary or limit of the land conveyed
 - If title indicates the shore, the boundary is the OLWM
 - There may be access issues if the title does not extend to the middle of the stream
 - If title indicates the general term of "river", without an express intent, title carries to the thread

61 **END**

PART IV – NONTIDAL, NON-NAVIGABLE WATER BOUNDARIES

62 **PART V – OTHER WATER BOUNDARIES**

ISLANDS, SWAMP & OVERFLOWED LANDS

63 **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

What you want to know...the general rule is:

- The Rules – Civil Code 830
- **(830.)** Except where the grant under which the land is held indicates a different intent, the owner of the upland, when it borders on tide water, takes to ordinary high-water mark; when it borders upon a navigable lake or stream, where there is no tide, the owner takes to the edge of the lake or stream, at low-water mark; when it borders upon any other water, the owner takes to the middle of the lake or stream.

64 **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

What you want to know...the general rules are:

- The Rules – Civil Codes 1016-1018
- **(1016)** Islands and accumulations of land, formed in the beds of streams which are navigable, belong to the State, if there is no title or prescription to the contrary.
 - **(1017)** An island, or an accumulation of land, formed in a stream which is not navigable, belongs to the owner of the shore on that side where the island or accumulation is formed; or, if not formed on one side only, to the owners of the shore on the two sides, divided by an imaginary line drawn through the middle of the river.
 - **(1018)** If a stream, navigable or not navigable, in forming itself a new arm, divides itself and surrounds land belonging to the owner of the shore, and thereby forms an island, the island belongs to such owner.

65 **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

Nature of title for islands is time-dependent.

- An island present **BEFORE** statehood (09.09.1850)
 - In a meanderable water and surveyed...
 - Had to be surveyed – if the island was meanderable or not - and shown on GLO plat
 - Had to have ties to upstream and downstream points if not meanderable
 - Belongs to federal government available for patent
 - In a meanderable water and NOT surveyed, (even if US parted with title to land adjoining mainland)...
 - Is considered NOT in bed at statehood
 - Remains federal land and is subject to survey
 - Is subject to disposal by US when identified

66  **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

- What is “meanderable”?
 - Navigable rivers along OHWM
 - Non-navigable rivers and streams when 3 chains or wider
 - Navigable lakes at OHWM
 - Non-navigable lakes of 50 acres and greater, if authorized
 - Islands above OHWM or MHT
 - Swamp & Overflowed lands at line of OHWM or OHT – NOT at segregation line
- What is “a meander”?
 - It is a traverse that approximates the margin of a permanent natural body of water
 - It is for delineation and purposes of computing area
 - It is NOT meant to be OHWM or OHT for boundary purposes

67  **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

68  **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

Nature of title for islands is time-dependent.

- An island that emerges **AFTER** statehood (09.09.1850)
 - In a navigable body of water due to accretion
 - Is considered part of the bed and thus ownership vested in the state
 - In a non-navigable body of water due to accretion
 - If on one side or the other of the center will be owned by the owner of that bank
 - If straddles the center is owned by both owners of opposite banks

69  **PART V – OTHER WATER BOUNDARIES –**

ISLANDS

70  **PART V – OTHER WATER BOUNDARIES –**

SWAMP & OVERFLOWED LANDS

Swamp and Overflowed lands were considered undesirable and uncultivable and were to be segregated for purpose of exclusion from area to be patented

- **Swamp** – 1) Low-lying land saturated with moisture and overgrown with vegetation but not covered with water. 2) Land at elevations below the upland such as would be wet and unfit for agriculture without construction of artificial drainage.
- **Overflowed Lands** – Lands which are annually or periodically subject to natural flooding during the normal planting, growing or harvesting seasons of a region to such an extent that they are rendered wet and unfit for the cultivation of the staple crops of that region, unless artificially drained or protected.
- **Marsh** – An area of low-lying, wet ground subject to frequent or regular flooding or ordinarily covered with water. Marsh vegetation is composed chiefly of reeds, grasses and grasslike plants. In Cadastral Survey usage the work “marsh” has usually been used to refer to coastal “salt marshes”.

71  **PART V – OTHER WATER BOUNDARIES –**

SWAMP & OVERFLOWED LANDS

72  **PART V – OTHER WATER BOUNDARIES –**

SWAMP & OVERFLOWED LANDS

- Swamp and Overflowed Lands (S&O)
 - S&O determined by federal survey
 - If navigable waters present, title and right of disposal belong to State

73 END

PART V – OTHER WATER BOUNDARIES

ISLANDS, SWAMP & OVERFLOWED LANDS

74 Useful Books and Publications

- Glossaries for Surveyors, Minnick
- Shore and Sea Boundaries, Vol I & II, Shalowitz
- River and Lake Boundaries, Simpson
- Water Boundaries, Cole
- Tidal Datum Planes Rev.1951, H.A.Marmer
- USACE Engineering Manual Hydrographic Surveying, USACE
- Tidal Datums and their Applications, NOAA Special Publication NOS CO-OPS 1
- Computational Techniques for Tidal Datums Handbook, NOAA Special Publication NOS CO-OPS 2
- Our Restless Tides, NOAA NOS
- Manual of Surveying Instructions 1973, US Dept. of Interior, BLM
- CLSA Water Boundaries Workshop, 1976
- Miller & Starr, California Real Estate 3d:
 - § 8:48. Water as a Property Boundary
 - § 8:49. Effect of Erosion, Accretion, and Reliction
 - § 15:12. Public Trust, Navigation and Conservation Easements

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NEVER QUIT LEARNING...

76

That's my story
And I'm sticking to it.
Goodbye, good luck!
and Thanks for shopping with us.

77 **California Land Surveyors Association**

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Water Boundaries
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