ANNOTATION

RIPARIAN OWNER'S RIGHT TO NEW LAND CREATED BY RELICTION OR BY ACCRETION INFLUENCED BY ARTIFICIAL CONDITION NOT PRODUCED BY SUCH OWNER

INDEX

TOTAL CLIENT-SERVICE LIBRARY® REFERENCES

Am Jur, Waters (1st ed §§ 212, 453, 461, 476–493)

24 Am Jur Pl & Pr Forms (Rev ed), Waters, Form Nos. 91–98, 152–153

2 Am Jur Proof of Facts 649, Boundaries

2 Am Jur Trials 293, Locating Scientific and Technical Experts; 6 Am Jur Trials 555, Use of Engineers as Experts

US L Ed Digest, Waters §§ 29, 49, 53

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TABLE OF JURISDICTIONS REPRESENTED

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§ 1. Introduction

[a] Scope

The subject herein under discussion is the right of a riparian owner to new land formed against his premises by the natural processes of accretion or reliction, where such processes have been influenced by various works of man in which the riparian owner took no part. Accordingly, this annotation[1] collects and arranges cases wherein the actions of man have served as an artificial catalyst for the natural processes of accretion or reliction.[2] To be found herein are cases involving the situation where some act or erection of man has completely or partially interfered with the rate of flow, or the direction of the current, of a waterway in such a manner as to initiate, accelerate, or otherwise influence the workings of the natural processes of accretion or reliction. The situation thus covered is one where "but for" the construction of a cutoff channel, a new channel, a dike, a wharf, a breakwater, a groin, a bulkhead, a jetty, a dam, a revetment, an embankment, or the like (most often away from the premises against which the new land is formed), such natural processes would not have occurred at the place in question. Thus, the process herein under discussion may be characterized as natural accretion artificially caused. In all cases the actual depositing of alluvion must have been done by the flow of the waters.

This annotation does not collect cases wherein it appears that the deposits (alluvion) in question were di-

1. The annotation at 134 ALR 467 need no longer be consulted with regard to the matter contained in this annotation.

2. Accretion is the process of gradual and imperceptible addition of solid materials, called alluvion, thus extending the shoreline out by deposits made by contiguous water, while reliction is the gradual withdrawal of water from land by the lowering of the water's surface level from any cause, said the court, in Krumwiede v Rose (1964) 177 Neb 570, 129 NW2d 491, infra §§ 3, 4[a].

rectly added to a claimant's shoreline either by the owner of the shoreline or by a stranger thereto; thus, reclamation, landfill, dredging, and like situations are without the scope of this annotation,[3] since these situations do not actually involve the processes of accretion or reliction, in that the formation of the new land is the result of the direct act of man, rather than of the action of the water, and is obvious and rapid rather than gradual and imperceptible.[4] To be included within the scope of this annotation, the deposit of alluvion through the process of accretion must be the direct result of the action of waters, even though the course of such waters has been influenced by some manmade project.

To be included herein, a private claimant riparian owner must in a given case have had no direct part in creating or in causing, nor any control over, the artificial agency which induced the processes of accretion or reliction to form deposits against his premises.[5]

To be within the scope of this annotation, a case must present a situation wherein the processes of accretion or reliction, rather than avulsion,[6] have been present. In the discussion of the cases herein, the reasoning found in many of the cases with regard to the question of whether the change had been wrought by avulsion or by accretion or reliction is not set forth—a resolution in favor of accretion being necessary for inclusion herein.

In order to be included in this annotation, a case must demonstrate a fact pattern wherein the land created by accretion is contiguous to the shoreline of the mainland; beyond the scope of this annotation are cases wherein the land created by accretion moves from an island toward the mainland.[7]

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3. See the annotation at 91 ALR2d 857 entitled, "Rights to land created at water's edge by filling or dredging."

4. The court in Schafer v Schnabel (1972, Alaska) 494 P2d 802, infra §§ 3, 4[a], pointed out that the decisions have been careful to distinguish filled lands from accreted lands.

It was pointed out by the court in Board of Public Works v Larmar Corp. (1971) 262 Md 24, 277 A2d 427, that artificial fill, in the sense that the fill material is brought over riparian land by mechanical means and dumped into the water or dredged up from the bottom of the sea and placed in front of riparian properties so as to create new land, is not within the established meaning of "accretion," as it was known at common law, citing Am Jur, Waters (1st § 486), wherein it is said that it is the general rule that a riparian owner will not be permitted to increase his estate by his own actions in creating an artificial condition for the purpose of effecting such an increase, and that the doctrine of accretion does not apply to land claimed by man through filling in land once under water.

5. For a discussion of the rule of accretion where the artificial condition influencing the processes of accretion and reliction has been created by a riparian claimant himself, see Division III of the annotation at 134 ALR 467.

The payment of taxes or of special assessments going toward a public works project which results in the initiation of the processes of accretion and reliction is not considered, for the purposes of this annotation, as a "direct part."

6. "Avulsion" is a sudden and perceptible loss or addition to land by the action of water, a sudden change in the bed or course of a stream. Ballentine's Law Dictionary (3rd ed) p 116.

7. In this regard see the annotation entitled, "Applicability of rules of accretion and reliction so as to confer upon owner of island or bar in navigable stream title to additions," at 54 ALR2d 643.

Since statutory provisions are discussed only to the extent that they are reflected in the reported cases within the scope of this annotation, the reader is advised to consult the latest enactments in his jurisdiction.

[b] Related matters

Right to accretion built up from one tract of land and extending laterally in front of adjoining tract without being contiguous thereto. 61 ALR3d 1173.

Right of public in shore of inland navigable lake between high- and low-watermarks. 40 ALR3d 776.

Rights to land created at water's edge by filling or dredging. 91 ALR2d 857.

Apportionment and division of area of river as between riparian tracts fronting on same bank, in absence of agreement or specification. 65 ALR2d 143.

Relative riparian or littoral rights respecting the removal of water from a natural, private, non-navigable lake. 54 ALR2d 1450.

Applicability of rules of accretion and reliction so as to confer upon owner of island or bar in navigable stream title to additions. 54 ALR2d 643.

Right of public to fish in stream notwithstanding objection by riparian owner. 47 ALR2d 381.

Right of riparian owner to construct dikes, embankments, or other structures necessary to maintain or restore bank of stream or to prevent flood. 23 ALR2d 750.

Right of riparian owner to continuation of periodic and seasonal overflows from stream. 20 ALR2d 656.

Waters: rights in respect of changes by accretion or reliction due to artificial conditions. 134 ALR 467.

Right to injunction to protect water rights as affected by fact that party seeking injunction contemplates no immediate use of rights. 106 ALR 687.

Right of riparian owner on navigable water to access to water. 89 ALR 1156.

Right of riparian land owners to continuance of artificial conditions established above or below their land. 88 ALR 130.

Estoppel of one riparian owner to complain of diversion of water by another riparian owner. 74 ALR 1129.

Right of riparian owner to embank against flood or overflow water from stream. 22 ALR 956, 53 ALR 1180, 23 ALR2d 750.

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Fazio, Rights of Riparian Owners to Alluvion Formed as a Result of the Works of Man. 18 La L Rev 739 (1958).

Lundquist, Artificial Additions to Riparian Land: Extending the Doctrine of Accretion. 14 Ariz L Rev 315 (1972).

Smith, Right of Riparian Owner to Artificial Accretion. 25 Miss LJ 174 (1954).

Went, Riparian Rights: Accessions. 29 Tulane L Rev 362 (1955).

§ 2. Background and summary

[a] Generally

It is a widely accepted and ancient rule of real property law, supported by the commentators,[8] the annota-

8. "[T]itle to accreted land is awarded to the upland owner irrespective of who owns the bed." Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion." 14 Ariz L Rev 315, 322 (1972).

"A riparian proprietor is entitled to all accessions made to his land by the re-

tors,[9] and, of course, the cases,[10] that a riparian owner receives title to new lands formed as a result of the processes of accretion[11] and reliction;[12] it

treating of the river from its former limits, or by the slow and secret deposit of sand and other substances, so as to leave the soil theretofore inundated uncovered by the water." 1 English Ruling Cases, Accretion (American Notes) p. 479.

9. "Land formed by natural accretion upon the bank of a navigable stream belongs to the riparian owner of the bank . . . ." Note "Accretion, Alluvion." 22 Am St Rep 202 (1892).

Similarly, it has been said that "land formed by alluvion or the gradual and imperceptible accretion from the water, and that gained by reliction or the gradual and imperceptible recession of the water, belong to the owner of the land to which the addition is made . . . ." Note, "Relative Rights of the State and of Riparian Owners in Navigable Waters." 127 Am St Rep 40, 57 (1909).

"The general rule of law is that alluvion is an incident to the property which fronts upon the water that has made the deposit, and that it belongs to the owner of that property." Note, "Alluvion." 33 Am Dec 276 (1910).

Title to land made by reliction "will vest in the adjacent proprietor, if the withdrawal of the waters was 'slow, gradual, imperceptible. . . .'" Note, "Reliction." 33 Am Dec 280 (1910).

10. For example, the United States Supreme Court in New Orleans v United States (1836) 35 US 662, 9 L Ed 573, said that the question is well settled at common law that a person whose land is bounded by a stream of water which changes its course gradually by alluvial formations shall still hold by the same boundary, including the accumulated soil. The court said that no other rule could be applied on just principles. The court said that under the rule every proprietor whose land is thus bounded is subject to loss by the same means which may add to his territory, and that since he is without remedy for his loss, in this way, he cannot be held accountable for his gain.

In Bonelli Cattle Co. v Arizona (1973) 414 US 313, 38 L Ed 2d 526, 94 S Ct 517, infra §§ 3, 4[b], the United States Supreme Court said that federal law recognizes the doctrine of accretion whereby the grantee of land bounded by a body of navigable water acquires a right to any gradual accretions formed along the shore. The court went on to say that when there is a gradual and imperceptible accumulation of land on a navigable river bank, by way of alluvion or by way of reliction, the riparian owner is the beneficiary of title to the surfaced land.

The owner of adjoining lands has the title to land formed by accretion whether or not the state owns the bottom of the body of water in question; whether or not the body of water in question is navigable or nonnavigable; and whether the accretion formed, in part or wholly, due to artificial causes or improvements made by third persons, said the court in Brundage v Knox (1917) 279 Ill 450, 117 NE 123, infra §§ 3, 4[b].

The theory of accretion is that it permits a riparian owner to continue his access to the shore or waterline; thus, in order to effect a change of boundary, formations resulting from accretion must not only be made to the contiguous land, but must also operate to produce an extension of the shoreline outward from the tract to which they adhere, it being fundamental in the law of accretions that the land to which they attach must be bounded by water to entitle its owner to such increase, commented the court in Sieck v Godsey (1962) 254 Iowa 624, 118 NW2d 555, infra § 4[a].

In State v Longyear Holding Co. (1947) 224 Minn 451, 29 NW2d 657, the court said that under the doctrine of accretion and reliction, it is universally held that riparian owners gain a vested right in property added to their riparian lands as a result of deposits from the waters or because of the recession of the waters.

11. The court in Board of Trustees v Medeira Beach Nominee, Inc. (1973, Fla App) 272 So 2d 209, 63 ALR3d 241, infra § 4[b], said that accretion is the gradual and imperceptible addition of soil to the shore of waterfront property, the test as to what is gradual and imperceptible being that though witnesses may see

is also a widely accepted proposition that the fact that such processes were initiated, accelerated, or otherwise influenced by artificial, manmade structures has no effect on the general rule of accretion and reliction.[13]

Thus, except for the courts of California,[14] the overwhelming number of courts, whether in suits between private parties and governmental entities[15] or in suits between private litigants,[16] have not been deterred from

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from time to time that progress has been made, they cannot perceive it while the process is going on.

In Brundage v Knox (1917) 279 Ill 450, 117 NE 123, infra §§ 3, 4[b], the court, noting that "accretion" was often used as a synonym of "alluvium" or "alluvion," said that "accretion" had been defined in several ways: the gradual increase of dry land by imperceptible accumulation of new land; the imperceptible accumulation of land by natural causes; the increase or growth of property by external accessions, as by alluvium naturally added to land situated on the bank of a river or on the seashore; the increase of real estate by the addition of soil by gradual deposits through the operation of natural causes to that already in the possession of the owner; the increase of real estate by the gradual deposit, by water, of solid material, whether mud, sand, or sediment, so as to cause that to become dry land which was before covered by water; the process of gradual and imperceptible increase of land, caused by the deposit of earth, sand, or sediment thereon by contiguous waters. The court went on to adopt the idea that accretion rests in the law of nature, the principle applying alike to streams that do, and to those that do not, overflow their banks. The court also accepted the notion that accretion, being a gradual and imperceptible addition to land, is always to be distinguished from avulsion, which is a sudden and perceptible loss or addition to land by the action of water or otherwise.

The court in Humble Oil & Refining Co. v Sun Oil Co. (1951, CA5 Tex) 190 F2d 191, reh den (CA5 Tex) 191 F2d 705, cert den 342 US 920, 96 L Ed 687, 72 S Ct 367, said that "alluvion" is a term applied to the thing deposited, while "accretion" denotes the process of adding real estate by gradual and imperceptible deposition, through the operation of natural causes, to that already in the possession of the owner. The word accretion was said to have been derived from the Latin term "accrescere," meaning to grow to, to be united with, or to increase.

In Freeland v Pennsylvania R. Co. (1901) 197 Pa 529, 47 A 745, the court said that "alluvion" has been defined as those accumulations of sand, earth, and loose stones or gravel brought down by rivers which, when spread out to any extent, form what is called "alluvial land." The court also said that "alluvion" is the addition made to land by the washing of the seas or rivers, and that its characteristic is its imperceptible increase, so that it cannot be perceived how much is added in each moment of time.

12. "Reliction" involves an increase in the amount of exposed land beside a body of water, but properly refers only to situations where the water itself has receded, said the court in Schafer v Schnabel (1972, Alaska) 494 P2d 802, infra §§ 3, 4[a].

In Martin v Busch (1927) 93 Fla 533, 112 So 274, infra § 4[b], the court said that reliction is the term applied to land that has been uncovered by water, but which has become uncovered by the imperceptible recession of water.

In Krumwiede v Rose (1964) 177 Neb 570, 129 NW2d 491, infra §§ 3, 4[a], the court stated that reliction is the gradual withdrawal of the water from land by the lowering of the water's surface level from any cause.

13. § 3, infra.

14. § 5, infra.

15. § 4[b], infra.

The established principles of accretion and reliction apply to the public, as landowner, to the same extent as to a private owner of riparian lands, there being no substantial difference in the application of those principles to public land. 63 Am Jur 2d, Public Lands § 43.

It is sometimes said that riparian rights to accretions are ordinarily the same

awarding accreted or relicted lands to riparian or upland owners by the fact that some act of man served in whole or in part to cause the otherwise natural processes of accretion or reliction to function.

The opinion of the Supreme Court of the United States in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, infra §§ 3, 4[b], may serve us here as an introduction to some of the general legal principles in the area of accretion. The court, taking the position that the question of to whom accretion belongs is a question of law, noted that it had been said in the Institutes of Justinian that alluvial soil added by a river to land becomes the possession of the riparian owner, alluvion being an imperceptible increase, that is, a process so gradual that no one can perceive how much is added at any one moment of time. The court then turned to the Code Napoleon, which declared that accumulations and increases of mud formed successively and imperceptibly on the soil bordering on a river or other stream is denominated "alluvion;" and that alluvion is for the benefit of the proprietor of the shore, whether such alluvion is in respect of a river, and whether the river or stream is navigable or not. The court said that alluvion may be defined as an addition to riparian land, gradually and imperceptibly made by the water to which the land is contiguous, being different from reliction and the opposite of avulsion.[17] The test as to what is gradual and imperceptible in the sense of the rule of accretion was said to be that though witnesses may see from time to time that progress has been made, they could not perceive it while the process was going on. The court said that the riparian right to future alluvion is a vested right and an inherent and essential attribute of the original property. The title to increments was said to rest in the law of nature and to be the same as that of the owner of a tree to its fruits, and of the owner of flocks and herds to their natural increase. The court said that the principle applied alike to streams that do, and to those that do not, overflow their banks, and to bodies of water where dikes and other defenses are, and where they are not, necessary to keep the water within its

whether title to the bed of the water is in a riparian owner or in a state. The general validity of this observation is re-enforced when one considers that where the bed of a stream to its thread is in riparian owners and if alluvion is then formed by the process of accretion, nothing more has happened than that the level of the bed has been raised (that is, lands have been raised above the level of water that were already vested in the owner of the shore); the only result, therefore, of the process of accretion is to shift the position of the land already owned. On the other hand, even if the title to the bed of streams is considered to be in the state, there exists no reason why the state, which affords no redress for the loss that is occasioned by the cutting of a river on one of its banks, should claim the deposit on the other bank, which, perhaps, is a result of the very overflow of the first. Subsequent to the process of accretion the now dry land is no longer bed and is therefore no longer the property of a particular state.

16. § 4[a], infra.

17. In St. Louis v Rutz (1891) 138 US 226, 34 L Ed 941, 11 S Ct 337, infra § 4[b], the court pointed out that an avulsive change does not affect title and that a boundary established by a river remains at that line, although the river runs in a new course subsequently to an avulsive change, even if the result is to cut off a landowner's riparian rights.

proper limits. The court then went on to observe that Blackstone, through Bracton, had laid down the rule of the common law with regard to lands gained from the sea, either by alluvion (the washing up of land and earth, so as in time to make dry land) or by reliction (when the sea shrinks below the usual watermarks), the common law having been said to hold that if the gain is by small and imperceptible degrees, it should go to the owner of the adjoining land under the maxim "de minimis non curat lex." Thus, it was said to be well settled at common law that the person whose land is bounded by a stream of water which changes its course gradually by alluvial formations shall still hold by the same boundary, including the accumulated soil, and that no other rule could be applied on just principles. Blackstone was described as having been of the further opinion that to owners of land adjoining waters, being often losers by the breaking-in of the sea, any possible gain by accretion was, therefore, a reciprocal consideration for the possible loss by erosion. Since every proprietor whose land is bounded by water is subject to loss by the same means which may add to his territory, and since a riparian owner is without remedy for his loss in this way, he cannot be held accountable for his gain. The court said that a shoreline owner takes the chance of injury and of benefit arising from the situation of his property; if there is a gradual loss, he must bear it; if there is a gradual gain, it is his. The right of a riparian owner to accreted land was said to be a natural and not a civil one with the maxim "qui sentit onus debet sentire commodum," lying at its foundation.[18]

In an excellent exposition[19] of the various rationales[20] for the rule that a

18. The maxim is translated at Ballentine's Law Dictionary (3d ed), p. 1044, as meaning "he who assumes the burden ought to secure the benefit."

19. Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion," 14 Ariz L Rev 315, 322–323 (1972).

20. In Bonelli Cattle Co. v Arizona (1973) 414 US 313, 38 L Ed 2d 526, 94 S Ct 517, infra §§ 3, 4[b], the United States Supreme Court pointed out a number of interrelated reasons for the application of the doctrine of accretion: where lands are bounded by water, it may well be regarded as the expectancy of the riparian owners that they should continue to be so bounded; the quality of being riparian, especially to navigable water, may be the most valuable feature of the land and is part and parcel of the ownership of such land; the riparian nature of land also encompasses the vested right to future alluvion, which is an essential attribute of the original property; by requiring that an upland owner suffer the burden of erosion and by giving him the benefit of accretions, the riparian nature of land is maintained; and, finally, under the compensation theory it is said that a riparian owner should benefit from any additions to his lands by accretions thereto, because a riparian owner is subject to losing land by erosion, both of which processes are beyond his control.

In Schafer v Schnabel (1972, Alaska) 494 P2d 802, infra §§ 3, 4[a], the court indicated that the basic justification for the rule that accretion is to benefit riparian owners is that it protects the riparian owner's interest in his land by assuring him continued access to the water and the advantages consequent thereto. The court also noted that some courts had characterized the doctrine of accretion as compensating the riparian owner for the risk he runs of losing some of his land by erosion, while others had called the doctrine a fact of natural law, and still others had employed the doctrine to dispose of small unaccounted-for parcels.

The court in Board of Trustees v Medeira Beach Nominee, Inc. (1973, Fla

riparian owner is entitled to the land formed by gradual and imperceptible accretions from the water, it has been pointed out that one of the several foundations upon which the doctrine of accretion is based is that of the Roman theory of accession—that is, just as where the owner of a tree which produces fruit becomes the owner of such fruit, so the owner of riparian land owns accreted lands. Another rationale postulates that where a watercourse forms a boundary between landowners, such watercourse should remain as the legal boundary even though it has changed its location.[21] Also used as a reason for the existence of the doctrine of accretion is the thought that where accretion or reliction produces dry land little by little, such new land should go to the owner of the adjoining riparian premises under the maxim "de minimis non curat lex."[22] A fourth rationale is identified as the "productivity theory," under which it is reasoned that a riparian owner can more quickly and completely utilize accreted land and that the policy of the law favors productive land use. The "compensation theory" is identified as a fifth reason for the existence of the doctrine; here it is reasoned that since a riparian owner is subject to losing land through erosion, such owner ought to be allowed to benefit from any addition to his tract.[23] Since

App) 272 So 2d 209, 63 ALR3d 241, infra § 4[b], said that there are four reasons for the doctrine of accretion: (1) the maxim "de minimis non curat lex"; (2) the theory that he who sustains the burden of losses and of repairs imposed by the contiguity of waters ought to receive whatever benefits they may bring by accretion; (3) the belief that it is in the interest of the community that all land have an owner and, for convenience, the riparian is the chosen one; and (4) the necessity for preserving the riparian right of access to water. The court said that an additional reason behind the doctrine of accretion relates to the riparian owner's ability to use his land.

In State by Kay v Sause (1959) 217 Or 52, 342 P2d 803, infra § 3, the court noted that various reasons had been assigned by the courts for the doctrine of gradual accretion; among them were these: (1) the increase is too minor to be worth notice by the law, (2) the rule is founded on the principle of compensation for loss, (3) since the increase is so minute that it is unascertainable it will, therefore, be deemed not to exist, and (4) the rule encourages improvement by the person thus able to use the land. The court said that these reasons were perhaps more compelling when they are applied to explain the rule with respect to changes in boundaries between private riparian owners along a stream, than to changes in boundary against a state, but conceded that they had been asserted with equal force in both situations. The court believed that a more cogent reason, although seldom expressed, was the desirability of keeping riparian property riparian.

21. "Where the shoreline is the boundary between the upland and the state-owned bed, accretion or erosion can cause the upland to gain or lose ground since the legal boundary follows the shoreline." Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion." 14 Ariz L Rev 315, 322 (1972).

22. "The adoption of the de minimis concept set the stage for a legal distinction between gradual changes and sudden changes along waterways. No such distinction was drawn in Roman Law." Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion." 14 Ariz L Rev 315, 322–323 (1972).

23. "The reason of the rule giving accretions to a riparian proprietor . . . is that he is entitled to reap from his position the benefits that may spring therefrom, as that position exposes him to corresponding losses." Note, "Alluvion." 33 Am Dec 276, 279 (1910).

The rationale of the rule granting to

the quality of being riparian is usually seen as being a valuable asset and an integral part of the ownership of riparian land, a sixth "and perhaps most important reason" for the doctrine is to preserve the riparian character of lands abutting upon waters.

It can be seen from this discussion of the reasons for the usual rule of accretion, that the further proposition, that accretion due to artificial means over which a claiming riparian owner has no control belongs to the riparian owner in the same manner as naturally accreted land, does not change, run counter to, or undermine such reasons so as to logically demand the recognition of a distinction, as to ownership, between accretion influenced by works of man and accretion not so influenced.

[b] Practice pointers

In cases dealing with accretion it may frequently be the case that there will be little dispute about the applicable law, but complete disagreement as to how and where the accretion in question occurred;[24] thus, it has been said that accretion is a subject which lends itself readily to disputed questions of fact and honest differences of opinion as to when, where, and how much of it has taken place.[25] The courts have expressed their appreciation of the difficulties sometimes found to inhere in the trial and determination of an accretion case. Thus, for example, the court in Ussery v Anderson-Tully Co. (1954, DC Ark) 122 F Supp 115, pointed out that the basic questions of how and when the area in controversy was formed are generally involved in all of such cases. In answering these questions, it was said, a court is usually required to reconstruct the movements of the particular body of water involved from the time of the original surveys down to the time of the filing of the suit. In passing upon cases of this kind, a court was said to have to rely upon expert testimony;[26] the evidence of maps and charts of the body of

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the riparian owner title to all alluvial deposits which attach to his land as the result of silt or deposits carried by rivers and running streams is the equitable principle that he whose property is subject to depradation, inundation, or destruction by the forces of nature in the form of currents present in rivers and streams must be accorded the benefits or advantages which such forces bestow in the form of additions to his property when such fortuitous event occurs, pointed out the court in State v Cockrell (1964, La App) 162 So 2d 361, cert den 246 La 343, 164 So 2d 350, infra § 4[b].

24. The court in Schafer v Schnabel (1972, Alaska) 494 P2d 802, infra §§ 3, 4[a], pointed out that the burden is upon the riparian owner to show that accretion has in fact occurred; more particularly, his proof must demonstrate that a gradual depositing of alluvium by the actions of contiguous waters has taken place.

25. Sieck v Godsey (1962) 254 Iowa 624, 118 NW2d 555, infra § 4[a]; Mather v State (1972, Iowa) 200 NW2d 498, infra § 4[b].

For examples of complaints, petitions, declarations, prayers for relief, findings of fact, judgments, or decrees with regard to various aspects of riparian rights, see 24 Am Jur Pl & Pr Forms (Rev ed) Waters, Forms 91–98, 152–153.

26. See generally 31 Am Jur 2d, Expert and Opinion Evidence §§ 1 et seq.

See 2 Am Jur Trials 293, Locating Scientific and Technical Experts: § 34 Civil Engineers, § 46 Geologists, § 60 Photographers, § 65 Real Estate Appraisers, § 70 Surveyors.

Also see 2 Am Jur Trials 585, Selecting and Preparing Expert Witnesses, as well as 6 Am Jur Trials 555, Use of Engineers as Experts.

For a discussion of the qualification of a surveyor as an expert witness, see 2 Am Jur Proof of Facts 649, Boundaries, Proof 1.

water and of the area in controversy;[27] physical evidence upon the ground, including significant features of terrain and the age, species, and distribution of growing timber within the area; the testimony of lay witnesses when such is available;[28] and any other evidentiary material which may be at hand. While the solution of some accretion problems was said to be quite difficult, and while it was said to probably be true that absolute certainty of solution is seldom, if ever, obtained, yet where a case is carefully prepared and the available evidence competently presented,[29] the court said that a result could be reached, the accuracy of which was reasonably certain. The court pointed out that rivers do not act arbitrarily or capriciously, being limited by natural laws of force and hydraulics. The court expressed its belief that since such movements of rivers must be in obedience to such natural laws, it follows that their movements could be understood by those familiar with such laws and with their application to river behavior, and that such persons, given adequate evidence and a reasonable opportunity for investigation, could with reasonable accuracy retrace the movements of the stream in question and its bankline history for quite considerable periods of time. This being true, the considered opinions of duly qualified experts were said to be entitled to great weight in accretion cases. The court went on to say, however, that unfortunately, in accretion cases as in other types of litigation, the experts frequently disagree among themselves as to how certain phenomena should be interpreted, and when such a situation arises, the court is required to examine other available evidence to determine which expert, or set of experts, is more probably correct. The court continued by pointing out that accurate maps and charts are, of course, indispensable in accretion cases, since in most of such cases the crucial movements of a river have not been observed by living witnesses. The court said that if all maps were

27. For a text discussion of maps and plats as evidence, see generally 29 Am Jur 2d, Evidence §§ 783, 802–803, 905–907.

Also see the annotation at 9 ALR2d 1047 entitled "Use of maps, plats, or diagrams to illustrate or to express testimony."

See 2 Am Jur Trials, Preparing and Using Maps, with regard to locating stock maps and mapmakers, considerations in the preparation of maps, the mapping of specific matters, and the use of such maps in the courtroom.

With regard to the use of maps and plats in showing the location of land or of boundary lines, see also 12 Am Jur 2d, Boundaries §§ 114–115, and 2 Am Jur Proof of Facts 669, Boundaries.

28. See 2 Am Jur Trials 229, Locating and Interviewing Witnesses.

29. In Durfee v Keiffer (1959) 168 Neb 272, 95 NW2d 618, both parties introduced a large number of aerial photographs, maps, and charts of the area where the land in dispute was located. However, much of this effort was apparently wasted since the court noted that the record was replete with the testimony of witnesses who referred to locations of land, buildings, fences, dikes, streams, and the like, by general statements of "here" and "there," and "indicated" to the trial court the reference to the location they were testifying about—yet, in many instances the court was unable to determine with any degree of certainty to what the witnesses referred, and in some instances even the exhibits mentioned could not be identified by the court. The court stressed that trial courts should not permit a record to be made of testimony referring to exhibits without requiring counsel and witnesses to identify for the record that about which they are testifying.

accurate in detail, and if the chronology of such maps were complete and close, the solution of accretion problems might be fairly simple, but that such was not usually the case. The court thought it obvious that physical evidence on the ground was of the utmost importance in the determination of accretion cases, and that, ordinarily, if the theory of one expert as to the nature and origin of the area in controversy is correct, it will find corroboration on the ground in the presence or absence of a meander scar, recognizable old banklines, or other topographical features. On the other hand, a theory which is not supported by physical evidence was said to be subject to grave doubt as to its correctness, regardless of the eminence of the potamologist[30] who may propound it. The court said that the testimony of lay witnesses having familiarity with the channel changes under consideration is of great value when it is available, and that it may be sufficient to tip the scale when expert testimony is evenly balanced. The court remarked that included, to a limited extent, in the concept of "lay testimony" is contemporary nomenclature of areas of land or bodies of water, as indicating the local and contemporary understanding of the nature and origin of such areas or bodies. In addition the court believed that local reputation as to land ownership may be entitled to weight. However, the court related that it is not often that reliable lay testimony is available, and that such is becoming less so as time goes by.

In Chicago Mill & Lumber Co. v Tully (1942, CA8 Ark) 130 F2d 268, the judge described the task of solving the problem of the nature and origin of the area there in controversy as being one which involved study of the maps and profiles[31] prepared from surveys made at different times in the past and comparisons between conditions shown to have existed at different times and at the time of the work, study of the physics and hydraulics of the river in question and comparisons between ascertained water levels and references back to the recognized government gauges, and close observation and understanding of the terrain itself and of all the physical indications of the actions of the river, as well as the character of all tree growth. The judge went on to say that study of the regimen of the river in any given period, that is, the relation of areas upon which the currents of the river work to cave off its banks and the areas traversed more gently without eroding the banks, was also important. The court commented that the techniques may only be mastered by hard work long continued.

In Mather v State (1972, Iowa) 200 NW2d 498, infra § 4[b], the court noted that the evidence consisted not only of voluminous oral testimony, but also of numerous plats, maps, and photographs.[32]

30. The science of river behavior is known as "potamology," and those who follow it as "potamologists."

31. For a text discussion of the use of models as evidence, see 29 Am Jur 2d, Evidence § 804.

For a practical discussion of the use of topographical models, see 3 Am Jur Trials, Preparing and Using Models §§ 28–29; it is pointed out at § 29 that hypsographic models (those showing topographical relief) have been used in cases involving water rights and other disputes where unlevel ground was a factor.

As to the use of diagrams to illustrate testimony, see 3 Am Jur Trials 507, Preparing and Using Diagrams.

32. The use of photographs as evidence

It should be remembered that various jurisdictions have enacted statutes dealing with accretion; thus, it is pointed out at 3 Witkin, Summary of California Law (8th ed) Real Property § 68, that § 1014 of the California Civil Code provides that where land forms, through natural causes, by imperceptible degrees upon the bank of a river or stream, navigable or not navigable, either by the 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.[33] It has been similarly pointed out[34] that Louisiana Article 509 of the Civil Code provides that the accretions, which are formed successively and imperceptibly on any soil situated on the shore of a river or other stream, belong to the owner of the soil situated on the edge of the water, whether it is a river or stream, and whether it is navigable or not, although such owner is bound to leave public that portion of the bank which is required by law for the public use.

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It should also be remembered that the dry land created or exposed as a result of the works of man may not always be viewed by a court as the product of accretion or of reliction.[35]

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is discussed at 29 Am Jur 2d, Evidence §§ 785–801.

For a discussion of aerial photographs, see 3 Am Jur Trials, Preparing and Using Photographs in Civil Cases §§ 159–162; it is pointed out at § 163 that "aerial obliques" are useful in presenting "bird's-eye" views of extensive areas in water-right disputes.

In Burket v Krimlofski (1958) 167 Neb 45, 91 NW2d 57, infra § 4[a], there were many maps and aerial photographs introduced into evidence and the court specified in some detail the contents of each.

33. Witkin also points out that although § 1014 refers only to rivers and streams, the common-law doctrine, which makes the same disposition of property, applies to land bordering on the ocean.

See Littlefield v Nelson (1957, CA10 Okla) 246 F2d 956, infra § 4[a] (applying Oklahoma law), where the court discussed a closely similar Oklahoma statute.

Also see a discussion of a pertinent Florida enactment in Board of Trustees v Medeira Beach Nominee, Inc. (1973, Fla App) 272 So 2d 209, 63 ALR3d 241, the full report of which immediately precedes this annotation.

34. Fazio, "Rights of Riparian Owners to Alluvion Formed as a Result of the Works of Man." 18 La L Rev 739 (1958).

35. In Barakis v American Cyanamid Co. (1958, DC Tex) 161 F Supp 25 (applying Texas law) involving a claim by the plaintiff that his premises were riparian, the court noted that a map, photographs, and the testimony showed that some of the plaintiff's tracts could not be considered to be riparian lands where they demonstrated the existence of manmade land and a manmade river channel. The court said that land built up artificially by a water district came under the doctrine of avulsion, and that a change in the channel of the river by the water district could not be denominated a change by accretion.

In State v Longyear Holding Co. (1947) 224 Minn 451, 29 NW2d 657, involving an action by the state to determine adverse claims to that portion of the bed of a lake below low-water mark, where the lake had been temporarily drained so as to allow mining in its bed, the court held that under the circumstances there presented, the doctrine of reliction appeared to have no application. The defendants were the riparian owners. The lake was to be refilled and its channel restored when the mining operations were completed. The court said that the trial court had properly made findings and ordered judgment in favor of the state where it had determined that the lake, at the time of Minnesota's admission to the union, had been part of a navigable waterway, and that, hence, the state had retained or reserved title to the bed thereof below low-water mark. Saying that under the doctrine of accretion and reliction it is

Thus, it may well be that an attorney, whose position will not be aided by the general rule of accretion and its corollary with regard to accretion influenced by works of man, will want to argue that such rules are inapplicable and that a principle such as avulsion (which yields a contrary result as to title) is the correct one under all the circumstances present.

§ 3. Rule as to effect of artificial influences

As indicated by legal commentators,[36] the following cases[37] dealing with the right of a riparian owner to take lands uncovered by the recession of waters by the process of reliction, or to take alluvial deposits formed by the process of accretion, where such processes have been initiated, accelerated, or otherwise influenced by artificial, manmade causes, have taken the position that the fact that artificial means caused, in whole or in part, the working of the processes of accretion or reliction does not affect the

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universally held that riparian owners gain a vested right in property added to their riparian lands as a result of deposits from the waters or because of their recession, and noting that in the instant case there was no claim that land had been added as a result of accretion, the court observed that with regard to reliction, the evidence was undisputed that until the time of its drainage by the state, the lake had maintained a fairly constant level. Accordingly, the only possible claim based upon reliction, thought the court, must rest upon the theory that temporary drainage of the lake pursuant to statutory power constituted a reliction vesting the riparian owners with full title to the lands in question. The court pointed out, however, that the drainage of the lake herein had been sudden and artificial, accomplished through the agency and authority of the state, that it was of a temporary nature, and that the evidence disclosed that as soon as the drainage pumps ceased, the lake would again fill up. The court quoted with approval a statement to the effect that if "accretion" or "reliction" was sudden and considerable it did not belong to the owner of the adjoining land, because the state was owner of the bed of the lake while it was covered with water and it continued to be so after a sudden shrinkage. The court thought it to be clear that before a riparian owner could claim title to lands as a result of reliction, such reliction had to be of a permanent nature, without the possibility of the water again filling in or covering the relicted area.

36. "A majority of the courts have provided . . . that whether accretion is natural or artificial does not affect the riparian owner's title in [accreted] land." Smith, "Navigable Waters: Right of Riparian Owner to Artificial Accretion." 25 Miss LJ 174, 175 (1954).

One commentator has pointed out that both where the cause of deposits formed by accretion is entirely natural and where the only cause of such deposits is artificial, the general rule is that the accretions will inure to the benefit of the upland owner. "The vast majority of courts place no reliance on the distinction between artificial and natural causes which affect the flow of the water, working to the speed of change and not the source." Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion." 14 Ariz L Rev 315, 326–327 (1972).

Another commentator has pointed out that where natural forces are aided by artificial means, such as the building of a pier or other structure, if the structure was not built by the owner of the shoreline, the courts have held that the riparian owner acquires title. Went, "Riparian Rights: Accessions." 29 Tulane L Rev 362, 363 (1955).

37. See, however, Lewis v John L. Roper Lumber Co. (1893) 113 NC 55, 18 SE 52, where the court said that where it appeared that a swamp had been drained to some extent causing the water to recede, such enlargement of the original island by artificial means was not an accretion that inured to the plaintiff's benefit.

usual rule[38] that an upland or riparian owner takes new land formed against his tract.[39]

US—County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59; St. Louis v Rutz (1891) 138 US 226, 34 L Ed 941, 11 S Ct 337 (by implication); Bonelli Cattle Co. v Arizona (1973) 414 US 313, 38 L Ed 2d 526, 94 S Ct 517 (recognizing rule).

Kansas v Meriwether (1910, CA8 Kan) 182 F 457; Beaver v United States (1965, CA9 Cal) 350 F2d 4, cert den 383 US 937, 15 L Ed 2d 854, 86 S Ct 1067 (unless, perhaps, artificial structures are erected for the purpose of causing the accretion); Burns v Forbes (1969, CA3 VI) 412 F2d 995 (by implication); United States v Claridge (1969, CA9 Ariz) 416 F2d 933, cert den 397 US 961, 25 L Ed 2d 253, 90 S Ct 994 (unless, perhaps, artificial structures are erected for the purpose of causing the accretion).

For federal cases involving state law, see state headings infra.

Alaska—Schafer v Schnabel (1972, Alaska) 494 P2d 802 (no part).

Nordale v Waxberg (1949, DC Alaska) 84 F Supp 1004 (recognizing rule, by implication; applying Alaska law).

Ark—Gill v Porter (1970) 248 Ark 140, 450 SW2d 306 (by implication).

Cal—See the California cases discussed infra § 5.

Del—United States v 1629.6 Acres of Land (1971, DC Del) 335 F Supp 255, supp op (DC Del) 360 F Supp 147, and affd in part and revd in part on other grounds (CA3 Del) 503 F2d 764 (applying Delaware law).

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38. § 2[a], supra.

39. Many cases expressly add to the above-stated principle the proviso that the riparian owner may not be the author of, the director of, nor a participant in the erection or maintenance of the artificial influence; such cases are indicated by the parenthetical notation "no part." With regard to the rule of accretion where such has been created by the claimant himself, see Division III of the annotation at 134 ALR 467. It is undoubtedly the general rule that additions to land fronting on bodies of water, caused, by artificial means, *by the owner of the adjoining shoreland*, do not come under the laws as to the ownership of accretion formed by purely natural causes, said the court in Brundage v Knox (1917) 279 **Ill** 450, 117 NE 123, infra § 4[b], the court pointing out that the authorities are generally agreed that riparian owners will not be permitted to increase their estates by themselves creating artificial conditions for the purpose of effecting such an increase, and that the doctrine of accretion does not apply to land reclaimed by man through filling in land once under water and making it dry. The title to land thus filled in was said by the court to remain where it was before, unless the filling was done wrongfully by a stranger to the riparian tract, in which case it will pass to the riparian proprietor.

Title to accreted lands, by the great weight of authority, vests in the riparian owners of abutting land; one exception to the general rule is that accretion does not belong to the riparian owner where the riparian himself causes the accretion, pointed out the court, in Board of Trustees v Medeira Beach Nominee, Inc. (1973, **Fla** App) 272 So 2d 209, 63 ALR3d 241, infra § 4[b].

Some of the cases dealing with direct filling, dredging, and reclamation, collected in the annotation at 91 ALR2d 857, may be taken as impliedly supporting the above-stated principles; thus, in Lockwood v New York & N. H. R. Co. (1870) 37 **Conn** 387, it was held that a railroad grantee of a riparian owner was entitled to possession of reclaimed land within the limits of a right of way to the new high-water line, and that if "the line of high-water mark should be changed by natural or by artificial causes the rights-of-way would follow the changed line of the harbor. . . ."

Fla—Board of Trustees v Medeira Beach Nominee, Inc. (1973, Fla App) 272 So 2d 209, 63 ALR3d 241 (by implication).

Ill—Lovingston v County of St. Clair (1872) 64 Ill 56, error dismd 85 US 628, 21 L Ed 813; Brundage v Knox (1917) 279 Ill 450, 117 NE 123 (no part).

Iowa—Solomon v Sioux City (1952) 243 Iowa 634, 51 NW2d 472 (no part); Sieck v Godsey (1962) 254 Iowa 624, 118 NW2d 555 (no part); Mather v State (1972, Iowa) 200 NW2d 498 (no part).

Kan—Adams v Roberson (1916) 97 Kan 198, 155 P 22 (no part).

La—Esso Standard Oil Co. v Jones (1957) 233 La 915, 98 So 2d 236.

State v Cockrell (1964, La App) 162 So 2d 361, cert den 246 La 343, 164 So 2d 350.

Mass—Adams v Frothingham (1807) 3 Mass 352; Burke v Commonwealth (1933) 283 Mass 63, 186 NE 277; Michaelson v Silver Beach Improv. Asso. (1961) 342 Mass 251, 173 NE2d 273, 91 ALR2d 846 (recognizing rule; no part).

Mich—Klais v Danowski (1964) 373 Mich 262, 129 NW2d 414 (by implication).

Mo—Tatum v St. Louis (1894) 125 Mo 647, 28 SW 1002 (no part); Whyte v St. Louis (1899) 153 Mo 80, 54 SW 478; Erickson v Greub (1956, Mo) 287 SW2d 873 (by implication).

Neb—Gill v Lydick (1894) 40 Neb 508, 59 NW 104 (recognizing rule); Frank v Smith (1940) 138 Neb 382, 293 NW 329, 134 ALR 458; Ziema v Zeller (1957) 165 Neb 419, 86 NW2d 190 (recognizing rule); Burket v Krimlofski (1958) 167 Neb 45, 91 NW2d 57; Durfee v Keiffer (1959) 168 Neb 272, 95 NW2d 618 (recognizing rule); Krimlofski v Matters (1963) 174 Neb 774, 119 NW2d 501 (recognizing rule); Krumwiede v Rose (1964) 177 Neb 570, 129 NW2d 491.

NH—State v 6.0 Acres of Land (1958) 101 NH 228, 139 A2d 75.

NJ—Wildwood Crest v Masciarella (1968) 51 NJ 352, 240 A2d 665.

Roberts v Brooks (1896, CC NY) 71 F 914, affd (CA2 NY) 78 F 411 (applying New Jersey law; by implication).

NY—Halsey v McCormick (1858) 18 NY 147 (recognizing rule); Mulvy v Norton (1885) 100 NY 424, 3 NE 581 (recognizing rule).

New York v Feltman (1930) 230 App Div 299, 243 NYS 625, mod on other grounds 256 NY 156, 176 NE 5 (apparently recognizing rule); Re Neptune Ave. (1933) 238 App Div 839, 262 NYS 679.

Re Hutchinson River Parkway Extension (1939, Sup) 14 NYS2d 692, mod as to amount of interest 260 App Div 999, 24 NYS2d 991, affd 285 NY 587, 33 NE2d 252; Long Island Lighting Co. v People (1960) 22 Misc 2d 979, 196 NYS2d 756 (recognizing rule; no part).

Ohio—State ex rel. Duffy v Lakefront East Fifty-Fifth Street Corp. (1940) 137 Ohio 8, 17 Ohio Ops 301, 27 NE2d 485 (no part).

Okla—Littlefield v Nelson (1957, CA10 Okla) 246 F2d 956 (applying Oklahoma law).

Or—Gillihan v Cieloha (1915) 74 Or 462, 145 P 1061 (by implication); Hanson v Thornton (1919) 91 Or 585, 179 P 494 (by implication); State by Kay v Sause (1959) 217 Or 52, 342 P2d 803 (recognizing rule; no part).

Wash—State v Sturtevant (1913) 76 Wash 158, 135 P 1035, reh den 76 Wash 176, 138 P 650 (by implication).

In County of St. Clair v Lovingston

(1874) 90 US 46, 23 L Ed 59, the court, noting that the county was insisting that since the accretion in question had been caused wholly by artificial obstructions placed upstream, the rules upon the subject of alluvion did not apply, went on to say that, even if the fact of artificial influence was as alleged, the consequence urged by the county did not follow, there being no warrant for such a proposition. The court, citing Halsey v McCormick (1858) 18 NY 147, took the position that where the proximate cause of the formation of alluvion was the deposits made by the water, the law would look no further, the question of whether the flow of the water was natural or affected by artificial means being immaterial. The court stressed that whether the deposit of alluvion is the effect of natural or of artificial causes makes no difference, the result as to ownership being the same in either case.[40]

In Bonelli Cattle Co. v Arizona (1973) 414 US 313, 38 L Ed 2d 526, 94 S Ct 517, the United States Supreme Court said that the doctrine of accretion applies to changes in a river's course due to artificial as well as to natural causes, and that where accretions to riparian lands are caused by conditions created by strangers to the land, the upland owner remains the beneficiary thereof.

The erecting of artificial structures does not alter the application of the accretion doctrine unless, perhaps, the structures are erected for the specific purpose of causing the accretion, said the court in Beaver v United States (1965, CA9 Cal) 350 F2d 4, cert den 383 US 937, 15 L Ed 2d 854, 86 S Ct 1065.

In Schafer v Schnabel (1972, Alaska) 494 P2d 802, the court pointed out that it is generally held that it is immaterial whether accreted deposits derive from natural causes or have an artificial impetus, so long as the deposits are gradual; thus, if accretion is brought about by the acts of a third person in which the riparian owner played no part, then the riparian owner is not precluded from acquiring title to the accreted land.

When an accretion is due, wholly or in part, to artificial causes, and those causes are not the act of the party owning the original shoreland, the decisions hold, and justice would seem to require, that the same rules prevail as to the ownership of the accretions as in the case of accretions formed solely by natural causes, said the court in Brundage v Knox (1917) 279 Ill 450, 117 NE 123. The court thought that the better view was that an addition, by way of alluvion, may as well be due to the combined influence of natural and artificial causes as to natural causes alone. The court said that the question of whether the flow of water is natural, or affected by artificial means, is immaterial where the proximate cause of the formation of new land is deposits made by the

40. In Jones v Johnston (1856) 59 US 150, 15 L Ed 320, the Supreme Court appeared to pretermit questions regarding the fact that the alluvial accretions in question were formed through the artificial agency of certain piers constructed in the vicinity.

The United States Supreme Court reaffirmed the Lovingston accretion doctrine in Hughes v Washington (1967) 389 US 290, 19 L Ed 2d 530, 88 S Ct 438, involving a contest between a state and a private riparian, the court saying that any other rule would leave riparian owners continually in danger of losing access to water, which access is often the most valuable feature of their property, and continually vulnerable to harassing litigation challenging the location of the original water lines.

action of water. The court concluded that if an accretion is indirectly induced by artificial conditions created by third parties, the right of a riparian owner to such accretion is not affected, and pointed out that such appeared to be the holding of a majority of the cases.

In State v Cockrell (1964, La App) 162 So 2d 361, cert den 246 La 343, 164 So 2d 350, the court said that the fact—that the process of accretion had been somewhat accelerated by the existence of certain works of man, which works had resulted in alluvion being deposited upon a shoreline—had no bearing upon the applicability of a state statute which, in effect, provided that owners of lands adjoining rivers or streams were entitled to the accretions which were formed successively and imperceptibly and became attached to the shore.

See Michaelson v Silver Beach Improv. Asso. (1961) 342 Mass 251, 173 NE2d 273, 91 ALR2d 846, where, although the court was dealing with an alluvial deposit which had been created solely by the commonwealth in a relatively short time by its direct efforts, the court, nevertheless, said, in dictum, that if the beach in question had been created by accretion—which was said to occur when the line between water and land bordering thereon is changed by the gradual deposit of alluvial soil upon the margin of the water—the question of whether the beach belonged to the littoral proprietors or to the commonwealth would have been clear, because it is settled that where accretions are made to lands along the seashore, the line of ownership follows the changing waterline. The court went on to say that such accumulations need not be due entirely to natural causes, provided that they are not caused by the littoral owner himself. The court adopted the view that the fact that the building of breakwaters by a public authority may have aided the operation of natural causes in the deposit of accretions does not modify the general rule that a littoral proprietor is entitled to his proportionate share of such accretions.

In Tatum v St. Louis (1894) 125 Mo 647, 28 SW 1002, the court said that a riparian owner is entitled to land formed by gradual and imperceptible accretions from water, and that such right exists regardless of the cause which produced the land, because a riparian owner cannot be deprived of his rights by the acts of others over whom he has no control and for which he is in no way responsible.

In Whyte v St. Louis (1899) 153 Mo 80, 54 SW 478, the court took the position that it made no difference that the accretion in question might have been produced by reason of dikes placed in the river by the city, or by other artificial means.

See Ziemba v Zeller (1957) 165 Neb 419, 86 NW2d 190, where, although the court determined that the situation before it dealt with avulsion caused by a public power project rather than with accretion, the court nevertheless recognized in dictum the principle that although accretion is due, in whole or in part, to obstructions placed in a river by third parties, such does not prevent a riparian owner from acquiring title thereto.

See Durfee v Keiffer (1959) 168 Neb 272, 95 NW2d 618, where, although the court believed that the rule of avulsion rather than the rule of accretion was applicable in the case before it, the court, in dictum, nevertheless recognized the principle that the fact that accretion is due, in whole or in part, to an obstruction

placed in a river by third parties does not prevent a riparian owner from acquiring title to such accretion, and does not affect the applicability of the rule that where, by the process of accretion, the water of a river gradually recedes, changing the channel of the stream and leaving land dry that was theretofore covered by water, such land belongs to the riparian owner.[41]

See Krimlofski v Matters (1963) 174 Neb 774, 119 NW2d 501, where, although the evidence was said to show that the land in controversy had been formed by a process of accretion to an island and not to the mainland, the court nevertheless associated itself, in dictum, with the theory that the fact that accretion is due, in whole or in part, to obstructions placed in a river by third parties does not prevent a riparian owner from acquiring title thereto.

See Halsey v McCormick (1858) 18 NY 147, where, although the court said that it was not necessary to pass upon the question of whether there was a distinction between alluvion formed by natural means and that caused by artificial means, the court nevertheless went on to say that it could find no such distinction in the books. The court said that if by some artificial structure or impediment in a stream, the current should be made to impinge more strongly against one bank, thereby causing it imperceptibly to wear away, forming a corresponding accretion on the opposite bank, the court was not prepared to say that a riparian owner would not be entitled to the alluvion thus formed, especially as against the party who had caused it. If the accretion had been formed under all the other circumstances necessary to constitute it alluvion, the court could scarcely suppose that a person could successfully resist the otherwise valid claim of a riparian owner by showing that the accretion would not have thus formed if he had not himself wrongfully placed impediments in the stream.

See Mulry v Norton (1885) 100 NY 424, 3 NE 581, where, although the court concurred in the conclusion of the trial court that the extension of a certain beach had not been made by the process of accretion, the court, nevertheless, said, in dictum, that when water disappears from land, either by its gradual retirement therefrom by reliction or by the elevation of the land by avulsion or accretion, or even by the exclusion of water by artificial means, that proprietorship of such land will be in the riparian owners.

See Long Island Lighting Co. v People (1960) 22 Misc 2d 979, 196 NYS2d 756, where, although the facts showed that an upland owner was the successor in title of an entity which had, when it had owned the tract, erected a breakwater which had caused the process of accretion to take place at the premises in question, the court said in dictum that if the upland bordering the accreted land had been owned down through the years by an inactive riparian owner, the erection of the breakwater by a different party would not have deprived such riparian owner of ownership of the resulting alluvion.

The court in State ex rel. Duffy v Lakefront East Fifty-Fifth Street Corp.

41. In Duke v Durfee (1961, DC Mo) 215 F Supp 901, revd on other grounds (CA8 Mo) 308 F2d 209, revd 375 US 106, 11 L Ed 2d 186, 84 S Ct 242, the court said that if the building of certain revetments by the Army Engineers caused the channel of the river to move slowly, property lines would follow it.

(1940) 137 **Ohio** St 8, 17 Ohio Ops 301, 27 NE2d 485, said that activities by third persons which cause accretions to the premises of a riparian owner but in which the riparian owner does not participate do not serve to impair the riparian owner's littoral rights. The court took the position that the action of adjoining littoral owners in wharfing out or in extending the shoreline by dumping or filling in, so as to increase or make possible accretion, does not affect the title of one not participating in such act, to land made by accretion.

See State by Kay v Sause (1959) 217 **Or** 52, 342 P2d 803, where, although the court was not confronted with an accretion-caused-by-another-party situation, it, nevertheless, in an exhaustive collating opinion, expressed its agreement with the idea that gradual artificial accretions go to the upland owner even though caused by the acts of third persons. The court said that it was a general principle that if a change is gradual, the boundary of the upland will follow the water. The court noted that when the cause of the change is not natural, but artificial, there is some divergence of opinion, but went on to say that the majority of courts appear to place no reliance in a distinction between natural and unnatural accretion, but merely look at the type of change, not the source, at least where the acts of third persons were involved. The court noted that one of the earliest cases with regard to rights in respect of changes by accretion or reliction due to artificial conditions was Adams v Frothingham (1807) 3 **Mass** 352, infra § 4[a], wherein the court stated that whatever increase resulted from a union of natural and artificial causes had to be held to inure to the benefit of the owner of the upland or of the owner of the flats to which the increase was attached. The court noted that the leading American case on this question was County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, infra § 4[b], wherein the United States Supreme Court took the position that whether a deposit caused by accretion was the effect of natural or artificial causes made no difference, the result as to the ownership in either case being the same. Another case supporting the rule that gradual artificial accretions go to the upland rule was said to be Solomon v Sioux City (1952) 243 **Iowa** 634, 51 NW2d 472, infra § 4[b], wherein the court said that accretion due to artificial means over which a claiming riparian owner has no control belongs to the riparian owner in the same manner as naturally accreted land. The court said that the Oregon cases seemed to hold that the artificial origin of accreted land did not affect the rule that the boundary follows the water; but the court noted that the question had been left open where the rights of the state were involved.

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Also see Attorney General v Chambers (1859) 4 De G & J 55, 45 **Eng** Reprint 22, where, although the court noted that there was insufficient evidence to tell whether certain artificial conditions, which caused the process of accretion to work and which resulted from the acts of others, occurred upon the lands of certain upland claimants or whether they merely produced effects upon the waters opposite such lands, the court nevertheless, in dictum, said that if "it had been clearly proved or admitted in this case, that the additions to the seashore . . . were of gradual and imperceptible progress, so as to compel me to express an opinion upon the distinction taken by the Crown

between accretions produced by nature and by artificial causes, I should have been prepared to repudiate the distinction. . . ."

In Brighton & Hove General Gas Co. v Hove Bungalows [1924] 1 LR Ch (Eng) 372, 13 BRC 183, it was held that the general law of accretion applies to a gradual and imperceptible accretion to land abutting upon the foreshore, brought about by the operation of nature, even though it had been unintentionally assisted by, or would not have taken place without, the erection by the public of groins for the purpose of protecting the shore from erosion.

§ 4. Application of rule in particular factual circumstances

[a] Litigation between private parties

In the following cases involving litigation between private parties, the courts indicated, under the particular facts before them, that a riparian owner, against whose premises new land created by reliction or by accretion was formed, had a right to such new land even though the processes of reliction or accretion had been influenced by certain acts of man, where such riparian owner had no part in producing the artificial condition.

Although it is not absolutely clear whether all the deposits in question were formed by direct fill or, as is the subject of this annotation, the natural process of accretion initiated or triggered by a public works project or some other act of man, see Schafer v Schnafel (1972, Alaska) 494 P2d 802, involving an action for trespass and conversion, where the court indicated that the fact that the process of accretion had taken place because of a state roadbuilding project would not, ipso facto, result in the rejection of the rule that accretion is to go to riparian owners. The accretion question was presented somewhat indirectly. The plaintiffs were claiming damages arising out of the deposit, by the defendant, of certain materials on certain new areas which the plaintiffs claimed as their own under the doctrine of accretion. The defendant contended that any accretion to the plaintiffs' properties was substantially the result of manmade fill, primarily from the establishment of a highway roadbed along the original seaward meander line. The trial court had found that no material seaward movement of the line of mean high tide had occurred other than by the act of man from which, the trial court believed, the plaintiffs could derive no rights of ownership. This finding was held by the trial court to be determinative of the plaintiffs' claim for relief for the removal of the materials which the defendant had placed seaward of the original line of mean high tide. The Supreme Court held that the question of the effect of the acts of man had to be remanded to the superior court for the purpose of entering additional findings of fact. The Supreme Court said that, upon remand, the trial court should determine whether the plaintiffs had proved that the mean high tide had moved seaward of the original survey's meander line by accretion, regardless of whether such accretion occurred because of acts of man. The court said that the general rule applied to accretion (the process by which an area of land along the waterway is expanded by the gradual deposit of soil due to the action of contiguous waters) is that it benefits the riparian owner. The court said that the basic justification for the rule is that it protects the riparian owner's interest in his land by assuring him continuing access to the water and the advantages conse-

quent thereto; it was noted that some courts had also characterized the doctrine of accretion as compensating the riparian owner for the risk he runs of losing some of his land by erosion, while other courts had characterized the doctrine as a fact of natural law, and still others had employed the doctrine to dispose of small unaccounted-for parcels. The court said that it is generally held that it is immaterial whether the deposits derived from natural causes or from artificial causes so long as the deposits were gradual. The court noted in this regard that the Supreme Court in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, infra § 4[b], had rejected the notion that the accretions there in question were not within the rule of accretion merely because they were attributable to the erection, by third persons, of dikes upstream which had changed the current and had accelerated the formation of deposits, the Supreme Court saying that where the proximate cause of the creation of new land is deposits made by water, the law will look no further, the question of whether the flow of the water was natural or affected by artificial means being immaterial. The Alaska court said that this position had been adopted in most jurisdictions, and went on to say, citing, inter alia, State v 6.0 Acres of Land (1958) 101 NH 228, 139 A2d 75, infra § 4[b], and Wildwood Crest v Masciarella (1968) 51 NJ 352, 240 A2d 665, infra § 4[b], that if accretion is brought about by the acts of a third person, in which acts the riparian owner played no part, then the riparian owner is not precluded from acquiring title to the accreted land.

Where the Corps of Engineers dredged a river cutoff and where the Arkansas River abandoned its old channel as a result, the court, saying that the riparian landowners obtained rights in the bed of the abandoned river channel the moment the river became non-navigable, held in Gill v Porter (1970) 248 Ark 140, 450 SW2d 306, that the boundary between the opposite riparian owners was the thalweg or valley way of the abandoned river channel. Although the court nowhere expressly spoke of reliction, it rejected a cross appeal claiming that the trial court had erred in not holding that the river changes had been avulsive in nature.

A plaintiff claimant was held to be entitled to certain accreted lands in Sieck v Godsey (1962) 254 Iowa 624, 118 NW2d 555, where a project by the Corps of Army Engineers had changed the course of the Missouri River, apparently causing the intermittent stream of water going through the old channel to flow in such a manner as to leave deposits of sand and silt along the old bank, the court saying that it did not matter that such accretions had been caused by an artificial process or by means over which the riparian owner had no control and which he had no part in creating or causing.

Where there had been a considerable accretion along the banks of a river, which accretion had at least partially been the result of the erection of wharves above and below the premises in question, the court, invoking the maximum "de minimis non curat lex," took the position that whatever increase happened from a *union* of natural and artificial causes must inure to the benefit of the owner of the upland or of the flats to which the increase was attached, in Adams v Frothingham (1807) 3 Mass 352.

In Adams v Roberson (1916) 97 Kan 198, 155 P 22, a riparian owner

was not prevented from acquiring title to certain deposits formed by the process of accretion because of the fact that such addition to his land had been influenced by an artificial project in which the riparian owner had played no part (a bridge and a protective embankment had changed the current of a river).

See Klais v Danowski (1964) 373 Mich 262, 129 NW2d 414, where, although dealing with avulsion or erosion, the court appeared to believe that a riparian owner would have title to land which was first above water, then submerged, and finally restored to a dry condition either from natural forces or from artificial, manmade influences. The court went on to say that when, during a period of high water and inundation, conveyances made of all or some portion of lands by descriptions state that they extend to one of the Great Lakes, such descriptions must be held to mean, unless a contrary intent is clearly expressed, that such lands extend at least to the border of the lake as of the date of the patent, and, by reason of riparian rights and the consequent right to accretions, extend beyond, if and when accretions or reliction caused the border of the lake to recede further lakeward.

See Erickson v Greub (1956, Mo) 287 SW2d 873, where the court appeared to assume that some riparian owners would have the right to deposits formed by the process of accretion, which process began almost immediately upon the initiation of government work on the Missouri River consisting of a revetment and dikes constructed upstream from the land in question, although the court was mainly concerned with whether an original riparian tract had been so totally dissipated by erosion that the next tract upland had become a riparian tract and had thereby become entitled to the above-mentioned deposits created by accretion.

In Frank v Smith (1940) 138 Neb 382, 293 NW 329, 134 ALR 458, involving an action to quiet title to certain lands, a riparian owner on the south side of a river was held to have a right to new land created at the north edge of his tract by accretion resulting indirectly from various public works projects. It appeared that when a bridge had been constructed upstream from the claimant's tract, a fill approximately 800 feet long had been put in on the south side of the river, and that subsequently, at the time of reconstruction of the bridge, the old fill had been extended until it extended approximately 2,100 feet from the old south bank. It also appeared that the construction of an upstream reservoir had resulted in the heaviest flow of water in the river being along the north side thereof. Furthermore, seven or eight spillways had been constructed from the south side of the river upstream from the plaintiff's tract and this had a tendency to cause sediment and silt to form and fill up that portion of the river (the south side) from which the water was diverted. Something like 2 miles upstream from the plaintiff's tract, an irrigation district had constructed an obstruction which extended out into the river for a few hundred feet and diverted the water to the north. A dike was constructed west of the above-mentioned bridge (which was immediately west of the plaintiff's tract) for the purpose of throwing the water in the river to the north, to protect the bridge and to force the flow of water under the open part of the bridge. The court pointed out that all these obstructions placed in the river had been so placed by artificial means but by par-

ties other than the plaintiff. The court pointed out that the dikes and obstructions had narrowed the river's channel, the result being that by lessening the amount of water, the land claimed as accretion became usable; trees, willows, and brush grew on this land, while cattle and horses were pastured thereon for 20 years or more. The defendants argued that where the channel of a river changes suddenly by the process of avulsion or is caused to change by artificial means such as the building of dikes, bridges, and the like, the boundary line, as originally located in the old riverbed, remains in the same place and does not change. The court noted that accretion is the process of gradual and imperceptible addition of solid material, called alluvion, which extends the shoreline outward by deposits made by the contiguous waters. The court said that the facts in the instant case failed to disclose avulsion in any particular; rather, the process was seen as a gradual and imperceptible deposit of alluvion against the plaintiff's land. The court said that the additional effect of the obstructions during the course of time caused the new land in question to become uncovered by the gradual subsidence of the water; this was reliction, and the court stressed that the same law applied to both reliction and accretion. The court accepted the theory that the test as to what is gradual and imperceptible in the sense of the rule of accretion is that though a witness may see from time to time that progress has been made, he can not perceive it while the process is going on. The court said that the evidence in the instant case met this test. The court said that the rule of accretion and reliction is that where the water of a river gradually recedes, changing the channel or the stream, and leaving the land dry which theretofore had been covered by water, such lands belong to the riparian proprietors. The court was of the further opinion that the fact that the accretion or reliction is caused by other than natural causes does not affect the application of the rule of accretion. The court adopted the view that if accretion is indirectly induced by artificial conditions created by third parties, the right of a riparian owner to such accretion is not affected, and stated that such appeared to be the holding of the majority of the cases. The court further accepted the view that where the proximate cause of the creation of additional land is deposits made by water, the law looks no further, the question of whether the flow of water was natural or affected by artificial means being immaterial. The court noted that it had been held in Gill v Lydick (1894) 40 Neb 508, 59 NW 104, supra § 3, that whether accretion is from natural or artificial causes makes no difference—the result as to the ownership in either case being the same. The court concluded that the evidence in the instant case showed that the land involved had been formed by accretion in a gradual process, brought about *purely* by the construction of irrigation works, dikes, and the fills for bridges; there was no rapid and sudden change of channels and the seeking of a new bed, as required for avulsion. The court believed that under the circumstances and evidence as disclosed, the plaintiffs were entitled to the land in controversy under the doctrine of accretion, and that in such respect the trial court had not erred.

Land had been formed, by accretion caused by an Army Engineers' project, from the bank of a river and also from an island so that the two finally met, in Burket v Krimlofski

(1958) 167 Neb 45, 91 NW2d 57, involving an action seeking a decree quieting title to certain lands, where the court upheld a riparian owner's right to land created by accretion resulting indirectly from public works construction projects, but limited such right so that the mainland owner and the island owner would each have control of the accretion up to the line of contact; thus, the plaintiffs' land, although once riparian, was no longer riparian. The court adopted the rule that where accretion is due, in whole or in part, to obstructions placed in a river by third parties, riparian owners are not prevented from acquiring title thereto.

In Krumwiede v Rose (1964) 177 Neb 570, 129 NW2d 491, the court upheld a riparian owner's right to land created by accretion which resulted from public works construction in the vicinity. The plaintiffs brought an action to quiet title, basing their petition on the theory that they were the riparian owners of new land which had developed as an accretion to their property located on the west bank of the Missouri River. The defendants claimed that the land was an island to which they had independently acquired title by adverse possession and counterclaimed for a decree quieting title to them. It appeared that originally the river had flowed on either side of an island and that the United States Army Engineers had then decided to create a new main unitary channel through the island. At first the river began to flow from both the smaller channel on the west and the eastern main channel into the new channel; however, the work broke down as the result of the Second World War, and the main channel then returned to the eastern side. The western channel started plugging up with sand, soil, and increasing amounts of vegetation. By 1945 or 1946 the sand which stretched to the west of the island in the area which had comprised the bed of the western channel and the adjacent new land which was forming out from the plaintiffs' high bank were becoming covered with vegetation and increasingly usable. About 1958 the United States Army Engineers plugged the western channel and, as a result, very little, if any, water flowed in the bed of the western channel. The court said that where, by the processes of accretion and reliction (or either) the waters of a river gradually recede, the channel of the stream changing and leaving land dry that was theretofore covered by water, such land belonged to the riparian owner. The court took the position that the fact that third parties had performed construction work which had accelerated such processes did not alter the application of the rule as to the ownership of accreted land, the rule as to the ownership of new land formed by accretion remaining the same, even though the process of accretion is caused or accelerated by the works of third parties.

See Roberts v Brooks (1896, CC NY) 71 F 914, affd (CA2) 78 F 411 (applying New Jersey law), where the court was generally involved with a suit brought for the specific performance of a contract for the sale and conveyance of a tract of land and of a dock, and where although part of the shore was made-land and the dock was of solid filling, the court also noted that a small piece of land had been formed by a gradual accretion to other land next to the wharf constructed by the plaintiff's predecessors in title, and that such land, being outside of the express terms of the deeds and grants, had been said not to belong to the plaintiff. The court

concisely disposed of the question by saying that it seemed unquestionable that such an accretion goes with the land to which it has accrued.

A riparian owner's right to land created by accretion was upheld by the court in Littlefield v Nelson (1957, CA10 Okla) 246 F2d 956, applying Oklahoma law, even though the process of accretion was *in part* influenced by certain public works projects and even though the controlling Oklahoma statute spoke of "natural causes" exclusively. The case involved an action to quiet title to certain lands bordering the Arkansas River on the south; the lands in controversy were contiguous to lands admittedly owned by the plaintiff but stood unrepresented by record of title except as the plaintiff claimed by accretion and except as the defendant asserted possessory rights. The controlling statute then in effect provided as follows: "*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." (Emphasis added) The defendant contended that the adverbial phrase "from natural causes" should be strictly construed to negative any statutory right to accretion where the exposing of land is hastened or influenced by artificial means. It appeared that for many years the confines of the Arkansas River had gradually diverted to the north, slowly changing the river's course and exposing the lands in controversy upon the south bank. The progress of the river had been measurable, hastened somewhat by occasional but recurring flood years, but without radical or violent change. Eight surveys of the channel and bank taken between 1897 and 1955 indicated a progressive movement to the north which had exposed over 300 acres contiguous to the record title lands of the plaintiff. The natural movement of the river and the problems occasioned by floods had initiated the construction of controls by the United States Government and others. During the period from 1929 to 1931 a revetment was built co-operatively by a railroad, a city, and the state; in 1952 the United States Government constructed bank stabilization controls. The court noted that the opinions of expert engineering witnesses were in sharp conflict as to the extent of the effect of the construction work upon the river's course. The trial court had found that the river's channel had not been changed suddenly by either revetment project although each may have added impetus or direction to the flow; the trial court had specifically found that the revetment work had changed, to some extent, the current of the river and may have had some effect in causing the river to recede to the north but that the changes after the revetment work had been completed had been gradual. The court observed that no Oklahoma decision had directly determined whether a claimant asserting rights to lands accreting to his existing riparian lands had to show the addition to be wholly natural. However, the court noted that the statutory section in question had been held to be declaratory of the common law and that the identical statute contained in the California Civil Code had similarly been interpreted as a codification of the common law. The court said that cases based upon the common law and similar codifications were virtually unanimous in their holdings that a

riparian owner is not precluded from acquiring land by accretion where the accumulation is but hastened by artificial constructions lawfully constructed by third parties. Since the additions to the plaintiff's riparian lands appeared gradually, were not caused by his own acts, and were but hastened by the lawful acts of others, the court saw no fact in the instant case requiring exception to the statement of the United States Supreme Court in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, infra § 4[b], that whether a deposit of alluvion is the effect of natural or artificial causes makes no difference, the result as to ownership being the same in either case. The court thought it clear that the influence of the revetment work of the government and others upon the flow and course of the river did not defeat the plaintiff's title to the accreted lands. The court took the position that the alluvion had been occasioned essentially by natural causes as intended by the Oklahoma statute, and that to interpret it to mean "entirely from natural causes" would be unrealistic.

The basic Oregon rule was laid down, at least as between private parties, in Gillihan v Cieloha (1915) 74 Or 462, 145 P 1061, a quiet-title action involving a dispute between two landowners over title to a filled-up channel between two islands, the court apparently being of the opinion that the fact that certain new land had been formed *in part* by accretion resulting from a governmental construction project did not prevent a plaintiff riparian owner from taking title. The channel, formerly navigable, was filled up when a federal dike had been built at its upstream end and material dredged from another channel had been strewn over the dike as waste. Thus, the filling had been due in part to accretions caused by the changed flow of the water and in part to the "sudden" dumping of material. The dike served to divert the current of the water in such a way that sand immediately began to accumulate below the dike. In holding that the accretions went to the upland owner, the court stated that as against everyone but the state (concerning the rights of which the court expressed no opinion), the plaintiffs were the owners of any artificial extensions of the land. The court said that the law zealously guarded the right of a riparian owner to have access to the stream upon which his land is situated, and that while the right of the state to artificially extend the banks, as was done in this instance in the interest of commerce, was paramount, the court was disposed to hold that in the absence of any assertion of title or possession by the state or the general government, such extension accrued to the shoreowner.[42]

[b] Litigation between public entities and private parties

In the following cases involving litigation between private parties and public entities, the courts indicated, under the particular facts before them, that a riparian owner, against whose premises new land created by

42. In State by Kay v Sause (1959) 217 Or 52, 342 P2d 803, supra § 3, the court said that it was difficult to discern from the Gillihan opinion whether the court would have favored the state or the upland owner as to all of the increase, or whether it would have made some distinction between land formed by the action of the water and the land formed by direct fill. The Sause Court said that in view of other authorities, it tended to think that the Gillihan court might have done the latter, allowing the upland owner to take only the water-carried accretions.

reliction or by accretion was formed, had a right to such new land even though the processes of reliction or accretion had been influenced by certain acts of man, where the riparian owner had no part in producing the artificial condition.[43]

In the frequently cited landmark case of County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, involving an action of ejectment brought by a county, the court upheld a riparian owner's right to alluvion deposited by accretion resulting from the construction of a dike upstream on the Mississippi River by a city, and from the construction of a railroad track downstream from the premises in question. The county contended, inter alia, that accretion must be produced by natural means and not by artificial ones, even if such artificial means are made by someone other than the riparian owner. The riparian owner contended that the fact that the accretions in question may have been caused in part by the work of others and made for other purposes was wholly immaterial to the application of the general principle that alluvial deposits formed by the process of accretion belong to riparian proprietors. The court, noting that the plaintiff county was insisting that the rules with regard to the doctrine of accretion did not apply where the process of accretion had been caused *wholly* by obstructions placed in the river, said, in a very frequently quoted passage, that if "the fact [that the process of accretion was influenced by acts of man] be so, the consequence [contended for by the county] does not follow. There is no warrant for the proposition. The proximate cause was the deposits made by the water. The law looks no further. Whether the flow of the water was natural or affected by artificial means is immaterial. . . . Whether it is the effect of natural or artificial causes makes no difference. The result as to the ownership in either case is the same."

See St. Louis v Rutz (1891) 138 US 226, 34 L Ed 941, 11 S Ct 337, where the court appeared to believe that the fact that it had been a United States Government dike which had caused a channel of water between a sandbar and a plaintiff riparian owner's river shoreline to become, over a period in excess of 5 years, filled up by the process of accretion until it had become dry land, did not prevent the riparian owner from becoming the owner of the accreted land.

See Kansas v Meriwether (1910, CA8 Kan) 182 F 457, where, although the main issue appeared to revolve around the questions of whether a riparian owner could properly cause deposits of sediment to

43. Also see Priewe v Wisconsin State Land & Improv. Co. (1896) 93 Wis 534, 67 NW 918, where, although not in this respect addressing itself to the main point in the case, the court appeared to accept the notion that a riparian owner could properly claim about 4 acres of land adjoining his premises, which acreage had been uncovered by the recession of the water level of a lake caused by drainage projects undertaken by other persons (the plaintiff had paid an assessment for the resulting benefits). However, in the court's opinion, the acreage had been uncovered, not by reliction nor by accretion by slow and imperceptible degrees from natural agencies; nor was it a case of reliction by avulsion from natural agencies. "But it was, apparently, the drainage of low, marshy land, and the lowering of the lake by artificial agencies, for the benefit of riparian owners, including the plaintiff. We must hold that the plaintiff did not thereby lose his rights as a riparian proprietor, and that he continued to have free access to the lake in front of his premises . . . ."

accelerate and whether such an owner could properly confine such deposits once they were in place, the court, nevertheless, pointed out that the state had made no contention that the alluvial deposits along the south shore of a river (insofar as they had been caused or accelerated by the projection of a dike of a waterworks company or by a sewer project of a city) had been produced by any such artificial means as would affect the riparian claimant's title, the claimant, or those under whom he claimed, not having been responsible for and having had no control over those works. Saying that the law is well settled that in order to vest title in a riparian owner by accretion, the constitutive sedimentary deposits along the shore of the river must be gradual, imperceptible, and *natural,* the court noted that a waterworks had constructed a dike located about 1,600 feet upstream from the land in question; that an upstream city had extended a sewer out into the current of the river; and that the effect of these constructions had been to retard the flow of water, to make it flow northward, and to accelerate the process of accretion along the southern bank of the river, so that as a result the channel receded further north until it ran several hundred feet north of the claimant's original land. The court said that, most obviously, the claimant's rights to alluvion could not be affected by the above-mentioned works of man, because of the doctrine of County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra, that there is no warrant for the proposition that because accretion has been caused *wholly* by manmade obstructions placed in a river, the rules upon the subject of accretion do not apply, and that where the proximate cause of alluvial deposits is the action of the water, the law will look no further, the question of whether the flow of the water was natural or affected by artificial means being immaterial and the matter of whether a deposit was the effect of natural or artificial causes making no difference.

The United States, as owner of certain withdrawal lands on the California side of the Colorado River, was held to have a right to land created by accretion as against the claims of Arizona bank appellants, even though the accretion process may have been influenced by a government dam, in Beaver v United States (1965, CA9 Cal) 350 F2d 4, cert den 383 US 937, 15 L Ed 2d 854, 86 S Ct 1067. The government's evidence showed a small bend developing a short distance above the government-owned tract in question between 1902 and 1912. The bend migrated in the classic manner, eating away soil on the concave bank and depositing soil on the convex bank. In this manner, the bend moved downstream, eroding the Arizona bank and building up the California bank. Between 1922 and 1925, the bend reached the site of the land in Arizona that was being claimed by the appellants. By 1925, about half of the land had washed away and by 1926 the land had been entirely taken and the bend was continuing its downstream progression. The United States land opposite the appellants' area was slowly being built up by the soils washed downstream, so that between 1930 and 1936 the accretion was complete and the tract herein in question was formed. Since 1936 the river had remained in relatively the same location as it flowed past the tract in question. The appellants claimed that a dam downstream, built by the government, increased the silt and thus caused heavier cutting power in the river upstream.

Rejecting the appellants argument that there had been an avulsive change, the court, although noting that the government evidence disclosed that the dam had little, if any, effect upstream, and noting further that the trial court had found the building of the dam to be an insignificant factor in the subsequent accretion, nevertheless said that the erecting of artificial structures does not alter the application of the accretion doctrine unless, perhaps, the structures are erected for the specific purpose of causing accretion.

In United States v Claridge (1969, CA9 Ariz) 416 F2d 933, cert den 397 US 961, 25 L Ed 2d 253, 90 S Ct 994, involving an action instituted by the United States to quiet title to lands located on the Arizona side of the Colorado River, the court held that the United States (as a riparian holder of a part of the public domain) rather than a state (as holder of title to the bed of the navigable waterway) was to have ownership of previously submerged land exposed, apparently through the process of reliction caused by a public works project. The court said that the appellants' (the defendants and the state of Arizona as intervenor) theory was founded on the mistaken assumption that the annual spring floods of the river (suffered prior to the advent of the construction of the Hoover Dam in 1935), which covered the valley from bluff to bluff, constituted its ordinary high-water mark, and that the valley, from bluff to bluff, thus constituted the bed of the river. The appellants contended that, by eliminating these floods, the Hoover Dam had caused an avulsive change in the flow of the river so that the United States, as riparian owner, did not take title to the flood plain. Saying that the appellants' definition of "ordinary high water mark" was unsound, the court said that while the river unquestionably had meandered through the valley since the time of Arizona's statehood, any change in the river's course had resulted from gradual erosion and not from an avulsion; therefore, the resulting accretion would pass to the United States as the riparian owner. The court said that whether the Hoover Dam affected the course of the river was a matter of no significance, because it did not result in avulsive changes and the dam had not been constructed for the purpose of reducing riverbed holdings. The court pointed out that it had been stated in Beaver v United States (1965, CA9 Cal) 350 F2d 4, cert den 383 US 937, 15 L Ed 2d 854, 86 S Ct 1067, supra, that the erection of artificial structures does not alter the application of the doctrine of accretion unless, perhaps, the structures are erected for the specific purpose of causing accretion.

See Bonelli Cattle Co. v Arizona (1973) 414 US 313, 38 L Ed 2d 526, 94 S Ct 517, involving a quiet-title action by a riparian owner, where the court, applying federal common law, held that title to land, abandoned by the stream of the Colorado River as a result of a federal rechanneling project,[44] belonged not to the state, as the owner of the bed under a navigable stream, but to the plaintiff, as the

44. It is not entirely clear whether the federal rechannelization project resulted in dredged materials being deposited directly on the banks of the plaintiff's tract (thus taking the specific fact pattern of the case outside the scope of this annotation), or whether the rechannelization work merely changed the rate of flow and width of the channel so that the processes of natural accretion and reliction indirectly resulted from these works of man.

owner of land riparian to the river at the time of its rechanneling. It appeared that as of the date of a federal patent, the parcel in question abutted the east bank of the Colorado River, the bed of which was owned by the state. Between 1903 and 1959 (when it was rechanneled) the river had moved gradually eastward, depositing alluvion on its west bank, and resulting in the submergence by erosion of the subject land. The court said that as the river moved eastward, the boundary between upland owners and the state-owned riverbed moved mechanically with it, transferring title to the lands, which became part of the riverbed, to the state. When the plaintiff acquired title to the subject portion of the original grant, all but 60 acres of its parcel was covered by water; however, in 1959 a federal project deepened and rechanneled the river in the area of the subject land. The plaintiff successfully argued that the narrowing of the river's course should properly be characterized as an artificial accretion, and that under the doctrine of accretion the disputed land, which had originally been lost from the plaintiff's parcel by erosion, should once again belong to it as the riparian owner. The court said that federal law recognized the doctrine of accretion whereby, when there is a gradual and imperceptible accumulation of land on a navigable riverbank by way of alluvion or reliction, a riparian owner is the beneficiary of title to the surfaced land under the established rule that a riparian proprietor of land bounded by a stream, the banks of which are changed by the gradual and imperceptible process of accretion or erosion, continues to hold to the stream as his boundary; if his land is increased he is not accountable for the gain, and if it is diminished he has no recourse for the loss. The effect of the doctrine of accretion was said to give a riparian owner a fee determinable upon the occupancy of his land by the river and to give to the state a qualified fee, determinable in favor of riparian owners upon the abandonment of the bed by the river. The court went on to state that the doctrine of accretion applies to changes in a river's course due to artificial as well as to natural causes, and that where accretions to riparian land are caused by conditions created by strangers to the land, the upland owner remains the beneficiary thereof. The court noted that the Arizona Supreme Court[45] had held that because the rechanneling of the Colorado River was an engineering relocation of the waters of the river by artificial means, it was, under state law, an avulsion and did not divest

45. See State v Bonelli Cattle Co. (1971) 107 Ariz 465, 489 P2d 699, reh den and op clarified, 108 Ariz 258, 495 P2d 1312, revd 414 US 313, 38 L Ed 2d 526, 94 S Ct 517, where the Supreme Court of Arizona adopted a distinction between natural and manmade accumulations to riparian land. The Arizona court held that title to the accumulations vested not in the adjacent riparian owner, as the doctrine of accretion would require, regardless of influences caused by acts of man, but in the state. It should be recalled that the United States Supreme Court opinion reversing was explicitly based upon federal common law, and that the law of Arizona upon the ownership of alluvion resulting from accretion influenced by the acts of man is, thus, somewhat unclear.

One commentator has stated that the Arizona court "ignored a virtually unanimous body of authority to the contrary, misapplied a federal statute, and rejected a federal decision directly on point . . . ." Lundquist, "Artificial Additions to Riparian Land: Extending the Doctrine of Accretion." 14 Ariz L Rev 315, 316 (1972).

the state of title to the land from which the river had withdrawn. However, the court said that federal law had to be applied with a view toward the limited nature of the sovereign's rights in the riverbed. An analysis of the interests of the state and of the plaintiff, in the light of the rationale for the federal common-law doctrines of accretion and avulsion, compelled the conclusion that as between the state, as owner of the riverbed, and the plaintiff, as a riparian owner, the surfacing of the subject land should be treated as an accretion;[46] hence, title to the disputed land should be properly vested in the plaintiff. The court said that the policies behind the doctrine of accretion were fully applicable, the theory of accretion guaranteeing the riparian character of land by automatically granting to a riparian owner title to land which formed between his holdings and a river and which otherwise threatened to destroy the valuable riparian feature of his property.[47]

The court held that a strip of accreted land became the property of the upland riparian owner even where the functioning of the process of accretion was the result of a lawful exercise of the police power by a municipality to prevent beach erosion, in Board of Trustees v Medeira Beach Nominee, Inc. (1973, Fla App) 272 So 2d 209, 63 ALR3d 241, involving an unsuccessful appeal from a final summary judgment ruling that the state had no interest in accreted lands and quieting title thereto in the defendant. The defendant's deed conveyed all riparian rights to the premises, the western boundary of which was the mean high tide line. It appeared that when the defendant had begun construction of a seawall, the state sued to enjoin further construction for a distance of approximately 115 feet landward of the existing mean high tide line, claiming the same to be sovereignty lands. The defendant cross-claimed, seeking to quiet title to the property and to obtain judicial determination of the westerly boundary of the premises. The lands in dispute, or some part of them, were formed by accretion in front of the defendant's riparian uplands apparently as a result of a public erosion control and beach stabilization program consisting of 37 wooden groins constructed on the beach below the existing mean high tide line, one of which had been located in front of the defendant's property. Subsequently, the wooden panels of some or all of the groins had been replaced with concrete slabs. While the parties agreed that the natural process of accretion had been influenced by these projects, the trial court had made no findings on the issues of when, where, how much, and proximate cause, because these issues had not been deemed material, the trial judge having determined that the defendant would hold title to all the accreted lands even if no accretion would have occurred but for the

46. The court expressly pretermitted the issue of whether, in a suit between private landowners (or in which the state claimed title in some capacity other than as owner of the riverbed), the differing interests of the parties might require a holding that the rechannelization should be treated as an avulsion. Nor did the court determine whether, in a suit between a riparian owner and a former owner of surfaced land, the former should take the property as an accretion or the latter as a re-emergence.

47. The Bonelli Case is discussed at Young, "Riparian Owner, Not the State, Owns Bed Deserted by River." 60 Am Bar Asso J 221 (1974).

state projects. The court said that title to accreted lands, by the great weight of authority, vested in the riparian owners of abutting lands. The court noted that the fact that the strip of land in dispute was true accretion was not in dispute, the disagreement between the parties appearing to be whether the established rule of law should be followed or whether an exception to the general rule should be recognized or created. The court said that there was little authority for distinguishing between natural and artificial accretions. The court pointed out that in County of St. Clair v Lovingston (1874) 90 US 46, 32 L Ed 59, supra, where accretions were caused by a city exercising its police power, albeit unintentionally, the United States Supreme Court had held that whether accretion is the effect of natural or of artificial causes makes no difference, and that the riparian right to future alluvion is a vested right similar to the rights of a tree owner to the fruits of the tree. The state also urged that the court make a distinction between artificial accretion and artificial accretion produced by a state or municipality in the exercise of its police power; however, the court, declining, said that to do so would be usurping the authority vested in the legislature to make sweeping changes in property rights, assuming that constitutional problems were properly avoided.[48] The court

48. The court acknowledged that, at first blush, the case of Martin v Busch (1927) 93 Fla 535, 112 So 274, appeared to be some authority for such a distinction, but it went on to impliedly disapprove of the reasoning of the Martin court and, in any result, distinguished the Martin Case, which involved reliction, from the instant case, which dealt with accretion.

In Martin v Busch (1927) 93 Fla 535, 112 So 274, the court rejected the contention of a riparian owner that such owner had a right to certain dry land created by a public drainage project on a lake, the property remaining a possession of the state even though such land had come to be upland of the ordinary high-water mark. The court said that a riparian owner is one who owns to the line of ordinary high water on navigable waters. Riparian owners in Florida were said to usually have title up to the ordinary high-water mark of navigable waters, the lands below such mark belonging to the state by virtue of its sovereignty and not being held for ordinary private ownership purposes. The court was of the opinion that if to serve a public purpose, the state, with the consent of the federal authority, lowers the level of navigable waters so as to make the water recede and uncover lands below the original high-water mark, the lands so uncovered below such high-water mark continue to belong to the state. The court conceded that the doctrine of reliction is applicable where, from natural causes, water recedes by imperceptible degrees, but said that such doctrine does not apply where land is reclaimed by governmental agencies as through drainage operations. Thus, a project which the state had deliberately planned so as to produce the accretion which occurred served to deprive an upland owner of his status as a riparian.

See Conoley v Naetzker (1962, Fla App) 137 So 2d 6, where, although not deciding the case on a reliction-accretion principle, the court nevertheless indicated that if the parcel in dispute was in fact reclaimed land resulting from drainage operations, then the defendants, as riparian owners on a navigable waterway, could not have acquired title through reliction, the controlling case on this question being Martin v Busch (1927) 93 Fla 535, 112 So 274. It appeared that the plaintiffs and the defendants were upland owners to the west and to the east respectively of a roughly triangular piece of dry land, formerly part of the bed of a lake. The plaintiffs based their right to possession of the disputed parcel on a deed to them from the Trustees of the Internal Improvement Fund which recited that the land conveyed was "a parcel of reclaimed

also rejected an argument by the state urging a retroactive application of a statute which purported to vest title to accretions caused by public works in the state.

Where the functioning of the process of accretion had been the gradual result of a combination of natural causes on the one hand and of public and private works and erections on the other, the Illinois Supreme Court, reversing the judgment of a lower court and allowing certain riparian owners to take the accreted lands in controversy, held that the riparian owners, because of the accretions, should not lose their river frontage nor be debarred of valuable rights theretofore enjoyed, such rights stemming from possession of the river frontage, in Lovingston v County of St. Clair (1872) 64 Ill 56, error dismd 85 US 628, 21 L Ed 813. It appeared, inter alia, that a city, to preserve its harbor and to prevent a change in the channel, "threw rock into the river"; efforts were also made by the United States to move the channel of the river toward the city, although it was "not at all certain, from the proof, that the accretions were entirely the result of artificial structures, or that they would not have been formed without them." Even conceding that the works, to some extent, caused the accretions, the court pointed out that they had not been constructed for such purpose and that the riparian claimants had had nothing to do with their erection. The court said that the fact that the labor of other persons had changed the current of the river and had caused the deposit of alluvion upon the land of the claimants could not serve to deprive them of a right to the newly made soil. The court adopted the theory that neither the state nor any other individual had the right to divert a stream and render it less useful to the owners along its banks, and reasoned that if neither the state nor any other individual

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lake bottom." The defendants claimed title to a portion of the former lake bed by virtue of the doctrine of reliction, and asserted that the water had receded gradually and imperceptibly from the former shore of the lake some 30 or more years ago and that the now dry lake bed had come to form a natural accretion to the land to which they held title. The defendants contended that the doctrine of reliction applied if the lowering of the lake level was gradual and imperceptible even though such lowering was brought about by a combination of natural and artificial causes. The plaintiffs, however, contended that the recession of the waters had been perceptible and accomplished by drainage, thereby rendering the former lake bed reclaimed land vested in the state. The plaintiffs produced testimony indicating that a fairly rapid drop in the level of the lake had coincided with the putting down of drainage wells in the early 1920's. The defendants produced testimony that recession of the lake level had been gradual, resulting from at least partially natural causes. The plaintiffs asserted that even if the lowering had been gradual and had been only partially the result of artificial causes, it could not be deemed to have been brought about by reliction. The jury had been unable to reach a verdict; thereafter, the trial court had directed a verdict for the plaintiffs, saying that collateral attack might not be made upon the finding of the Secretary of Agriculture and the Trustees of the Internal Improvement Fund that the lands in question were reclaimed lands, since the just-mentioned officials were not parties to the suit. The Court of Appeals deemed it unnecessary to pass upon the question of reliction, since it believed that it had to affirm the lower court's ruling that the finding by the Trustees—that the subject land was reclaimed lake bottom, which finding was reflected in a certificate of the Commissioner of Agriculture attached to the deed—could not be collaterally attacked in the manner which had been attempted in the trial court.

could divert water from a riparian owner, then artificial structures, which caused deposits between an old and a new bank, should not divest riparian owners of the use of the water. The court took the position that if the river had been the boundary of the tract in question, the alluvion, as fast as it formed, had become the property of the owner of the adjacent land to which it was attached. The court thought that on a great commercial river such as the Mississippi, land purchasers must have obtained property along the banks so as to have the beneficial use of the river, as well as for the land itself. The court rejected the idea that the United States would make grants of lands (bordering upon the river with its turbulent current and its constant change in banks through the processes of accretion upon one side and erosion upon the other) and then claim all alluvion formed by the gradual deposit of sand and soil so as to deprive the grantee of his riverfront. The court said that since a riparian owner could lose his entire grant by the moving of the river, such an owner should be permitted to enjoy any gain which the ever-varying channel might bring to him. The court said that if a government were to undertake, under such circumstances, to dispossess its grantee of his riverfront, the attempt would be akin to fraud.[49]

Where the accretion in question had been at least partially the result of a city reclaiming, by filling, a large amount of the bed of Lake Michigan, of work by municipal authorities in extending a solid pier out into the lake to protect a sewer line, and of pumping works, the findings of a trial court—that the land in dispute had been formed by natural accretions caused by artificial structures (none of which had been erected by the defendant riparian owners), that the title to all of the artificially made land was in the chief defendant and other defendants claiming under him, and that the plaintiff state had no right to any part of such lands—were affirmed in Brundage v Knox (1917) 279 Ill 450, 117 NE 123. The state charged the defendants with the appropriation of a part of the bed of the lake. The state, arguing that the evidence introduced by the defendants tended to show that practically all of the accretions on the land in question, from the time of the original survey of 1839 to 1912, had been caused by artificial structures along the lake, contended that the decree of the trial court was wrong in holding that the accretions were due to natural causes, and stated further that even though none of the accretions was the direct result of the defendant's own work or effort, yet, in legal effect, they were no different, so far as affecting the title to the property, than if such accretions had been caused by artificial structures erected by the defendant. The court conceded that it was undoubtedly the general rule that additions to land fronting on bodies of water, caused both by artificial means and by the acts of the owner of the adjoining shoreland, did not come under the rule as to the ownership of accretions formed by purely natural causes. However, the court pointed out that the definition of "accretion" did not always require, as one of its essential elements, that such deposits had to be due to natural causes; thus, the erection by a village of five or more piers in conjunction with a

49. Also see County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra.

in Lovingston v St. Clair County (1872) 64 Ill 56, error dismd 85 US 628, 21 L Ed 813, supra, it had been said that, by the common law, alluvion was the addition made to land by the washing of the sea, a navigable river, or other stream, whenever the increase was so gradual that it could not be perceived in any one moment of time. The court said that when accretion is due *wholly or in part* to artificial causes, and these causes are not the act of the party owning the original shoreland, the decisions hold, and justice requires, that the same rules prevail as to the ownership of alluvion as in cases of accretion caused solely by natural causes. The court adopted the views of the Lovingston court that the fact that the labor of other persons has changed the current of a river, and has caused the deposit of alluvion upon the land of riparian owners cannot deprive such owners of the right to the newly made soil, and that upon no principle of reason or justice should riparian owners be deprived of accretions forced upon them by the labor of another without their consent or connivance, and thus become cut off from the benefits of their original proprietorship. The court adopted the reasoning that if neither a state nor any other individual can divert water from a riparian owner, then artificial structures, which cause deposits between an old and a new bank, should not serve to divest a riparian owner of the use of the water. The state conceded this doctrine, but insisted that it should not apply in the instant case, because in the Lovingston Case the riparian owner had owned the land to the center of the river and, therefore, had owned the submerged land which had become dry land, while in the instant case the riparian owner only owned to the edge of the water. The state reasoned that, title to the submerged land being in the state, it was impossible for a riparian owner to obtain title to accretions to his land, because such owner did not have title to the submerged bed. However, the court adopted the theory that if accretion is indirectly induced by artificial conditions created by third parties, it would seem that the right of riparian owners to such accretion would not be affected, and that such appeared to be the holding of a majority of the cases (although there were a number of respectable authorities supporting the opposite view). The court also noted that it had been held that where the proximate cause of an accretion is deposits made by water, the law will look no further, the question of whether the flow of water was natural or affected by artificial means being immaterial. The court thought that none of the sources made the distinction, contended for by the state, that accretions, when caused or aided by artificial conditions created by third parties, belong to the riparian owner only upon rivers, and not upon lakes or upon the high seas. The court stated that the owner of adjoining land has the title to land formed by accretions, and that this is the law as to the sea, where the state owns the bottom of the sea, or on large inland lakes, as well as on navigable and nonnavigable rivers. The court thought that this rule held good as to the ownership of land formed by accretions when such formation was due, in part or wholly, to artificial causes or improvements made by third persons. The court said that the right to accretions or alluvion was not mainly based, as argued by the state, upon the right to the title to submerged lands, but largely, if not chiefly, upon the right of access to

the water; otherwise, thought the court, the owners of lands along lakes might, by losing their frontage by accretions, be debarred of valuable rights for which there would be no adequate redress. The court thought, therefore, by reason and by the great weight of authority, that it had to be held that an owner of land bordering on Lake Michigan had title to land formed adjacent to his property by accretions, even though the formation of such accretions was brought about, *in part,* by artificial conditions created by third parties; furthermore, the court rejected the notion that there was any obligation on the part of riparian owners to challenge the erection of structures away from their premises which might have the effect of causing accretion to the riparian owners' premises.

In Solomon v Sioux City (1952) 243 Iowa 634, 51 NW2d 472, the court found that a plaintiff riparian owner, rather than a city as a grantee of a state, had a right to land created by accretion resulting from a federal public works project. A 1932 survey showed that all of the land originally separating the plaintiff's lot from the Missouri River had been engulfed thereby and that the then existing high bank extended through the plaintiff's lot. In the same year, the Federal Government, in the furtherance of navigation on the river, erected a series of dikes or jetties, commencing a short distance out in the river from the then high bank, and extending into the river some 300 feet; these dikes were located both above and below the point where the river cut across the plaintiff's lot. The outer edge of these dikes was the point established by the government as the new channel line; by 1935, the tract of land in question had been built up. In 1940, the city received a patent from the state which granted to it certain lands between the new channel line and a point 300 feet, measured at right angles thereto, toward the old high bank of 1932; the grant included therein the tract between the plaintiff's lot as it had existed in 1932 and the new channel line. The court said that the doctrine of accretion was well established and recognized in Iowa, and that to constitute an accretion, there has to be a gradual and imperceptible addition of soil to the shoreline by the action of the water to which the land is contiguous. The defendants claimed, inter alia, that, even conceding, arguendo, that the tract in dispute had been formed by gradual and imperceptible growth and had formed from the shoreline outward rather than vice versa so as to be properly denominated as land accreted to the plaintiff's lot, the alluvial deposits had been built by artificial means and that, under the law of Iowa, such land did not, therefore, belong to the abutting riparian owner. Noting that the question of title by a riparian owner to accreted land built by artificial means over which the owner had no control had not been previously decided by it, the court said that it had been well stated as a general rule that a riparian owner is not precluded from acquiring land by accretion or reliction, notwithstanding the fact that the accumulation is brought about by *partly* artificial obstructions erected by third persons, where the riparian owner had no part in erecting the artificial barrier. The court thought that this was a sound rule, especially in view of the fact that it recognized the theory that riparian rights can only be taken from a riparian owner in accordance with established law, for the public good, and upon due compensation. Stressing that it had

been conclusively established that the land in question had been created by the slowing down of the current of the river because of the dikes built by the government, the court went on to say that while it was admitted that the plaintiff had done some filling along the new tract and had permitted others to do likewise, it appeared that this filling in had been done between the new and the old high bank and had been a sort of leveling-off process, which did not aid in the establishment of the new high bank. The court concluded that accretion due to artificial means over which a claiming riparian owner has no control belongs to the riparian owner in the same manner as naturally accreted land.

See Mather v State (1972, Iowa) 200 NW2d 498, involving a quiet-title action seeking to settle ownership of lands formed by accretion along the Missouri River, where, although the court was chiefly concerned with whether the accretions should be awarded to the state as owner of an island in the river or to a riparian shoreline owner, it, nevertheless, noted that the action of the river against certain dikes erected by the United States Corps of Engineers had been the sole cause for the accretion about which the case revolved, and went on to specifically state that the right to accreted land is the same whether it results from natural causes or from artificial means over which a riparian owner has no control.

Where alluvion formed along a horseshoe bend of a river after a cutoff channel had been dug across the open end of the bend, and where the cutoff took most of the flow, but where some water continued to flow around the bend depositing large amounts of silt, the court in Esso Standard Oil Co. v Jones (1957) 233 La 915, 98 So 2d 236, allowed certain riparian owners to successfully claim the deposits of alluvion created by the process of accretion, even though the accretion resulted from a public works project. The state contended in opposition that because the works of man were the *primary* cause of the formation of the alluvion, it should not pass to the riparian owner. The District Court had held that the alluvion belonged to the riparian owners. On appeal and rehearing, the Supreme Court affirmed, saying that so long as accretion is successive and imperceptible the laws of accretion will apply, and that it makes no difference that works of man were the cause. It was pointed out that the Louisiana Civil Code defined alluvion as the accretions which are formed successively and imperceptibly to any soil situated on the shore of a river or other stream, and declared that such alluvion belongs to the owner of the soil situated on the edge of the water, whether such water is a river or a stream and whether it is navigable or not. One of the state's contentions was that this part of the Code could not be applied because the hand of man had had something to do with the change of the Mississippi River channel, which, in turn, had resulted in the creation of the alluvion in question. The court acknowledged that it was true that the Army Corps of Engineers had cut a small high-water pilot channel as an aid to flood control and had later enlarged the cut and had caused additional water to flow through it, all of which, together with the natural action of the waters, had finally resulted in the cutoff becoming the main river channel. However, the court pointed out that there had been no designed purpose whatsoever on the part of the engineers to bring about any change in property

ownership. In arguing that the above-mentioned provision of the Civil Code was inapplicable because the process that had taken place was not true accretion, but was, rather, the direct result of artificial avulsion, the state's counsel admitted that, inter alia, in the case of County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra, the laws of accretion had been applied to rivers and streams even though works of man had contributed to the changes, but sought to draw a distinction by asserting that in the case at bar the changes had been *primarily* caused by the works of man. However, the court noted that no authority had been cited to support such a distinction and that in the County of St. Clair Case, the United States Supreme Court had laid down a test for "gradual and imperceptible," and had observed that whether alluvion was the effect of natural or artificial causes made no difference, the result as to ownership being the same in either case. It was also noted that the cutoff channel affected the river current as far as 50 miles upstream and 10 miles downstream, the court stating that if accretion by alluvion deposits should occur in that area along the main river channel, no one would question the applicability of the Code. The court adopted the view that if, as here, the batture is built up imperceptibly and slowly even though it is partly caused by the works of the state, then it is true alluvion and belongs to the riparian owners. It was noted that the Code Napoleon held that alluvion which formed in a river as a result of works executed by man or at the expense of the state belonged to the riparian owners in the same manner as that which was formed naturally, provided only that, as here, the formation should have taken place successively and imperceptibly—the rights of riparian owners being otherwise in cases where, as a result of artificial works, accretion is formed perceptibly and instantaneously. The court said that, obviously, if a riparian owner took a dredge to the middle of a stream, sucked the dirt from the bottom, and threw a bar along his property fronting on that stream, it would not be just to permit him to own the new land. The court said that the text of the Code Napoleon had no regard for the cause which produced an accretion, considering only the mode of its formation. Thus, to require that an alluvion should result from the sole action of nature would add to the test of the Code Napoleon in an unwarranted manner, thereby placing a new restrictive condition on the rights of riparian owners without authority of law.[50]

50. One commentator has pointed out that any other result than the one actually reached by the court in the Esso Case would have created a rule almost impossible to apply, because all the major rivers in Louisiana are held in check by artificial banks or levees. "Accretion formed along these rivers can logically be traced directly to the works of man. To hold that accretion so formed does not belong to the riparian owners would remove hundreds of acres from private use and ownership to lie idle until the state should see fit to make some use of them. The criterion announced by the court . . . provides a fair, workable guide for future litigation . . . ." Fazio, "Rights of Riparian Owners to Alluvion Formed as a Result of the Works of Man," 18 La L Rev 739, 741–742 (1958).

In Heirs of Leonard v Baton Rouge (1887) 39 La Ann 275, 4 So 241, the Supreme Court held that since the land in dispute was kept above water solely by a high embankment built by a railroad with city authority, the land was not batture

In State v Cockrell (1964, La App) 162 So 2d 361, cert den 246 La 343, 164 So 2d 350, involving an action in trespass, the plaintiffs unsuccessfully contended that a Louisiana statute, which in effect provides that owners of lands adjoining rivers or streams are entitled to accretions attached to the shore which are formed "successively and imperceptibly," was inapplicable because the currents in the stream in question had been affected by certain manmade works, such as the dredging of a channel and the dredging of an outlet, which had produced a current capable of carrying alluvial material or of accelerating the normal rate of deposit; thus, it was the plaintiffs' position that the resultant accretion might not be said to have been formed "successively and imperceptibly." The court said that—while it was of the opinion that the record preponderated in favor of the conclusion that the accretion in question had *to some extent* been accelerated by the works alluded to by the plaintiffs and had resulted in alluvion being deposited beginning in 1942 and continuing to the time of trial—such circumstances had no bearing upon the applicability of the just-mentioned statute. The court accepted the idea that although the works of man may accelerate the rate of alluvial accretion or deposit, such deposit is nevertheless deemed gradual, successive, and imperceptible so long as the rate is such that its growth is not discernible at a given moment. The court said that the record in the case at bar was barren of proof that a spectator viewing the area could, at any given moment, perceive the alluvial deposit being formed. On the contrary, the court said that it was clear from the record that the batture in question had been gradually and imperceptibly formed by the currents of the stream in question. The court said that the rationale, of the rule granting riparian owners title to all alluvial deposits which attach to their land as the result of silt or deposit carried by rivers and running streams, was the equitable principle that he whose property is subject to depredation, inundation, or destruction by the forces of nature in the form of currents present in rivers and streams must be accorded the benefits or advantages which such forces bestow in the form of additions to his property. The court also said that there was no support in the record for the plaintiffs' contention that the land in dispute was manmade in that it consisted of soil which had been deposited at the well site as the result of hydraulic dredging in the course of constructing an outlet; nothing in the record indicated that soil was pumped directly to the point of the accretion. The court said that the evidence clearly preponderated in favor of the conclusion that the material in question had been carried to the place of deposit by water currents. The court said that its conclusion in this regard was supported by the fact that although the dredging of the outlet had been conducted in 1941 or 1942, the batture in question did not emerge from the water at low-water stage until approximately 1952; this salient fact appeared to the

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formed by accretion within the meaning of a statute allowing riparian owners to recover batture in excess of that needed by a city for public purposes.

"Batture" has been defined as an accumulation or deposit of sand, stone, or rock mixed together on the bed of a stream or other body of water and rising toward the surface by the process of accumulation. Ballentine's Law Dictionary (3rd ed) p 127.

court to be patently inconsistent with the plaintiffs' contention that the land in question had been deposited by dredging operations rather than by the natural forces of running or flowing water.

In Burke v Commonwealth (1933) 283 Mass 63, 186 NE 277, involving a petition to register title to land, a riparian owner's right to land, created by accretion resulting indirectly from activities performed by the commonwealth, was upheld. It appeared that subsequently to the time of the original granting of a deed by a town to the claimant's predecessor in title in 1890, a substantial area of land had gradually formed against the original tract by accretion, so that the normal high-water mark of the ocean in front of the lot of the claimant at the time of trial was approximately 700 feet east of the high-water mark of 1890. The building of stone breakwaters had been commenced in 1898 and completed in 1899 for the purpose of improving a harbor by protecting the entrance channel. Most, if not all, of the area added by accretion to the claimant's lot had been created gradually since the building of the breakwater; apparently the process of accretion was aided by the building of the breakwaters. The court said that the formation of this new land arose from natural causes so far as the riparian claimant was concerned. The court noted that the deed under which the claimant held title gave the easterly boundary of the lot as "on the ocean 60 feet"; the court said that a boundary of this description not only included all above high-water mark, but also extended to the low-water mark when it did not exceed 100 rods. The court thought it settled that where accretions were made to land along the seashore, the line of ownership followed the changing waterline. The circumstance that the building of the breakwaters by the public authority might have aided the operation of natural causes in the deposit of the accretion was said not to modify the general rule that a littoral proprietor is entitled to his proportionate share of any accretions.

In Tatum v St. Louis (1894) 125 Mo 647, 28 SW 1002, involving an action of ejectment to recover possession of a parcel of land, the court upheld a riparian owner's right to land created by accretion resulting indirectly from construction projects of others. By declaring that it had not been proved that the land in question had been formed by "natural" accretion to the plaintiff's land on the main shore, the trial court appeared to have embraced the proposition that if the land in question had not been formed by "natural" accretions, the plaintiff could not recover. There was, in fact, substantial evidence tending to prove that the land in question had *not* been formed by "natural" accretions, the evidence tending, rather, to prove that the land had been formed against the bank of the claimant's tract by reason of artificial dikes and other obstructions constructed upstream from the plaintiff's tract. The court noted that the trial court had distinguished between accretions formed by obstructing the flow of water or changing the current by artificial means and accretions formed without artificial interference with the banks or natural flow of the water; however, the court thought that the law made no such distinction. The court said that a riparian owner is entitled to the land formed by gradual and imperceptible accretions from the water, regardless of the cause. A riparian owner cannot be deprived of this right by the acts of others over whom he has no control,

and for which he is in no way responsible, said the court, which thought that where the proximate cause of an accretion is a deposit made by water, the question whether the flow of water is natural or is affected by artificial means is immaterial.

See State v 6.0 Acres of Land (1958) 101 NH 228, 139 A2d 75, where, although the court was most concerned with the proper apportionment (between the state and private claimants) of certain land created by accretion resulting from deposits forming along the side of a jetty constructed in a river by the state, the court, nevertheless, stated that the fact that the accretion which formed along the private claimants' property resulted *in whole or in part* from the artificial obstructions erected by the state did not operate to prevent such claimants from acquiring rights in the accretion in dispute.

In Wildwood Crest v Masciarella (1968) 51 NJ 352, 240 A2d 665, involving an action for a declaratory judgment, the New Jersey Supreme Court agreed with the lower court that certain defendant riparian owners' right to land, extending beyond the original lot lines and created by accretion resulting indirectly and in part from governmental public works projects, should be upheld. The court pointed out that the accretion had not been the result of any filling-in or other action by the upland owners. It was stipulated that the area in controversy had gradually and imperceptibly accreted during the years from the time of the original riparian grant from the state to the time of the trial. The court pointed out that private lands along the Atlantic Ocean, as well as other tide-flowed lands, extended to the high-water mark, but went on to say that the high-water mark might shift from time to time through the processes of erosion and accretion. Persons who owned or purchased tide-flowed lands were said to be well aware of this. The court noted that where there was erosion, such persons lost title to the state, and that where there was accretion, they gained title at the expense of the state. The doctrine of acquisition by accretion was said to have been founded on a principle of compensation. The court accepted the propositions that the proprietor of lands having a boundary on the sea is obliged to accept the alteration of his boundary by the changes to which the shore is subject; that he is subject to loss by the same means that may add to his territory; and that just as he is without remedy for his loss, so he is entitled to the gain which may arise from alluvial formations. This rule was said to be vindicated on the principle of natural justice that he who sustains the burden of losses imposed by the contiguity of waters ought to receive whatever benefits they may bring by accretion. There was some evidence in the case that the accretion had been stimulated by governmental activities in connection with the construction of certain jetties and by the closing of an inlet. The state and the borough argued that the new land here in question should have been deemed to be the property of the state or of the borough, rather than of the upland owners, on the ground that it had been formed as the result of artificial rather than natural causes. The trial judge had found that this evidence did not call for the conclusion that the accretion had been caused by artificial means, and said that, at best, it had to be concluded that the accretion had been created by a *combination* of natural and artificial causes. The trial judge had rejected the suggestion that because

artificial structures may have contributed to the accretion, it should be deemed to be the property of the state, holding that at least where accretion is not the result of any action on the part of the upland owners nor the result of any project by the state in aid of navigation or other public project unrelated to shore protection, deposits of alluvion formed by the process of accretion are the property of the upland owners. The Supreme Court stated its entire agreement with this holding and went on to point out that judicial decisions elsewhere asserted very broadly that gradual and imperceptible accretions belong to the upland owners, even though they may have been induced by artificial structures. The court also noted that the United States Supreme Court had stated, as the federal rule, that whether the deposit of alluvion is the effect of natural or artificial causes makes no difference, the result as to the ownership in either case being the same. The New Jersey Supreme Court noted that this rule, as thus framed, had been adhered to in most of the states.

Saying that a town, acting in its governmental capacity in laying out a street, could not deprive an upland owner of his riparian rights, the court in Re Neptune Ave. (1933) 238 App Div 839, 262 NYS 679, held that the upland owner could have the full benefit of the process of accretion, even though it had been accelerated by the act of the town in laying out the street.

In Re Hutchinson River Parkway Extension (1939, Sup) 14 NYS2d 692, mod as to amount of interest 260 App Div 999, 24 NYS2d 991, affd 285 NY 587, 33 NE2d 252, the court upheld a riparian owner's right as against a city, to land created by accretion resulting from a public works construction project. It appeared that new land had been formed between the high-water mark of 1897 and that which existed at the time of trial, by a narrowing of a stream, which narrowing was a direct result of a city's erecting certain floodgates. Thus, between the existing stream and the riparian owner's land, there was a tract, title to which was in question. It was not disputed that the claimant was a riparian owner who had title up to the high-water mark as it had existed in 1897. However, it was argued that if the additional land had been created by natural causes, title would be in the claimant, but because it was the result of artificial means, the claimant obtained no title. However, the court said that not only would such an argument create an unjust situation, but that also the law was to the contrary. The court said that it was quite apparent that a riparian owner continues to own to the ripa even though the lines of a stream are changed by artificial means. The court accepted the proposition that the fact that the labor of other persons changes the current of a river and causes the deposit of alluvion upon land cannot deprive a riparian owner of a right to the newly made soil. The court also noted that the United States Supreme Court in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra, had taken the position that whether accretion is the effect of natural or of artificial causes makes no difference, the result as to ownership being the same in either case, and that where the proximate cause of the presence of alluvion is deposits made by water, the law will look no further, the question of whether the flow of the water was natural or affected by artificial means being immaterial. The court also noted that it had been said in the

early case of Halsey v McCormick (1858) 18 NY 147, supra § 3, that if, by some artificial structure or impediment, the current of a stream was made to flow more strongly against one bank, causing it imperceptibly to wear away, and causing a corresponding accretion on the opposite bank, the court was not prepared to say that the riparian owner would not be entitled to the alluvion thus formed.

In State ex rel. Duffy v Lakefront East Fifty-fifth Street Corp. (1940) 137 Ohio St 8, 17 Ohio Ops 301, 27 NE2d 485, involving a quo warranto action, the court upheld a riparian owner's right to new land created by accretion resulting indirectly from activities of others. It appeared that the attorney general of Ohio sought to oust a corporation from a tract which lay between the then existing shoreline of Lake Erie and the shoreline as it had existed in 1898; the attorney general claimed that the land between those shorelines had been submerged land prior to 1898 and since then had been filled up by artificial means and agencies. The corporation claimed that it had become the owner of the newly made land by accretion. The court noted that there was nothing in Ohio legislation that altered the common-law doctrine of accretion, saying that just as a littoral owner may lose land by erosion, he might gain it by accretion. It was noted that courts generally hold that a littoral owner, as a protection to his right of access to the water, is entitled to land added to his own gradually and imperceptibly through the action of waves and currents. The court said that if the land between the shorelines of 1898 and 1938 had been formed gradually and imperceptibly by the action of the waves and currents of Lake Erie, the corporation had an estate therein. The court thought that the situation would not be altered because adjoining littoral owners had extended their shorelines out by dumping or wharfing so as to form a pocket in front of the premises in question which would then be more readily filled by accretion. Actions by third persons in which a riparian owner did not participate were said not to impair the latter's littoral rights. The court noted that the newly made land was about 1,000 feet from north to south and 700 feet from east to west, and that it had been estimated to contain 200,000 cubic yards of drifted sand and soil. After the land had been formed by the action of the lake plus such filling and dumping as there may have been, about 40,000 cubic yards of dirt were hauled and dumped upon the newly made upland, but the court stressed that not a particle of the dirt so hauled was put directly into the lake. The court pointed out that it appeared by the greater weight of the evidence that the extent to which the almost constant accretion during all those years was aided by dumping or filling at this point was so trifling that the law would not take notice of it under the doctrine of de minimis 'non curat lex. The court noted that for years at a time there had been no dumping at the point in question at all, and that what dumping had taken place was occasional and comparatively inconsiderable; such a limited and inconsequential addition to the accretion could not change its true character, thought the court.

See Hanson v Thornton (1919) 91 Or 585, 179 P 494, which involves the title status of land uncovered by the reliction of a navigable lake, where, although the court ultimately found that the change had resulted entirely from natural causes, it nevertheless discussed the defendant's con-

tention that, in order to enable the plaintiff to acquire title to land between the meander line and the water's edge, the recession of the water must have been gradual and imperceptible, and must have been caused *largely* by natural means. The court said that the contention that reliction must result purely or largely from natural causes must be received subject to many restrictions. The court said that one who purchases land abutting upon a lake or watercourse usually considers his right of access to such waters as an element of the value in the purchase, and that when riparian rights are spoken of, one is not considering a mere shadowy privilege, but a substantial property right, the right of access to and a usufruct in the water. To say that the owner of such a right may, without his consent, be deprived of it by the state or the general government permitting some other person to obtain title to the accretion formed by an impounding or diversion of part of the waters that previously washed the shore of his land, did not appeal to the court's sense of justice, and the court did not believe that the authorities generally supported such a doctrine. The court accepted the theory that in general the rule of accretions applies to artificial ponds as well as to natural waters, and to changes made by artificial as well as natural causes, if the artificial cause is not itself unlawful and the gradual acquisition of the new soil results from the exercise of lawful rights of property, and not from operations tending or intended to produce change.

See State v Sturtevant (1913) 76 Wash 158, 135 P 1035, reh den 76 Wash 176, 138 P 650, where the court was apparently of the opinion that a *wholly* man-created reliction on a lake could give riparian owners control of the newly created artificial dry land up to the line of ordinary navigation so as to preserve the fundamental riparian right of access to the water, and that a statutory enactment leading to such a result was merely an acknowledgment of an existing right rather than a grant of a new right.

§ 5. California cases

While there seems to be little question that the overwhelming number of jurisdictions support the proposition that alluvial deposits attaching to a riparian tract belong to the owner of such tracts even though the process of accretion was influenced by the works of men who were strangers to such tract, the courts of California have not usually applied this proposition and have in the greatest number of cases awarded accreted land to the state or to its grantees (few cases having dealt with disputes between private litigants) rather than to an upland owner, although there have been judicial statements supporting the usually prevailing doctrine.[51] Be-

51. With regard to artificial accretions in California, it has been said that the "increase does not go to the owner of the land where the accretion is caused by an artificial structure such as a breakwater, erected below the line of ordinary high water. In such case, the alluvion belongs to the state." 3 Witkin, Summary of Cal Law (8th ed), Real Property § 69(a). Similarly, it has been pointed out that in California, accretions to tidelands formed gradually and imperceptibly, but caused by artificial means entirely, belong to the state or to its grantees, not to upland owners, and that accretions caused by artificial structures cannot operate to divest the state of California of its title to its tidelands. 52 Cal Jur 2d, Waters § 798.

After a substantial discussion of the California cases, it was pointed out by the court in State by Kay v Sause (1959) 217 Or 52, 342 P2d 803, supra § 3, that Cali-

cause the California cases are usually viewed as constituting a body of opinion on the instant subject which stands apart from that generally prevailing, it has been thought best to group all the cases declaring California law together in a single section in chronological order so as to facilitate intramural comparison and reference.

In Dana v Jackson Street Wharf Co. (1866) 31 Cal 118, involving an action of ejectment, the court held that the owner of a lot on a statutory "waterfront" did not become the owner of newly formed permanent land adjoining such lot and lying in the harbor between it and open water, such land having been gained from the sea by the gradual accretion of sand and earth caused, in part, by the erection of a wharf in the public harbor. The court said that as to lands gained from the sea by the process of accretion, the law had been held to be that if this gain was by small and imperceptible degrees, it would go to the owner of the adjoining upland; however, the court emphasized that the findings in the instant litigation made out a case of purpresture or encroachment, by the erection of the wharf, and not a case of marine increase by accretion. The court pointed out that in a statutorily created "waterfront" harbor area, an owner of a lot abutting on the water is not a riparian proprietor in the sense in which that term is used in the law of tidewaters. Furthermore, there was no "shore" or area between high- and low-water lines before the premises in question. The rights of the plaintiff, as the owner of a water lot abutting upon the waterfront, were said to exist only in subordination to the statute establishing such waterfront. Noting that the statute prescribed that the boundary line of the waterfront should be permanent, the court stated that if the waterfront could be extended by reliction or by accretion so that the owner of a water lot immediately adjacent to the waterfront would have a right of entry upon the land formed by accretion or reliction to the exclusion of the state, the waterfront would be ever shifting instead of permanent. Thus, an owner of an adjacent upland, under the facts pertaining in the instant case, could have no right of entry upon a structure erected in front of his premises below the line of low water on which he could maintain ejectment.

In Western P. R. Co. v Southern P. Co. (1907, CA9 Cal) 151 F 376, (disapproved on other grounds Strand Improv. Co. v Long Beach, 173 Cal 765, 161 P 975), a claimant of certain alluvial deposits along San Francisco Bay argued that certain construction projects in conjunction with the shoreline served to form an impounding basin into which material, brought

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fornia has very strongly adopted the view that the source of the change in a shoreline is material in the application of the rule of accretion. The court suggested that, in part, this may be explained by reference to § 1014 of the California Civil Code, which, in speaking of accretion on rivers, uses the term "natural causes," and to Article 15, § 3 of the California Constitution, which forbids the grant or sale of tidelands within 2 miles of a city.

In Wildwood Crest v Masciarella (1968) 51 NJ 352, 240 A2d 665, supra § 4[b], the New Jersey court, after a review of the California cases, said that they were much too slender a reed on which to ground the thought of departing from such generally prevailing and ancient property law principles as the idea that gradual and imperceptible accretion-caused deposits of alluvion belong to upland owners even though the occurrence of the process of accretion may have been induced by artificial structures.

into the Bay by a river, was carried and deposited. A grantee of a municipality claimed, on the other hand, that from the evidence in the record it appeared that the added land had been made by dredging,[52] and that the deposit of material was, therefore, not in any proper sense alluvion created by the process of accretion, and that while the ebb and flow of the tide may have caused its even distribution, the material so deposited had not been carried upon the premises by the water. The grantee invoked the theory that the doctrine of accretion does not apply to land reclaimed by human agencies. The court, applying California law, said that it did not have to enter into a discussion of this conflict, because, in its opinion, the material so deposited, from whatever source it came, was not alluvion, within the law of the state of California. The court pointed out that the California Civil Code provided as follows: "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." The court said that this provision covered the whole subject of the right to alluvion, and confined it to that which resulted from natural causes, and to that which is formed on the banks of rivers or streams. However, in Strand Improv. Co. v Long Beach (1916) 173 Cal 765, 161 P 975, the California Supreme Court, recognizing the right of a seashore owner to alluvion under California law, said that the United States Circuit Court of Appeals seemed to have erroneously reached the conclusions that the above-quoted section covered the entire law of California on the subject of alluvion, that it was exclusive in its character, and that it abrogated the common law of alluvion as applied to the seashore. The California court said that there was no doubt that the above-quoted section established the law of California on the subject of alluvion deposited in rivers and streams, but that it did not purport to establish the law with regard to alluvion on the seashore, nor did it declare that neither the doctrine of accretion, nor the rights growing out of it by the common law, existed with reference to land abutting upon the ocean. The California Supreme Court said that there was nothing in a provision of the California Civil Code declaring that the Code "establishes the law of this state respecting the subjects to which it relates, and its provisions are to be liberally construed," nor in the maxim "expressio unius exclusio est alterius," that required that the above-quoted section be given such an effect. The Supreme Court of California stated that it did "not approve the construction given to it in the" Western Pacific Case. The California court concluded that the right of an upland owner to additions to his land caused by the process of accretion exists where the land abuts upon the ocean, and that the above-quoted section of the Civil Code had no application to alter the common-law rule in that respect.[53]

52. See the annotation entitled, "Rights to land created at water's edge by filling or dredging," at 91 ALR2d 857.

53. It is said at 52 Cal Jur 2d, Waters § 796, that "the provisions of the Civil Code adopting the common-law rule of accretion as applied to rivers and streams do not have the effect of abrogating the same rule as applied to alluvion formed on the seashore."

Taking the position that where the proximate cause of a deposit of alluvion is gradual accretion caused by a flow of water, the question whether that flow was natural or affected by artificial means is immaterial, the court in Forgeus v Santa Cruz County (1914) 24 Cal App 193, 140 P 1092, said that a grant of a right of way over land fronting on a bay, to a county for the purpose of constructing a highway, did not impair the grantor's riparian right or estate and did not entitle the county to accretions to the land, the alluvion being an accession to the fee and not to the easement. The county argued unsuccessfully that if the accretion was subject to private ownership, it belonged to the county, because the county owned the 60-foot roadway against which the accretion formed. However, the court pointed out that the predecessor in title of the riparian claimant had not conveyed the fee but merely a right of way. The court stressed that if any accretion or reliction had formed, it had not been caused in any way by any act of the original riparian owner or by any of his successors in interest, such formation being due to the act of the county in raising the roadbed along the right of way. The court said that it could hardly be contended that the county, by such artificial means, could secure the fee to the alluvion as an addition to its right of way. The court pointed out that in Tatum v St. Louis (1894) 125 Mo 647, 28 SW 1002, supra § 4[b], it had been held that a riparian owner was entitled to the land formed by gradual and imperceptible accretions from the water, regardless of the cause which produced them, and that such owner could not be deprived of this right by the acts of others over whom he had no control, and for which he was in no way responsible. The court also appeared to accept the view of the United States Supreme Court in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra § 4[b], wherein it was said that there was no warrant for an argument that since accretion was formed wholly by an obstruction placed in a river above the lands of a riparian claimant, the usual rules upon the subject of alluvion did not apply, because the proximate cause of the deposit was the action of the water, whether the flow of water was natural or affected by artificial means being immaterial. The court said that there were many decisions to the same effect, and that they recognized the principle, as expressly stated in some of them, that the right to alluvion to be formed in the future is an inherent and essential attribute of the original proprietorship and is a vested right, with all the usual incidents of such property interest. The court also was of the opinion that there was a clear distinction between the instant case and one where a structure is erected, by a state or municipality, on land below the line of ordinary high water. In the latter case the court thought that the deposit of alluvion caused by such structure would not inure to the benefit of the riparian owner, as had been pointed out in Dana v Jackson Street Wharf Co. (1866) 31 Cal 118, supra, wherein it was held that in case of purpresture or encroachment by the erection of a wharf in a bay beyond a city's front, the right to recover possession was in the people, and not in the owner of the land adjoining the city front.

In Patton v Los Angeles (1915) 169 Cal 521, 147 P 141, the court held that accretions to the mainland caused by artificial structures could not operate to divest the state of its title to tidelands, an upland owner

being denied any title to the accreted lands. It was contended that a part of the land in controversy had ceased to be tideland because of an accretion to the mainland caused by the lawful erection of an embankment by a railroad company. The court said that it could see no plausible reason for the contention that the making of such embankments, or accretions caused thereby, would operate in favor of third persons to divest the state of its title to tidelands covered by the embankment and accretions extending out over it from the adjacent upland, and transfer the title to the owner of the upland.[54]

In Los Angeles v Anderson (1929) 206 Cal 662, 275 P 789, alluvion—formed on tidelands "not from natural causes and by imperceptible degrees" but from the deposit and lodgment of foreign materials against an artificial obstruction (a federal breakwater erected below the mean tide line)—was held not to inure to the benefit of the upland owner, but to retain its character as public land belonging to the state's grantee (the city) rather than to the upland owner. The alluvion was viewed by the court as being in the nature of land reclaimed or filled in by the government. The court acknowledged that at common law, when land was gained from the sea, or formed upon the banks of rivers and streams, from natural causes and by small and imperceptible degrees by accretion, the alluvion belonged to the owner of the upland or of the bank, respectively. The court also noted that the California Civil Code definitely applied this common-law principle to rivers and streams situated within California, but pointed out that the applicable section contained no express reference to the rule of accretion as it affected the seashore. The court went on to point out that the authorities had consistently declared that for the owner of the upland to be entitled to the accretions thereto, such accretions must have resulted from natural causes and must have been of gradual and imperceptible formation. Where, however, the accretions resulted, not from natural causes, but from artificial means, the court said that a case of encroachment was made out and the deposit of alluvion caused by an artificial structure did not inure to the benefit of the littoral or upland owner, the right to recover possession thereof being in the state or its successor in interest.[55]

In Jackson v United States (1932, CA9 Cal) 56 F2d 340 (applying California law) and involving an action in ejectment, the court upheld the right of the United States, as an upland owner, to land created by accretion, which partially resulted from artificial causes stemming from the activities of persons other than those representing the United States. The alluvion in controversy lay between a military reservation and the Pacific Ocean. It further appeared that at some time in the late 1880's certain persons had thrown up some shacks on the beach at the foot of a cliff overlooking the ocean and west of the high tide line as it was at that time. A wooden bulkhead was erected seaward of the

54. The Patton Case also involved reclamation and landfill aspects which are discussed at 91 ALR2d 857, 873.

55. It was pointed out by the court in State by Kay v Sause (1959) 217 Or 52, 342 P2d 803, supra § 3, that while the California court in the Anderson Case spoke of purprestures (structures illegally below high-water mark), the breakwater which caused the process of accretion to work was a government breakwater and therefore legal.

shacks. Changes of the tide, together with gradual and imperceptible alluvial deposits, that were partially caused by the bulkhead and by "bunch grass" that was planted along a fence, produced more land, so that the high-water line of the lot some time subsequent to 1908 moved westerly and seaward. The defendants' evidence showed that the high tide line of the ocean at all times prior to 1909 was east of the land and buildings in question, and it was admitted that all of the property claimed by the defendants was, at the time of trial, easterly of the then existing high-water line. The court thought it settled under the common law that to the owner of the shore belong imperceptible and gradual additions to land, which additions, when once acquired, become in all respects a part of the original tract. The court went on to say that unless there was some contrary rule applicable in California, it followed that the government, having admittedly perfect title to the upland that was contiguous to the alluvial deposit, was also seized of the new land under the doctrine of accretion. The court noted that a section of the Civil Code of California then in effect provided: "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." (Emphasis added). The court noted that the Supreme Court of California had taken the position that the doctrine that the right to alluvion exists in the owner of the seashore had been recognized in the California decisions. The defendants contended, however, that, even assuming that the land they claimed accreted to the property of the plaintiff, the accretion had resulted, not from natural causes, but from artificial means (the erection of the bulkhead and the planting of the grass), and that there was, therefore, made out a case of purpresture or encroachment, and that the deposit of alluvion caused by such means did not inure to the benefit of the United States as the littoral or upland owner. The court noted that the defendants' evidence showed only that the artificial means were purely of a defensive nature, having been intended and used solely to keep out the sea at times of high water and to protect the land from erosion and the inroads of the ocean, and having been created and employed by others wholly disconnected with and disassociated from the government. The court also pointed out that there was no evidence whatever that the additions were not imperceptible. Under such circumstances, the accretion was said to belong to the owner of the upland, and it could not be said that it was not made from "natural causes" within the meaning of the California Civil Code. The court thought that the statement of the United States Supreme Court in County of St. Clair v Lovingston (1874) 90 US 46, 23 L Ed 59, supra §§ 3, 4[b], was pertinent wherein that court—noting that the counsel for the plaintiff in error was insisting that the alluvion in question had been formed wholly as a result of manmade obstructions placed in the river and that the doctrine of accretion did not, therefore, apply—said that even if the artificial obstruction had caused the process of accretion to function, the consequences urged

by the plaintiff in error did not follow, there being no warrant for such a proposition. The proximate cause of the deposit being the action of the water, the question whether the flow of water was natural or affected by artificial means was immaterial. The court also observed that no necessary causal connection between the existence of the bulkhead and of the bunch grass and the formation of the alluvial accumulations had been proved. Furthermore, no evidence was seen to have been introduced to show that the shoreline would not be just as it was if the bulkhead or the grass had never been so placed.

A plaintiff upland owner claimed that sand deposited by the waves of the ocean (which were influenced by artificial structures) in the course of many years upon a beach in front of his property constituted accretions and belonged to him and he sought damages which resulted from the later construction, by the city, of a breakwater which altered the movement of the water and caused the beach to erode, in Carpenter v Santa Monica (1944) 63 Cal App 2d 772, 147 P2d 964, where the court stated that it was settled in California that accretions formed gradually and imperceptibly, but caused *entirely* by artificial means—that is, by works of man such as wharves, groins, piers, and the like, or by the dumping of material into the ocean—belong to the state or to its municipal grantee and do not belong to upland owners. The court found that in a state of nature the beach in question had been in equilibrium and would have continued in equilibrium indefinitely if no manmade structures had been constructed. The court found, however, that before the accretions, which the plaintiff claimed, had begun to form, piers, wharves, and groins had been erected nearby, and that they had changed the ocean current, causing the sand to pile up gradually over the years. In that way, according to the court, the extensions to the beach, which the plaintiff claimed, were created. Still later the city built the breakwater of which the plaintiff's suit complained and thereby the course of the current was again changed, with the result that the accretions gradually eroded. Thus, the legal problem which the case presented was the ownership of the accretions which were caused by the wharves, piers, and groins. The court stated that if accretions formed along an entire bay and caused by the construction of a pier or wharf were held to belong to the upland owners as against the state or its grantee, it would mean, in some cases, that the power of a municipality to improve its harbor would be cut off unless the accreted areas were condemned. Such a holding would mean, said the court, that every time the state or its grantee determined to build a wharf or pier, or to grant a permit or franchise for such construction, it would in effect be granting away those portions of the tidelands that might later come to be covered by artificial accretions. Such a rule would mean, thought the court, that the state or its grantee could thus grant into private ownership tidelands which it held under an irrevocable trust. The court said that such a rule would permit the state to do indirectly what it could not do directly. Such a rule would be violative of fundamental concepts of public policy, stated the court. The court expressly reserved decision as to what the proper rule is where the accretion in question is the result of

"both natural and artificial causes."[56]

In Abbot Kinney Co. v Los Angeles (1959, Cal App) 340 P2d 14, superseded 53 Cal 2d 52, 346 P2d 385, the California District Court of Appeals, although the issue of accretion was not squarely met, seemed to take the position that a gradual and imperceptible accretion resulting from "both natural and artificial process" belongs to the upland owner and not to the public.

In People v Hecker (1960) 179 Cal App 2d 823, 4 Cal Rptr 334, involving a condemnation action between the state and a littoral owner, the court rejected a littoral owner's claim of a vested right of access to the sea, holding that whatever right he originally had was extinguished when the shoreline was artificially built up through piers and breakwaters. The court said that it is well established that accretions caused *entirely* by artificial means belong to the state or to its grantee and not to upland owners, and that land that had once been covered and uncovered by the daily tides, but which, at the time of trial, consisted entirely of artificial accretion resulting from the effects and influence of manmade structures, retained its character as public land in the nature of tideland. A finding that the shoreline of property located on the shoreline of a bay was in a state of equilibrium, subject to seasonal fluctuations, from 1875 to 1912, and that from 1921 to 1954 the progradation of the beach was *entirely artificial,* was said to be supported by expert testimony that during the former period, in the absence of artificial structures, all the sand that would cause natural accretion would leak out the southern end of the bay, that during the time between 1912 and 1921 there was insufficient data to determine whether the progradation was natural or artificial, and that after 1921, due to the construction of piers, groins, and breakwaters, the accretions to the beach were 100 percent controlled by manmade structures. The expert testimony in opposition thereto was said to be based on assumptions that were admittedly "vulnerable to challenge."

See South Shore Land Co. v Petersen (1964) 230 Cal App 2d 628, 41 Cal Rptr 277, apparently involving a direct landfill situation, wherein the court, citing People v Hecker (1960) 179 Cal App 2d 823, 4 Cal Rptr 334, and Los Angeles Athletic Club v Santa Monica (1944) 63 Cal App 2d 795, 147 P2d 976, supra, said that although it is true that an owner of upland may see the quantity of his land increase by natural accretion, that is, by the action of tides washing soil up along the shoreline, it is settled that such owner, having no rights or title in tidelands, acquires no interest therein when they are filled by *artificial* means.

See People ex rel. Dept. of Public Works v Shasta Pipe & Supply Co. (1968) 264 Cal App 2d 520, 70 Cal Rptr 618 (disapproved on other grounds Merced Irrig. Dist. v Woolstenhulme, 4 Cal 3d 478, 93 Cal Rptr 833, 483 P2d 1), where, although the court was not primarily concerned with accretion or reliction questions, the court stated that when the river in question shifted to a new location as a result of such unnatural forces as

56. The Carpenter Case involved the same area and reached largely the same result as that reached in Los Angeles Athletic Club v Santa Monica (1944) 63 Cal App 2d 795, 147 P2d 976, which was decided by the same court on the same day.

hydraulic mining operations, channel-straightening projects, and dredging operations, the state did not lose title to the bed of the stream in the old location in the absence of some formal type of abandonment.

See Long Beach v Mansell (1970) 3 Cal 3d 462, 91 Cal Rptr 23, 476 P2d 432, where, although the court found it impossible, with respect to certain filled areas, to determine the extent to which natural as opposed to artificial means had been responsible for the fill, the court nevertheless pointed out that, generally speaking, the augmentation of existing upland by gradual natural accretion alters the boundary of that upland accordingly, but that when such augmentation occurs as a result of sudden avulsion or by accretion caused by the works of man, the boundary is not altered, citing, inter alia, Los Angeles v Anderson (1929) 206 Cal 662, 275 P 789, and Carpenter v Santa Monica (1944) 63 Cal App 2d 772, 147 P2d 964, both supra.

Consult POCKET PART in this volume for later cases