

In the United States Court of Federal Claims

No. 99-445 L
(Filed: July 31, 2001)

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JOHN H. BANKS, ET AL.,)	
)	
Plaintiffs,)	Motion to Dismiss; RCFC
)	12(b)(1); Statute of Limitations;
v.)	28 U.S.C. ' 2501; time of accrual;
)	continuous erosion
THE UNITED STATES,)	
)	
Defendant.)	
_____)	

John B. Ehret, Olympia Fields, IL, for plaintiffs.

Alan Brenner, Environment & Natural Resources Division, United States Department of Justice, Washington, DC, for defendant.

OPINION AND ORDER

HEWITT, Judge

Before the court is defendant's Motion to Dismiss plaintiffs' takings claims as time-barred. Plaintiffs are owners of property located along the eastern shore of Lake Michigan south of the harbor in St. Joseph, Michigan. Plaintiffs allege that the maintenance of the St. Joseph's Harbor jetties by the United States Army Corps of Engineers (Corps), dating from 1950 until 1989, caused the erosion of their shoreline property. Seeking compensation for the lost property, plaintiffs filed takings actions in this court in 1999. Defendant contends that plaintiffs' claims were not filed within the applicable statute of limitations and moves the court to dismiss for lack of jurisdiction. For the following reasons, the motion is GRANTED.

I. Background

Plaintiffs are property owners along the eastern shoreline of Lake Michigan south of St. Joseph's Harbor. Memorandum of Points and Authorities in Support of Defendant's Motion to Dismiss (D's Mot.) at 1, 2. On July 9, 1999, sixteen plaintiffs, invoking

jurisdiction under the Tucker Act, 28 U.S.C. ' 1491, brought claims based on the prohibition of the Fifth Amendment of the United States Constitution against taking of private property without just compensation. Original Complaint (Orig. Compl.) & 2. Plaintiffs allege that defendant has constructed and maintained a series of 15 jetties along 200 miles of eastern coast of Lake Michigan for over 100 years . . . [that] ha[ve] altered the littoral drift, causing sand which would have been distributed southward along plaintiffs= shoreline property, to accumulate around the jetties externally and in the area between the jetties and the navigational channel. Id. && 26, 27. Plaintiffs complain that by dredging the sand near the jetties and barging it out into deep lake water, defendant has permanently remov[ed] [sand] from the littoral ecology. Id. & 28. Plaintiffs state that as a direct result of the dredging and sand trapping . . . the nearshore lakebed has been downcut, or lowered, and the shoreline south of St. Joseph=s Harbor is in recession [sic] at a rate of about two feet per year. Id. & 30. Estimating that approximately 200 landowners were uniformly suffering property loss, plaintiffs sought to bring the takings claims as a class action. Id. && 3, 18-25.

By Order dated October 14, 1999, the court denied class certification. On February 23, 2000, plaintiffs filed a Notice of Additional Plaintiffs, identifying thirty-seven plaintiffs, and filed separate complaints for each plaintiff.¹ See Notice of Additional Plaintiffs. The claims in each of the individual complaints filed by plaintiffs, except as to the allegations regarding ownership and property description, are identical.²

In their individual complaints, plaintiffs allege that the Corps undertook the project of improving and maintaining St. Joseph=s Harbor pursuant to the River and Harbor Act of July 4, 1836. Banks= Complaint (Banks= Compl.) & 4. In 1903, the Corps constructed parallel jetties to stabilize the entrance of the St. Joseph River into the harbor. Plaintiffs= Exhibit (Pls.= Ex.) 23 at 2 (the June 1996 technical report)³; see also Banks= Compl. & 5. Plaintiffs claim that the jetties did not cause harmful interference to the natural littoral flow of sand and river sediment until the Corps gradually installed sand-tight steel sheet piling during the period of 1950 to 1989. Id. & 6. Plaintiffs further claim that the Corps has dredged much of the river and littoral sand and barged it out into deep lake water, permanently removing it from the littoral ecology. Id. & 10. Plaintiffs complain that A[a]s a direct result of the dredging and sandtrapping [caused by the steel sheet-piled jetties] . . . the nearshore lakebed has been downcut, or lowered, and the shoreline south of the St. Joseph=s Harbor is in recession at a rate of about two feet per year. Id. & 12. Plaintiffs state that they have suffered a gradual and continued taking of their property without just compensation, and such taking is continuing intermitt[e]ntly without permanent stabilization. Id. & 13.

Based on the allegations in the plaintiffs= pleadings and the evidentiary record developed by the parties, defendant contends that plaintiffs= takings actions are time-

barred. D.'s Mot. at 2-3. Defendant moves to dismiss plaintiffs' claims for lack of jurisdiction. Id.

II. Discussion

A. Standard of Review

Rule 12(b)(1) of the Court of Federal Claims (RCFC) governs dismissal of a claim based on a lack of jurisdiction over the subject matter.³ RCFC 12(b)(1). The Supreme Court has stated that in evaluating a motion to dismiss, the allegations of the complaint should be construed favorably to the pleader.⁴ Scheuer v. Rhodes, 416 U.S. 232, 236 (1974), abrogated on other grounds, Harlow v. Fitzgerald, 457 U.S. 800 (1982); Hamlet v. United States, 873 F.2d 1414, 1416 (Fed. Cir. 1989). When considering a motion to dismiss, the court must presume that well pleaded factual allegations in the complaint are true. Miree v. DeKalb County, 433 U.S. 25, 27 n.2 (1977); Reynolds v. Army & Air Force Exch. Serv., 846 F.2d 746, 747 (Fed. Cir. 1988). If the jurisdictional facts in the complaint are disputed, however, the court may consider relevant evidence beyond the pleadings to decide the jurisdictional question.⁴ Land v. Dollar, 330 U.S. 731, 735 n.4 (1947); Rocovich v. United States, 933 F.2d 991, 993 (Fed. Cir. 1991); Indium Corp. of Am. v. Semi-Alloys, Inc., 781 F.2d 879, 884 (Fed. Cir. 1985); Reynolds, 846 F.2d at 747.

B. Statute of Limitations

Defendant moves for dismissal on the ground that plaintiffs' claims are time-barred. D.'s Mot. at 2-3. The applicable statute of limitations for filing suit in the Court of Federal Claims is six years. 28 U.S.C. ' 2501 (1994) ('Every claim of which the United States Court of Federal Claims has jurisdiction shall be barred unless the petition thereon is filed within six years after such claim first accrues.'). The six-year limitation is an express limitation on the Tucker Act's waiver of sovereign immunity.⁵ Franconia Assocs. v. United States, 240 F.3d 1358, 1362 (Fed. Cir. 2001) (quoting Hart v. United States, 910 F.2d 815, 817 (Fed. Cir. 1990)). In Hopland Band of Pomo Indians v. United States, 855 F.2d 1573, 1576-77 (Fed. Cir. 1988), the Federal Circuit observed that the six-year limitations period for actions against the United States is a jurisdictional requirement attached by Congress that must be strictly construed. See also Seldovia Native Association, Inc. v. United States, 144 F.3d 769, 774 (Fed. Cir. 1998) (stating that 'A statute of limitations issues . . . are jurisdictional').

To survive defendant's motion to dismiss this case, plaintiffs must establish a jurisdictional timeliness.⁶ Alder Terrace, Inc. v. United States, 161 F.3d 1372, 1377 (Fed. Cir. 1998) (citing McNutt v. General Motors Acceptance Corp. of Ind., 298 U.S. 178, 189 (1936)). Plaintiffs cannot rely merely on the allegations in the complaint. Reynolds, 846 F.2d at 747. Because plaintiffs bear the burden of proof by a preponderance of the

evidence, they must offer relevant, competent evidence to show that they filed suit within six years of the accrual of their claims. See 28 U.S.C. § 2501; Reynolds, 846 F.2d at 748; Martinez v. United States, 48 Fed. Cl. 851, 857 (2001).

C. Determining the Date of Accrual

Determining whether plaintiffs' takings claims are time-barred requires the court to ascertain when the plaintiffs' cause of action first accrued. The Federal Circuit instructs that a claim against the United States first accrues when all the events have occurred which fix the alleged liability of the defendant, see Hopland Band, 855 F.2d at 1577, at which time the plaintiff has a legal right to maintain his or her action. Catawba Indian Tribe of S.C. v. United States, 982 F.2d 1564, 1570 (Fed. Cir. 1993) (quoting Corman, Limitation of Actions, § 6.1 (1991)). The proper focus for statute of limitations purposes, is upon the time of the [defendant's] acts, not upon the time at which the consequences of the acts became most painful. Fallini v. United States, 56 F.3d 1378, 1383 (Fed. Cir. 1995) (quoting Delaware State College v. Ricks, 449 U.S. 250, 258 (1980)).

A claim does not accrue, however, unless the claimant knew or should have known that the claim existed. Hopland Band, 855 F.2d at 1577 (quoting Kinsey v. United States, 852 F.2d 556, 557 n.* (Fed. Cir. 1988)). To demonstrate ignorance of a claim, a plaintiff must show either that defendant has concealed its acts with the result that plaintiff was unaware of their existence or that [plaintiff's] injury was inherently unknowable at the accrual date. Japanese War Notes Claimants Ass'n v. United States, 373 F.3d 356, 359 (Ct. Cl.), cert. denied, 389 U.S. 971 (1967). Whether the pertinent events have occurred is determined under an objective standard; a plaintiff does not have to possess actual knowledge of all the relevant facts in order for the cause of action to accrue. Fallini, 56 F.3d at 1380 (citing Menominee Tribe v. United States, 726 F.2d 718, 721 (Fed. Cir.), cert. denied, 469 U.S. 826 (1984)). Moreover, where the actions of the government are open and notorious,⁵ . . . plaintiff is on inquiry as to its possible injury. . . . Once plaintiff is on inquiry that it has a potential claim, the statute of limitations begins to run. Coastal Petroleum Co. v. United States, 228 Ct. Cl. 864, 867 (1981).

Here, plaintiffs allege that the erosion of their shoreline property was caused by the Corps' maintenance activities at the St. Joseph's Harbor jetties. Banks' Compl. & 7. In the original complaint filed with the court, plaintiffs alleged that defendant effected a gradual taking of their shorefront property through the construction and maintenance of a series of 15 jetties along 200 miles of the eastern coast of Lake Michigan for over 100 years. Orig. Compl. & 26. Upon filing individual complaints with the court, however, plaintiffs narrowed their claims with respect to the government activities alleged to have effected a taking. Plaintiffs now complain that it was the Corps' installation of sand-tight steel sheet piling during the period of 1950 to 1989 that has altered the supply of sand to

the lake bed and subaerial visible beach in front of the plaintiffs' property. Banks Compl. ¶¶ 6, 7. Referring to the installation of the steel sheet piling, plaintiffs state that as a direct result of Defendant's actions, they have suffered a gradual and continued taking of their property, which requires that they incur costs to provide prudent protection against the erosion of their shoreline . . . as well as the value of their property. Id. ¶¶ 13, 14. The court now considers plaintiffs' claims for a gradual and continued taking of their property in the light of the law governing accrual of a cause of action for a continuing process of physical events. See Banks Compl. ¶ 13.

1. Accrual of a cause of action for a taking caused by a continuing process of physical events

In United States v. Dickinson, 331 U.S. 745, 749 (1947), the Supreme Court stated that, when the government allows a taking of land to occur by a continuing process of physical events, a landowner may postpone suit until the consequences [of the governmental act in question] have so manifested themselves that a final account may be struck. Plaintiffs may postpone filing suit until the nature and extent of the taking is clear. Fallini, 56 F.3d at 1381 (quoting Dickinson, 331 U.S. at 749). In such a case, plaintiffs' cause of action does not accrue until the situation becomes stabilized. Dickinson, 331 U.S. at 749.

Although the language in Dickinson could be read to mean that a cause of action for a taking does not accrue until all the damages resulting from the taking can be finally calculated, courts have interpreted Dickinson more narrowly. In Fallini, the Federal Circuit considered plaintiffs' suggestion of a broad interpretation of Dickinson and observed:

The Supreme Court has not read Dickinson so expansively. In United States v. Dow, 357 U.S. 17, 27, 78 S. Ct. 1039, 1047, 2 L. Ed.2d 1109 (1958), the Court characterized Dickinson as holding only that the statute of limitations does not bar an action for a taking by flooding when it was uncertain at what stage in the flooding operation the land had become appropriated to public use.

Following Dow, the Court of Claims adopted a similarly narrow interpretation of Dickinson and the meaning of stabilization in the takings context. In Kabua v. United States, 546 F.2d 381, 384, 212 Ct. Cl. 160 (1976), the court noted that in Dow, the Supreme Court more or less limited [Dickinson] to the class of flooding cases to which it belonged, when the landowner must wait in asserting his claim, until he knows whether the subjection to flooding is so substantial and frequent as to constitute a taking. Accord Hilkovsky v. United States, 504 F.2d 1112, 1114, 205 Ct.

Cl. 460 (1974) (Dow distinguished the flooding situation in Dickinson from other types of Government taking because, in the slow flooding situation in Dickinson, the full extent of the Government taking could not be known until the high water mark of the flooding had been reached). And in Barnes v. United States, 538 F.2d 865, 210 Ct.Cl. 467 (1976), on facts very similar to those in Dickinson, the court held that a taking by flood accrued in 1973 rather than in 1969, the date of the first flood. The court explained that the taking must be dated from the time that it first became clearly apparent . . . that the intermittent flooding was of a permanent nature. @ Id. at 873. In other post-Dickinson cases, the Court of Claims has made clear that it is not necessary that the damages from the alleged taking be complete and fully calculable before the cause of action accrues. Columbia Basin Orchard v. United States, 88 F. Supp. 738, 739, 116 Ct. Cl. 348 (1950) (We do not think the Supreme Court, in the Dickinson case, meant to hold that plaintiff was entitled to wait until any possibility of further damage had been removed); Nadler Foundry & Mach. Co. v. United States, 164 F. Supp. 249, 251, 143 Ct. Cl. 92 (1958) (same); see also Wilcox v. Executors of Plummer, 29 U.S. (4 Pet.) 172, 177, 7 L. Ed. 821 (1830) (statute of limitations begins to run when breach of duty occurs; right to sue is not suspended, until subsequent events shall show the amount of damage or loss).

Fallini, 56 F.3d at 1381-82.

Subsequently, in Boling v. United States, 220 F.3d 1365, 1370-71 (Fed. Cir. 2000), the Federal Circuit stated that stabilization [within the meaning of Dickinson] occurs when it becomes clear that the gradual process set into motion by the government has effected a permanent taking, not when the process has ceased or when the entire extent of the damage is determined. @ When it is clear that the process has resulted in a permanent taking and the extent of the damage is reasonably foreseeable, the [takings] claim accrues and the statute of limitations begins to run. @ Id. at 1371. The Federal Circuit has also observed that [t]he point at which the taking becomes sufficiently certain to give rise to a claim for compensation varies in each case. @ Cooper v. United States, 827 F.2d 762, 764 (Fed. Cir. 1987).

Here, defendant moves to dismiss plaintiffs' taking actions as time-barred. Defendant asserts that the takings causes of action accrued, at the latest, in 1989. D. 3 Mot. at 6. Relying on the allegations in plaintiffs' complaints, which are accepted as true for purposes of this motion, see Reynolds, 846 F.2d at 747, defendant states that the Corps completed the steel sheet-piling installation program in 1989.⁶ See Banks Compl. & 6. Based on the 39-year period of time during which the Corps conducted the program that plaintiffs allege caused shoreline erosion at a rate of two feet per year, see Banks

Comp. §§ 6, 7, 12, defendant concludes that plaintiffs or their predecessors sustained a loss of almost eighty feet of shoreline and bank. D. Mot. at 6. Defendant argues that injuries of this magnitude as quantified by plaintiffs themselves[] cannot reasonably be categorized as "inherently unknowable" for purposes of establishing a date of claim accrual. Id. Noting that plaintiffs' properties consist primarily of residential structures lying on relatively small parcels of land, defendant reasons that the loss of an average of two feet per year, even if not consistent from one year to the next, is an ongoing process of an inevitable and recurring nature so that over a four decade period, the extent of such land loss could not be ignored by a reasonable and prudent property owner exercising ordinary diligence.⁷ Id. Accordingly, defendant contends that plaintiffs' claims accrued at least ten years before plaintiffs filed suit and are now time-barred. Id. at 6-7.

Plaintiffs argue that their cause of action did not accrue until 1999⁸ when they learned that the observed shoreline erosion was permanent and irreversible. Plaintiffs' Response to Defendant's Motion to Dismiss (Pls. Resp.) at 5, 7-8. Plaintiffs also claim that they could not have filed suit prior to the late 1990s because: (1) the effects of the St. Joseph's Harbor structures on the lake bottom were "hidden"; (2) the government was engaged in a sand transfer program which promised full mitigation of the effects of the structures; and (3) prior to the Federal Circuit's 1988 decision in Owen v. United States, 851 F.2d 1404 (Fed. Cir. 1988), there was no cause of action.⁹ Plaintiffs' Briefing Re Time between Owen and Applegate (Pls. Owen Br.) at 1-2. Plaintiffs state that "[d]espite the existence of fluctuating erosion prior to 1999 [the year suit was filed], the existence of a claim for permanent taking caused by the jetties remained subject to great uncertainty." Pls. Resp. at 2. Plaintiffs explain that "[t]he uncertainty in this case has been a function of background erosion from other sources, periodic fluctuations in lake levels, and the promise of mitigation of the injury through sand transfer measures authorized and partially implemented by the Defendant." Id. at 8. Plaintiffs further explain that "[w]hile landowners were aware of apparent erosion processes like wind and fluctuating lake levels, they had no means of knowing that the jetties were in the process of permanently removing the lake bed." Id. at 2. Plaintiffs add that "[n]ot until 1999 did [they] have available information from which they could conclude that [defendant's] mitigation program would probably never be able to restore the equilibrium beach." Id. at 5. Analogizing the facts here to the facts in United States v. Applegate, 25 F.3d 1579 (Fed. Cir. 1994),¹⁰ plaintiffs assert that, because "the Government[] promise[d] to mitigate [erosion damage] by transferring sand, . . . the landowners remained justifiably uncertain about the permanence of the . . . taking." Pls. Resp. at 7 (quoting Applegate, 25 F.3d at 1583).

The court considers the parties' arguments in light of the legal standards articulated by the Federal Circuit. In deciding when plaintiffs' claims accrued, the court

must determine when all the events occurred to fix the liability of the Government, see Hopland Band, 855 F.2d at 1577, and thereby give plaintiffs a legal right to maintain their actions. See Catawba Indian Tribe, 982 F.2d at 1570. As the Federal Circuit has stated, a takings claim accrues when it becomes clear that the gradual process set into motion by the government has effected a permanent taking . . . and the extent of the damage is reasonably foreseeable. See Boling, 220 F.3d at 1370-1371. To survive a time bar dismissal here, plaintiffs must show that it was not clear that the Corps' activities in St. Joseph's Harbor were causing permanent erosion of plaintiffs' shoreline property at any time before July 9, 1993, which is six years prior to the filing date, July 9, 1999, of these claims.

2. The erosion of plaintiffs' shoreline property

The court turns now to examine the erosive effect on plaintiffs' shoreline property of the Corps' activities in the vicinity of St. Joseph's Harbor. To understand the effect of the Corps' activities, the court considers, as a threshold matter, the geological characteristics of plaintiffs' shorefront property.

a. The geological characteristics of St. Joseph's shoreline

St. Joseph, Michigan is a small city of approximately 9,300 located at the mouth of the St. Joseph River along the southeastern shore of Lake Michigan. The June 1996 technical report prepared by the Corps, which plaintiffs identified as a trial exhibit, states that "[t]he shoreline of Lake Michigan is a product of the last Pleistocene ice age, which began about 18,000 years ago. Pls.' Ex. 23 at 7. The southerly movement of ice sheets during the Pleistocene glaciation shaped the present shoreline and yielded various glacial deposits in the St. Joseph vicinity."¹¹ Id. The geological effect of this glacial movement on the shore of St. Joseph is the formation of a "cohesive" shore, rather than a sandy shore. Id. at 10.

A sandy shore on a barrier coast is generally distinguished by an inexhaustible local supply of beach sediment. Pls.' Ex. 23 at 10. In contrast, a cohesive shore is composed of a "cohesive" sediment substratum, which may include glacial till, glaciolacustrine deposits, soft rock or other consolidated deposits. Id. As a glacial deposit, a cohesive layer derives its strength from the cohesiveness of clay content and/or through the compression it was subjected to during the period of glaciation. Id. Once eroded by waves, cohesive material cannot reconstitute itself. Id. A cohesive shore erodes and recedes due to the permanent removal and loss of cohesive material. Id.

On a cohesive shore, a veneer of sand (and in some instances gravel) covers the cohesive glacial till. Pls.' Ex. 23 at 8; see also Pls.' Ex. 24 at 8 (the July 1997 technical report).¹² That top layer of sand can act as a protective cover on a cohesive shoreline.

Pls.=Ex. 24 at 8. While the thickness of the sand cover varies according to season, water level, and storm activity, Aerosion of the cohesive layer is irreversible.@ Pls.=Ex. 23 at 10. The rate at which a bluff or shoreline recedes on a cohesive shore is governed by the rate at which the nearshore cohesive profile is eroded or downcut by alongshore drift. Id. at 10, 11. Typically, cohesive shores are subject to Astrong alongshore drift@ that can remove large quantities of sand during storms and prevent the necessary accumulation for stable and protective beaches. Id.

Among the readily visible indicators that a shore is cohesive are: (1) the exposure of a cohesive layer beneath the beach during severe storms, and (2) Athe existence of a backshore bluff@¹³ above lake level. Id. at 10. The height of the bluff may be as low as 0.3 meters or as high as 50 meters or more. Id. The maturity of the vegetation on the bluff is an indication of the rate at which the shore is eroding. Id. A bluff that is eroding more rapidly lacks mature vegetation. See id. Additionally, at the base of a bluff that is not protected by a revetment, a narrow beach of sand and gravel may be observed and sandbars may be observed offshore. Id.

b. Evidence of naturally occurring Abackground erosion@

The technical reports of the Corps that plaintiffs have introduced into evidence incorporate historical data indicating that the observed erosion of the St. Joseph= shoreline has been caused, in part, by natural processes. In its June 1996 technical report, the Corps observed that A[b]oth ground-penetrating radar (GPR) and underwater video document considerable exposure of glacial till for the lake bed in [the St. Joseph=] area.@ Pls.=Ex. 23 at 10. The Corps subsequently noted in its July 1997 technical report that, based on its studies of St. Joseph= shoreline profiles, the area Awas vulnerable to considerable erosion@because the erosion of the nearshore sand cover left the underlying till exposed. Pls.=Ex. 24 at 31, 37.

The Corps stated in its June 1996 technical report:

The shoreline in the vicinity of St. Joseph is in a state of recession. . . . Evidence has been presented . . . showing a southward progression of increased erosion rates since 1829. . . . [In 1978], the Michigan Department of Natural Resources . . . computed the bluff line recession rate for the St. Joseph region to be approximately 1 m/yr over a 50-year period.

Pls.=Ex. 23 at 8-9 (citations omitted).

The Corps also addressed the historic annual rate of shoreline recession at St. Joseph in its July 1997 technical report. In the July 1997 technical report, the Corps specifically compared a series of 1989 aerial photographs of St. Joseph with a 1978 study

of shoreline recession rates conducted by the Michigan Department of Natural Resources over a forty-year period north and south of the St. Joseph's Harbor jetties. Pls.=Ex. 24 at 14. The Corps reported that while the shoreline reflected Aa long-term depositional trend@ north of the harbor jetties for 2.5 km and south of the harbor jetties along the first 0.8 km of shoreline, the balance of the shoreline, 13 km in the northerly direction and 13 km in the southerly direction of the harbor jetties, showed erosion.¹⁴ Id. Quantifying the shoreline recession rates, the Corps stated that the annual recession rate north of the accretional zone at the harbor jetties averaged 0.76 m/yr and that the recession rate of the shoreline southward of the St. Joseph's harbor jetties varied from 0.36 m/yr to 1.16m/yr. Id. The Corps explained that the variable recession rate of shoreline southward of the harbor jetties could be attributed to the construction of revetment protection.¹⁵ Id.

The historical rate of recession of the St. Joseph shoreline was also addressed in the deposition testimony of plaintiffs' expert witness, Dr. Guy Meadows. A mechanical engineering professor at University of Michigan, Dr. Meadows testified that his 23-year professional career has been devoted to [studying] the interaction of severe storm waves with the coastline and with coastal engineering structures placed on the coastline . . . [t]hat encompasses both Great Lakes and ocean coasts. Deposition of Guy Meadows (Meadows Dep.) at 6.

At deposition, plaintiffs' counsel questioned Dr. Meadows regarding the littoral drift of sand along the eastern shore of Lake Michigan:

Q: We've already established that there is a dominant littoral drift from north to south?

A: Yes, sir.

Q: You fully agree with that?

A: I do.

Q: So, would all this sand [dredged by the Corps out of St. Joseph's Harbor] now have been taken down to the Indiana dunes, this dredged sand?

A: In a perfect world for the beach to remain stable, that is, for a property owner such as yourself to stake out a claim and have certain dimensions on that, for that to remain stable for a long period of time an equivalent amount of sand has to enter in your case from the north that is being transported out the south and being transported offshore.

So there has to be a net balance of sediment. Otherwise, the beach decreases or if there is a surplus of sediment, the beach would increase.

Meadows Dep. at 48-49. Dr. Meadows continued his testimony by describing the history of background erosion near St. Joseph in the context of the geological history of the Great Lakes:

We don't usually see increasing beaches other than a few locations within the Great Lakes.

So, if there were no alterations to the shoreline, whatever comes in from the north is generally transported out by the south. Superimposed on that is the fact that the Great Lakes are very new features geologically. They are only 10 to 12 thousand years old. They are unusually steep sided and unusually deep, and mother nature tends to broaden that out.

So, even in the absence of any man-made intervention on the shoreline, erosion does exist on the Great Lakes shorelines, and that is somewhere around a foot per year most places and [is] referred to in the literature as the background erosion rate.

Superimposed on that are the influences of man-made structures, both small and private structures as well as large navigation structures that perturb that general equilibrium.

....

The Witness: The background erosion is approximately one foot per year. The lakes are trying to become swamps.

Meadows Dep. at 49-50.

The evidence establishes that erosion of the shorelines on the Great Lakes is occurring naturally, without human intervention, at a measurable annual rate of approximately one foot per year. Id. at 50. Plaintiffs do not dispute that background erosion exists independent of the jetties or other harbor structures in St. Joseph. Plaintiffs' Response to Defendant's Motion to Dismiss (Pls.' Resp.) at 3-4. In fact, plaintiffs acknowledge that as landowners, they were aware of apparent erosion processes like wind and fluctuating lake levels. Id. at 2. The basis for plaintiffs' claims is the alleged exacerbation of the natural process of shoreline erosion by the Corps' ongoing activities in St. Joseph's Harbor. Id. at 1-2.

c. The effect of the Corps' activities on St. Joseph's shoreline

Plaintiffs assert that the Corps' actions have compounded the natural erosive processes affecting the St. Joseph's shoreline. Specifically, plaintiffs allege that the Corps' actions have alter[ed] the supply of sand to the lake bed and caused the shoreline to recede at a rate of about two feet per year. See Banks' Compl. && 7, 12.

Plaintiffs complain that the Corps' maintenance of the fifteen jetties in St. Joseph's Harbor from 1950 to 1989 caused the permanent loss of plaintiffs' shorefront property. Banks' Compl. && 3, 10. During that period of time, the Corps' installed sand-tight steel sheet piling and then dredged and barged the sediment captured by the piling out into deep lake water. Id. && 6, 10. Plaintiffs explain that the shuttling of sand off the end

of the steel sheet piled jetties and beyond the depth of closure¹⁶ has permanently damaged the littoral ecology of the plaintiffs' shoreline property. @ Id. §§ 11, 13.

The jetties about which plaintiffs complain were constructed in 1903 and have been in their present state since 1989. Banks' Compl. §§ 5, 6. Plaintiffs state that A [t]hese jetties have, over the course of many years, interfered with the littoral drift in a way which has deprived the Plaintiffs of their property by gradually undermining the underwater foundation of the beaches themselves. @ Pls.' Resp. at 1.

In further support of their allegations that activities of the Corps have effected a taking of their property, plaintiffs offer historical evidence of the Corps' undertakings in St. Joseph's Harbor. The nineteenth-century survey maps and governmental reports filed by plaintiffs indicate that the Corps has been engaged in activities that have impacted St. Joseph's Harbor and shoreline since the 1830s.¹⁷ See Pls.' Exs. 47, 48, 49, 68, 69, 70, 71, 72, 73.

Plaintiffs' evidence includes the expert testimony of Dr. Meadows regarding the exacerbating erosive effect on the shoreline of the St. Joseph's Harbor jetties that the Corps constructed and maintained. At deposition, plaintiffs' counsel questioned Dr. Meadows about the state of scientific understanding of the effects of the jetties on the shoreline at the time of their construction. Dr. Meadows explained that while the erosive effect of the jetties on downdrift beaches was not recognized at the time the jetties were constructed, knowledge of the processes of beach erosion became important as a result of World War II:

Q: And at the time [the Corps] established th[e] length [of the harbor jetties] which was according to my records or the records of the Corps 1903, no one had ever heard of depth of closure, had they?

A: They had not, and the effects on the downdrift beaches was also unknown at that time and not known significantly until after World War II when it became important to understand the processes that go on beaches in an effort to be able to land troops on beaches.

Q: So, there is no question that whatever harm has been done was unintentional as a result of these [harbor jetties].

A: The harm that has been done is the accumulated harm since 1903 [the construction date of the harbor jetties]. That structure has done two things. It has blocked the shore parallel transport of material from north to south and it has also deflected some of that material offshore and, hence, being lost forever once it's beyond the depth of closure.

Meadows Dep. at 68-69. Dr. Meadows testified that the exacerbation of erosion by the jetties and possible mitigation of those erosive effects came into scientific focus as early

as the 1960s:

Processes were known in the 60's and 70's that these effects occur and that there were mechanisms available to mitigate those effects, and it is also my understanding that it wasn't until the State of Michigan that forced the Corps of Engineers in the section 111 studies to address the downdrift impacts of the federal structures.

Id. at 69. Plaintiffs' counsel then asked Dr. Meadows to address the percentage of erosion attributable to the Corps under section 111 studies:¹⁸

Q: Have you ever heard the figure 30 percent attributable under Section 111 to the Corps structures?

A: Yes, I have.

Q: Could you explain what that figure means?

A: Section 111 studies attempted to identify the extent in percentage of erosion that occurred along the shoreline that was directly attributable to the federal structures.

So, in arriving at their value of 30 percent, they considered the distance a particular property existed from the structure, what the background erosion rate this one foot per year might have been in the area and what other structures existed in and around the affected properties.

It's my understanding for most of the harbors [the Corps] arrive[s] at a value of about 30 percent for that portion of the erosion directly attributable to the structures, federal structures.

Id. at 68-70 (bracketed material added).

The testimony of Dr. Meadows makes clear that defendant has acknowledged the longstanding and significant exacerbation of erosion caused by its harbor jetties. Defendant has also introduced evidence reflecting a disclosure by the Corps in the mid-1970s that 30% of the erosion on [lakefront] property just south of the St. Joseph's piers was caused by these structures.¹⁹ Additionally, as demonstrated by the Corps' implementation in 1976 of a section 111 beach nourishment program to mitigate the effects of the harbor jetties, the Corps has recognized openly the erosive impact of the jetties for more than 20 years prior to the filing of plaintiffs' claims. See Pls.' Ex. 24 at 5.

3. When permanent erosion damage to plaintiffs' shoreline property became known or reasonably knowable

Notwithstanding plaintiffs' own evidence showing that the Corps' activities in St. Joseph's Harbor, which span a period of more than 150 years, have interfered with the

littoral drift and deprived the Plaintiffs of their property by gradually undermining the . . . foundation of the beaches, see Pls.= Resp. at 1, and notwithstanding plaintiffs' own expert's testimony of a background erosion rate of one foot per year, and notwithstanding undisputed testimony that man-made structures, most prominently, the St. Joseph's Harbor jetties, significantly increased the annual rate of shoreline erosion,²⁰ plaintiffs insist that the permanent effect of the Corps' actions was uncertain until 1999. Id. at 2. Plaintiffs claim that they could not have filed suit earlier because prior to the Federal Circuit's 1988 decision in Owen, there was no cause of action.²¹ Plaintiffs' Briefing Re Time between Owen and Applegate (Pls.= Owen Br.) at 2. Plaintiffs further claim that until the late 1990s: (1) the effects of the St. Joseph's Harbor structures on the lake bottom were hidden, and (2) the government was engaged in a sand transfer program which promised full mitigation of the effects of the structures. Id. at 1.

Describing the sand transfer program more particularly, plaintiffs explain that, in 1976, the Corps implemented a Section 111 mitigation plan of beach nourishment to address the erosion problems associated with the interception of sand on the northerly side of the jetties in St. Joseph's Harbor. Id. at 4. The mitigation plan involved placing fine sand from the harbor maintenance dredging on the downdrift [southerly] beaches. Pls.= Ex. 24 at 5 (bracketed insert added). After fifteen years of beach nourishment, however, the Corps determined that fine sand does not fulfill the role of the coarser sediment which forms a large part of the natural beach closer to shore. Id. Because coarse grain sediment has a longer retention time than fine sand on the beach, the Corps postulated that coarser sediment might protect the underlying glacial till from erosion better than fine sand. Id. In furtherance of the beach nourishment program, the Corps deposited, on five different occasions between 1986 and 1993, coarse material on St. Joseph's shoreline. Id. In 1995, the Corps expanded the mitigation program to place barge-loads of large rocks into the lake. Pls.= Resp. at 4. But, as reported in the Corps' 1997 technical report on the effectiveness of the beach nourishment program, a [c]omparison of the lake bed surfaces from the 1991 to 1995 hydrographic surveys [of St. Joseph's Harbor] reveal[ed] a rapid acceleration in lake bed lowering. Pls.= Ex. 24 at 84. Noting that as much as 50 percent of the sand placed in the feeder beach area . . . ends up back in the navigation channel from where it was originally removed, the Corps stated that a more cost-effective approach than beach nourishment must be found to protect and maintain the position of the shoreline. Id. at 87.

Plaintiffs contend that the sand transfer program promised complete mitigation of the effect of the harbor jetties. Pls.= Resp. at 5. Plaintiffs note that they could not, [based upon] their inferior position of observation and knowledge, know that the [sand transfer mitigation] program would not be effective. Id. Plaintiffs argue that A [d]efendant . . . did not provide [them] with the information to bring this suit until 1999. Id.

Plaintiffs maintain that until the Corps disclosed certain technical information in the late 1990s, they were uncertain about the permanent effect of the observed erosion. See Pls.= Resp. at 2, 5. In support of their claim of uncertainty, plaintiffs point to the deposition testimony of their expert Dr. Meadows. Id. at 3-4. Plaintiffs also point to a 1998 article in a regional newspaper and to a 1999 technical report prepared by the Corps addressing the section 111 beach nourishment. Id. at 2-3, 4-5.

a. Dr. Meadows=deposition testimony

Dr. Meadows testified, when questioned by plaintiffs= counsel, that the erosion of St. Joseph=s shoreline would be noticeable to shoreline property owners:

Q: Would you expect the ordinary layperson who owns property on the shore would understand what=s taking place out there in the lake?

A: I believe someone who has lived on the shoreline for a number of years would be able to notice these trends.

From day-to-day exposure that you would be able to see that towards the harbor there is death and destruction and the further away from the harbor you get the less apparent that is, and that, particularly an astute observer, might notice that that area of sediment depletion is migrating.

Meadows Dep. at 54. While testifying that erosion would be noticeable to shoreline property owners, Dr. Meadows also testified that a lay person would not understand the subsurface erosive processes that are occurring:

Q: But the concept of an equilibrium beach and what the shortage of sand supply does to the equilibrium beach, you couldn=t expect a layperson just sitting on the shore to understand what was going on there?

A: No, and that is why we are doing the work that we are for the MDEQ is to understand what invisible changes go on beneath the water surface that ultimately result in very high erosion rates.

Id. at 54-55.²²

Plaintiffs rely on Dr. Meadows= testimony of the property owners= ignorance of subsurface processes as evidence that their claim did not ripen until 1999. But plaintiffs= reliance on their ignorance of technical information is misplaced. That plaintiffs were unaware of the extent of or the scientific analysis of the subsurface erosion is not a proper basis for postponing the filing of their claims because plaintiffs need not have actual knowledge of all the relevant facts in order for the cause of action to accrue.@Fallini, 56 F.3d at 1380.

Dr. Meadows's testimony makes clear, and plaintiffs do not dispute, that erosion of the shoreline was noticeable to shoreline property owners. See Meadows Dep. at 54; Pls.= Resp. at 2. The Corps's steel sheet-piling installation as well as its dredging and dumping activities were open and notorious acts occurring over a 40-year period in St. Joseph's Harbor. See Coastal Petroleum Co., 228 Ct. Cl. at 867. Plaintiffs offer no evidence showing either that the Corps concealed its acts or that the erosion damage to the shoreline was inherently unknowable. See Japanese War Notes Claimants Ass'n, 373 F.3d at 359. Rather, plaintiffs have filed suit for their property losses, alleging that A [a]s a direct result of the [Corps's activities] . . . the shoreline south of St. Joseph's Harbor is in recession at a rate of about two feet per year,@ Banks= Compl. & 12 (emphasis added), and plaintiffs have acknowledged that they were aware of apparent erosion processes.@ Pls.= Resp. at 2. Even if the science of the erosion process was not fully understood by plaintiffs, the erosion of the shoreline was apparent and sufficient to put plaintiffs on notice that erosive processes were occurring. Accordingly, the court cannot find that the effects of the jetties on St. Joseph's shoreline were hidden until 1999.

b. The 1998 newspaper article

Plaintiffs cite a 1998 newspaper article entitled "Too soon to tell if erosion experiment will help" as supporting evidence that not until the late 1990s did plaintiffs understand the extent of the erosive processes or learn that the Corps's sand transfer efforts would not fully mitigate the shoreline erosion. See Pls.= Resp. at 4-5; Pls.= Resp. Ex. 21C ("Too soon to tell if erosion experiment will help," @The Herald-Palladium, April 20, 1998, at 1A). The newspaper article stated:

Back in 1995, the Army Corps of Engineers took bargeloads of big rocks out into Lake Michigan and started dumping them in about 15 feet of water. . . .

They weren't getting rid of useless rocks--they were performing an experiment. They wanted to see if it was possible to stabilize the lake bottom and thereby halt, or at least slow, the erosion of the steep Shoreham bluffs.

Pls.= Resp. Ex. 21C at 1A. In assessing the effectiveness of the Corps's efforts, the newspaper article quoted Charles Thompson, a physical scientist for the Corps in Detroit, who stated:

It will take several more years to see any offshore effect and probably many more years to see any effects on the bluff behind it. It hasn't been a failure, it's just going to take more time to see the benefits.

. . . .

Some people are grasping at [the beach nourishment plan] as being a solution to erosion problems. . . . I guess I would caution them that, as with most shore

protection, it probably is not. If you could get out and cover the whole lake bottom with stone it might do some good, but to do some good it has to be done early on. The sad fact is that . . . the area south of St. Joseph has been anchored with shore protection and offshore it continues to erode.

Id. at 1A, 2A. Describing the critical disequilibrium in St. Joseph's Harbor that threatens the stability of the eastern shoreline of Lake Michigan, Mr. Thompson explained:

The conditions are such right now [as observed in April 1998] that the lake bottom is lower than it should be and the shoreline has been anchored (with manmade structures). The whole system out there is in a severe state of A disequilibrium.@

If the shoreline could readjust itself right now, it would be 150 feet further inland than it is. The only thing that keeps it from doing that is the presence of the shoreline structures. But sooner or later the shoreline protection will fail and the shoreline will readjust. Maybe rock will stop it from going further back, but most of the shoreline is looking at some really severe catching up, so to speak.

Id. Acknowledging the effect of the Corps' harbor jetties on the erosive processes, Mr. Thompson observed that the Corps' efforts to stem the shoreline erosion through the sand transfer program must compensate for nearly a century of non-mitigation:

Anything that people do, and I include the Corps, as far as building structures out there . . . really has a significant effect on disrupting the sand supply out there. The disruption of sand has more to do with erosion tha[n] any other cause. . . . [T]he breakwaters are the biggest structures around there, there's no denying that. [And that means the harbor structures may] be a major contributor to the processes off there. The Corps realizes that and that's why we have the beach nourishment program.

[However, the project began only in the early 1970's] so basically we have 80, 90, or 100 years of non-mitigation to make up for. Up until the 1970's, nobody recognized the importance of sand cover. For most of the life of the St. Joseph's Harbor structures [jetties], little was done to mitigate the effects of those structures.

Id.

Plaintiffs point to the comments of Mr. Thompson in the 1998 newspaper article as an important source of Ainformation@ permitting plaintiffs to file suit in 1999. Pls.=

Resp. at 5. In particular, plaintiffs rely on the information in the newspaper article about the Adisequilibrium@ of St. Joseph=s Harbor and Mr. Thompson=s statements that the sand transfer program would probably not Abe[] a solution to [the] erosion problems@ to establish that they did not have the technical knowledge about the extent of and the permanence of the erosion processes until the late 1990s. See Pls.= Resp. at 2. Plaintiffs urge that based on their lack of scientific understanding of the erosion processes in St. Joseph=s Harbor, they postponed suit until the Aconsequences [of the Corps= activities] . . . so manifested themselves that a final account [could] be struck.@ Pls.= Resp. at 6 (quoting Dickinson, 331 U.S. at 749).

Again, plaintiffs= belief that their takings claims did not accrue until they understood the science of the observed erosive processes is erroneous. The law does not require plaintiffs to have complete understanding of their claims before filing suit. See Fallini, 56 F.3d at 1380. Rather, it is sufficient that plaintiffs are Aon inquiry@ as to their possible damages, and once plaintiffs are on notice of their claims, the statute of limitations begins to run. See Coastal Petroleum Co., 228 Ct. Cl. at 867. Here, plaintiffs may not have had technical knowledge concerning their claims until the late 1990s. But there is ample evidence that they were Aon inquiry@ prior to that time.

Mr. Thompson=s statements in the 1998 newspaper article indicate that even if Athe effects of the St. Joseph=s harbor structure on the lake bottom were hidden@ from plaintiffs, see Pls.=Owen Br. at 1, the effects on plaintiffs= properties were well known. Describing the notoriety of erosion in the vicinity of plaintiffs= property, the article stated:

Shoreline erosion has been a matter of great concern for decades. Berrien County has lost enormous amounts of land to the lake, especially south of the breakwaters of the St. Joseph River harbor. The area has not only lost houses, but entire sections of communities.

Pls.= Resp. Ex. 21C at 1A (emphasis added). Such significant and well-known property losses militate against a finding that plaintiffs were Auncertain[]@ about Athe existence of a claim for permanent taking@ until 1999. Pls.= Resp. at 2.

Moreover, plaintiff=s reliance on the 1998 newspaper article as evidence that they did not learn until the late 1990s that the government=s sand transfer program would not solve the shoreline erosion is misplaced. See Pls.= Resp. at 5. While allowing that additional time would be required to Asee the benefits@ of the Corps= mitigation efforts, the article indicated that the shoreline nourishment program would Aprobably . . . not@ solve the erosion problems, see Pls.= Resp. Ex. 21C at 2A, and noted that A[w]e can hold it at bay for awhile, but for us there=s no return.@ Id. Mr. Thompson=s comments also indicated that, contrary to plaintiff=s assertions, the Corps= sand transfer efforts were not a promise Ato completely mitigate[] the effect of the St. Joseph jetties,@ see Pls.= Resp. at 4,

but were merely an experiment . . . to see if it was possible to stabilize the lake bottom and thereby halt, or at least slow, the erosion. Pls.= Resp. Ex. 21C at 1A (emphasis added).

Asserting that the Corps has held out the promise of mitigation by sand transfer, plaintiffs argue their uncertainty about the permanence of the taking is similar to the uncertainty of the landowner-plaintiffs in the Applegate case. Pls.= Resp. at 7. The evidence here, however, is dissimilar from the evidence that supported the decision of the Federal Circuit in Applegate. As defendant emphasizes in its reply briefing, the two critical factors present in Applegate, specifically, repeated and unequivocal promises by the Corps to cure the erosion problem²³ and a congressional appropriation to cover the cost of the cure, are missing here. Defendants= Reply to Plaintiff[s]= Response to Motion to Dismiss (D.= Rep.) at 7-8. See Applegate, 25 F.3d at 1582. Defendant argues that plaintiffs fail to point to any specific statutory authority from Congress granted to the Corps to eliminate or fully correct the erosive processes in St. Joseph's Harbor. D.= Rep. at 8. Rather, defendant explains, plaintiffs rely on the general language of section 111 of the River and Harbor Act of 1968 which authorizes the Secretary of the Army to investigate, study and construct projects for the prevention or mitigation of shore damages attributable to Federal navigation works, see 33 U.S.C. ' 426i(a), but does not impose a duty to mitigate all erosion . . . as plaintiffs contend. D.= Rep. at 8.

In support of its position that section 111 does not impose a duty to mitigate all erosion, defendant cites a decision by the Seventh Circuit in Save the Dunes Council v. Alexander, 584 F.2d 158 (7th Cir. 1978). In Save the Dunes Council, a plaintiff organization and several individuals brought an action to compel the Secretary of the Army to take remedial action in connection with the Corps= harbor improvements at Michigan City, Indiana. Id. at 160. Considering the issue of whether section 111 imposed a duty on the part of the Secretary of the Army to mitigate shore erosion damage, the Seventh Circuit stated:

[T]he legislative history shows that 426i was . . . enacted . . . to permit the Corps to apply its expertise and discretion to the problem of erosion damage caused by existing navigational structures.

. . . .

. . . We hold that the language of s 426i and the congressional intent in enactment grant and authorize only discretionary decision of action or non- action on the part of the Secretary, acting through the Corps, in the premises. No clear, plainly defined and peremptory duty on the part of the Secretary is spelled out or, by any stretch, to be garnered inferentially upon which a Writ of Mandamus to comply can be predicated.

Save the Dunes Council, 584 F.2d at 165. Defendant contends that in view of the

Seventh Circuit's decision in Save the Dunes Council, plaintiffs could not reasonably rely on the statutory language of section 426i Aas requiring the Corps to take . . . action . . . to eradicate the erosion occurring on plaintiffs' lands or . . . constitut[ing] a promise to do so @ as the basis for failing to bring suit in a timely fashion. D.'s Rep. at 10.

Additionally, defendant introduces evidence of various correspondence between the Corps, interested citizens, local government officials and members of Congress over a period of many years. @ See D.'s Rep. at 10. See also D.'s Rep. Exs. 7, 7(a), 8, 9, 10, 11, 12, 13. In particular, see D.'s Rep. at 10, defendant points to a letter dated June 4, 1974 from Colonel James E. Hays, District Engineer, to Rep. Edward Hutchinson in which Col. Hays responded to a request for information regarding concerns raised by one of the Congressman's constituents residing in Shoreham,²⁴ a neighboring community to St. Joseph:

As you probably know, the project [to complete three feeder beaches] provides partial compensation for the erosion. The primary objective of this project is to restore that part of the littoral drift which is being interrupted by the navigation project. The project is not intended to provide mitigation measure of such magnitude as to approach complete beach erosion protection.

D.'s Rep. Ex. 8 at 2 (emphasis added).

The court agrees with defendant that the evidence here does not show that the Corps' sand transfer program constituted a promise on which plaintiffs could rely to postpone the filing of their suits, as contemplated by the Applegate case. As construed in a persuasive opinion by the Seventh Circuit, the statutory language of section 111 does not impose a duty on the Corps to mitigate fully the erosive effects of the harbor jetties on St. Joseph's shoreline. Nor has the Corps represented that its beach nourishment efforts along the eastern shoreline of Lake Michigan were intended to provide complete mitigation. See Pls.' Resp. Ex. 21C at 2A; D.'s Rep. Ex. 8 at 2.

c. The Corps' 1999 annual report on section 111 beach nourishment

Finally, plaintiffs rely on a 1999 annual report prepared by the Corps stating that A the language in this report is the first clear indication of permanent damage caused by the harbor structures. @ Pls.' Owen Br. at 2 n.6 ; see Pls.' Owen Br. Ex. 2 (Annual Report on the Section 111 Beach Nourishment Monitoring Program FY 1999 (Jan. 2000)). The 1999 report summarized the results of the Detroit District's section 111 beach monitoring program for ten area harbors, including St. Joseph's Harbor. Pls.' Owen Br. Ex. 2. Before detailing the Corps' sand transfer efforts for fiscal year 1999, the report provided a synopsis of the geological origin of the Great Lakes coastline, identified the coastline as cohesive rather than sandy, and addressed the particular characteristics of the cohesive

coastline on the Great Lakes.²⁵ Id. at 2-3. The report stated that A[e]rosion of the consolidated layer [underlayer of a cohesive coastline] is generally irreversible@and may result in the permanent lowering of the lakebed (known as downcutting), which effectively increases the water depth at that location in the lake and correspondingly increases the wave energy and the erosion of the coastline in the landward direction. Id. at 3. Based on the nature of the erosion process on a cohesive shoreline, the report explained, A[e]xisting profile response models and shoreline change models in use by the Corps [to monitor beach nourishment] . . . have limited value for cohesive coastlines since one of their basic assumptions is that of a sandy coastline with an unlimited sand supply.@ Id.

Although plaintiffs argue that the 1999 report is the first clear indication of permanent erosion damage, plaintiffs acknowledge in their briefing that the Corps= 1997 report Aprovided evidence of irretrievable erosion of the lakebed.@ Pls.=Owen Br. at 6 n.2. Plaintiffs also acknowledge that A[t]he events described in the 1999 report all occurred prior to this lawsuit,@id., and that the 1999 report Aprovided confirmation that the Corps[=] mitigation attributability formula is wrong and that permanent loss of lakebed is forthcoming.@ Pls.=Owen Br. at 6. Plaintiffs state that, in July 1999, six months before the Corps issued its 1999 annual report, they nevertheless reasonably concluded they had suffered a sufficiently permanent injury to commence suit. Id. at n.2.

The court observes that plaintiffs= claims that they were uncertain about the permanence of the erosion damage until 1999 are contradicted by their own evidence. Plaintiffs acknowledge the evidence of Airretrievable erosion of the lakebed@in the Corps= 1997 report. Pls.=Owen Br. at 6 n. 2. Moreover, in the 1996 Corps report that plaintiffs introduced into evidence, the Corps concluded that A[t]he profile erosion that occurs during th[e] process [of lakebed downcutting in the vicinity of St. Joseph= Harbor] is permanent.@ Pls.= Ex. 23 at 48. That 1996 technical report of the Corps not only addressed the permanence of the Aprofile erosion,@ but also concluded that the St Joseph= shoreline Ais in a state of recession@ based on various studies measuring bluff recession rates over more than 50 years.²⁶ Id. at 9. In light of the evidence presented by the parties indicating that scientific evidence of significant shoreline erosion in the St. Joseph region was documented well before 1999 and because plaintiffs have acknowledged that the shoreline erosion was Aapparent,@see Pls.= Resp. at 2, the court is unpersuaded that plaintiffs did not have Athe information to bring this suit until 1999.@ See Pls.= Resp. at 5.

The Federal Circuit has stated that Aa plaintiff does not have to possess actual knowledge of all relevant facts in order for [his] cause of action to accrue.@ See Fallini, 56 F.3d at 1380. AWhether the pertinent events have occurred [for accrual of a claim] is determined under an objective standard,@see id., and when the government= acts are open and notorious, the claim accrues Aonce plaintiff is on inquiry that [he] has a potential

claim. Coastal Petroleum Co., 228 Ct. Cl. at 867. Plaintiffs argue that because the shoreline erosion was a continuing process of physical events as contemplated by the Supreme Court in Dickinson, 331 U.S. at 749, they were able to postpone filing suit until 1999 when it became clear that a permanent taking had been effected and the extent of the damage became reasonably foreseeable. Pls.= Resp. at 7; see Boling, 220 F.3d at 1371. But the evidence supports a finding that plaintiffs= claims accrued no later than 1989.

Plaintiffs allege in their complaints, which the court construes in favor of the complainants, see Scheuer, 416 U.S. at 236, that the Corps completed the installation of a sand-tight steel sheet piling in 1989. See Banks= Compl. & 6. Plaintiffs further allege that the totally impenetrable design of the [steel sheet piled] jetties has alter[ed] the supply of sand . . . in front of [their] property and thereby effected a taking. Id. && 7, 13. Plaintiffs add that the Corps= dredging and barging of sand from the end of the steel sheet piled jetties has permanently disrupted the littoral ecology south of the jetties. Id. && 8, 10, 11. Plaintiffs explain that until 1999, the Corps= efforts to mitigate the erosive effects of the St. Joseph= Harbor jetties through the section 111 beach nourishment program, begun in 1976, promised complete mitigation. See Pls.= Resp. at 4, 5. Plaintiffs do not dispute that the erosion of their shorefront property, allegedly occurring at an annual rate of two feet per year, see Banks= Compl. & 12, was apparent, see Pls.= Resp. at 2, and plaintiffs have introduced evidence indicating that Berrien County [which encompasses St. Joseph] has lost enormous amounts of land to the lake. Pls.= Resp. Ex. 21C at 1A.

Focusing on the time of the [defendant=s] acts for statute of limitations purposes, see Fallini, 56 F.3d at 1383, the court construes plaintiffs= complaints to allege 1989 as the last date of the Corps= activities in St. Joseph= Harbor that caused deprivation of sand and loss of [plaintiffs=] property. Banks= Compl. & 3. Based on plaintiffs= own allegations, the last act of the Corps alleged to have caused the taking of plaintiffs= property occurred one year after the Federal Circuit= 1988 decision in Owen, which removed any jurisprudential bar to plaintiffs= suit imposed by the Pitman and Ballam cases. Thus, at the time of defendant=s last act in 1989, there was no jurisprudential prohibition against plaintiffs= filing suit.²⁷

Additionally, the substantial loss of physical property, estimated to be almost eighty feet of shoreline and bank between 1950 and 1989, see Banks= Compl. && 6, 12, was sufficient to put plaintiffs on inquiry notice of their potential takings claims. See Coastal Petroleum Co., 228 Ct. Cl. at 867. The recession of the shoreline and the loss of plaintiffs= property continued at an annual rate of about two feet per year, see Banks= Compl. & 12, notwithstanding the Corps= efforts to mitigate the erosive effect of the harbor jetties through the sand transfer program implemented in 1976. See Pls.= Resp. at 4. Although plaintiffs did not have a complete understanding of the erosive processes

affecting the shoreline in 1989, plaintiffs have acknowledged their awareness of an apparent loss of lakefront property. *See id.* at 2. The court finds that the uncertainty argued by plaintiffs regarding the permanence of the erosion, *see id.*, while reflecting their subjective lack of technical knowledge about the erosive processes, misinterprets the stabilization doctrine set forth in *Dickinson*. Based on the evidence presented by the parties, the court determines that, by 1989, the gradual process of shoreline erosion set into motion by the government had resulted in a permanent taking and the extent of the damage had become reasonably foreseeable. *See Boling*, 220 F.3d at 1370-71. While the information that plaintiffs learned in 1999 undoubtedly assisted the plaintiffs in better understanding the entire extent of the damage caused by the Corps' activities, *see id.* at 1371, the court does not find that 1999 is the time at which the erosion situation became stabilized within the meaning of *Dickinson*. *See Dickinson*, 331 U.S. at 749. Rather, it is the court's view that plaintiffs' takings claims accrued no later than 1989 and the time for filing suit expired in 1995. *See* 28 U.S.C. § 2501. Plaintiffs did not file suit in this court until 1999.

It is well established that a takings claim must be asserted by the owner of the property at the time of the taking. *See Dickinson*, 331 U.S. at 749 ("[An] owner of land flooded by the Government . . . [may] postpone bringing a suit against the Government for the flooding until the consequences of inundation have so manifested themselves that a final account may be struck.") (emphasis added). Here, the court has determined that the takings claims accrued in 1989. Accordingly, only those plaintiffs who owned the shorefront property alleged to have suffered erosion damage at the time of claim accrual were able to assert these takings claims prior to the running of the statute of limitations in 1995,²⁸ and those plaintiffs here who acquired their property interests after 1989 cannot assert the takings claims which properly accrued to the predecessor property owners. In applying this rule of law, the court acknowledges the difficulty of determining who owned the property at the time of an alleged taking when the alleged taking is caused by a continuing process. Further, the court recognizes that this determination may be complicated by a change in property ownership during the continuing taking process. In reaching its decision here, the court has relied on the guidance provided by the Federal Circuit in the *Cooper* decision,²⁹ and has inferred from the Federal Circuit's reasoning in that case that the plaintiff to whom compensation for a continuous taking is owed is also the proper party plaintiff to assert the suit. Because the plaintiffs here who owned the shorefront property at the time that the takings claims accrued in 1989 failed to assert their claims timely, the court finds that those claims are time barred. Additionally, the court finds that the claims of the plaintiffs who acquired their property after 1989 are asserting claims that had accrued to the predecessor property owners and that those claims cannot be asserted by the named plaintiffs. *See* RCFC 17.³⁰

III. Conclusion

For the foregoing reasons, defendant's Motion to Dismiss is GRANTED. The

Clerk of the Court shall enter judgment for defendant in case nos. 99-445L; 00-388L; 99-4451L; 00-383L; 00-381L; 00-387L; 00-380L; 00-384L; 00-391L; 00-392L; 99-4452L; 00-386L; 99-4453L; 00-385L; 99-4454L; 99-4455L; 00-394L; 00-399L; 00-400L; 99-4456L; 99-4457L; 99-4459L; 00-382L; 00-401L; 00-390L; 00-389L; 00-379L; 99-4458L; 99-44510L; 99-44511L; 00-393L; 99-44512L; 00-398L; 00-397L; 00-396L; 00-395L; and 00-365L. Each party shall bear its own costs.

IT IS SO ORDERED.

EMILY C. HEWITT

Judge

¹Among the listed plaintiffs were the named plaintiffs in the original complaint.

²During oral argument on the motion to dismiss, plaintiffs' counsel stated that the allegations in the complaints were the same. Transcript of April 4, 2001 Oral Argument (Tr.) at 20. Accordingly, for ease of reference and unless otherwise noted, the court will refer to the individual complaint filed by the first named plaintiffs, John and Mary Banks, when addressing plaintiffs' claims in this action. The individual complaint of Mr. and Mrs. Banks, cited as the Banks' Complaint (Banks' Compl.), together with the separate complaints filed by the other named plaintiffs in the Original Complaint, supplanted the Original Complaint and were deemed to have been filed on July 9, 1999, the filing date of the Original Complaint. See Rule 15(c) of the Court of Federal Claims (RCFC). The subsequently added plaintiffs identified in the Notice of Additional Plaintiffs filed their separate complaints on February 23, 2000.

³Plaintiffs' Exhibit 23 is a technical report prepared by the Corps dated June 1996. See Larry E. Parson, Andrew Morang, & Robert B. Nairn, Geologic Effects on Behavior of Beach Fill and Shoreline Stability for Southeast Lake Michigan, June 1996. The activities of the Corps in the vicinity in fact date back to the earliest days of Michigan statehood (1837). See infra n.17 and accompanying text.

⁴Because the parties were preparing for trial at the time defendant filed its motion to dismiss, the evidentiary record is well-developed. The court has before it the anticipated trial exhibits prepared by the parties and filed in accordance with the pre-trial scheduling order.

⁵The term Notorious is defined in Black's Law Dictionary as A[generally known and spoken of]. Black's Law Dictionary 1090 (7th ed. 1999).

⁶Defendant also notes that the dredging and dumping of sand, of which plaintiffs complain as well, see Banks' Compl. & 10, occurred from 1963 to 1983. D.'s Mot. at 7 (citing Appendix G Joint Preliminary Status Report Ex. X [a map of Lake Michigan entitled, Fig.1 Location of Federal Projects on Eastern Shore of Lake Michigan, depicting the years in which the Corps dumped sand into the open waters of Lake Michigan and the volume of sand dredged from each harbor along the eastern shore of the lake]). Defendant points out that this activity of the Corps ended at least sixteen years before plaintiffs filed suit. D.'s Mot. at 7.

⁷Among the larger lots are those owned by: (1) Country L.L.C. (approx. lot size of 300 feet x 1550 feet acquired in 1961 with subsequent acquisition in 1984); (2) the Del Marianis (approx. lot size of 235 feet x 1700 feet acquired in 1975); and (3) the Marzkes (approx. lot size of 246

feet x 1810 feet acquired more than 50 years prior to suit). See Notice of Additional Plaintiffs. Representative of the remaining plaintiffs' lots are those owned by: (1) the Errants (approx. lot size of 70 feet x 388 feet acquired in 1964); (2) the Kanes (approx. lot size of 66 feet x 250 feet acquired in 1980); and (3) the Melchers (approx. lot size of 92.6 feet x 350 feet acquired in 1970). Id.

⁸Alternatively, plaintiffs assert in later briefing that A[t]he matters which have come to light since [the Federal Circuit's 1988 decision in] Owen did not give them a basis for suit until at least 1997. @ Plaintiffs' Briefing Re Time Between Owen and Applegate (Pls.'s Owen Brief) at 2. Plaintiffs explain that A[i]n 1997, the [Corps'] Report, Effectiveness of Beach Nourishment . . . revealed for the first time the irreversible erosion occurring in the lakebed. @ Id. at 5.

⁹The named plaintiff in Owen v. United States, 851 F.2d 1404 (Fed. Cir. 1988), as the executor of the estate of the property owner, filed a takings claim alleging that the Corps' dredging activities in the Tombigbee River caused increased riverbank erosion which eventually undermined the property owner's house and caused it to fall into the river. Id. at 1405, 1406. In determining whether the erosion loss of the riparian owner's property constituted a compensable taking for which plaintiff could seek recovery, the Federal Circuit considered the scope of the navigational servitude, which permits the government to conduct activities to improve navigation on privately owned property located in the bed of navigable waters without compensating the property owner. Id. at 1409. Upon examining the boundaries of the navigational servitude and A fail[ing] to discern valid distinctions between the undermining and permanent loss of fast land (and a house) due to government-caused erosion and the permanent flooding of fast land due to government improvements to navigation found to be compensable by the Supreme Court, @ id. at 1415, the Federal Circuit ruled for the plaintiffs. That decision overruled two earlier decisions, namely Pitman v. United States, 457 F.2d 975 (Ct. Cl. 1972), and Ballam v. United States, 806 F.2d 1017 (Fed. Cir. 1986), to the extent that [the two cases] allow[ed] the navigational servitude to reach fast land above and outside the bed of navigable water. @ Id. at 1416. The Owen decision thereby eliminated the barrier to A recovery for government-caused erosion outside the bed of [a] navigable stream. @ Id. at 1418.

¹⁰In Applegate, plaintiffs owned oceanfront property south of Port Canaveral, Florida. 25 F.3d at 1580. Pursuant to the River and Harbor Act of 1945 which authorized the construction of jetties at Port Canaveral for purposes of constructing a harbor, the Corps built structures which caused the downdrift shoreline to recede. Id. In 1962, Congress authorized and appropriated more than \$5 million dollars for the construction of a sand transfer plant to correct the downshore erosion problem. Id. In 1968, Congress approved a Corps plan to restore the beaches and build the plant. Id. In 1971, the Corps delayed construction pending further research. Id. In 1988, the Corps renewed its plans to build a sand transfer plant. Id. Plaintiffs filed suit in 1992. The Federal Circuit found that the plaintiffs postponed filing in reliance on the Corps' unfulfilled promise build the sand transfer plant. Id. at 1582. Reasoning that A the gradual character of the natural erosion process set in motion by the Corps, compounded by the Government's promises of a sand transfer plant, have indeed made accrual of the landowner's claim uncertain, @ see id. at 1582, the Federal Circuit concluded that the statute of limitations did not bar plaintiffs' suit. Id. at 1584.

¹¹The four types of glacial deposits identified in the St. Joseph vicinity are: (1) moraines, (2) outwash plains, (3) lacustrine, and (4) eolian. Pls.'s Ex. 23 at 7. Moraines, which form along

glacial margins, consist of a complex mixtures of gravel, sand, and clay, a material called glacial till as well as individual layers of gravel, sand, and clay. Id. See also Pls.=Ex. 76 (Steven E. Benton and Richard N. Passero, Geology and Aquifers in Berrien County, Michigan (September 1990)) at 6, 8. Outwash plains are deposits of sand and gravel originating from glacial meltwater. Pls.=Ex. 23 at 7. Lacustrine deposits are composed primarily of clay and appear in lakes where meltwaters have carried fine sediment. Id. Eolian deposits are wind-blown deposits that produce coastal sand dunes. Id.; see also Pls.=Ex. 76 at 10.

¹²Plaintiffs=Exhibit 24 is the July 1997 technical report prepared by the Corps. See Robert Nairn, Peter Zusek, Andrew Morang & Larry Parson, Effectiveness of Beach Nourishment on Cohesive Shores, St. Joseph, Lake Michigan, July 1997.

¹³A Backshore refers to A[t]he area of shore lying between the average high-tide mark and the vegetation. American Heritage Dictionary 131 (4th ed. 2000). A Bluff is a steep headland, promontory . . . or cliff. Id. at 202.

¹⁴All of plaintiffs=properties are located along the shoreline between 5.3 km and 12.6 km south of the St. Joseph's Harbor jetties. See D.'s Mot. Ex. 3 at BN000001 (Road Map of Berrien County Michigan with handwritten notes of plaintiffs= counsel reflecting distance of plaintiffs=properties from the jetties).

¹⁵The section of the shoreline immediately south of the harbor jetties is protected by groins. Pls.=Ex. 24 at 4-5. Groins are defined by the American Heritage Dictionary (4th ed. 2000) as A small jett[ies] extending from a shore to protect a beach against erosion or to trap shifting sands. Id. at 774. The adjacent southerly portion of the shoreline is protected by a revetment constructed by the Chesapeake & Ohio Railroad, and the southernmost portion of the St. Joseph's shoreline is protected by a revetment constructed by the Michigan Department of Transportation. Id. at 5. See also Narrative to Aerial Photographs filed by defendant on March 19, 2001 (Def.'s Narrative) at 2. A comparison of the St. Joseph shoreline assessment first conducted in 1978 and updated in 1989 indicates that the construction of the revetments in or about 1970 has reduced the rate of shoreline recession where the revetments exist, while adjacent shorelines south of the revetments have receded. Pls.=Ex. 24 at 14; Def.'s Narrative at 2.

¹⁶The Depth of closure refers to the beach depth beyond which wave action is no longer able to move . . . sediment. Meadows Dep. at 19-20. A[L]osing sediment to the offshore region [or beyond the depth of closure] loses that sediment forever. Id. at 20. For A[m]ost of the Lake Michigan shoreline that depth [specifically, the depth of closure] ranges between 18 and 21 feet. Beyond that depth we see no significant sediment movement due to waves. Id. at 19.

¹⁷A Report from the Secretary of War dated February 21, 1835, detailing A the survey, plan, and estimate for the improvement of the harbor at the mouth of St. Joseph's river contains a proposal for diverting A the river to flow through a new channel in a more direct line towards [Lake Michigan] and includes a plan to erect crib work of wood and stone to permit A the uninterrupted action of the river to gradually deepen the channel across the sand bar that A obstructs the entrance into the harbor. Pls.=Ex. 48A at 1, 2, 25. The 1835 Secretary of War Report describes the lakeshore as follows:

[Sand] bars have been found where examinations have been made along the lake shore, and are found to run nearly parallel with the shore, and to have about the same depth of water upon them. . . . Good anchorage is found on the outside in fourteen or fifteen feet

water, on clay bottom; and on the inside of the bar the clay is stated to be but thinly covered with sand. No rock is found upon the shores or bottoms or anywhere in the immediate vicinity.

Id. at 3. The copies of the nineteenth century topographical maps and surveys of St. Joseph, Michigan, filed by plaintiffs, reflect various topographical changes following the harbor improvement project referenced in the 1835 Secretary of War Report. For example, the Map of Public Works at St. Joseph, Michigan prepared by the United States War Department Bureau of Topographical Engineers in September 1839 contains notations stating, "sand bottom nearly as low as surfaces of Lake [Michigan] and [St. Joseph's] River, sandy knolls from 10' to 50' high but being rapidly diminished in recent years by effects of winds, this bar is being washed away, and this bar originally 8 ft. above water is now removed." Pls.=Ex. 71.

¹⁸Title 33, United States Code, Section 426i, also referred to as section 111 of the River and Harbor Act of 1968, governs shore damage prevention or mitigation. 33 U.S.C. ' 426i (1986). The statute provided, in pertinent part, that "[t]he Secretary of the Army is authorized to investigate, study, plan, and implement structural and nonstructural measures for the prevention or mitigation of shore damages attributable to Federal navigation works." *Id.* at ' 426i(a).

¹⁹As reflected in a 1982 letter from Michigan Senator Carl Levin to Colonel Robert Vermillion, the Corps' District Engineer in Detroit, the disclosure was made during discovery procedures in a law suit filed by some of Senator Levin's constituents against the Corps for severe erosion of their lakefront property near St. Joseph. *See* Def.=Rep. Ex. 10.

²⁰At deposition, Dr. Meadows testified that the average annual rate of erosion is 1 m/yr. Meadows Dep. at 50. In a 1998 report to the State of Michigan's Department of Environmental Quality regarding Michigan's coastal monitoring program, the Corps stated:

Detailed examination of aerial photography of the survey sites was completed for the purpose of extracting bluff recession rates. . . . In general, the majority of the sites suffer from erosion on the order of 1.5 to 2.0 feet per year, designating these sites as high risk erosion areas.

Exhibit 3 to Meadows Dep. (Lorelle A. Meadows, Guy A. Meadows, Brandy Kuebel, and Hans Van Sumeren, 1997 Project of Special Merit: States of Michigan Coastal Monitoring Program, Final Report (May 26, 1998)) at 12.

²¹The named plaintiff in Owen v. United States, 851 F.2d 1404 (Fed. Cir. 1988), as the executor of the estate of the property owner, filed a takings action alleging that the Corps' dredging activities in the Tombigbee River caused increased riverbank erosion which eventually undermined the property owner's house and caused it to fall into the river. *Id.* at 1405, 1406. In determining whether the erosion loss of the riparian owner's property constituted a compensable taking for which plaintiff could seek recovery, the Federal Circuit considered the scope of the navigational servitude, which enables the government to conduct activities to improve navigation on privately owned property located in the bed of navigable waters without compensating the property owner. *Id.* at 1409. Based on the boundaries of the navigational servitude and unable to discern [a] valid distinction[] between the undermining and permanent loss of fast land (and a house) due to government-caused erosion and the permanent flooding of fast land due to

government improvements to navigation found to be compensable by the Supreme Court,^{@see id.} at 1415, the Federal Circuit overruled two earlier decisions, namely Pitman v. United States, 457 F.2d 975 (Ct. Cl. 1972), and Ballam v. United States, 806 F.2d 1017 (Fed. Cir. 1986). Whether plaintiffs were barred completely from filing suit prior to the Owen decision is not entirely clear. See Boling, 220 F.3d at 1374 (Although plaintiff landowners would have had difficulty in succeeding with their takings claims during the period between the Ballam and Owen decisions, the Federal Circuit concluded that such difficulty did not justify the tolling of the statute of limitations.). For purposes of this motion, the court need not address plaintiffs' argument that they could not have brought their takings actions prior to the decision in Owen.

²² In another part of his testimony, Dr. Meadows pointed out that the effects of erosion have been continuously noticeable but noted that the landowners were often unaware of some of the subsurface processes that were most detrimental to their shoreline properties:

Our research here in the Great Lakes on applying this equilibrium profile concept has shown that during periods of low water level in the Great Lakes, that the profile artificially steepens. This is a time when property owners typically think of having a safe condition because typically beaches are wider during low water level and relatively stable looking, but in reality the profile . . . is steepening during this time and when water levels rise again in the Great Lakes, that artificially steep profile is essentially cocking the gun that goes off causing very rapid erosion of the shoreline.

Id. at 16-17.

²³ Because the shoreline in Applegate was sandy, the promised sand transfer efforts had the potential to cure the shoreline erosion problems. See Applegate, 25 F.3d at 1580, 1582.

²⁴ Defendant observes that the constituent, Mrs. Donna Asselin, became the lead plaintiff in a 1982 tort suit against the Corps for property losses incurred by erosion. D.º Rep. at 10; D.º Rep. Ex. 5(a).

²⁵ The report described the characteristics of cohesive coastlines on the Great Lakes as:

- 1) Wide variation in physical properties such as composition, density, formation; 2) A finite and usually limited sand supply.
- 3) A generally thin layer of protective sand cover.
- 4) The intermittent exposure of her underlying consolidated layer as the result of natural events such as storms.
- 5) Susceptibility of the consolidated underlayer to exposure in areas where the sand supply is interrupted or where the protective sand cover is removed or reduced.
- 6) Susceptibility of the consolidated underlayer to erosion when exposed.
- 7) Wide variation in exposure rates.
- 8) The irreversible nature of the erosion of the consolidated layer.

Pls.=Owen Br. Ex. 2 at 2-3.

²⁶ Among the studies referenced in the 1996 technical report was a study by the Michigan Department of Natural Resources in 1978 comput[ing] the bluff line recession rate for the St. Joseph region to be approximately 1m/yr over a 50-year period.[@] Pls.=Ex. 23 at 9.

²⁷ See footnote 21.

²⁸ According to the Notice of Additional Plaintiffs filed with the court on February 23, 2000, those property owners were: (1) Michael and Janice Anderson; (2) John and Mary Banks; (3) Frank Bunker; (4) Donald and Gail Chapman; (5) J. Thomas Conklin Trust; (6) Gerard and Ruth Cosgrove; (7) Country L.L.C.; (8) Robert and June Cunitz; (9) Marc and Mary Del Mariani; (10) Ehret Michigan Trust; (11) James and Beth Errant; (12) George Gregule; (13) Victoria Jackson; (14) Robert and Patricia Kane; (15) Frank and Charlotte Lahr; (16) Bruce and Jenny Mack; (17) Richard and Nancy Marzke; (18) Thelma McKay; (19) Robert and Maria Melcher; (20) Donald and Judith Miller; (21) Carolyn Morvis Trust; (22) Richard Neuser; (23) Robert and Pamela Pancoast; (24) Ragins Herzl; (25) Dorothy Renner; (26) Leonard Smith; (27) Yolanda Stevens; and (28) Roger and Ann Wilschke.

²⁹ In Cooper, the Federal Circuit considered the question of who is the property owner to whom compensation for a taking is owed when the property ownership changes during the course of a continuous taking. 827 F.2d at 764. The plaintiff in Cooper filed suit alleging a taking of the timbered area of his farm. Id. at 762. The farm had been subjected to unusual flooding by the construction activities of the Army Corps of Engineers on an adjacent waterway. Id. at 762. Over a six-year period, standing flood water on the farm caused seventy-five percent of the trees in the timbered area to die. Id. at 763. Although the plaintiff acquired the property several years after the flooding began on the farm, the court determined that because J.R. Cooper had a property interest in the timber when the taking of the timber became complete[,] . . . he is entitled to compensation for the value of the timber destroyed. Id. at 764. The Federal Circuit observed:

[W]hen a taking is caused by a continuous process, it is not complete, for purposes of determining when the claim arose, until the situation becomes stabilized. [Dickinson, 331 U.S.] at 749. . . .

As in Dickinson, [plaintiff] J.R. Cooper did not acquire legal title to the Cooper farm until after the physical events causing the taking began. That, however, is no impediment to recovery, because the destruction of the trees did not stabilize sufficiently for J.R. Cooper to ascertain proper compensation until after he acquired legal title to the property.

Cooper, 827 F.2d at 764. This court is aware of no authority for reviving a claim for a physical taking. See Palazzolo v. Rhode Island, 121 S.Ct. 2448, 2463 (2001) (While articulating a modified rule for regulatory takings, the Supreme Court has recently reiterated that when there is a physical taking of property . . . in compliance with the law, it is the owner at the time of the taking who is entitled to compensation.) (emphasis in original).

³⁰ Rule 17 provides that [e]very action shall be prosecuted in the name of the real party in interest. RCFC 17.