

In the United States Court of Federal Claims

No. 99-4451 L

c/w 99-4452L, 99-4453L, 99-4454L, 99-4455L, 99-4456L, 99-4457L, 99-4458L, 99-4459L, 99-44510L, 99-44511L, 00-365L, 00-379L, 00-380L, 00-381L, 00-382L, 00-383L, 00-384L, 00-385L, 00-386L, 00-387L, 00-388L, 00-389L, 00-390L, 00-391L, 00-392L, 00-393L, 00-394L, 00-395L, 00-396L, 00-397L, 00-398L, 00-399L, 00-400L, 00-401L, 05-1353L, 05-1381L, 06-72L

(E-Filed: July 21, 2010)

JOHN H. BANKS, ET AL.,)
)
 Plaintiffs,)
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 v.)
)
 THE UNITED STATES,)
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 Defendant.)
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Motions In Limine to Strike Expert Reports; RCFC 26; FRE 702; Daubert
No. 99-4451L

EUGENE J. FRETT, Individually and)
 as Trustee of the Victor J. Horvath)
 and Frances B. Horvath Trust,)
)
 Plaintiff,)
)
 v.)
)
 THE UNITED STATES,)
)
 Defendant.)
)
)
)
)

No. 05-1353L

John B. Ehret, Olympia Fields, IL, for certain plaintiffs in No. 99-4451L, Mark E. Christensen, Chicago, IL, for certain plaintiffs in No. 99-4451L. Eugene J. Frett, Chicago, IL, pro se in No. 05-1353L.

Terry M. Petrie, Denver, CO, Natural Resources Section with whom were Ignacia S. Moreno, Assistant Attorney General, and Mark S. Barron, Environment and Natural Resources Division, United States Department of Justice, Washington, DC, for defendant. Gary W. Segrest and Don C. Erwin, Office of Counsel, United States Army Corps of Engineers, Detroit, MI, of counsel.

ORDER and OPINION

HEWITT, Chief Judge

Before the court are Plaintiffs' Motion to Strike Defendant's OHW M [Ordinary High Water Mark] Expert, Dr. Robert Nairn (plaintiffs' Motion or Pls.' Mot.) filed April 2, 2010, Docket Number (Dkt. No.) 397; United States' Response in Opposition to Plaintiffs' Motion to Strike United States' OHW M Expert, Dr. Robert Nairn (defendant's Response or Def.'s Resp.) filed April 26, 2010, Dkt. No. 402; and Plaintiffs' Reply in Support of Their Motion to Strike Defendant's OHW M Expert, Dr. Robert Nairn (plaintiffs' Reply or Pls.' Reply) filed May 10, 2010, Dkt. No. 404. For the following reasons, plaintiffs' Motion is DENIED.

I. Background

Plaintiffs consist of several dozen individuals who own property in Michigan "along a four and one-half mile stretch of the eastern shoreline of Lake Michigan south of St. Joseph Harbor." Banks v. United States (Banks II), 314 F.3d 1304, 1306 (Fed. Cir. 2003).¹ Plaintiffs allege that the United States Army Corps of Engineers (Corps), through its construction and maintenance of certain jetties within St. Joseph Harbor, "ha[s] interfered with the natural littoral flow of sand and river sediment and caused damage to

¹ Notwithstanding the court's May 4, 2010 Opinion, see Docket Number (Dkt. No.) 403, the court uses the following shorthand for certain of the opinions issued by this court and the opinion of the United States Court of Appeals for the Federal Circuit: Banks v. United States (Banks I), 49 Fed. Cl. 806 (2001); Banks v. United States (Banks II), 314 F.3d 1304 (Fed. Cir. 2003); Banks v. United States (Banks III), 68 Fed. Cl. 524 (2005); Banks v. United States (Banks IV), 71 Fed. Cl. 501 (2006); Banks v. United States (Banks V), 75 Fed. Cl. 294 (2007); Banks v. United States (Banks VI), 76 Fed. Cl. 686 (2007); Banks v. United States (Banks VII), 78 Fed. Cl. 603 (2007); and Banks v. United States (Banks VIII), 88 Fed. Cl. 665 (2009).

the lakebed,” which has effected “a gradual and continued taking” of plaintiffs’ shoreline property. Id.

The activities of the Corps affecting St. Joseph Harbor and the eastern shoreline of Lake Michigan began in the 1830s. Id. The Corps constructed the jetties in 1903. Id. In 1950 the Corps began a “thirty-nine year construction project of installing [sandtight] steel sheet pilings” around the jetties. Banks v. United States (Banks III), 68 Fed. Cl. 524, 525, 535 (2005). The parties agree that the jetties in St. Joseph Harbor have “‘significantly increased the annual rate of shoreline erosion,’ which, without human intervention, occurs naturally at a rate of approximately one foot per year.” Banks II, 314 F.3d at 1306 (quoting Banks v. United States (Banks I), 49 Fed. Cl. 806, 818 (2001)). Since the mid-1970s, the Corps has “‘acknowledged the longstanding and significant exacerbation of erosion caused by its harbor jetties.’” Id. (quoting Banks I, 49 Fed. Cl. at 817). On summary judgment, the court determined that the claims were time-barred. Banks I, 49 Fed. Cl. at 825-26. On appeal, the United States Court of Appeals for the Federal Circuit (Federal Circuit) held that “[w]ith the mitigation efforts underway, the accrual of plaintiffs’ claims remained uncertain until the Corps’ 1996 Report, 1997 Report, and 1999 Report collectively indicated that [the shoreline] erosion was permanent and irreversible.” Banks II, 314 F.3d at 1310. The Federal Circuit concluded that, because “[t]he statute of limitations did not begin to run until the Corps issued the 1996, 1997, and 1999 Reports,” plaintiffs’ complaints were timely. Id.

Pursuant to Section 111 of the River and Harbor Act of 1968, Pub. L. No. 90-483, 82 Stat. 731, 735 (1970),² the Corps prepared a proposal in 1974 to mitigate the shoreline erosion attributable to the jetties in St. Joseph Harbor. Banks II, 314 F.3d at 1306. The Corps’ mitigation efforts included: providing fine sand for “feeder beaches ‘to nourish the areas suffering shore damage’” for over fifteen years, depositing coarse sediment material on the St. Joseph Harbor shoreline at least five times between 1986 and 1993 and “placing barge-loads of large rocks into the lake in 1995.” Id. at 1306-07. Technical reports prepared by the Corps addressed the progress of the Corps’ mitigation efforts and indicated “that the [shoreline] erosion was permanent and irreversible.” Id. at 1307.

In Banks III, the court cited to the United States Court of Appeals for the Federal Circuit for the proposition that landowners may be compensated for damage to “‘land located above or outside . . . the high water mark at the time of construction.’” Banks III, 68 Fed. Cl. at 534 (emphasis omitted) (quoting Owen v. United States, 851 F.2d 1404,

² “Section 111 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.’” Banks II, 314 F.3d at 1306 (quoting River and Harbor Act of 1968, Pub. L. No. 90-483, § 111, 82 Stat. 731, 735 (1970)).

1412 (Fed. Cir. 1988) (en banc)); see also Banks v. United States (Banks IV), 71 Fed. Cl. 501, 503 (2006) (“At issue is the extent of the United States’ navigational servitude, as defined by the high water mark or ordinary high water mark, within which the United States cannot be liable for an alleged taking.”). The court concluded that

the proper period for evaluation of a plaintiff’s claim is from the date of the plaintiff’s acquisition of the property to the claim accrual date of January 2000, and that the appropriate date on which to measure the high water mark is the date of the particular plaintiff’s property acquisition, but not earlier than 1950, the date the Corps began its . . . construction project at the St. Joseph Harbor pier.

Banks IV, 71 Fed. Cl. at 504 (citations omitted) (citing Banks III, 68 Fed. Cl. 530-33). The court denied plaintiffs’ subsequent motion for clarification of the term “high water mark.” Id. at 509. In doing so, the court acknowledged that federal case law uses the terms ordinary high water mark and high water mark interchangeably and stated that “despite any distinction in nomenclature, federal case law and regulations, in their use of the different terms ‘high water mark’ and ‘ordinary high water mark,’ refer to the same boundary.” Id. at 506.

After the 2007 trial on liability, the court concluded that defendant is liable for a percentage of certain individual plaintiffs’ “total erosion above the ordinary high water mark that occurred after any such plaintiff’s acquisition of the property (but in no case earlier than 1950).” Banks v. United States (Banks VII), 78 Fed. Cl. 603, 656-57 (2007). Although the “location of the high water mark was not addressed in the trial of liability,” the court noted that “[t]he subject will, however, necessarily arise in any trial of damages.” Id. at 607 n.8.

The parties are now engaged in discovery in preparation for the damages phase of litigation. On September 14, 2009, the court entered an expert discovery order establishing the dates for the parties’ disclosures of, inter alia, high water mark experts. See Order of Sept. 14, 2009, Dkt. No. 328. On November 17, 2009 plaintiffs filed an Unopposed Motion for an Enlargement of Time to Disclose Their OHWM Expert Witnesses (Pls.’ [First] Unopposed Mot.), Dkt. No. 366, because of defendant’s failure promptly to respond to plaintiffs’ requests for production of documents. Pls.’ [First] Unopposed Mot. 4-6. The court granted plaintiffs’ motion on November 20, 2009. Order of Nov. 20, 2009, Dkt. No. 368. On December 30, 2009 plaintiffs filed a second Unopposed Motion for an Extension of Time to Disclose Expert Witnesses (Pls.’ [Second] Unopposed Mot.), Dkt. No. 378, because of defendant’s three-month delay in “fully and completely satisfy[ing] [p]laintiffs’ discovery request, thereby delaying [p]laintiffs’ OHWM expert’s ability to properly and adequately draft his expert report,”

Pls.’ [Second] Unopposed Mot. 5. The court granted plaintiffs an extension of time until February 3, 2010 to serve on defendant its OHWM expert disclosures and granted defendant an extension of time until March 5, 2010 to disclose its OHWM experts. Order of Dec. 30, 2009, Dkt. No. 379. On February 3, 2010 plaintiffs disclosed the report of their OHWM expert, Dr. Guy Meadows (Meadows Report or Meadows Rpt.), Pls.’ Mot. 3, and by March 5, 2010, defendant disclosed the report of its OHWM expert, Dr. Robert Nairn (2010 Nairn Report, 2010 Report or 2010 Nairn Rpt.),³ compare Def.’s Resp. 3 (“On March 4, 2010, the United States provided Plaintiffs with its disclosures for its expert on OHWM, Dr. Robert Nairn.”) with Pls.’ Mot. 3 (“On March 5, 2010, [p]laintiffs’ counsel received [d]efendant’s purported disclosure of Dr. Robert Nairn as its OHWM expert.”). Plaintiffs now move the court to strike the 2010 Nairn Report. Pls.’ Mot. 1-2.

Plaintiffs argue that the 2010 Nairn Report should be struck in its entirety because it violates Rules 26(a)(2) and 37(c) of the Rules of the United States Court of Federal Claims (RCFC) and Rule 702 of the Federal Rules of Evidence (FRE). Pls.’ Mot. 1, 6-7. Specifically, plaintiffs allege the following: the 2010 Nairn Report relies on unreliable scientific technology; the 2010 Nairn Report relies on data that is not relevant to determining the 1950 OHWM; and plaintiffs will be prejudiced by the unreliable and irrelevant 2010 Nairn Report. Id. at 2-3, 18. In its response, defendant contends that plaintiffs’ Motion relies on “inaccurate representations,” “is premised on an improper application of applicable law” and is procedurally premature. Def.’s Resp. 1 n.1, 3. The court, however, treats plaintiffs’ Motion as a motion in limine intended to promote the efficiency of expert discovery in compliance with RCFC 26.⁴ See Reese v. Herbert, 527

³ Dr. Robert Nairn’s Report (2010 Nairn Report or 2010 Nairn Rpt.) is attached to Plaintiffs’ Motion to Strike Defendant’s OHWM [Ordinary High Water Mark] Expert, Dr. Robert Nairn (plaintiffs’ Motion or Pls.’ Mot.), Dkt. No. 397, as Exhibit B, and Dr. Guy Meadows’ Report (Meadows Report or Meadows Rpt.) is attached to United States’ Response in Opposition to Plaintiffs’ Motion to Strike United States’ OHWM Expert, Dr. Robert Nairn (defendant’s Response or Def.’s Resp.), Dkt. No. 402, as Exhibit 1. A 2002 report issued by W.F. Baird & Associates Coastal Engineers Ltd. (2002 Baird Report or 2002 Baird Rpt.) and a 2006 report authored by Dr. Nairn (2006 Nairn Report or 2006 Nairn Rpt.), see discussion infra Part II.B.1.a, are attached to plaintiffs’ Motion as Exhibits C and F, respectively. A 2006 report authored by Dr. Grahame Larson (2006 Larson Report or 2006 Larson Rpt.), see discussion infra Part II.B.1.b, is attached to plaintiffs’ Motion as Exhibit D. All page citations refer to the page numbers of the exhibits as they appear on the electronic docket for the case, Docket Number 99-4451.

⁴ Rule 26(a)(2) of the Rules of the United States Court of Federal Claims (RCFC) specifies that an expert’s testimony must be accompanied by a written report that discloses, *inter alia*, “the basis and reasons for [the opinions];” “the data or other information considered by the
(continued...)

F.3d 1253, 1266 (11th Cir. 2008) (“[T]he expert witness discovery rules are designed to allow both sides in a case to prepare their cases adequately and to prevent surprise.” (quoting Cooper v. Southern Co., 390 F.3d 695, 728 (11th Cir. 2004))). Because the court does not find persuasive defendant’s argument that plaintiffs’ Motion is premature, the court examines the Motion on the merits.

II. Discussion

A. The Admissibility of Expert Testimony Generally

FRE 702 governs the admissibility of expert testimony:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. The admission of expert testimony is within the discretion of the trial court. Sundance, Inc. v. DeMonte Fabricating Ltd., 550 F.3d 1356, 1360 (Fed. Cir. 2008). The United States Supreme Court has described the trial court as a “gatekeeper” with the duty to “ensur[e] that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” Kumho Tire Co. v. Carmichael (Kumho Tire), 526

⁴(...continued)

witness in forming [the opinions];” and “any exhibits that will be used to summarize or support [the opinions].” RCFC 26(a)(2)(B). If a party does not comply with the provisions set forth in RCFC 26(a)(2)(B), “any other party may move to compel disclosure and for appropriate sanctions” pursuant to RCFC 37(a)(3)(A). RCFC 37(a)(3)(A); see also RCFC 37(c)(1) (“If a party fails to provide information or identify a witness as required by RCFC 26(a) . . . , the party is not allowed to use [the withheld] information or witness to supply evidence on a motion, at a hearing, or at a trial unless the failure was substantially justified or is harmless.”). The nondisclosing party has the burden of establishing that a failure to disclose was substantially justified or harmless. Mitchell v. Ford Motor Co., 318 Fed. App’x 821, 824 (11th Cir. 2009) (unpublished decision). If the court finds that a party has failed to comply with Rule 26, the court may strike the expert’s testimony. See Smith v. Botsford Gen. Hosp., 419 F.3d 513, 516-17 (6th Cir. 2005) (holding that the trial court was within its discretion when it struck an expert’s testimony because the expert failed to disclose information required under Rule 26 in a timely manner). Other than discussing RCFC 26(a)(2)(B) and RCFC 37(c)(1) generally, plaintiffs do not rely on the RCFC in their Motion. See Pls.’ Mot. 6-7.

U.S. 137, 141 (1999) (quoting Daubert v. Merrell Dow Pharms., Inc. (Daubert), 509 U.S. 579, 597 (1993)). The trial court’s gatekeeping duties include assessing scientific, technical or any other type of expert testimony. Id. at 147. The rationale behind the gatekeeping requirement is “to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” Id. at 152.

In Daubert, the Supreme Court established a two-prong test for the admissibility of expert evidence: the trial court must determine if the expert’s testimony “both rests on a reliable foundation and is relevant to the task at hand.” Daubert, 509 U.S. at 597. Under the first prong, the trial court should consider: whether the methodologies can be and have been tested; whether the theories have been peer-reviewed and published; the existence of standards governing the technique; any known or potential rate of error; and acceptance of the methodologies within the relevant scientific or technical community. Id. at 593-94. In Kumho Tire, the Supreme Court encouraged the trial court to consider additional aspects of the expert’s testimony in order to determine admissibility. Kumho Tire, 526 U.S. at 151 (“[In Daubert, the Supreme Court] made clear that its list of factors was meant to be helpful, not definitive.”). The Supreme Court recognized that the trial court “must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.” Id. at 152. As to the second Daubert prong, the Court concluded that relevance requires that a fit exist between the proffered testimony and the issue for consideration and resolution at trial. Daubert, 509 U.S. at 591-92 (“[T]he evidence or testimony [must] ‘assist the trier of fact to understand the evidence or to determine a fact in issue.’” (quoting Fed. R. Evid. 702)). Even under Daubert, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” Id. at 596. As with other testimony, expert testimony that is both reliable and relevant may be challenged under FRE 403, which permits the exclusion of evidence on grounds of prejudice, confusion or waste of time. See Fed. R. Evid. 403.

B. The 2010 Nairn Report⁵

⁵ When the admissibility of an expert’s findings are challenged, the court must first consider the qualifications of the expert. In its trial opinion on liability, the court acknowledged Dr. Nairn’s credentials and his extensive coastal engineering experience. See Banks V, 75 Fed. Cl. at 302. Plaintiffs’ liability trial expert, Dr. Meadows, also acknowledged Dr. Nairn’s experience. Id. (“Dr. Meadows . . . stated that Dr. Nairn ‘probably is the top modeler in the Great Lakes region’ and that he could not ‘think offhand of anyone in the near shore sediment

Plaintiffs contend that the 2010 Nairn Report relies on 2001 LIDAR (Light Detection and Ranging), which provides topographic data, to determine bluff heights of plaintiffs' individual shoreline property. Pls.' Mot. passim. The National Oceanic and Atmospheric Administration (NOAA), which is a division of the United States Department of Commerce, defines LIDAR as

an active sensor, similar to radar, that transmits laser pulses to a target and records the time it takes for the pulse to return to the sensor receiver. This technology is currently being used for high-resolution topographic mapping by mounting a LIDAR sensor, integrated with Global Positioning System (GPS) and inertial measurement unit (IMU) technology, to the bottom of aircraft and measuring the pulse return rate to determine surface elevations.

Id. at 5; NOAA Coastal Services Center, http://www.csc.noaa.gov/crs/rs_apps/sensors/lidar.htm (last visited July 19, 2010). NOAA further states that LIDAR data can be used to address "shoreline and beach volume changes." Pls.' Mot. 6; NOAA Coastal Services Center, http://www.csc.noaa.gov/crs/rs_apps/sensors/lidar.htm (last visited July 19, 2010).

The 2010 Nairn Report describes LIDAR data as "the best available source for bluff height." 2010 Nairn Rpt. 42; see Pls.' Mot. 9, 11. However, plaintiffs claim that "[p]rior to the damages phase of trial, [d]efendant's report went to great lengths to explain how unreliable, inaccurate, and value-deficient LIDAR data is." Pls.' Mot. 11. Plaintiffs accuse Dr. Nairn of "abandon[ing] his and [d]efendant's previous scientific methodologies and opinions in what amounts to an exercise in true advocacy, rather than sound science at the damages phase of the trial." Id. at 2. Plaintiffs further contend that Dr. Nairn's use of 2001 LIDAR data is not relevant to determining the 1950 topography of plaintiffs' property. Id. at 17.

As an initial matter, defendant clarifies that the 2010 Nairn Report does not employ 2001 LIDAR data to determine OHWM delineations. Def.'s Resp. 8-9, 13 n.6; see also Def.'s Resp. 9 n.3 (noting that Dr. Nairn calculated plaintiffs' property areas based on OHWM delineations). Instead, Dr. Nairn employs a geomorphic approach to determine OHWM delineations. Id. at 15; 2010 Nairn Rpt. 8, 10-11. The 2010 Nairn Report defines its "geomorphic-based approach" to determining OHWM location as applying the regulatory definition of OHWM: "the line on the shore established by

dynamics area who has done more or accomplished more.'"). Further, Dr. Nairn's curriculum vitae demonstrates his expertise in a number of areas, including "Coastal Processes and Engineering." See 2010 Nairn Rpt. Appendix (App.) E, at 1.

fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.” 2010 Nairn Rpt. 7 (quoting 33 C.F.R. 329.11(a)(1)). Dr. Nairn chooses a geomorphic approach--which is based on historical photography, satellite imagery, and property surveys and inspections--as distinguished from a LIDAR-derived elevation-based approach because “[t]he topographic information required to apply an elevation-based approach is simply unavailable for most or all of [p]laintiff properties prior to 2001.” *Id.* at 8. Defendant asserts, and plaintiffs acknowledge, that Dr. Nairn utilizes bluff height estimates derived from 2001 LIDAR for two purposes: (1) to rebut Dr. Meadows’ approach to calculating volume of property lost, Def.’s Resp. 13 n.6; Pls.’ Reply 3; see 2010 Nairn Rpt. 42-43, 48; and (2) to calculate a confidence estimate or potential error rate for Dr. Nairn’s OHWM calculations, Def.’s Resp. 8-9; see Pls.’ Reply 3.

Dr. Nairn first uses the 2001 LIDAR data to determine bluff heights for each of plaintiffs’ individual properties in an effort to rebut the approach Dr. Meadows employs in his sand loss volume calculations. Def.’s Resp. 13 n.6; see 2010 Nairn Rpt. 42-43, 48, 50, 52; Meadows Rpt. 17. Dr. Nairn specifically states that he calculates volumetric loss of plaintiffs’ property--with LIDAR-derived bluff heights--for the sole purpose of rebutting Dr. Meadows’ calculations. 2010 Nairn Rpt. 48; see also 2010 Nairn Rpt. 52 (“Table 6.4 - Calculation of Volume Lost based on Appropriate MDEQ 30-yr Setbacks, Revised Frontages and LIDAR-Derived Bluff Heights”) (emphases added). Dr. Nairn also uses 2001 LIDAR-derived bluff heights to calculate confidence estimates of his OHWM delineations. *Id.* at 29-30. Dr. Nairn characterizes this use as a “fall back position” stating that “the bluff slope method to define confidence was applied for only a minimal number of cases (six out of forty confidence estimates in 1973; one out of forty confidence estimates in 2009), and none for the remaining imagery sets.” *Id.* at 29. For most of plaintiffs’ properties, Dr. Nairn uses the root mean square error⁶ “associated with the image from which the OHWM was derived” to calculate confidence estimates. *Id.* at 28; see Def.’s Resp. 9. However, in a small number of cases, “the OHWM was difficult to delineate due to dense vegetation cover or shadow effect . . . [so] [a]n approach using bluff slopes was applied to help determine confidence.” 2010 Nairn Rpt. 29. Whether Dr. Nairn’s use of 2001 LIDAR data either to rebut Dr. Meadows’ calculations or to calculate confidence estimates equates to Dr. Nairn’s reliance “upon 2001 LIDAR data for his OHWM analysis”--as plaintiffs contend, Pls.’ Reply 7--is a question of fact that

⁶ The court understands the root mean square error referred to in the 2010 Nairn Report, 2010 Nairn Rpt. 28, to refer to “the square root of the mean squared error.” Graham Upton & Ian Cook, A Dictionary of Statistics 130 (rev. 2d ed. 2008).

should be presented at trial. The court's present concern is solely whether the 2010 Nairn Report is admissible under FRE 702. Accordingly, the court addresses below whether the 2010 Nairn Report utilizes "unreliable scientific technology and [irrelevant] information." Id.; see infra Parts II.B.1 (discussing reliability of the 2010 Nairn Report), II.B.2 (discussing relevance of the 2010 Nairn Report).

1. The 2010 Nairn Report Is Reliable

Plaintiffs contend that the 2010 Nairn Report's use of 2001 LIDAR data is unreliable for two reasons: defendant stated in 2002 that LIDAR technology is inaccurate and unreliable, and the 2010 Nairn Report's reliance on 2001 LIDAR data contradicts a previous bluff height analysis conducted by Dr. Nairn in 2006.⁷ Pls.' Mot. 9-10.

a. 2002 Baird Report

With respect to their first allegation, plaintiffs point to a 2002 St. Joseph Harbor sediment budget report (2002 Baird Report or 2002 Baird Rpt.) issued by W.F. Baird & Associates Coastal Engineers Ltd., of which Dr. Nairn is a principal and employee. Id. at 10; Pls.' Reply 8; 2002 Baird Rpt. 11. Plaintiffs contend that the 2002 Baird Report "reject[s] the use of [LIDAR] data to determine bluff heights." Pls.' Mot. 4. Plaintiffs

⁷ In their Reply, plaintiffs introduce additional LIDAR limitations identified by the National Oceanic and Atmospheric Administration (NOAA). Pls.' Reply 8-11. These limitations include difficulty in mapping surfaces with dense vegetation; limited accuracy due to errors in onboard GPS; and poor returns caused by water, clouds or fog absorbing the LIDAR laser's near-infrared radiation. Id. at 8-9 (citing NOAA Coastal Services Center, http://www.csc.noaa.gov/crs/rs_apps/sensors/lidar.htm (last visited July 19, 2010)). Plaintiffs contend that at least two of these conditions were present during the collection of the 2001 LIDAR data: dense vegetation and poor weather conditions. Id. at 9. As support for its dense vegetation claim, plaintiffs cite to defendant's Response that 2001 LIDAR-derived bluff heights were used to calculate confidence estimates in a small number of cases when the "OHWM was difficult to delineate . . . due to dense vegetation." Id. (quoting Def.'s Resp. 9). The court notes that while there may be dense vegetation at the OHWM location, it does not necessarily follow that dense vegetation exists at the bluff's crest. See 2010 Nairn Rpt. 29-30 (explaining that "where the bluff toe position cannot be discerned from an air photo," because it may be covered with vegetation, "the fall back position is to rely on the bluff crest"--which is "usually discernable where the toe is not" and is derived from 2001 LIDAR topographic data). Plaintiffs also assert that the weather conditions ranged from cloudy to stormy on the three dates in which the 2001 LIDAR data were collected. Pls.' Reply 10 & 10 n.1. The court finds that these arguments pertain to the weight that the court should afford to the 2001 LIDAR data and thus should be presented during trial.

claim the 2002 Baird Report, issued for the Corps, contains several passages that question the reliability of LIDAR data, Pls.' Mot. 10-11, including the following:

Although [LIDAR] technology has the potential to provide extremely dense data coverage, there are several limitations with the current technology, including: 1) often poor coverage at the harbor mouths due to water clarity issues . . . , 2) highly variable spatial coverage (for example, there is very little overlap between the 1995, 1999, and 2001 [LIDAR] surveys at St. Joseph), and 3) unreliable results in the swash zone due to turbulence from breaking waves

2002 Baird Rpt. 11. Plaintiffs also cite to a passage in the 2002 Baird Report that “raises questions about the accuracy” of the 1997 to 1999 LIDAR bathymetric data for Shoreham, Michigan--which is located 8 kilometers south of the St. Joseph Harbor jetties. Pls.' Mot. 10-11; 2002 Baird Rpt. 22-24.

In response, defendant asserts that the 2002 Baird Report “makes no reference at all to the use of LIDAR data to calculate bluff heights.” Def.'s Resp. 10. Instead, the 2002 Baird Report's discussion of LIDAR data “relates exclusively to the value of LIDAR as a source of bathymetric⁸ data for that specific study.” Id. Defendant further contends that the 2002 Baird Report does not “criticize the intrinsic value of LIDAR data generally,” rather, it “addresses the difficulty of using multiple collections of LIDAR data to create an integrated three-dimensional grid comparing historic to recent bathymetric data.” Id.

Plaintiffs' argument that the 2002 Baird Report's criticisms of LIDAR technology “are not limited to bathymetric applications,” Pls.' Reply 8, is not persuasive. The 2002 Baird Report explicitly states that it utilizes LIDAR data as a source of “historic and recent bathymetric data.” 2002 Baird Rpt. 10. In fact, the very passages that plaintiffs cite indicate that most of Baird's criticisms about the use of LIDAR data were related to “water clarity issues,” or “turbulence from breaking waves,” id. at 11, neither of which would affect bluff height analyses--the purported use of the LIDAR data in the 2010 Nairn Report. 2010 Nairn Rpt. 29-30, 42-43. Further, with respect to the “variable spacial coverage” criticism, the 2002 Baird Report utilized multiple data sets in an attempt to “complete 3D historic to recent lake bed comparisons.” 2002 Baird Rpt. 10. The 2010 Nairn Report, in contrast, does not attempt to employ a three-dimensional comparison of historic to recent data. The court also questions whether the criticisms set forth in the 2002 Baird Report of 1997 to 1999 LIDAR bathymetric data for Shoreham,

⁸ Bathymetry is defined as “[t]he measurement of the depth of bodies of water.” The American Heritage Dictionary of the English Language 152 (4th ed. 2000).

Michigan, 2002 Baird Rpt. 22-24, are applicable to the 2010 Nairn Report's use of 2001 LIDAR bluff height data for St. Joseph, Michigan. The 2002 Baird Report's criticisms of LIDAR data do not require the court to find the 2010 Nairn Report unreliable.

b. 2006 Nairn Report

With respect to plaintiffs' second allegation--that the 2010 Nairn Report's reliance on 2001 LIDAR data contradicts a previous bluff height analysis conducted by Dr. Nairn--plaintiffs point to a 2006 report authored by Dr. Nairn (2006 Nairn Report or 2006 Nairn Rpt.) during the liability phase of this litigation. Pls.' Mot. 11, Ex. F (2006 Nairn Rpt.); see 2006 Nairn Rpt. 4-109 to 4-115. One of the objectives of the 2006 Nairn Report was "to evaluate the impact of [St. Joseph] harbor on shore erosion processes . . . due to the interruption of littoral and river sand supply." 2006 Nairn Rpt. 4-109. One means of accomplishing this objective was to determine "historic shoreline and bluff recession rates," which can act as a proxy for changes in the OHWM position. Id. at 4-112. The 2006 Nairn Report begins this discussion with a section entitled "Review of the Geology South of the Harbor" (Review Section), which reviews the geology and stratigraphy⁹ of four areas or "reaches" south of the harbor and also estimates bluff heights for each reach.¹⁰ Id. at 4-109 to 4-112. Plaintiffs reside in Reaches 2 through 4. Id.

Plaintiffs point to the Review Section in support of their contention that the 2006 Nairn Report relies on stratigraphy to estimate bluff height ranges for Reaches 2 through 4. Pls.' Mot. 13. Plaintiffs argue that the 2001 LIDAR-derived bluff height analysis employed by Dr. Nairn in his 2010 Report "contradicts" the methodology he employed in his 2006 Report. Id. at 11, 13. Plaintiffs state that "prior to the damages phase of trial, [d]efendant and Dr. Nairn used . . . stratigraphy to determine bluff heights, even though they had access to the 2001 LIDAR data." Id. at 13. Plaintiffs then compare the 2010 Nairn Report's property-specific LIDAR-derived bluff height calculations, see supra Part II.B (discussing Dr. Nairn's use of 2001 LIDAR-derived bluff height calculations to rebut Dr. Meadows' sand loss volume calculations), to the 2006 Nairn Report's range of bluff heights for Reaches 2 through 4. Pls.' Mot. 14-15; Def.'s Resp. 13. Plaintiffs contend that a review of this comparison "reveals significant differences

⁹ Stratigraphy is defined as "[t]he study of rock strata, especially the distribution, deposition, and age of sedimentary rocks." The American Heritage Dictionary of the English Language 1712 (4th ed. 2000).

¹⁰ The Review Section, 2006 Nairn Rpt. 4-109, was derived from the 2006 Larson Report, see supra n.3, which estimated that bluff heights north and south of St. Joseph Harbor range between 16.5 and 88.5 feet. Pls.' Mot. 12-13 (citing 2006 Larson Rept. 19-20).

between Dr. Nairn's 2006 bluff height ranges and his 2010 bluff heights for specific properties." Pls.' Mot. 15. Plaintiffs cite to several cases as support for their assertion that the court should exclude an expert's opinion if it concludes that the expert has contradicted himself or has "depart[ed] from [his] own established standards." Id. at 12.

Defendant responds that both the methodology employed and the bluff height calculations advanced by Dr. Nairn in his 2010 Report are consistent with those in his 2006 Report. Def.'s Resp. 11-13. With respect to Dr. Nairn's methodology in the 2006 Report, defendant states that Dr. Nairn "actually used the 2001 LIDAR data set to calculate bluff heights in his 2006 [R]eport." Id. at 11. In fact, the "Shoreline and Bluff Recession Rates" section--which immediately follows the Review Section--lists the data sources that were used in ascertaining shore line position and bluff recession rates, one of which is 2001 LIDAR data. 2006 Nairn Rpt. 4-112 to 4-115. This section specifically states that 2001 LIDAR data "was used to determine the bluff height." Id. at 4-115. Thus, the court does not find that Dr. Nairn has employed inconsistent methodologies or that Dr. Nairn has departed from his "own established standards." See Pls.' Mot. 12.

As for the alleged inconsistencies in bluff height calculations, defendant states that "[p]laintiffs appear to suggest that [the 2010] calculations lack reliability because some of the parcel-specific measurements do not reach the outermost figures Dr. Nairn estimated for the regional range in 2006." Def.'s Resp. 13. However, as defendant also points out, each of the property-specific bluff height estimates set forth in Dr. Nairn's 2010 Report falls within the ranges presented in his 2006 Report. See Def.'s Resp. 13-14. It is also clear that the bluff height calculations are being presented for different purposes. See supra Part II.B (discussing the 2010 Nairn Report's use of 2001 LIDAR data to calculate individual bluff heights to rebut Dr. Meadows' sand loss volume calculations); 2006 Nairn Rpt. 4-109 to 4-112 (providing a summary estimate for three reaches of plaintiffs' properties); Pls.' Mot. 13 (noting that Dr. Nairn's 2006 Report "summariz[ed] [p]laintiffs' bluff heights"). The court does not find it unreasonable that the forty property-specific LIDAR-derived bluff height estimates provided in the 2010 Nairn Report "do not reach the outermost figures Dr. Nairn estimated for the regional range in 2006." Def.'s Resp. 13; see Pls.' Mot. 13 (explaining that the liability phase of trial, for which Dr. Nairn issued his 2006 Report, did not focus on plaintiffs' individual properties). Defendant asserts that Dr. Nairn has not reached a "finding in his [2010] [R]eport that contradicts any finding that Dr. Nairn has reached previously in this litigation."¹¹ Def.'s Resp. 14. The court agrees.

¹¹ Plaintiffs also briefly mention a 2006 United States Army Corps of Engineers Report (2006 Corps Report or 2006 Corps Rpt.) that allegedly used stratigraphy to estimate bluff height ranges. Pls.' Mot. 13. As with the 2006 Nairn Report, the 2006 Corps Report specifically

The court further finds that plaintiffs' reliability arguments are based largely on fact rather than law, as the foregoing discussion of plaintiffs' arguments and defendant's responses makes clear. The court therefore agrees with defendant's observation that "[r]ather than argue that Dr. Nairn's [2010] [R]eport does not satisfy the requirements for admitting expert testimony, [p]laintiffs appear to be arguing that Dr. Nairn's methods and results are inaccurate" Id. at 14. The court does not view the 2010 Nairn Report as evidence of "[d]efendant's and Dr. Nairn's rejection of their own science and prior opinions." Pls.' Mot. 15-16. Rather, the court agrees with defendant that these arguments are to be presented at trial and that plaintiffs have "fail[ed] to account for the procedural posture of this case." Def.'s Resp. 15. At trial, plaintiffs "will have a full opportunity to explore the credibility (including the consistency of viewpoints) of Dr. Nairn and other witnesses and the reliability of particular conclusions supported in the parties' expert reports." Banks v. United States (Banks V), 75 Fed. Cl. 294, 301 (2007) (stating that plaintiffs were inappropriately arguing facts and not law as a basis for striking Dr. Nairn's 2006 Report). The court therefore determines that plaintiffs' reliability criticism of the 2010 Nairn Report provides insufficient support for a motion in limine to strike.

2. The 2010 Nairn Report Is Relevant

Plaintiffs also contend that Dr. Nairn's reliance on 2001 LIDAR data in calculating bluff heights is not relevant to determining the 1950 OHWM. Pls.' Mot. 16-17. Plaintiffs rely on the court's August 11, 2009 Opinion and Order, Dkt. No. 324, for the proposition that only the 1950 OHWM--and its corresponding topographic and bathymetric data--is relevant in this case. Pls.' Mot. 17. Plaintiffs state that the 1950 topography of plaintiffs' property is "necessarily very different from the topography of [p]laintiffs' properties 50 years later." Id.

Defendant asserts that "[p]laintiffs are once again 'arguing facts and not law.'" Def.'s Resp. 16 (quoting Banks V, 75 Fed. Cl. at 301). Defendant claims that "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means' to contest [Dr. Nairn's] conclusions." Id. (quoting Daubert, 509 U.S. at 596). The court agrees with defendant. Further, the court is not convinced that, as plaintiffs contend, the 2010 Nairn Report will offer no assistance to the court in understanding or resolving this dispute. See Pls.' Mot. 17. Accordingly, the court finds that plaintiffs have not offered

references 2001 LIDAR data as being "used to determine the bluff height." Plaintiffs' Reply in Support of Their Motion to Compel Defendant to Produce Certain Discovery Information, Dkt No. 344, Ex. B (2006 Corps Rpt.), at 3.

sufficient support for a motion in limine to strike based upon the relevance of the 2010 Nairn Report.

3. Plaintiffs Are Not Prejudiced by the 2010 Nairn Report

Plaintiffs' final argument, that they will be prejudiced by Dr. Nairn's "unreliable and irrelevant" 2010 Report, see id. at 18; Pls.' Reply 5, 13-14, is rendered MOOT by the court's conclusions in Parts II.B.1 and II.B.2 above.

III. Conclusion

Based on the foregoing, the court DENIES Plaintiffs' Motion to Strike Defendant's OHWM Expert, Dr. Robert Nairn.

IT IS SO ORDERED.

s/ Emily C. Hewitt
EMILY C. HEWITT
Chief Judge