

United States Court of Appeals for the Federal Circuit

ARKANSAS GAME & FISH COMMISSION,
Plaintiff-Cross-Appellant,

v.

UNITED STATES,
Defendant-Appellant.

2009-5121, 2010-5029

Appeals from the United States Court of Federal
Claims in No. 05-CV-381, Judge Charles F. Lettow.

Decided: December 3, 2013

JAMES F. GOODHART, Arkansas Game & Fish Commission, of Little Rock, Arkansas, argued for plaintiff-cross appellant. With him on the brief were JOHN P. MARKS, Of counsel on the brief were JULIE D. GREATHOUSE, MATTHEW N. MILLER, and KIMBERLY D. LOGUE, Perkins & Trotter, PLLC, of Little Rock, Arkansas.

ROBERT J. LUNDMAN, Attorney, Environment & Natural Resources Division, United States Department of Justice of Washington, DC, argued for defendant-appellant. With him on the brief was IGNACIA S. MORENO, Assistant Attorney General.

BRIAN T. HODGES, Pacific Legal Foundation, of Bellevue, Washington, and R.S. RADFORD, of Sacramento, California, for amici curiae.

Before NEWMAN, BRYSON, and DYK, *Circuit Judges*.

BRYSON, *Circuit Judge*.

This case is before us on remand from the Supreme Court. We previously held that plaintiff Arkansas Game and Fish Commission failed to establish that increased flooding of its property during the period 1993-2000 constituted a taking that is compensable under the Fifth Amendment to the Constitution. *Ark. Game & Fish Comm'n v. United States*, 637 F.3d 1366 (Fed. Cir. 2011). The Supreme Court reversed, holding that government-induced flooding can qualify as a Fifth Amendment taking even if it is temporary in duration. *Ark. Game & Fish Comm'n v. United States*, 133 S. Ct. 511 (2012). The Court then remanded the case for us to determine whether the government's actions at issue in this case gave rise to a temporary taking, as found by the Court of Federal Claims, and whether the judgment of that court should be sustained. We now affirm the judgment of the Court of Federal Claims.

I

The facts of this case have been recited in detail both by this court and by the Court of Federal Claims, so we will provide only a brief summary here. The Arkansas Game and Fish Commission owns a large parcel of land along the Black River in northeastern Arkansas known as the Dave Donaldson Black River Wildlife Management Area ("the Management Area"). The Commission uses the Management Area as a wildlife and hunting preserve and a timber resource. The dominant species of hardwood trees in the bottomlands of the Management Area are nuttall oaks, overcup oaks, and willow oaks. The Com-

mission engages in harvesting and reforestation to maintain a healthy regenerating forest in those bottomlands.

In the 1940s, the Army Corps of Engineers built a dam on the Black River upstream of the Management Area for flood control purposes. The water that accumulated behind the dam became Clearwater Lake. In 1953, the Corps of Engineers issued the Clearwater Lake Water Control Manual, which set the policy for releasing water from the dam into the Black River at various times during the year. The Manual policy, which was designed to mimic the natural flow of water in the Black River while preventing severe floods, called for a rapid release of water each spring, which produced short-term flooding in low-lying areas along the river and in the Management Area, but did not result in long-term flooding during the April through October tree-growing season. Under the Manual policy, floodwaters downstream of the dam generally receded by late May of each year, as had been the case prior to the dam's construction.

The 1953 water release policies resulted in a modest increase in the average number of days during each year that the Management Area was flooded, as compared with the pre-dam period. However, the additional days of flooding that occurred during the 40 years that the Manual policy was in place did not result in long-term damage to the timber in the Management Area. The evidence at trial showed that the valuable trees in the Management Area were able to withstand short periods of flooding during the growing season, as long as there were no more than two or three successive growing seasons in which there were prolonged periods of flooding.

The Water Control Manual permitted the Corps of Engineers to approve deviations from the normal pattern of water release. Beginning in late 1993, the Corps approved a series of deviations in the prescribed water levels from the normal standards authorized by the

Manual. The deviations were adopted in response to requests from agricultural interests, which advocated modifying the water release policies so as to provide farmers in the flood-affected regions more time each year to harvest their crops. The post-1993 deviations resulted in an increase in the number of days that portions of the Management Area were flooded during the growing seasons from 1994 until 2000.¹

Starting in early 1996, Commission representatives began complaining to the Corps of Engineers that the flooding caused by the deviations was injuring some of the valuable oak species in the Management Area. The Corps of Engineers, however, continued to implement the new policy on a yearly basis until 2000. In 1999 and 2000 the area suffered a moderate drought. Following the drought, Commission employees found that large numbers of the most valuable trees in the Management Area were dead or in degraded condition. The trial court concluded that the flooding during the growing seasons between 1994 and 1998 had damaged the roots of the trees in the Management Area so that they were not able to withstand the drought. Absent the root damage caused by the flooding, the court found, the drought would not have had a detrimental effect on the forest.

In 1999 the Corps of Engineers proposed making the interim deviations of the prior six years a permanent part of the water control plan for Clearwater Dam. Upon further objections by the Commission, however, the Corps in April 2001 decided not to make the deviations permanent but instead to end the deviations altogether. The Corps confirmed that the Management Area would flood

¹ Although there had been some previous deviations from the 1953 policy, the evidence showed that those deviations were for brief periods and were not detrimental to the timber in the Management Area.

when the water level at the Corning, Arkansas, gauge on the Black River reached six feet, which had occurred frequently during the deviation period. In a news release, the Corps explained that it was abandoning the plan to make the deviations permanent because of concern for the “potential for damage to the bottomland hardwoods in the Dave Donaldson Black River Wildlife Management Area.”

The Commission brought this action in the Court of Federal Claims, contending that the Corps’ water release practices between 1993 and 2000 constituted a compensable Fifth Amendment taking. In a comprehensive opinion, the Court of Federal Claims held that by implementing the deviations from 1993 through 2000, the government had taken a temporary flowage easement over the Management Area, resulting in the destruction of a substantial amount of valuable timber. *Ark. Game & Fish Comm’n v. United States*, 87 Fed. Cl. 594 (2009). The court found that the extended periods of flooding in the Management Area were foreseeable and were the cause of the damage to the timber there. The court awarded the Commission \$5,602,329.56, the value of the timber lost because of the excess flooding between 1993 and 2000. The court granted an additional \$176,428.34 in damages to pay for regeneration efforts in areas severely affected by wetland plant species that had invaded the area during the years of increased flooding, but it denied the Commission’s request for a greater regeneration award covering a larger portion of the Management Area.

This court reversed the Court of Federal Claims, holding that the government’s actions did not constitute a compensable taking. *Ark. Game & Fish Comm’n v. United States*, 637 F.3d 1366 (Fed. Cir. 2011). In so doing, we relied on language in several Supreme Court cases suggesting that temporary flooding does not constitute a taking and that because the deviations were temporary in nature, the flooding was not an “inevitably recurring” event that would give rise to a takings remedy. We did

not reach any of the other issues raised by the parties, including the Commission's cross-appeal in which it sought an increase in the award of regeneration damages.

The Supreme Court reversed this court, holding that government-induced flooding can constitute a taking even if it is temporary in duration. *Ark. Game & Fish Comm'n v. United States*, 133 S. Ct. 511 (2012). Unlike permanent physical takings, the Court explained, temporary invasions "are subject to a more complex balancing process to determine whether they are a taking." *Id.* at 521, quoting *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 435 n.12 (1982). The Court remanded the case for further proceedings, noting that the government had challenged "several of the trial court's factfindings, including those relating to causation, foreseeability, substantiality, and the amount of damages." *Id.* at 522. The Court added that those issues the government had previously preserved for review in this court would remain open for further consideration.

II

On remand, the government has raised several issues that it raised in the previous appeal (and some that it did not). We address the issues that the government has preserved for appeal, but we decline to address those that the government did not previously raise before the trial court.

A. Duration

The government's first argument on remand is that the deviations that resulted in flooding the Management Area were "temporary and ad hoc" and therefore did not constitute a physical taking of the Commission's property. Given that the Supreme Court held that a physical taking could result from flooding that is only temporary in nature, the government's argument is necessarily limited to the contention that the flooding was not sufficient in

duration to constitute an appropriation of the Commission's property rights. The trial court found to the contrary, and we agree with the trial court that the assertedly "temporary and ad hoc" nature of the deviations does not defeat the Commission's takings claim.

While it is true that each of the Corps-authorized deviations was designated as temporary, the deviations were renewed each year between 1993 and 2000. The deviations were adopted in response to requests from agricultural interests, which sought to have the pattern of water releases from Clearwater Lake modified to increase the length of the harvest season. The changes made in the release patterns between 1993 and 2000 had the intended effect of benefiting farmers in the area, but as the trial court found, the change also resulted in a substantial increase in the number of days that the Management Area was flooded during each growing season during those years.

That period of flooding imposed a severe burden on the Commission's property. According to the trial court's findings, "the government's superinduced flows so profoundly disrupted certain regions of the Management Area that the Commission could no longer use those regions for their intended purposes, i.e., providing habitat for wildlife and timber for harvest." 87 Fed. Cl. at 620.

The government's claim that each of the deviations that the Corps of Engineers implemented during the 1990s was insufficient by itself to effect a taking ignores that while the prescribed water levels varied slightly from year to year, the deviations were directed to a single purpose—to accommodate agricultural interests—and had a consistent overall impact on the Management Area. Thus, the government-authorized flooding of the Management Area is properly viewed as having lasted for seven years, and the question whether the flooding constituted a compensable taking must be assessed in light of

an invasion of that duration. See *Portsmouth Harbor Land & Hotel Co. v. United States*, 260 U.S. 327, 329-30 (1922); *Hendler v. United States*, 952 F.2d 1364, 1377 (Fed. Cir. 1991); *Eyherabide v. United States*, 345 F.2d 565, 569 (Ct. Cl. 1965) (“Isolated invasions, such as one or two floodings or sprayings, do not make a taking, . . . but repeated invasions of the same type have often been held to result in an involuntary servitude.”). The government cannot obtain an exemption from takings liability on the ground that the series of interim deviations were adopted on a year-by-year basis, rather than as part of a single multi-year plan, when the deviations were designed to serve a single purpose and collectively caused repeated flooding and timber loss on the Commission’s property.

In its opinion in this case, the Supreme Court held that the temporary nature of the flooding caused by the deviations was not a valid ground for holding that a taking did not occur. The Court was careful to make clear, however, that not every act of government-induced flooding constitutes a taking. The Court explained that in the case of temporary flooding, as in other temporary takings cases, the question whether a taking has occurred does not turn solely on the duration of the invasion that caused the injury in question. Instead, to determine whether a taking has occurred, a court must consider whether the injury was caused by authorized government action, whether the injury was the foreseeable result of that action, and whether the injury constituted a sufficiently severe invasion that interfered with the landowner’s reasonable expectations as to the use of the land. 133 S. Ct. at 522-23. We address each of those issues separately below.

B. Causation

The government contends that the Court of Federal Claims erred in finding that the deviations of the 1990s

caused any significant increase in the burden of flooding on the Commission's property.

The government's argument is in essence a challenge to the factual findings of the trial court. The parties offered competing evidence as to the issue of causation, and the trial court explained in great detail why it found the Commission's evidence persuasive. While the evidence on causation was conflicting, the trial court was entitled to credit the Commission's evidence and find that the deviations of the 1990s caused a substantial increase in the periods of flooding on the Management Area that in turn led to the destruction of or damage to a large number of trees in the bottomland hardwood forest there.

The evidence shows that there was a substantial increase in the number of days of growing-season flooding in the Management Area during the critical period between 1994 and 1998, compared to the period between 1953 and 1993. When compared to the period prior to the construction of Clearwater Dam for which the record contains data, the increase in the number of days of growing-season flooding is even greater.

Although the government characterizes the increase in flooding as only marginal, evidence in the record supports the trial court's finding that the increase in flooding was great enough to change the character of large parts of the Management Area and interfere with the Commission's ability to use the property in the manner it had been used for many years. The trial court credited the evidence that nuttall and overcup oak trees have limited tolerance for lengthy flooding conditions during the growing season and that the lengthy flooding over multiple years during the deviation period resulted in debilitation and destruction of those trees.

The trial court credited the Commission's evidence as to the amount of the increase in flooding and its effect on the trees in the Management Area. That evidence was

offered principally through the testimony and report of the Commission's expert, Dr. Mickey E. Heitmeier. By reference to the number of days the water level was above five feet, as measured by the Corning gauge a few miles north of the Management Area, Dr. Heitmeier testified that the number of days of growing-season flooding during the years from 1994 to 1998 was more than 40 percent higher than during the period after the construction of the Clearwater Dam but before the deviations began. The difference between the deviation period and the period before the dam was built was even greater. Dr. Heitmeier explained that the amount of flooding during the deviation period was "highly unique" and that "six consecutive years of prolonged flooding never happened prior, and has never happened since." Even one of the government's experts conceded that the deviations caused substantial additional flooding in the Management Area.

The Commission's experts testified that the deviations—not rainfall, run-off, or other factors—caused the flooding, and that the flooding—not insects, disease, or forest age—caused the damage to the trees in the Management Area. The trial court was entitled to credit that evidence and conclude, as it did, that the flooding during the deviation period caused injury to the trees' roots. That damage made the trees abnormally susceptible to the drought of 1999 and 2000, resulting in what the trial court referred to as "catastrophic mortality in the sections of the Management Area that were subject to flooding and saturated soils during the growing seasons" during the deviation period. 87 Fed. Cl. at 632.

Perhaps the most telling evidence in support of the trial court's finding of causation came from the Corps of Engineers itself. After conducting a site visit in early 2001 and determining that the Management Area would flood when the water level at the Corning gauge reached six feet, the Corps admitted that the deviations had "clear potential for damage to bottomland hardwoods" in the

Management Area. In response to the Commission's complaints that the flooding was destroying the hardwood forest, a Corps representative stated that the Commission "has objected in the past because they contend that we increase the flood duration of hardwoods and kill more trees this way, particularly during the growing season. They now have a study that shows this and we acknowledge the validity of their concerns." The Corps' district engineer explained that the deviations were ended because they "would unacceptably extend the duration of water inundation on bottomland hardwoods." And at public meetings during that period, the Corps admitted that, based on its site visit in March 2001, the deviations were "negatively impacting [the Management Area] during [the] growing season."

In sum, the evidence supports the trial court's findings that the deviations caused a substantial increase in the periods of growing-season flooding in the Management Area and that the flooding caused widespread damage to the trees there. Those findings in turn support the trial court's legal conclusion that the deviations caused an invasion, in the form of a temporary flowage easement, of the property rights enjoyed by the Commission and its predecessors since before the construction of the Clearwater Dam and until 1993.²

² Throughout this case, the parties have addressed the takings issue by comparing the flooding experienced under the 1953 Water Control Manual with the flooding experienced under the deviations implemented between 1993 and 2000. At oral argument, the parties acknowledged that in determining the scope of any invasion of property rights, the proper comparison would be between the flooding that occurred prior to the construction of Clearwater Dam and the flooding that occurred during the deviation period. The evidence showed that the

C. Foreseeability

The government next argues that the Corps of Engineers did not intentionally flood the Management Area and that the flooding that occurred between 1993 and 2000 was not a foreseeable result of the deviations that the Corps approved during that period.

In order for a taking to occur, it is not necessary that the government intend to invade the property owner's rights, as long as the invasion that occurred was "the foreseeable or predictable result" of the government's actions. *Moden v. United States*, 404 F.3d 1335, 1343 (Fed. Cir. 2005); *accord Ridge Line, Inc. v. United States*, 346 F.3d 1346, 1357 (Fed. Cir. 2003). The trial court found that the Corps of Engineers could have foreseen that the series of deviations approved during the 1990s would lead to substantially increased flooding of the Management Area and, ultimately, to the loss of large numbers of trees there. We uphold the court's conclusion as to that issue.

The court found that a reasonable investigation by the Corps of Engineers prior to implementing the deviations during the 1993-2000 period would have revealed that the deviations would result in a significant increase in the number of days of flooding in the Management Area

increase in the number of days of flooding during the deviation period, as compared to the period prior to the construction of Clearwater Dam for which the record contains data, was even greater than the increase over the 1953-1993 period. Because the water release policy under the Manual largely mimicked the pre-dam water flows, however, the parties' choice to focus on the 1953-1993 period as the baseline for determining the Commission's property rights appears to have had no effect on the outcome of this case.

during the growing season. That increase in flooding would in turn result, after a few years, in injury to the valuable trees in the hardwood forests there. When Corps of Engineers personnel investigated the effect of the deviations in 2001 as part of a proposal to make the deviations permanent, they concluded that the new plan could cause flooding for periods long enough “to damage or destroy the trees” in the Management Area. Had the Corps conducted such an investigation at the outset of the deviation period, the trial court concluded, the Corps would have come to the same conclusion. The court therefore found that the flooding was foreseeable.

We need not reach the question whether the trial court correctly found that the damages were foreseeable from the beginning of the deviation period in 1993. In addition to finding that the impact of the deviations was foreseeable from the outset, the trial court found that during the deviation period the Commission put the Corps of Engineers on notice of the impact the deviations were having. Starting in the spring of 1996, Commission representatives complained that the lengthy periods of flooding in the Management Area resulting from the deviation policies were harming the timber resources there, in particular the valuable oak trees in the bottomlands. Notwithstanding the complaints, the Corps continued approving the deviations through the growing season of 2000.

From the evidence at trial, the Court of Federal Claims found that the effects of flooding on hardwood timber are cumulative: that nuttall oak trees are likely to die when flooded for extended periods during three or more growing seasons in a row and that overcup oak trees are likely to die if exposed to such flooding for four or more growing seasons in a row. Even setting aside the trial court’s finding that the Corps of Engineers failed to conduct a reasonable investigation of the likely effects of the deviations on the Management Area at the outset of

the deviation period, the evidence indicates that the Commission advised the Corps of the danger of damage to the timber in the Management Area at a time when the deviations had been in effect for only two growing seasons, less than the period of time necessary to kill the nuttall and overcup oaks.

To be sure, the Court of Federal Claims did not make a specific finding that if the Corps of Engineers had stopped the deviations in response to the Commission's complaints the trees would not have been damaged. That may be because the government did not argue to the trial court that the Commission's complaints were insufficient to put the Corps on notice of the effects of the flooding on the Management Area or that the complaints came too late for corrective action to have had any effect. Not having made that argument to the trial court, the government cannot now contend that the court's foreseeability finding must be reversed because the Corps was not apprised of the impact of the deviations at a time when effective curative action could have been taken.³ Accord-

³ In its original brief in this court, the government argued, as it did in the trial court, that there was no reason for the Corps of Engineers to foresee the damage to the trees because "the best evidence before the [trial court] even after the fact established that the deviations had very little impact on flooding on the Wildlife Management Area." However, the trial court's findings on the impact of the deviations were squarely to the contrary. The government also argued that the Corps did not believe the deviations would substantially impact the Management Area. But that means only that the Corps did not foresee the effects of the deviations, not that the effects were unforeseeable. In its supplemental brief filed on remand from the Supreme Court, the government argued that the Commission's complaints did not render

ingly, based on the evidence and the trial court's factual findings, we reject the government's contention that the trial court's finding on the issue of foreseeability is unsupported.

D. Severity

The government's next contention is that even if the increased flooding was a predictable result of the water releases during the deviation period, the marginal increase in flooding did not constitute a sufficiently severe invasion of the Commission's property rights to support a takings claim. The government points out that the Management Area is part of a floodplain that floods regularly, that the Commission itself sometimes floods parts of the Management Area intentionally (for duck-hunting purposes). In addition, the government notes that the Management Area has experienced flood-related damage in the past, before the deviations of the 1990s. For those reasons, the government argues, the Commission "could not have expected either dry conditions or a healthy forest ecosystem."

Once again, the government's argument runs headlong into factual findings made by the trial court. While it is true that the bottomland forests in the Management Area were subject to flooding prior to the deviation period, the flooding during the pre-deviation period, both prior to and after the construction of Clearwater Dam, was consistent with the maintenance of a thriving bottomland hardwood forest and a wildlife and hunting preserve. The

the flooding foreseeable because the complaints "show only what the Commission believed." That argument misses the point that the significance of the Commission's complaints for purposes of establishing foreseeability is that they put the Corps on notice of the possible effects of continued deviations.

point is not that there was flooding before the deviations; the point is that after the deviations began the flooding lasted for significantly longer periods of time and had much more serious consequences than the flooding of the pre-deviation period.

The trial court found that the change in the flooding pattern effected a wholesale change in the ability of the Management Area to support timber harvesting and a wildlife preserve of the sort that the Commission had historically maintained. *See Jacobs v. United States*, 290 U.S. 13, 16 (1933) (construction of a dam that produced an incremental increase in flooding resulted in a taking because the increased flooding “impaired the use of the lands for agricultural purposes”). The Court of Federal Claims addressed that point in detail, and the government’s response—to downplay the extent and impact of the increased length of the periods of flooding during 1993-2000—is not sufficient to overcome the trial court’s contrary fact-based ruling.

In pressing its argument that the increase in flooding was only incremental, the government seeks to distinguish between the intrusion, i.e., the additional flooding, and the consequences of the intrusion for the hardwood trees in the Management Area. The government contends that the effect of the intrusion on the trees is irrelevant to the question whether the governmental action itself constituted a taking.

The distinction the government seeks to draw does not help it in this case. This is not a case in which the asserted intrusion was within a range that the property owner could have reasonably expected to experience in the natural course of things. To the contrary, the trial court found that the lengthy periods of growing-season flooding experienced in the Management Area between 1994 and 1998 were unprecedented and were clearly tied to the deviations. Nor is it unreasonable to measure the severi-

ty of the interference with a property owner's rights by looking to the effects of the interference. In addressing the severity issue, the Supreme Court characterized the asserted interference with the Commission's property rights in this case as depriving the Commission "of the customary use of the Management Area as a forest and wildlife preserve." 133 S. Ct. at 522. Indeed, it may often be difficult to say, in the abstract, whether a particular intrusion is severe or only incremental in nature; consideration of the effects of the intrusion on the property owner will often make that distinction easier to draw. In this case, the Court of Federal Claims found that the increased length of the periods of growing-season flooding made the intrusion sufficiently severe to support a takings claim, and we see no basis to overturn the court's ruling on that issue.

E. Reasonable Investment-Backed Expectations

On remand, the government makes the related argument that because the Management Area is subject to flooding, the Commission could not have had a reasonable expectation that the Management Area would be free of significant flooding during the growing seasons, and therefore there was no taking. In effect, the government contends that, because of preexisting conditions, the Commission's property interest does not include the right to be free of artificially imposed excess flooding in the Management Area. In making that argument, the government argues in its brief on remand that because the Commission did not purchase the Management Area property until after the Clearwater Dam was built and the Manual went into effect, the Commission's property interest is necessarily qualified by the right of the Corps of Engineers to authorize deviations from the ordinary flowage rates at any time. The problem with that argument is that it was not raised in the Court of Federal Claims. Also not raised below was the government's passing assertion on remand that under Arkansas water

rights law the Commission has no legal right against flooding by an upstream property owner or operator. Because neither argument was raised before the Court of Federal Claims in the initial appeal in this case, we decline to address either one.⁴

III

Apart from its arguments on the merits of the takings issue, the government raises two procedural points. First, it contends that the trial court should have excluded the Commission's damages evidence because of spoliation of certain documents that should have been produced in discovery. Second, the government argues that the trial court should have excluded certain appraisal evidence because there was no reliable evidentiary basis for the appraisal expert's opinion.

A. Spoliation

The government asserts that the trial court should not have admitted evidence from the Commission's forestry experts because the persons who conducted the surveys of the dead and damaged trees in the Management Area

⁴ The government also suggests that a downstream property owner's interest in not being flooded by a flood control project is different from an upstream owner's interest, because property downstream from a dam is not occupied by the project but is the intended beneficiary of the project, which is designed to reduce flooding impacts. It may often be the case that a downstream property owner is the beneficiary of a flood control project. That is not true, however, when the project results in substantially increased flooding of one downstream owner's property due to efforts to benefit other downstream properties, such as the agricultural lands that were the intended beneficiaries of the deviations at issue in this case.

failed to preserve a set of hand-drawn maps that they used while conducting the surveys.

The Commission contracted with a private firm, which conducted timber surveys in 2000 and 2001 to determine the extent of the timber damage in the Management Area. While they were working, the surveyors prepared “cruise maps” to orient themselves in the field, to determine the locations of access points and physical features on the ground, and to keep track of the boundaries of particular zones within the surveyed area. When the surveys were completed, the surveyors either lost or destroyed the cruise maps. The government argues that without the cruise maps it was impossible to determine whether specific tree damage was caused by flooding. Armed with the cruise maps, the government asserts, it could have determined whether the trees that were recorded as dead or damaged were in areas of high ground where they could not have been exposed to flooding or were in areas of known beaver activity. Based on the unavailability of the cruise maps, the government moved to exclude testimony from the Commission’s forestry experts. The trial court denied the motion.

The Commission argues that the cruise maps were not producible both because the surveys were not conducted in anticipation of litigation and because the maps were not “facts or data considered by [an expert] witness” in forming his opinion. Ct. Fed. Cl. R. 26(a)(2)(B)(ii). We do not need to decide whether the cruise maps should have been retained and produced to the government, because we are persuaded that the loss of the cruise maps did not result in substantial prejudice to the government. *See* Ct. Fed. Cl. R. 37(c)(1).

The evidence at trial showed that the cruise maps were created by copying the principal features of topographical or aerial maps onto ordinary sheets of paper to be used as makeshift maps in the field to aid the survey-

ors in orienting themselves. The evidence further showed that while the cruise maps could be used to determine generally where the cruises were conducted, they could not be used to determine accurately where particular tree-damage data was gathered.

The actual cruise lines were marked with flags placed in the ground for each plot. The evidence showed that it would have been possible, for a period of several years after the surveys were conducted, to determine where the individual plots were located based on those flags and other data provided with the survey report. Although this litigation did not begin until 2005, the reports of the timber survey were provided to the government beginning in early 2001, so the government could have replicated the cruises at that time if it had chosen to do so, at least with the assistance of the Commission. Moreover, the first report was accompanied by a demand for “financial compensation for the dead and dying timber and recreational and land value losses,” so the government would have had an incentive to challenge the findings in the report, if it doubted them, as early as 2001. Beyond that, the trial court found that it would have been possible for the government to replicate the cruises, even years later, based on deposition testimony from those who conducted the surveys. As the court explained when denying the government’s motion to exclude the cruise evidence, “as long as one knew the direction of the cruise and the starting point, those results could have been generally replicated. And a deposition of either Mr. Livingston or Mr. Foster produced that information. . . . [T]here is just very little question . . . that developing a replicated cruise was quite possible.” Tr. 2640.

The government, however, did not attempt to replicate the surveys in order to test their accuracy, either when it received the initial survey report in early 2001 or during the course of the litigation. Nor did the government use deposition testimony to test the accuracy of the

surveys, even though the depositions described the surveys in substantial detail. The government did not even depose several of the individuals who conducted the cruises.

The principal use that the government claims it could have made of the cruise maps would be to assist it in replicating the cruises in support of its hypothesis that the surveyors may have counted some dead or damaged trees that were not damaged by flooding. Yet because the government made no effort to replicate the cruises, it could not establish either that replicating the survey would have been possible with the cruise maps or that it would have been impossible without them. Under those circumstances, even if the cruise maps should have been preserved, we conclude that the loss of those documents did not prejudice the government's ability to defend against the Commission's claims at trial.

B. Appraisal Expert

The government's second evidentiary objection is that the testimony of the Commission's expert timber appraiser should have been excluded because there was no basis for his opinions as to the percentage of declining trees that would die within five years (50 percent) and the value of the timber from declining trees that recovered but in a degraded state (50 percent). In addressing those estimates, the expert explained that they derived not from any market data or scientific literature, but from his own 40 years of experience in the field studying and valuing trees harvested for timber.

The government contends that the expert's reliance on his own experience as a basis for his estimates of the mortality rate for declining trees and the reduced value of timber from declining trees that survived did not render his testimony sufficiently reliable to be admissible under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). We disagree. By their nature, appraisals are

often imprecise, and the appraiser's experience can be the most important factor in establishing valuation. See *Portland Natural Gas Transmission Sys. v. 19.2 Acres of Land*, 318 F.3d 279, 281 (1st Cir. 2003) (“[d]etermining the value of real estate is not a science”). The Commission's expert did not purport to be relying for his estimates on data he had collected or scientific literature he had examined. Instead, he acknowledged that his estimates were based on his experience and observations of trees over a 40-year career in forestry. The government was free to challenge the expert's estimates as unreliable, or to introduce competing evidence as to the mortality rates of the damaged trees and the value of the timber produced from the degraded trees. In these circumstances, it was not an abuse of discretion for the trial court to conclude that the government's challenges to the expert's testimony went to the weight of the evidence, not its admissibility, and to allow the expert to testify based on his lengthy experience working in the field. See *Libas, Ltd. v. United States*, 193 F.3d 1361, 1366 (Fed. Cir. 1999); *United States v. 14.38 Acres of Land*, 80 F.3d 1074, 1077 (5th Cir. 1996).

IV

In its cross-appeal, the Commission argues that the trial court should have granted its request for additional damages for regeneration of lands within the Management Area where invasive wetland plant species were able to gain a foothold due to the damage to the hardwood timber forests.

The Commission sought an award of more than \$2 million to remove undesirable, invasive vegetation that the Commission contends established itself as a result of the flooding of the Management Area during the 1990s. In addition, it sought approximately \$3 million to plant oak seedlings to restore the bottomland hardwood system to its pre-deviation-period condition.

The trial court found that the Commission had suffered additional damages beyond the destruction of trees as a result of the deviations during the 1993-2000 period, and that the Commission was entitled to damages in the amount necessary to eradicate the unwanted wetland vegetation and to regenerate the hardwood forest. However, the court awarded only \$176,428.34 in restoration damages. The court found that the Commission had proved its claim as to 349 of the 6,990 acres for which it sought regeneration damages, but “has not proved that it is entitled to recover all its projected regeneration costs for the remaining 6,641 acres.” The 349 acres were those for which the Commission had characterized the damage to the timber as “severe.” The Commission characterized the damage in the remaining 6,641 acres as “heavy” or “moderate.” As to those areas, the court held that the Commission “has not established to a reasonable certainty the need for regeneration damages.”

The Commission advances three arguments in support of its position that it is entitled to damages for all 6,990 acres. First, it contends that the trial court imposed an unduly heavy burden of proving damages to “a reasonable certainty,” whereas a plaintiff bears only the less exacting burden of proving a “fair and reasonable approximation of the damages.” *Bluebonnet Sav. Bank, F.S.B. v. United States*, 266 F.3d 1348, 1356-57 (Fed. Cir. 2001). That argument, however, is based on a false dichotomy.

The principle that damages must be shown to a reasonable certainty, which is borrowed from the law of contract remedies, is not incompatible with the rule that a plaintiff need not prove the precise amount of damages; both principles require that the quantum of damages be shown to a reasonable approximation. *See Ind. Mich. Power Co. v. United States*, 422 F.3d 1369, 1373 (Fed. Cir. 2005) (damages must be shown “with reasonable certainty,” but “the amount of damages need not be ‘ascertainable with absolute exactness or mathematical precision’”);

Precision Pine & Timber Co. v. United States, 596 F.3d 817, 833 (Fed. Cir. 2010) (evidence must be sufficient to enable finder of fact to make a “fair and reasonable approximation” of damages; that is, a party seeking damages must prove them with “reasonable certainty,” which “requires more than a guess, but less than absolute exactness”); *Huntley v. United States*, 135 F. Supp. 542, 546 (Ct. Cl. 1955) (“All that is required is such reasonable certainty that damages may not be based wholly upon speculation,” and “may be estimated with a fair degree of accuracy.”).

Nothing in the trial court’s treatment of the regeneration damages claim is inconsistent with that principle. Moreover, unlike cases in which the courts have found a “reasonable approximation” of damages to be sufficient to justify an award, the problem that the trial court had with the Commission’s proof did not go to the quantum of damages; instead, it went to whether any compensable loss at all was proved as to the sectors that the Commission identified as having suffered “heavy” and “moderate” injury. As to those sectors, the court found that the Commission had “not established to a reasonable certainty the need for regeneration damages for the remaining 6,641 acres.” 87 Fed. Cl. at 645. The trial court properly required the Commission to prove its entitlement to regeneration damages for those sectors to a reasonable certainty. See *Fifth Third Bank v. United States*, 518 F.3d 1368, 1379 (Fed. Cir. 2008) (rejecting claim that trial court improperly applied the “reasonable certainty” test in finding that a claim for lost profits was not established for a particular period).

The Commission’s second argument is that the trial court made improper use of information that the court obtained on a site visit during the course of the trial. The Commission complains that the court used its personal observations of the Management Area as a basis for denying relief for the portions of the Management Area

that the Commission alleged to have suffered “heavy” or “moderate” damage.

The first answer to the Commission’s “site visit” argument is that the trial court made clear in its opinion that it relied on the site visit only to “confirm[] that discrete portions of the Management Area require regeneration work,” i.e., to confirm the Commission’s showing with regard to the areas the Commission characterized as “severely” damaged, not to rebut the Commission’s showing with respect to the other areas. 87 Fed. Cl. at 644 (“Due to the site visit, the court was able to confirm the pervasiveness of invasive wetland species and the scarcity of oak trees in portions of the Management Area.”).

The second answer is that neither party objected to the trial court’s proposal to conduct a site visit. Absent an objection or insistence on some limitation on the court’s use of information obtained during the site visit, the Commission waived its right to object to the court’s use of any relevant information obtained in that fashion. *See United States v. Davis*, 127 F.3d 68, 70 (D.C. Cir. 1997). Nor is there any force to the Commission’s suggestion that its counsel could not have anticipated the use the court would make of the information gathered on the site visit. The court advised the parties that it was going to arrange for the presence of a court reporter during the site visit and added, “What I see and hear by way of facts are going to be insofar as humanly possible spread on the record.”

Finally, the decision to conduct a site visit is a matter that is subject to the discretion of the trial court. *United States v. Gray*, 199 F.3d 547, 550 (1st Cir. 1999); 22 Charles Alan Wright & Kenneth W. Graham, Jr., *Federal Practice & Procedure* § 5176.2, at 883-84 (2d ed. 2012). Having conducted such a visit in the exercise of its discretion and without objection from counsel, the court was free to make use of its observations, to the extent relevant, in its decision of the case. *See Glassroth v. Moore*,

335 F.3d 1282, 1289 (11th Cir. 2003) (“any kind of presentation to the jury or the judge to help the fact finder determine what the truth is and assimilate and understand the evidence is itself evidence”); *Gray*, 199 F.3d at 550 (a site visit or view is “within the category of admissible evidence”); 2 Jack B. Weinstein & Margaret A. Berger, Weinstein’s Federal Evidence § 403.07[4] (J. M. McLaughlin ed. 2013) (“[T]he modern position is that the view does provide independent evidence.”); *cf. Snyder v. Massachusetts*, 291 U.S. 97, 121 (1934) (the “inevitable effect [of a site visit] is that of evidence, no matter what label the judge may choose to give it”).

As its third argument in support of an enlargement of its damages award, the Commission contends that the evidence with regard to the portion of the Management Area for which the trial court granted regeneration damages was not materially different from the evidence with regard to the portions for which the trial court denied an award. Accordingly, the Commission argues, the evidence clearly indicated that artificial regeneration efforts will be required not only for the 349 acres as to which the trial court granted an award, but for the remaining 6,641 acres as well.

In finding that the Commission had not shown the need for regeneration damages for the remaining 6,641 acres, the court explained that the Commission “has failed to submit adequate evidentiary materials regarding certain areas where it seeks to recover regeneration costs and the prevailing conditions in those places.” 87 Fed. Cl. at 644. In particular, the court explained that in those remaining 6,641 acres, there was “no basis in the record to differentiate the areas that would require regenerative work from others which retain some oak stands of significance and which may well regenerate themselves.” *Id.* at 645.

The trial court did not commit clear error in finding that the Commission failed to satisfy its burden of proof with respect to the remaining 6,641 acres. The Commission argues that the invasive wetlands species, if not removed, will impede the regeneration process throughout the 6,990 acre area by depriving the new oak seedlings of sunlight. The testimony from the Commission's witnesses, however, was not so categorical. Those witnesses admitted that natural regeneration was occurring in some areas and that many of the trees that had suffered damage were showing signs of recovery. For example, the Commission's lead witness on regeneration acknowledged that regeneration would occur without intervention in many parts of the damaged areas, and he admitted that he could not quantify how much of the 6,990 acres had wetland species and how much did not. He testified that he recommended regeneration measures be employed throughout the entire 6,990-acre area "so that we're ensured the best possibilities of generating a like forest."

In light of the evidentiary uncertainties as to the need for artificial regeneration in the portions of the 6,990 acres where the damage was not "severe," the trial court was entitled to find the Commission's theory insufficiently supported with respect to the 6,641 acres of "heavy" and "moderate" damage. We therefore affirm the trial court's judgment on the cross-appealed issue.

Each party shall bear its own costs for these appeals.

AFFIRMED