In the

United States Court of Appeals

For the Seventh Circuit

No. 16-1654

RITA BOUCHER,

Plaintiff-Appellant,

v.

UNITED STATES DEPARTMENT OF AGRICULTURE, *et al.*,

Defendants-Appellees.

Appeal from the United States District Court for the
Southern District of Indiana, Indianapolis Division.
No. 1:13-cv-01585 — **Tanya Walton Pratt**, *Judge*.

ARGUED SEPTEMBER 21, 2018 — DECIDED AUGUST 8, 2019

Before WOOD, *Chief Judge*, and FLAUM and HAMILTON, *Circuit Judges*.

HAMILTON, *Circuit Judge*. In the mid- to late-1990s, the late David Boucher cut down nine trees on his family farm in Indiana. For almost two decades, the United States Department of Agriculture (USDA) has disagreed, first with Mr. Boucher and now his widow, plaintiff Rita Boucher, about whether that modest tree removal converted several acres of wetlands

into croplands, rendering the Bouchers' entire farm ineligible for USDA benefits that would otherwise be available.

Since at least 1985, federal law and regulatory policy have tried to remove financial incentives for destruction of environmentally important wetlands. In this case, however, the record shows arbitrary and capricious action by the agency. The USDA repeatedly failed to follow applicable law and agency standards. It disregarded compelling evidence showing that the acreage in question never qualified as wetlands that could have been converted illegally into croplands. And the agency has kept shifting its explanations for treating the acreage as converted wetlands. The USDA's treatment of the Bouchers' acreage as converted wetlands easily qualifies as arbitrary, capricious, and an abuse of discretion. See 5 U.S.C. § 706(2)(A). We reverse the district court's affirmance of the USDA's final determination and remand the case to the district court to enter judgment granting appropriate relief to plaintiff Rita Boucher.

In Part I, we summarize the statutes, regulations, and agency guidance that govern the USDA's wetland conservation enforcement efforts. In Part II, we set forth the facts and history of this dispute. We explain in Part III the legal standards for judicial review and explain in Part IV why this agency action was arbitrary, capricious, and an abuse of discretion. Along the way, we explain why the agency's litigation position has strayed far from the applicable law and science.

I. *The USDA and Wetland Conservation*

A. *The Statute, its Regulations, and the Agency*

Wetlands serve vital ecological and economic functions. They provide habitats for birds, fish, and unique species of

wild plants; enhance drinking water supply and quality; protect against loss of life and property from flooding; and offer significant recreational and commercial benefits from fishing, hunting, birdwatching, and other wetland-related activities that generate billions of dollars annually. 16 U.S.C. § 3901. Yet the continental United States has lost over half of its natural wetland habitats since the nation's founding, with that loss having accelerated sharply from the 1950s through the 1970s. See 16 U.S.C. § 3901(7); Natural Resources Conservation Service, *Introduction to Wetland Conservation Provisions*.[1] Those losses have been felt acutely in the Midwest as large proportions of wetlands have been converted to agriculture and other uses. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* at 8 (Aug. 2010) (noting historic wetland loss in Indiana (87%), Illinois (85%), Iowa (89%), Minnesota (80%), Missouri (87%), and Ohio (90%)).

Concerned about this precipitous loss of wetlands, Congress included wetland conservation provisions (known colloquially as the "Swampbuster" provisions) in the Food Security Act of 1985. 16 U.S.C. §§ 3801, 3821–24. These laws condition the availability of important USDA farm program benefits on farmers' willingness to protect wetlands on their property. Farmers who convert (i.e., destroy) wetlands for agricultural purposes are denied those benefits. 16 U.S.C. § 3821(a); 7 C.F.R. § 12.4; see also *Horn Farms, Inc. v. Johanns*, 397 F.3d 472, 474 (7th Cir. 2005) (noting that initial "Swampbuster" provisions made loss of farm subsidies "proportional to the amount of wetland converted," but 1990 amendment

[1] Available at https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/wetlands/?cid=stelprdb1043554 (last visited Aug. 7, 2019).

"provided that converting *any* wetland would cause the farmer to lose *all* agricultural payments").

Two USDA agencies implement this regulatory scheme. The Natural Resources Conservation Service (NRCS) is the USDA's scientific arm charged with making technical determinations about whether wetlands exist or have been converted, as well as investigating failures to comply with the Swampbuster provisions. 7 C.F.R. §§ 12.2, 12.6(a)(2) & (c), 12.30(a). And the USDA's Farm Service Agency (FSA) relies on NRCS's wetland determinations to make decisions regarding any violations and eligibility for benefits. 7 C.F.R. §§ 12.2, 12.6(a) & (b).

B. *Soil, Plants, and Water*

Farmers' access to important financial benefits can thus turn on NRCS's identification of "wetlands." The statutory definition is somewhat technical, but it lies at the heart of our decision:

> The term 'wetland' … means land that —
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> (A) has a predominance of *hydric soils*;
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> (B) is *inundated or saturated by surface or groundwater* at a frequency and duration sufficient to support a prevalence of *hydrophytic vegetation* typically adapted for life in saturated soil conditions; and
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> (C) under *normal circumstances* does support a prevalence of such vegetation.

16 U.S.C. § 3801(27) (emphasizing key terms discussed below); see also 7 C.F.R. § 12.2.

Under this definition, in making wetland determinations, the NRCS must assess whether "the area of interest supports a prevalence of [1] hydrophytic vegetation, [2] a predominance of hydric soils, and [3] wetland hydrology under normal circumstances." 7 C.F.R. § 12.30(c)(7). All three characteristics must be present for an area to be considered wetlands. *B&D Land and Livestock Co. v. Schafer*, 584 F. Supp. 2d 1182, 1194–95 (N.D. Iowa 2008) ("the statute plainly and unambiguously defines these three requirements as *separate*, *mandatory* requirements").

The three terms are not self-explanatory to judges and other laypeople, so we look to the statute and its implementing regulations for further guidance:

> (1) *Hydric Soil* is soil that is conducive to potentially supporting the types of vegetation that might be found in wetlands, i.e., "soil that, in its undrained condition, is saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation." 16 U.S.C. § 3801(a)(12); 7 C.F.R. § 12.2.
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> (2) *Hydrophytic vegetation* refers to plants known as "hydrophytes," which can be found "growing in water or in soil too waterlogged for most plants to survive." Webster's Third New Int'l Dictionary 1109 (1993). The technical statutory definition describes this type of plant as those which grow "in water or in a substrate that is at least periodically deficient in oxygen during a

> growing season as a result of excessive water content." 7 C.F.R. § 12.2; 16 U.S.C. § 3801(a)(13).
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> (3) *Hydrology* in this context is the fancy word for water, and lots of it. A wetland must be wet enough (at least for some period of the year) that typical wetland plants can grow or—in formal terms—the land must be observed to be "inundat[ed] or saturat[ed] by surface or groundwater during a growing season at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation." 7 C.F.R. § 12.2; see also *Army Corps of Engineers Wetland Delineation Manual* at A6 (1987) ("Hydrology" is "[t]he science of dealing with the properties, distribution, and circulation of water.").

The final key term is that the land must in fact be wetlands under "normal circumstances," which means "the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed." 7 C.F.R. § 12.31(b)(2)(i). As explained in agency guidance: "The premise for the concept of normal circumstances is that for many wetlands where the vegetation has been removed, the soil and hydrological characteristics remain to the extent that hydrophytic vegetation could return if vegetation management ceased." NRCS *National Food Security Act Manual* § 514.2H (2010).

The federal laws also address "converted" wetlands, defined by statute as:

> Wetland that has been drained, dredged, filled, leveled, or otherwise manipulated (including

> any activity that results in impairing or reducing the flow, circulation, or reach of water) for the purpose or to have the effect of making the production of an agricultural commodity possible.

16 U.S.C. § 3801(a)(7)(A). And relevant to this appeal, any "converted wetland" that was converted before December 23, 1985 (i.e., before passage of the Swampbuster provisions), is simply deemed "non-wetland." 7 C.F.R. § 12.2.[2]

NRCS agents are required to identify wetlands and implement the Swampbuster provisions across the varying geography of the United States. Several sources of detailed guidance have been developed. Beyond the statutory provisions and regulations, NRCS agents rely on the *Corps of Engineers Wetlands Delineation Manual* (1987) (the "Corps Manual"), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: *Midwest Region* (Version 2.0) (Aug. 2010) ("Corps Supplement"), the NRCS's National Food Security Act Manual (2010) ("NRCS Manual"), and the NRCS's Food Security Act

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[2] The corresponding definition in USDA regulations is slightly altered from the statutory text, potentially pulling the definition away from the statute's primary focus on hydrology: "Converted wetland is a wetland that has been drained, dredged, filled, leveled, or otherwise manipulated (including *the removal of woody vegetation or* any activity that results in impairing or reducing the flow and circulation of water) for the purpose of or to have the effect of making possible the production of an agricultural commodity without further application of the manipulations described herein." 7 C.F.R. § 12.2 (emphasis added).

Wetland Identification Procedures (2010) ("NRCS Procedures").[3]

Using a combination of off-site resources (e.g., aerial pictures, regional soil maps) and on-site investigations, NRCS agents or experts are charged with certifying a "wetland determination [that] is of sufficient quality to make a determination of ineligibility for program benefits." 7 C.F.R. §§ 12.30(c)(1); 12.6(c)(5)–(7); NRCS Manual at §§ 514.1A(1) & (3), B(1) (on-site visits are required in several circumstances that apply to the present case); NRCS Procedures at (1-3), (2-2), (2-3), (4-1), (5-2), (5-3).

C. *Making a Wetland Determination: Typical and Atypical Situations*

To assess whether the USDA's wetland determination for the Boucher farm is defensible, we set out in general terms the process and the rationales for that process in the agency's governing statutes, regulations, and guidance manuals. As noted above, the overarching statutory command is that NRCS agents must determine whether all three of the required characteristics—wetland soil, plants, and water—are present, or could be present, on disputed sites.

There are scientific reasons why only one or two of the criteria are insufficient for a wetland determination. As one of NRCS's primary sources of guidance cautions, NRCS agents

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[3] The Corps Manual is available at http://www.lrh.usace.army.mil/Potals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf; the Regional Supplement is available at https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/ id/7630; the NRCS Manual and Procedures are in the Administrative Record (AR) at 315–75.

should be careful not to overweight the potentially "misleading" presence of only hydric soils or wetland vegetation: "Many plant species can grow successfully in both wetlands and nonwetlands, and hydrophytic vegetation and hydric soils may persist for decades following alteration of hydrology that will render an area a nonwetland." Corps Manual at 6. Because "[i]ndicators of hydrophytic vegetation and hydric soil generally reflect a site's medium- to long-term wetness history," it is "[w]etland hydrology indicators [that] provide evidence that the site has a *continuing* wetland hydrologic regime and that hydric soils and hydrophytic vegetation are not relic[s] of a past hydrologic regime." Corps Supplement at 68. Thus, the Corps Manual advises at page 6, a certification of "[t]he presence of hydric soils *and* wetland hydrology indicators *in addition to* vegetation indicators will provide a logical, easily defensible, and technical basis for the presence of wetlands." (Emphasis added.)[4]

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[4] Agency guidance repeatedly emphasizes this need to account for all three criteria to conform to the statute's definition of wetlands, which was not followed here. See, e.g., NRCS Procedures (3-2) (definition of "wetland" is "unique to the statute, and all decisions regarding the identification of wetlands must be based on this definition"); Corps Manual at 9 ("The interaction of hydrology, vegetation, and soil results in the development of characteristics unique to wetlands [which] may be bordered by both wetter areas (aquatic habitats) and by drier areas (nonwetlands)."); NRCS Procedures (4-3) ("The ultimate decision if a site meets the [wetland] criteria for any of the three diagnostic factors is made from a preponderance of the evidence, best professional judgment, and the [agency] definitions, criteria, or both of hydrophytic vegetation, hydric soils, and wetland hydrology."); NRCS Procedures (4-4) (a decision must be "based on the determination of a presence or absence of each of the three factors under [normal conditions]" and "wetlands" are only those "[a]reas

As in this case, NRCS also may need to determine whether a specific area should be deemed a converted wetland after changes have been made to the land's soil, vegetation, and/or hydrology. In these "atypical situations," NRCS agents have guidance they can and should follow to determine whether such activity has indeed converted a wetland. Corps Manual at 73–74; Corps Supplement at 100 ("Atypical situations are wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events."); NRCS Procedures (2-4), (2-15) (again, alteration must have occurred after 1985).

NRCS has some "flexibility" when "[s]tandard sampling methodology must be modified if it does not accurately assess the site," but even in non-standard situations, "the basic approach for making wetland determinations should not be altered (i.e., the determination should be based on the vegetative, soil, and hydrologic characteristics of the area in question)." NRCS Procedures (5-5). "Any variation from the sampling methods should be fully documented." *Id.* Agency guidance addresses typical and atypical situations when NRCS agents assess a parcel of land's soil, vegetation, and water.

1. *Hydric Soil*

The presence of hydric soil alone is not controlling: "not all areas having hydric soils will qualify as wetlands." Corps

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determined to support wetland hydrology, a prevalence of hydrophytic vegetation, and a predominance of hydric soils"); NRCS Manual § 514.3 ("Wetlands are identified through the confirmation of three diagnostic factors: (i) A predominance of hydric soil; (ii) The prevalence of hydrophytic vegetation; and (iii) Wetland hydrology"); NRCS Manual § 514.3(2) ("Wetlands must meet the definition of all three wetland factors (soils, plants, hydrology)."); NRCS Manual § 514.2H.

Manual at 21. "Only when a hydric soil supports hydrophytic vegetation and the area has indicators of wetland hydrology may the soil be referred to as a 'wetland' soil." *Id.* If NRCS agents believe that ground or surface waters (i.e., hydrology) have been removed from otherwise hydric soils, they are instructed to look for "Onsite evidence of drained soils," such as the presence of ditches or canals, dikes, levees, or similar structures, or the "Presence of a tile system to promote subsurface drainage." *Id.* at 21–22. Whether such drainage will preclude a wetland designation depends on how successful it is; if such areas are not sufficiently drained, they "may continue to have wetland hydrology." *Id.* at 22.

If NRCS agents face an atypical situation in which they believe hydric soils themselves have been altered, they follow three investigative steps. First, they must describe the alteration (e.g., dredging, removal of surface layers). Corps Manual at 77. Then they should determine the date of the alteration and finally, characterize the soils that were present before the alteration. *Id.* at 77–79.

2. *Hydrophytic Vegetation*

The presence of hydric soil alone is not controlling, and neither is the growth of some potentially hydrophytic vegetation—i.e., the type of plants found "growing in water or in soil too waterlogged for most plants to survive." Webster's Third New Int'l Dictionary 1109 (1993).

The vegetation that NRCS agents encounter runs along a spectrum from species that will grow only in wetlands (called Obligate Wetland Plants, which occur more than 99% of the time in wetlands) to species that typically cannot survive in a wetland's anaerobic soil conditions (called Obligate Upland

Plants, which occur less than 1% of the time in wetlands). Corps Manual at 13–14 & Table 1. The categories of plants that lie between these extremes include Facultative Wetland Plants (occurring approximately 67% of the time in wetlands), Facultative Plants (those "with a similar likelihood of occurring in both wetlands and nonwetlands"), and Facultative Upland Plants (occurring less than 33% of the time in wetlands). *Id.*[5]

Thus, the presence (or former presence) of some vegetation should typically not control wetland status, except perhaps if it is Obligate Wetland or Obligate Upland vegetation. NRCS agents are provided with extensive guidance on the measurement and evaluation of vegetation in order to rely on it as a wetland indicator. See, e.g., Corps Supplement at 15–31. Key in such determinations are the "hydrologic factors [that] exert an overriding influence on [plant] species that occur in wetlands." Corps Manual at 13.

NRCS agents may face atypical situations in which vegetation has been removed or altered. For example, the predominant land use in the Midwest is agricultural. "Wetlands used for agriculture may be considered atypical because they generally lack a natural plant community and may be planted in crops or pasture species or altered by mowing, grazing, or other management practices." Corps Supplement at 101. Such parcels of land may indeed be "wetlands [that] exhibit

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[5] See also Corps Manual at 11 n.1 ("Some species, due to their broad ecological tolerances, occur in both wetlands and nonwetlands."); Corps Supplement at 16 (acknowledging "the broad tolerances of certain plant species that allow them to be widely distributed across the moisture gradient"); Corps Supplement at 21–22 (noting that "the five basic levels of wetland indicator status (i.e., OBL, FACW, FAC, FACU, and UPL) are used in hydrophytic vegetation indicators").

indicators of hydric soil and wetland hydrology but lack any of the hydrophytic vegetation indicators." *Id.* at 104.

In such circumstances, before proceeding with a further assessment, NRCS must "[v]erify that at least one indicator of hydric soil and one primary or two secondary indicators of wetland hydrology are present." Corps Supplement at 105. "[U]nless soil and/or hydrology are also disturbed," the absence of "hydric soil or wetland hydrology" indicators means "the area is likely non-wetland." *Id.* And if the NRCS agent believes that hydrology was also altered, then the agent should determine whether the disputed land *could* have wetland hydrology and "[v]erify that the area is in a landscape position that is likely to collect or concentrate water," such as a "[c]oncave surface (e.g., depression or swale)." *Id.* Thus, in such an atypical situation, an NRCS agent may proceed with a wetland determination only after the agent is convinced that the disputed area has: (1) hydric soil, (2) the requisite hydrology (or potential requisite hydrology, if altered) to support hydrophytic vegetation, and (3) hydrophytic vegetation that has been removed or altered.

The agent's first step is to "[e]xamine the area and describe the type of alteration that occurred" to the land's vegetation. Corps Manual at 74–75. The agent can look for evidence of such alteration, including "clear cutting," the use of drainage structures such as "dams [or] levees," or the installation of drainage tiles. *Id.* Once the alteration has been identified, the agent's second step is to "[d]etermine the approximate date when the alteration occurred." *Id.* at 75.

After reaching a conclusion on the type and date of alteration, the NRCS agent moves to the third step and describes the alteration's effects on the vegetation and determines "the

type of vegetation that previously occurred." Corps Manual at 75. In some instances, direct evidence of the removed vegetation may be available—perhaps through recent aerial photography, in which species identification is "sometimes possible," or remnants of the plants are discovered through an onsite inspection (e.g., "stumps, roots"). *Id.*

In a situation like the Boucher property, if no direct evidence is available, "[c]ircumstantial evidence … may sometimes be obtained by examining the vegetation in adjacent areas." Corps Manual at 76. Critical to this case, in choosing a comparison site, the NRCS agent must select a site with "[1] the same topographic position, [2] soils, and [3] hydrology as the altered area." *Id.* The instruction that a comparison site must have comparable hydrology is repeated throughout agency guidance, including a specific admonition directly on point here, because it was not followed with the Boucher property: NRCS agents may follow "Corps manual … STEP 3" to select an "adjacent vegetation data source … 'in the local area on the same hydric soil map unit,'" but that "*comparison site should support hydrologic conditions that are similar to what existed on the altered site prior to the drainage*." NRCS Procedures (5-30) (emphasis added), quoting 7 C.F.R. § 12.31(b)(2)(ii).[6] In

[6] See also 7 C.F.R. § 12.31(b)(2)(i) (NRCS must determine if the land "under normal circumstances … supports a prevalence of hydrophytic vegetation"; "normal circumstances" means "the soil and *hydrologic conditions that are normally present, without regard to whether the vegetation has been removed*") (emphasis added); 7 C.F.R. § 12.31(b)(2)(ii) (if vegetation has been removed, NRCS can look to a site "on the same hydric soil map unit" that exists "under *non-altered hydrologic conditions*"—i.e., hydrologic conditions that are similar to the hydrologic conditions on the disputed site); NRCS Procedures (2-4) (NRCS agents can choose a "comparison site" on the

short, the existence or potential existence of sufficient hydrology—i.e., lots of water—to support hydrophytic vegetation is central to both the statutory definition of a wetland and all of the expert guidance for making an accurate wetland determination.

3. *Hydrology*

"Numerous factors (e.g., precipitation, stratigraphy, topography, soil permeability, and plant cover) influence the wetness of an area," the Corps Manual advises, but adds at page 29, in an eloquent example of technical and bureaucratic understatement, that it is unavoidable that "the characteristic common to all wetlands is the presence of an abundant supply of water." Thus "it is essential to establish that a wetland area is periodically inundated or has saturated soils during the growing season." *Id.* Ground may be considered "inundated" if it "is covered by water due to ponding, flowing, or flooded water." NRCS Manual § 514.2E. And soils are considered saturated with a "[v]isual observation" of water that "is

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"same hydric soil map unit as the subject site … to make a decision on the presence of hydrophytic vegetation when the subject site is altered and the plant community that occurred prior to the alteration cannot be determined," but such "comparison site *should support hydrologic conditions that are similar to what existed on the subject site prior to the alteration*") (emphasis added); NRCS Procedures (2-11); Corps Supplement at 102 ("to determine the plant community that would occupy the site under normal circumstances, if the vegetation were not cleared or manipulated," NRCS can "[e]xamine the vegetation on an *undisturbed reference area with soils, hydrology, landscape position, and other conditions similar to those on the site*") (emphasis added); Corps Supplement at 109 (if there has been "clearing of woody species on rangeland or pasture land," the NRCS may "[e]xamine the vegetation on a nearby, unmanaged reference site *having similar soils and hydrologic conditions*") (emphasis added).

12 in. (30 cm) or less from the soil surface," which "must be associated with an existing water table located immediately below the saturated zone." Corps Supplement at 76–77.

Evidence of hydrology sufficient to support a wetland can be direct or circumstantial. For example, NRCS agents are advised to look for "primary indicators" of hydrology, which "provide stand-alone evidence of a current or recent hydrologic event," with even "[o]ne primary indicator [being] sufficient to conclude wetland hydrology is present." Corps Supplement at 72. There is no shortage of primary indicators for which NRCS agents can test—again, any one of which is sufficient to support a finding of wetland hydrology—including the presence of surface water, a high water table, or saturation. Corps Supplement at 72–98; see also Corps Manual at 30–32.[7]

Some of these indicators can be gleaned from recorded data that may be available from federal, state, and local agencies, or NRCS can collect data onsite. For example, NRCS agents can make a "[v]isual observation of inundation" or "soil saturation" by digging a soil pit and "observ[ing] the level at which water stands in the hole." Corps Manual at 31–32. And *lots* of water, on or very close to the land's surface, is required to qualify as a wetland. For "soil saturation to impact

[7] Other primary indicators include water marks on vegetation or fixed objects, sediment deposits, drift deposits, algal mats or crusts, iron deposits, inundation visible on aerial imagery, sparsely vegetated concave surfaces, water-stained leaves, aquatic fauna, true aquatic plants, hydrogen sulfide odor, oxidized rhizospheres along living roots, presence of reduced iron, recent iron reduction in tilled soils, thin muck surface, and gauge or well data. Corps Supplement at 72–98; Corps Manual at 30–32.

vegetation, it must occur within a major portion of the root zone (usually within 12 inches of the surface)." *Id.* at 32.[8] Therefore, digging a several-foot-deep hole and observing water pool only at the bottom—away from the root zone—would not show that the soil could support hydrophytic vegetation.

Absent at least one of the many "primary indicators," NRCS agents can also look for "secondary indicators," of which two or more "must be present to conclude that wetland hydrology is present." Corps Manual at 34. Examples of secondary indicators include an "FAC-neutral test of the vegetation," the "local soil survey hydrology data," or "[g]eomorphic position" of the area at issue. *Id.* and Corps Supplement at 98–99.[9] As relevant to this case, the geomorphic position indicator "is present if the immediate area in question is

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[8] These hydrology criteria are related to the definitions of hydric soil and hydrophytic vegetation. Recall, to be considered hydric, the undrained soil must be "saturated, flooded, or ponded long enough … to develop an anaerobic condition" that supports wetland vegetation. 16 U.S.C. § 3801(a)(12); 7 C.F.R. § 12.2. And to be considered hydrophytic, the vegetation must be capable of growing "in water or in a substrate that is at least periodically deficient in oxygen … as a result of excessive water content." 7 C.F.R. § 12.2; 16 U.S.C. § 3801(a)(13). Therefore, if one digs a ditch and the observed water sits 12 inches or more below the surface, then such water will not be sufficient to reach or support the roots of hydrophytic plants.

[9] The "FAC-neutral test" looks to see whether more than 50% of dominant plant species in a given area are Facultative, Facultative Wetland, or Obligate Wetland Plants—even if the remaining vegetation falls into the Facultative Upland and Obligate Upland Plant categories. If so, the vegetation can be used as a "secondary indicator" that the area may have wetland hydrology. Corps Manual at 17–18, 57–58 & n.1. See also Corps Supplement at 99.

located in a depression." Corps Supplement at 98. But absent evidence that hydrology has been drained, removed, or diverted (as described below), here is the critical bottom line: "If no positive wetland hydrologic indicator is present, the area at the observation point is not a wetland." Corps Manual at 59.

As with soil and vegetation, it is possible that hydrology has been altered or removed. In that case, the agent may follow the same investigative steps for atypical situations outlined above regarding vegetation. It bears repeating that hydrology must be determined independently because soil and vegetation indicators alone may not be reliable. Thus, if NRCS agents believe—as they did when assessing the Boucher's farm—that a site's "hydrology has been altered (increased or decreased) by manipulations," then the "consideration of wetland hydrology is particularly important" because "some plant communities are slow to respond to changes in hydrology" and "soil features are very resistant to change." NRCS Procedures (5-58) ("it becomes important that the agency expert confirms that under [normal conditions] wetland hydrology is still present at the time of rendering [an agency] wetland identification decision").

In such a situation, "STEP 1" is for the NRCS agent to "[e]xamine the area and describe the type of alteration that occurred." Corps Manual at 80. Evidence of alteration such that "sufficient ground or surface water has been removed by artificial means" may include the construction of dams or levees, ditching, land-leveling, diversion of water, ground-water extraction through pumping, or the "[p]resence of a tile system to promote subsurface drainage." *Id.* at 22, 80. As always, the agent must then "[d]etermine the approximate date when

the alteration occurred." *Id.* at 80. Note the relevance of drainage tile, for it figures prominently in this case.

"STEP 2" requires the NRCS agent to record "a general description of how the alteration … has affected the area," such as whether there is more or less frequent inundation, or whether the duration of inundation and soil saturation has changed. Corps Manual at 80–81. In "STEP 3" the agent must "[o]btain all possible evidence that may be used to characterize the hydrology that previously occurred." *Id.* at 81. The Corps Manual offers six potential sources of information that NRCS agents should consult if possible, including aerial photography "taken during the growing season" that shows "whether the area was inundated," stream data, historical records, floodplain management maps, and interviews of knowledgeable public officials. *Id.* 81–82. As relevant to this case, another potential source of information is "[f]ield hydrologic indicators" such as watermarks on structures or, "[i]f adjacent undisturbed areas are in the *same topographic position* and are *similarly influenced by the same sources of inundation*," then the agent can "look for wetland indicators in these [comparison] areas." *Id.* at 81 (emphasis added). If, however, after consulting all available sources outlined above, the NRCS agent concludes that "no indicators of wetland hydrology were found," then "the original hydrology of the area was not wetland hydrology." *Id.* at 82.

Drawing from the above guidance for both typical and atypical situations, the NRCS agent must then certify a "wetland determination [that] is of sufficient quality to make a determination of ineligibility for program benefits." 7 C.F.R. § 12.30(c)(1). That is at least what is supposed to happen. We

now move to the facts of this case, which strayed far from these norms.

II. *The USDA and the Boucher Farm*

A. *Round One (1980s–2003)*

The Boucher farm in Hancock County, Indiana, has been used to produce livestock and grain for more than 150 years. The Bouchers purchased the farm in the late 1980s, just after the Swampbuster provisions went into effect. The Bouchers received a USDA notice in November 1987 that the farm contained hydric soils and thus had potential for a wetland classification. But a National Wetland Inventory taken in 1989 did not identify any wetlands on the Boucher property.

Around 1994, Mr. Boucher began to clean up two areas of the farmland, formally designated in the record with the Dr. Seuss-like names Un1 and Un2. These two fields were being used for illegal dumping by persons unknown. In 1994, Mr. Boucher removed five trees to reduce cover for covert dumping. A few years later, he removed four more trees. All told, the nine trees had occupied approximately 12/10,000ths of an acre. As described in the later agency hearing, one could fill an area the size of a pick-up truck bed by laying flat a slice from each of the nine trees' trunks.

In June 2002, a USDA representative visited the Boucher farm to consider a request to establish a conservation filter strip around the perimeter of the farm. The USDA representative reported a potential wetland violation based on Mr. Boucher's tree removal. FSA directed NRCS to investigate. An NRCS resource conservationist, Karen Hauer, completed a routine wetland determination for Un1 and Un2 in late 2002.

Only brief notes are provided in the record, but Ms. Hauer's form indicates that the site was not "significantly disturbed" and did not present an "Atypical Situation." She began her investigation by following the above-outlined agency guidance and assessing the hydrological properties of Un1 and Un2. She found no surface water. Any soil saturation was at a depth of greater than 12 inches (i.e., not close enough to the root zones to support hydrophytic vegetation). Despite the lack of hydrology or a significant disturbance (making for an "atypical" situation), Ms. Hauer apparently assumed the hydrology had been drained through the installation of tile. When agency experts were later asked why they assumed the fields had been tiled—as we will see, they had not been—the reason given was "because typically these fields are tile drained" and "they would not be farmable normally without drainage."

Ms. Hauer thus selected a comparison area in an "off-site adjacent" area. She chose "Field 7," which was entirely unsuitable for comparison. It was an unfarmed area in a depression and was indisputably a wetland.[10] If Ms. Hauer believed that she needed a comparison site due to alteration of hydrology in Un1 and Un2, the process for testing that hypothesis is outlined above: verify that such an alteration was made and the date of that alteration, assess the effect of that alteration, and then obtain all possible evidence to characterize the previous hydrology (including the use of primary and secondary indicators). Her assessment did not make it past step 1. Not

[10] There is no dispute that Field 7 is a wetland of some type. The Bouchers originally challenged NRCS's determination that Field 7 was not an "artificial wetland," but were unsuccessful on that claim in the underlying agency proceedings and have not raised the issue on appeal.

surprisingly, Ms. Hauer had no trouble finding the requisite hydrology or hydrophytic vegetation on Field 7's wetland, including plant species that were almost all categorized as FACW (very likely to occur in wetlands), and just two FAC species (just as likely to occur in wetlands as not).

NRCS sent Mr. Boucher the preliminary determination on February 7, 2003, which concluded that Un1 and Un2 contained 2.8 acres of converted wetland. The agency was under the impression that Mr. Boucher planned to accept a remediation plan, and on February 27, 2003 mailed him a plan that would have required Mr. Boucher to plant 300 trees per acre to compensate for the removal of the nine trees. Mr. Boucher, however, decided to challenge the decision. He hired an attorney and requested reconsideration and a site visit. Mr. Boucher did not feel that the follow-up visit was "adequate," and on April 17, 2003, he appealed to the Farm Service Agency (FSA) County Committee to request a review by the NRCS State Conservationist. The FSA Committee docketed his request, but noted that the committee "must feel that there is merit to your request for the wetland review" to be ordered.

Mr. Boucher pointed out that the only trees he removed had been Facultative Upland Plants—i.e., those unlikely to be found in wetlands—and that no leveling or drainage work had been performed on this site. The FSA Committee found merit in the appeal and the case was referred to the NRCS State Conservationist for a further site visit and assessment. The Bouchers recalled meeting with State Conservationist Phil Bousman on September 9, 2003 and communicated about the planned meeting with their attorney. The USDA also has records that Mr. Bousman was in communication with Ms. Hauer for the Boucher aerial slides in anticipation of the site

visit. The USDA, however, "has no documentation that the site visit ever took place," with a USDA representative explaining that those records seem to have "disappeared." Hrg. Tr. 45.

Mr. Boucher left his meeting with the State Conservationist "feeling that he had proved his position." No further communication was received from the USDA for nearly ten years, until late 2012. In February 2004, Mr. Boucher passed away.

B. *Round Two (2012–2013)*

Mrs. Boucher took over the farm and leased it to a new tenant. In 2012, her tenant asked if he could remove an old house and barn from a portion of the property called Field 8. Mrs. Boucher agreed and on July 2, 2012, sought permission from the USDA for that removal. Unfortunately, as we will see, this request prompted the USDA to discover in November 2012 that it had never completed a Final Technical Determination for Un1 and Un2 after Mr. Boucher's 2003 FSA appeal for a State Conservationist's visit.

A new site visit was scheduled for early 2013 to appraise Field 8, per the recent request, at which time the 2003 preliminary determination for Un1 and Un2 could be finalized. Conditions for the site visit were unusual. Over three inches of rain fell on January 13 and January 14, the day of the visit. That rain melted eleven inches of snow on the ground. NRCS sent a soil scientist, an area easement specialist, and a district conservationist, but no hydrologist, to assess the Boucher farm.

On this visit, the NRCS experts observed standing water and puddles in several fields, which can of course serve as a "primary indicator" of wetland hydrology. Corps

Supplement at 73. According to agency guidance applicable to this situation, "Care must be used" when basing a determination on such observations "because surface water may be present in non-wetland areas immediately after a rainfall event or during periods of unusually high precipitation," and absent "other hydrology indicators … a follow-up visit during the growing season may be needed." *Id.* The agency experts did not schedule a follow-up visit but did snap some pictures of puddled fields they believed to be Un1 and Un2 and noted in their assessment form the (unsurprising) "evidence that water collected at the surface after heavy rains."

A critical point, as we will see, was that the experts also noted that "Drainage tile has been added to the site," and thus "Hydrology data from comparison site Field 7 … was used for hydrology as per policy." App. 52. In a separate place on the assessment forms, the experts again recorded their belief that "[t]he site has been cleared, *drained*, and is currently farmed." App. 51 (emphasis added).

Based on these assumptions, the experts in 2013 concurred with Ms. Hauer's 2002 decision to use "[a] comparison site (reference site) to the south (Field 7) … to determine Vegetation *and Hydrology* as per policy" outlined in 7 C.F.R. § 12.31(b)(2)(ii) and the Corps Manual guidance on atypical situations. (Emphasis added.) The experts agreed with Ms. Hauer's 2002 assessment that Field 7 has a "similar landscape position and soil type" as Un1 and Un2. The vegetation observed on Field 7 was indeed hydrophytic vegetation, with almost all species categorized as FACW—i.e., the types of species likely to occur in wetlands—and one species of FAC (equally likely to be in wetlands or not) and one FACU (less likely to be in wetlands).

The agency issued on January 30, 2013 a new preliminary technical determination that Un1 and Un2 were converted wetlands. And on March 1, 2013, the NRCS issued its final technical determination, affirming its 2003 preliminary determination, but slightly reducing the acreage it had designated in 2003 as converted wetland to 2.6 acres total—0.7 acres on Un1 and 1.9 acres on Un2. The NRCS explained that during its site visit to "confirm the original findings … in 2003," it used Field 7 as a "reference site" to evaluate Un1 and Un2 because "the vegetation [was] no longer visible for identification and drainage tile has been added to these locations." App. 45 (emphasis added).[11]

After some prompting, the USDA notified Mrs. Boucher of its final determination on March 27, 2013. Mrs. Boucher appealed the determination to the USDA's National Appeals Division. On May 3, 2013, NRCS completed an "Atypical Situation Data Sheet" to document its use of Field 7 as a comparison site for Un1 and Un2. In case there was any doubt about the basis for the NRCS experts' use of a comparison site, and even though the agency has been trying to run away from this evidence for years now, the Atypical Situation Data Sheet showed clearly that the experts believed Un1 and Un2 were "drained allowing crop production," and thus "Hydrology

[11] This language implies that the USDA personnel in 2013 were not aware of the 2003 appeal and the evidence Mr. Boucher had provided to contradict Ms. Hauer's preliminary findings. In the agency hearings and the district court, the USDA blamed the Bouchers for the passage of time and the disappearance of USDA records, claiming the Bouchers should have realized the USDA had never closed its file after Mr. Boucher provided the evidence showing that the Un1 and Un2 parcels were not converted wetlands. Dkt. 49 at 24–25. On appeal, at least, the government has dropped this unusual line of argument.

was removed." They also noted that "Soils were minimally disturbed from land clearing and the site was not filled." App. 57. The experts had thus used a "Comparison Site (reference site)" in order "to determine Vegetation and Hydrology," relying upon the above-detailed agency guidance manuals.

C. *Agency Hearings*

1. *National Appeals Division Hearing and Decision*

On appeal to the National Appeals Division, Mrs. Boucher needed to show that the "agency's adverse decision [was] erroneous by a preponderance of the evidence," which she could do by submitting additional evidence. 7 C.F.R. § 11.8(e). Mrs. Boucher submitted evidence that Un1 and Un2: (1) did not appear to have any drainage tiling; (2) to the extent they did have any tiling, the tiles were installed before 1985; (3) did not demonstrate inundation or saturation with water; (4) were not in a depression; and (5) previously had trees that were not hydrophytic.

The agency continued to assert that Un1 and Un2 had been drained and that drainage required the use of Field 7 (the unfarmed wetland in a depression) as a comparison site. In its pre-hearing filing, the agency explained that at the time of the site visit, "Hydrology was noted as being altered," and "therefore, reference site hydrology data and secondary indicators noted provided the support to meet the wetland hydrology criteria." An evidentiary hearing was conducted by telephone on June 20, 2013.

Mrs. Boucher hired a company, B. Thompson Associates (Thompson), to make an independent assessment of Un1 and Un2. Relying on the Purdue University Indiana Drainage Guide for the best method to expose drainage tile, Thompson

used a trenching machine to dig trenches five and a half feet deep (a foot or two deeper than the Guide's recommended minimum level). Thompson dug those trenches in large cross patterns that reached the full distance across both Un1 and Un2.

The trenches discovered no drainage tile. What's more, in the wetter-than-normal spring of 2013, the open trenches did not pond or demonstrate any saturation. The water table never rose above the four-foot mark—far below the maximum twelve inches from the surface required for wetland hydrology. This evidence was consistent with NRCS agent Karen Hauer's 2002 assessment, before she assumed—incorrectly—that drainage tile had been installed.

In response, the Agency's Appeals Coordinator contended that the cross-shaped trenches were dug into the middle of Un1 and Un2 and that—because hydrology still appeared absent—she believed there must be tiling around the periphery of Un1 and Un2 responsible for the change in hydrology. Such an arrangement of tiling, however, would not be effective in draining water from a saturated field. Thompson and the Purdue Drainage Guide advised that effective drainage tiling needs to be in a grid pattern with tiles (i.e., pipes) that are spaced no more than 70 to 120 feet apart.

To be sure, a few pieces of tile had been recovered, but they were made of concrete. That type of tile was not used after the early 1980s when, if wetlands had already been converted, the lands were no longer considered wetlands by federal law. Mrs. Boucher also secured a note from the prior owners of the farm, who explained that any drainage tile on the property was installed around 1981 or 1982.

Mrs. Boucher also pointed out that, to the extent the agency experts believed they had taken photographs of standing water in fields Un1 and Un2 during the wet January 14, 2013 visit, they had been disoriented as to several locations on the property—including for those areas in the pictures. The pictures believed to be of Un1 and Un2 actually showed standing water primarily on a different portion of the farm—Field 1—that had been determined to be prior converted non-wetland. Hrg. Tr. 25–26 & 48.

Thompson (the company that trenched Un1 and Un2) also conducted a GPS survey of the property. The survey confirmed that Un1 and Un2 are not in a depression and thus cannot meet the depressional geomorphic position criterion. Hrg. Tr. 25. In fact, the only depressional field was the wetland in Field 7, the comparison site selected by the NRCS experts. At the risk of stating the obvious, this was strong evidence that Field 7 did not provide a relevant comparison to Un1 and Un2.

Mrs. Boucher also contested the agency's assumption that the nine removed trees were hydrophytic. She provided the agency with a letter from Mr. Boucher to their attorney that explained: "The species of tree that I removed are consistent with Facultative Upland and Soils developed under Prairie vegetation soils, 'trees can be removed' without an Act of Conversion." AR 404. In fact, she had contested the hydrophytic nature of the nine trees throughout the agency process. See, e.g., App. 87 ("My husband documented in his notes the trees removed were non-hydrophytic"); App. 88 ("According to my husband the trees removed were non-hydrophytic" and "were not wetlands to begin with"); App. 94 ("hydrophytic [v]egetation was not found [on a comparable parcel] as

always contended by my husband"); App. 100 ("My husband cleared 9 non-hydrophytic trees over 6 years in the farmstead area referred to as Fields Un1 and Un2. The brush being referred to is actually herbaceous plants not woody plants."); App. 105 ("I proved the only woody vegetation removed were nine non-hydrophytic trees and herbaceous vegetation."). The only response from the agency was an assertion that some trees on the Field 7 comparison site, although classified as FACW and not FACU, were in the same "family" as the removed FACU trees. Hrg. Tr. 40.

The agency thus faced substantial evidence that one of two situations was true. The first was that there was insufficient (or perhaps no) drainage tile on Un1 or Un2, so that hydrology had never existed on these plots to make them wetlands. That finding would be consistent with the trenching, topography measurements, and the older evidence that the removed trees were not hydrophytic. The second, less likely situation, was that the agency experts were correct that drainage tile had removed the hydrology that would have supported hydrophytic vegetation, but that the tile was installed before 1985, meaning that Un1 and Un2 could not legally be deemed wetlands. In either situation, Un1 and Un2 were not wetlands.

Rather than grappling with this evidence, the hearing officer used transparently circular logic, asserting that the agency experts had appropriately found hydric soils, hydrophytic vegetation, and wetland hydrology, "using a similar adjacent property [i.e., Field 7, the wetland in the depression] because [the] Property was converted and no longer had any natural fauna." App. 42. Without mentioning Mrs. Boucher's evidence that the removed trees were FACU—i.e., a category of trees unlikely to be found in wetlands—the hearing officer

found that Mrs. Boucher "failed to prove what type of natural vegetation was native to the Subject Property and did not show that [NRCS] inaccurately chose the species of natural vegetation that would have grown on" Un1 and Un2.

Oddly, the decision did not mention the agency experts' erroneous assumption from 2002 forward that Un1 and Un2 had been drained. Nor was there an effort to account for the role hydrology should have played, per all the agency guidelines, in the agency experts' assessment. The hearing officer did not mention, let alone reconcile, Mrs. Boucher's evidence that Un1 and Un2 had not been drained and still did not demonstrate sufficient inundation or saturation. Nor did the hearing officer note the site topography study, which showed that Un1 and Un2 were not in a depression, unlike Field 7—which meant, under all applicable expert guidance for the agency, that the comparison site could not serve as a "similar adjacent property." *Id*.

2. *Agency Director Review*

Mrs. Boucher then requested a Director review of the hearing officer's decision. She again protested that Field 7 was a wetland and not comparable to Un1 and Un2. She also objected that the "Hearing Officer did not adequately consider … the following of the program regulations that apply in this situation," nor did the officer "cite any of the evidence and arguments I submitted or [gi]ve any reason he considered them not to be valid."

In response, the agency continued to "disagree[] that these areas have not been impacted by drainage" and insisted that "[d]rainage did exist on the tract as documented by the clay tile." (The source of this assertion remains a mystery. Again,

the tile fragments found on the farm were cement, not clay, and to the extent there was any tiling, it would have been installed before 1985.) Any evidence offered by Mrs. Boucher to the contrary did "not prove the hydrology of the site has not been drained/altered." AR 165. The agency now also asserted, apparently for the first time, but important on judicial review, that "Removal of woody vegetation … is considered a hydrological alteration." AR 163. The agency further disputed Mrs. Boucher's evidence that the removed trees were non-hydrophytic because: (1) different species of trees, but possibly those in the same family as the removed trees, were located on Field 7 and classified as FACW; and (2) it could have been possible for "trained Agency staff" to identify the removed trees from aerial photos (although there was no suggestion they had done so).

The following month, an agency deputy director found that the decision was "supported by substantial evidence" and affirmed. App. 29–30, 36. In an overdue admission, the deputy director abandoned any underlying NRCS expert determination that Un1 and Un2 had tiling or any drainage, finding: "No drainage has been installed since the early 1980s." App. 30. In fact, the deputy director's factual "Background" statement recounting NRCS's wetland assessment omitted *any* reference to the agency experts' conclusions regarding, and reliance upon, the existence of drainage tile, quoting only the portions of the record and documentation that referred to tree removal. App. 30–32.

The deputy director acknowledged that Mrs. Boucher "specifically argues that Un1 and Un2 do not exhibit the required hydrology or hydrophytic vegetation necessary to identify land as wetland." Relying on 7 C.F.R. § 12.31(b)(2)(ii),

the deputy director concluded that use of a comparison site was warranted once the agency reviewed slides of aerial photography that showed some trees had been removed. Astonishingly, the deputy director wrote that all that was required of the comparison site was that it be *on the same hydric soil map*. App. 34. Further, Un1 and Un2 were appropriately considered "converted wetland" because, per 7 C.F.R. § 12.2(a), all that is required for the agency to deem land "converted wetland" is proof that "woody hydrophytic vegetation has been removed from hydric soils." App. 35. It made no difference that Mrs. Boucher "successfully argued below, and Agency conceded, that drainage did not exist on Un1 and Un2 as Agency originally claimed." Because aerial photography showed some type of woody vegetation had been removed, Un1 and Un2 "were correctly labeled" converted wetland. App. 35.

The deputy director did not mention, let alone reconcile, Mrs. Boucher's evidence that: (1) even without any drainage on Un1 and Un2, the fields did not demonstrate sufficient inundation or saturation; (2) the site topography study revealed that Un1 and Un2 were not in a depression, unlike Field 7; and (3) the removed trees were FACU—i.e., trees unlikely to be found in wetlands.

D. *District Court Proceedings*

Mrs. Boucher sought judicial review in the Southern District of Indiana under the Administrative Procedure Act, 5 U.S.C. § 702. The parties filed cross-motions for summary judgment based on the administrative record. Mrs. Boucher repeated her arguments from the agency proceedings. By this time, the agency stopped mentioning drainage or drainage tile at all. The agency argued that *any* removal of vegetation

permits use of a comparison site that is merely on the same hydric soil map, and a finding that woody vegetation has been removed is sufficient to deem an area "converted wetland." Dkt. 49 at 6, 12, 17, citing 7 C.F.R. §§ 12.31(b)(2)(ii) and 12.2(a).

The district court rejected Mrs. Boucher's argument that any tiling was present prior to 1985 because that argument "ignore[d] the other evidence that she herself presented during the administrative proceedings"—namely, that there was no tiling in Un1 and Un2**.** App. 16. In some logical tension with that holding, though, the district court rejected Mrs. Boucher's objection to Field 7 as a comparison site because the agency's evidence indicated that Un1 and Un2 "had been cleared, *drained*, and cropped, which necessitated the use of a comparison or reference site." App. 18 (emphasis added). Concluding that "NRCS followed the required regulatory procedures [and] appropriate technical manuals," as well as "completed the necessary wetland determination data forms and atypical situation data sheet to document and support its work and findings," the district court held that sufficient evidence supported the agency's wetland determination. The district court granted summary judgment for the USDA.

III. *Legal Standards*

We review *de novo* an appeal from a summary judgment disposition of an administrative action. *Habitat Education Center, Inc. v. U.S. Forest Service*, 673 F.3d 518, 525 (7th Cir. 2012). And we may overturn the underlying final decision of the USDA only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). This deferential standard of review stems from Congress's directive to defer to an agency's expertise because

"an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 378 (1989).

But even deferential review should "be searching and careful" when considering "whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment." *Id.*, quoting *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971); see also *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.*, 463 U.S. 29, 43 (1983) (standard requires that "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made'"), quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962). To fulfill this responsibility, we must "review the entire record" and, "even if we disagree with an agency's action," we must "uphold the action if the agency considered all of the relevant factors and we can discern a rational basis for the agency's choice." *Israel v. U.S. Dep't of Agriculture*, 282 F.3d 521, 526 (7th Cir. 2002); see also *Marsh*, 490 U.S. at 378 (courts must "carefully review[] the record and satisfy[] themselves that the agency has made a reasoned decision," including an "evaluation of the significance—or lack of significance—of [any] new information"); see also 5 U.S.C. § 706(2) (in reviewing agency decision, "the court shall review the whole record or those parts of it cited by a party").

An agency decision will be found "arbitrary and capricious" if it "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect

of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *State Farm*, 463 U.S. at 43. If a reviewing court is faced with "such deficiencies," it "should not attempt itself to make up" for those gaps by "supply[ing] a reasoned basis for the agency's action that the agency itself has not given." *Id.* "A contrary approach would … render judicial review generally meaningless." *Marsh*, 490 U.S. at 378; see also *SEC v. Chenery Corp.*, 318 U.S. 80, 92 (1943) (declining to uphold administrative decision when "the considerations urged [on appeal] in support of the [agency's] order were not those upon which its action was based").

IV. *Analysis*

With that legal framework in mind, we ask: Did the USDA examine relevant factors and relevant data, or articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made? Were the opinions of its own qualified experts reasonable, such that we should defer to their expertise? Did the agency evaluate the significance—or lack of significance—of any new information presented during the agency appeals process? The answers to all of these questions are no.

The agency guidance addresses the situation the NRCS agents faced at the Boucher farm: fields on a Midwestern farm appeared to "lack a natural plant community and [were] planted in crops or pasture species or altered by mowing, grazing, or other management practices." Corps Supplement at 101. Before proceeding further, NRCS agents were advised to "[v]erify that at least one indicator of hydric soil and one

primary or two secondary indicators of wetland hydrology [we]re present." Corps Supplement at 105. That step was crucial: "Unless soil and/or hydrology are also disturbed," the absence of "hydric soil or wetland hydrology" indicators means "the area is likely non-wetland." *Id.*

If the NRCS agents suspected that hydrology had been altered, then their obligation before proceeding to a comparison site was to determine whether the fields *could* have had wetland hydrology—for example by "Verify[ing] that the area is in a landscape position that is likely to collect or concentrate water," such as a "[c]oncave surface (e.g., depression or swale)." *Id.* The NRCS agents could have opted to look for one of almost two dozen primary or secondary indicators of wetland hydrology, such as making a "[v]isual observation of inundation" or "soil saturation" by digging a soil pit and "observing the level at which water stands in the hole" to see if the soil saturation occurred "within a major portion of the root zone (usually within 12 inches of the surface)." Corps Manual at 32.

That is not what happened, in 2002 or 2013. Instead the NRCS agents *assumed* that Un1 and Un2 had been drained of hydrology by the installation of field drainage tile *and* that Un1 and Un2 were in a depression. Both assumptions are, on this record, demonstrably wrong. The agents then walked down-gradient to Field 7, which *is* in a depression, into the midst of hydrophytic vegetation in what is obviously a wetland. They used those observations of Field 7 to declare that Un1 and Un2 were converted wetlands. That is not agency expertise that deserves deference. It is arbitrary and capricious disregard for both the facts and the law. The only evidence in the administrative record regarding the actual hydrology of

Un1 and Un2 is Ms. Hauer's initial 2002 measurements (which did not find wetland hydrology) and the work of the experts hired by Mrs. Boucher. They discovered neither drainage tiles nor sufficient wetland hydrology, and they measured the topography showing that Un1 and Un2 are not concave or in a depression.

Instead of defending these shortcomings, the government on appeal has tried to change the subject. The USDA contends that it is Mrs. Boucher who is making the case "all about drainage tiles, but USDA's decision had little if anything to do with tiles," and that "throughout the administrative appeal … the agency relied not just primarily but exclusively on tree removal to justify [its] decision." It was only "[t]he woody vegetation consideration, not the drainage assumption, [that] was the reason NRCS prepared an Atypical Situation Data Sheet and was the driving factor in the use of Field 7 to assess hydrology." We are not sure what 600-page administrative record the government is looking at, but it does not appear to be the same one we have.

We should be done—or rather the USDA should have been done when Mrs. Boucher provided evidence that the USDA experts should have found or recognized a decade earlier. But the USDA has continued to press two points on appeal—justifying its choice of a comparison site and its claim that it may forgo any assessment of wetland hydrology on a disputed site. We must address these points in a little more detail.

A. *Choice of Comparison Site*

The USDA argues that 7 C.F.R. § 12.31(b)(2)(ii) authorizes it to select a comparison site solely on the basis of the

comparison site's location "on the same hydric soil map unit"—without any reference as to whether the sites have similar hydrologic features. "In fact," the agency argues, "that regulation does not govern the hydrology-comparison-site question." USDA Br. at 30. The USDA contends that the appropriate "rules field experts follow for when and why to use a comparison site to assess hydrology come from the applicable policy manuals," including—it says—the Corps Manual, the Corps Supplement, and the NRCS Procedures. *Id*. at 30–31. Furthermore, the USDA asserts, "The Atypical Situation Data Sheet for Fields Un1 and Un2 specifically explained that NRCS used such guides to analyze Boucher's property." *Id.* at 31. Mrs. Boucher's positions are "no match for the straightforward expertise and guidance of the Army Corps Manuals," says the government. *Id*.

Let's go to the tape, as they say. Not only would such an interpretation cut against a regulatory scheme designed to conserve *wetlands*, but it is directly contrary to the very guidance the USDA cites. The NRCS Procedures do indeed say that the NRCS may rely on an "adjacent vegetation data source … 'in the local area on the same hydric soil map'" as authorized by the "Corps manual … Step 3." (5-30), quoting 7 C.F.R. 12.31(b)(2)(ii). But we cannot stop reading yet: The "comparison site *should support hydrologic conditions that are similar to what existed on the altered site prior to the drainage*." *Id.* (emphasis added); see also footnote 6, supra (citing some of the extensive agency guidance which directs that comparison sites have hydrology comparable to disputed sites).

The USDA also points to a second passage in a guidance manual, both in its appellate brief and in oral argument, that it contends supports this position. Quoting from the Corps

Supplement: "The evaluation of wetland hydrology requires special care on any site *where indicators of hydrophytic vegetation and hydric soil are present* but hydrology indicators appear to be absent," which is particularly important in the Midwest. USDA Br. at 31, citing Corps Supplement at 118 (emphasis added here). In such a situation, the government wrote on appeal: "The applicable manuals prescribe 'a number of approaches that can be used to determine whether wetland hydrology is present on sites *where indicators of hydrophytic vegetation and hydric soil are present* but hydrology indicators may be lacking due to normal variations in rainfall or runoff, human activities that destroy hydrology indicators, and other factors.'" *Id.* at 31–32, quoting Corps Supplement at 118 (emphasis added here). One such option when hydric soils and hydrophytic vegetation are present, but "human activity" has apparently "destroyed hydrology," is to "determine hydrology with a reference site." *Id.*, quoting Corps Supplement at 118, 121. "That describes Un1 and Un2 exactly," says the government, and "That is what NRCS did here." *Id.* at 31–32.

This critical passage in the government's argument has several important errors and omissions. First, the entire point of the cited passage of the Corps Supplement—as reflected in the passages quoted above—is to address situations where, despite the seeming absence of hydrology, both hydric soils *and hydrophytic vegetation are present*. That does *not* "describe Un1 and Un2 exactly." The thrust of this portion of the manual's guidance is to assist NRCS experts assess situations where hydrology is lacking, be it due to a "dry season," "dry year," "normal variations in rainfall or runoff," or "human activities." Corps Supplement at 118. Thus, this section outlines approaches NRCS experts can take when making site visits

"during the dry season," or during "Periods with below-normal rainfall," or "Drought years." *Id.* at 119–21.

Even if this guidance did not specifically describe "approaches that can be used to determine whether wetland hydrology is present on sites where indicators of hydrophytic vegetation and hydric soil are present but hydrology indicators may be lacking," it is still instructive to review the guidance. Corps Supplement at 118. At Step 1, NRCS agents must "Verify that indicators of hydrophytic vegetation and hydric soil are present, or are absent due to disturbance or other problem situations," and "proceed to step 2." *Id.* at 119. The NRCS agents must then "Verify that the site is in a geomorphic position that is likely to collect or concentrate water," such as a "Concave surface (e.g., depression or swale)." *Id.* Again, the only scientific or technical evidence in this case's Administrative Record as to site topography is that Un1 and Un2 are *not* concave or in a depression—unlike Field 7.

Assuming for purpose of argument that "the landscape is appropriate," i.e., is in a "depression," we might "proceed to step 3." Corps Supplement at 119. NRCS agents may now "use one or more" of several described "approaches to determine whether wetland hydrology is present and the site is a wetland," but must in "the data form or in the delineation report, explain the rationale for concluding that wetland hydrology is present even though indicators of wetland hydrology described in [this manual] were not observed." *Id.* Of course, the only rationale in the record for the NRCS experts believing hydrology sufficient for wetlands had once been present was their erroneous assumption, made by the agency from 2002 forward, that drainage tile had been installed in Un1 and Un2 after 1985—an untested and undocumented

hypothesis that Mrs. Boucher's evidence thoroughly refuted. But let's proceed.

As the USDA points out, the use of "Reference sites" for hydrology determinations is permitted, but with the following guidance: "If indicators of hydric soil and hydrophytic vegetation are present on a site that lacks wetland hydrology indicators, the site may be considered to be a wetland *if the landscape setting, topography, soils, and vegetation are substantially the same as those on nearby wetland reference areas*." Corps Supplement at 121 (emphasis added). Again, this guidance presumes the comparison of extant hydrophytic vegetation *and* insists that the topography be "substantially the same." Neither condition applies to this case.[12]

NRCS agents, however, are not left high and dry, so to speak, if they suspect hydrology has been altered and there is no adequate reference site. The guidance outlines additional "Hydrology Tools," which are "a collection of methods that can be used to determine whether wetland hydrology is present on a potential wetland site that lacks [hydrology] indicators due to disturbance or other reasons, particularly on lands used for agriculture." Corps Supplement at 122. These are back-up tools, to "be used only when an indicator-based wetland hydrology determination is not possible or would give misleading results," and they include: analyzing stream and lake gauge data; estimating runoff volumes, duration, and frequency of ponding in depressional areas based on

[12] At oral argument, the government read from this portion of the Corps Supplement but did not include Step 2's direction to verify the disputed site's geomorphic position and Step 3's insistence that, at a minimum, any reference site should share that same topography—just as it omitted those points in its appellate brief.

precipitation; evaluating the frequency of wetness signatures on repeated aerial photography; and estimating the "scope and effect" of ditches or any subsurface drainage systems—such as the drainage system the NRCS agents presumed was present in this case. *Id.*

It is disappointing that the NRCS agents failed to try an "indicator-based wetland hydrology" approach and made no effort to use any of these back-up tools. The guidance also specifically advises: "A hydrologist may be needed to help select and carry out the proper analysis" in situations where potential lack of hydrology is an issue. Corps Supplement at 122. Hydrology was at the heart of this dispute, but none of the experts NRCS sent to the Boucher farm was a hydrologist. The USDA's selection of Field 7 as a reference site remains deficient, even under the most favorable reading of the government's preferred regulation and guidance, making the resulting decision arbitrary and capricious.

B. *Forgoing Hydrology Altogether*

The USDA's second argument, taken to its logical conclusion, would eliminate the need to choose a comparison site at all, but would run directly counter to controlling statutes and regulations. The government relies on 7 C.F.R. § 12.32(a)(2) to assert that removal of woody hydrophytic vegetation from hydric soils is—by itself—sufficient to declare the area "converted wetland." If one reads only the highlighted provision, and not the governing statute, other regulations, or any guidance manuals, this could be a plausible reading:

> Where woody hydrophytic vegetation has been removed from hydric soils, for the purpose of or permitting the production of an agricultural

> commodity, the area will be considered to be converted wetland.

7 C.F.R. § 12.32(a)(2).

This argument reaches too far. First, here is the prefatory language for this provision: "Converted wetland shall be identified by determining *whether the wetland was altered* so as to meet the definition of converted wetland," and "in making this determination, the following factors are to be considered"—including whether woody hydrophytic vegetation has been removed. 7 C.F.R. § 12.32(a) (emphasis added). This language indicates that the regulation—as a whole—does in fact comport with the statutory requirement that soils, vegetation, and hydrology are to be considered by *first* determining whether the land is wetland, *before* considering various factors (including the removal of woody hydrophytic vegetation) to determine whether it is converted wetland. *Gunn v. U.S. Dep't of Agriculture*, 118 F.3d 1233, 1236–37 (8th Cir. 1997) (reading § 12.32(a) as "list[ing] factors that are to be considered in determining whether a wetland has been converted, such as whether woody hydrophytic vegetation has been removed").

The government's reading of this provision—the removal of woody hydrophytic vegetation from hydric soil is sufficient by itself to deem the site a converted wetland, without reference to hydrological factors—conflicts with the statutory definition's focus on hydrology. As defined in 16 U.S.C. § 3801(a)(7)(A), a "converted wetland" is:

> wetland that has been drained, dredged, filled, leveled, or otherwise manipulated (including any activity that results in impairing or

> reducing the flow, circulation, or reach of water) for the purpose or to have the effect of making the production of an agricultural commodity possible.

Agency guidance also maintains a focus on hydrology: "If indicators of either hydric soil or [one primary or two secondary indicators of] wetland hydrology are absent," then NRCS should conclude that "the area is likely non-wetland." Corps Supplement at 105.[13] More practically, if the agency experts in this case actually believed they were operating under this interpretation of 7 C.F.R. § 12.32(a)(2), why bother to select the comparison site of Field 7 and spend years defending that (arbitrary) decision?

This is not to say that the wholesale removal or decimation of hydrophytic vegetation could not affect an area's hydrology. In fact, the potential for such cause and effect is acknowledged in the agency's guidance because the presence or absence of vegetation can result in either more water or less water than would otherwise have been present. The Corps Manual specifically cautions NRCS agents that the "[t]ype and amount of plant cover affect both degree of inundation and duration of saturated soil conditions." Corps Manual at 29. For example, in some areas of "abundant plant cover," the "[e]xcess water drains more slowly … thereby increasing frequency and duration of inundation and/or soil saturation." *Id.* "On the other hand," the Manual notes, it is possible for "transpiration rates [to be] higher in areas of abundant plant cover,

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[13] The Corps Supplement adds at page 105 the caveat "unless soil and/or hydrology are also disturbed or problematic," but on appeal the USDA has abandoned any claim the fields were drained.

which may reduce the duration of soil saturation." *Id.* In short, the agency sends experts out into the field because someone must assess whether and how a change in vegetation has affected the area's hydrology.

The agency's assertion—that the removal of nine trees removed wetland hydrology from several acres of land—is incompatible not just with common sense, but with the NRCS experts' notation in their 2013 Atypical Situation Data Sheet for the Boucher farm. They noted: "Soils were minimally disturbed from land clearing and the site was not filled," such that there was only a "Minimal impact" on the area. App. 57. There is no indication in the experts' documentation that the removal of trees altered the disputed site's hydrology, despite the agency's position in subsequent litigation.

Furthermore, even if the USDA had adequate support for the convenient but arbitrary shortcut offered by its proposed interpretation of 7 C.F.R. § 12.32(a)(2), that provision still would not support a finding of converted wetland based on the record evidence in this case. Despite the government's assertion in oral argument that "there has never been a dispute as to whether or not the trees that were removed were hydrophytic vegetation," Mr. Boucher documented that the nine trees he removed from the disputed site were categorized as FACU—i.e., Facultative Upland Plants that are unlikely to occur in wetland areas, a point made repeatedly by Mrs. Boucher during the agency appeals process. See supra at 28–29. An assertion by the agency's appeal coordinator during the June 2013 hearing that some trees located on the comparison site appeared to be in the same "family" as the removed trees is not contrary evidence, and is not, at least without more, even relevant. The agency's mandate is to make an

assessment of sufficient reliability that benefits can be denied. This post hoc observation by an agency officer is not enough for us to avoid finding the agency's decision arbitrary and capricious.

The agency has also claimed on appeal that the NRCS experts could identify the species of removed trees via a series of aerial photography slides. There is no evidence in the record that any agency expert has attempted to identify the removed trees' species from aerial photographs. We confirmed at oral argument which photographs might be relied upon by the agency. While it is possible those blurry photographs are of the Boucher farm, it is highly implausible that anyone—even USDA experts—could use these aerial photographs to identify species of trees.[14]

As Mrs. Boucher correctly pointed out during the agency appeal process, the NRCS experts did not attribute the alteration of hydrology to the removal of the nine trees, and the agency presented no evidence that the tree removal altered the wetland hydrology. The USDA hearing officer and appellate officer failed to engage meaningfully with this point, thereby ignoring a crucial factor under the agency's

[14] Post hoc agency arguments notwithstanding, it is unclear from the administrative record what slides the agency experts reviewed before submitting their 2013 Final Technical Determination. During the June 2013 agency hearing, Mrs. Boucher referenced aerial photographs to support her contention that the disputed parcels had never sustained a vegetation coverage like that on Field 7. The USDA appeals coordinator inquired how Mrs. Boucher had obtained the referenced slides because the agency's technical team had "misplaced" their copies and had never requested any replacement slides from FSA. There are some notes from Karen Hauer's initial 2002 assessment reviewing slides, but those notes do not mention any species of trees.

interpretation of this regulation, rendering the decision arbitrary and capricious.

The district court's judgment is REVERSED and the case is REMANDED with instructions to enter judgment for Mrs. Boucher, awarding all appropriate relief.