Reciente informe de Science Mag resumiendo conflictos en las WaterActs y las cegueras del US Army Corps of Engineers. (WOTUS y USACE)

How wet must a wetland be to have federal protections in post-*Sackett* US?

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The most recent change to the interpretation of which waters constitute WOTUS occurred in May 2023 after the US Supreme Court ruled in *Sackett* v. *EPA*. The majority opinion stated that federal protections under the CWA extend only to those wetlands that are "indistinguishable" from "streams, oceans, rivers, and lakes" that are WOTUS, such that "the wetland has a continuous surface connection with that water, making it difficult to determine where the 'water' ends and the 'wetland' begins" (*5*). *Los vínculos solares por completo ausentes*

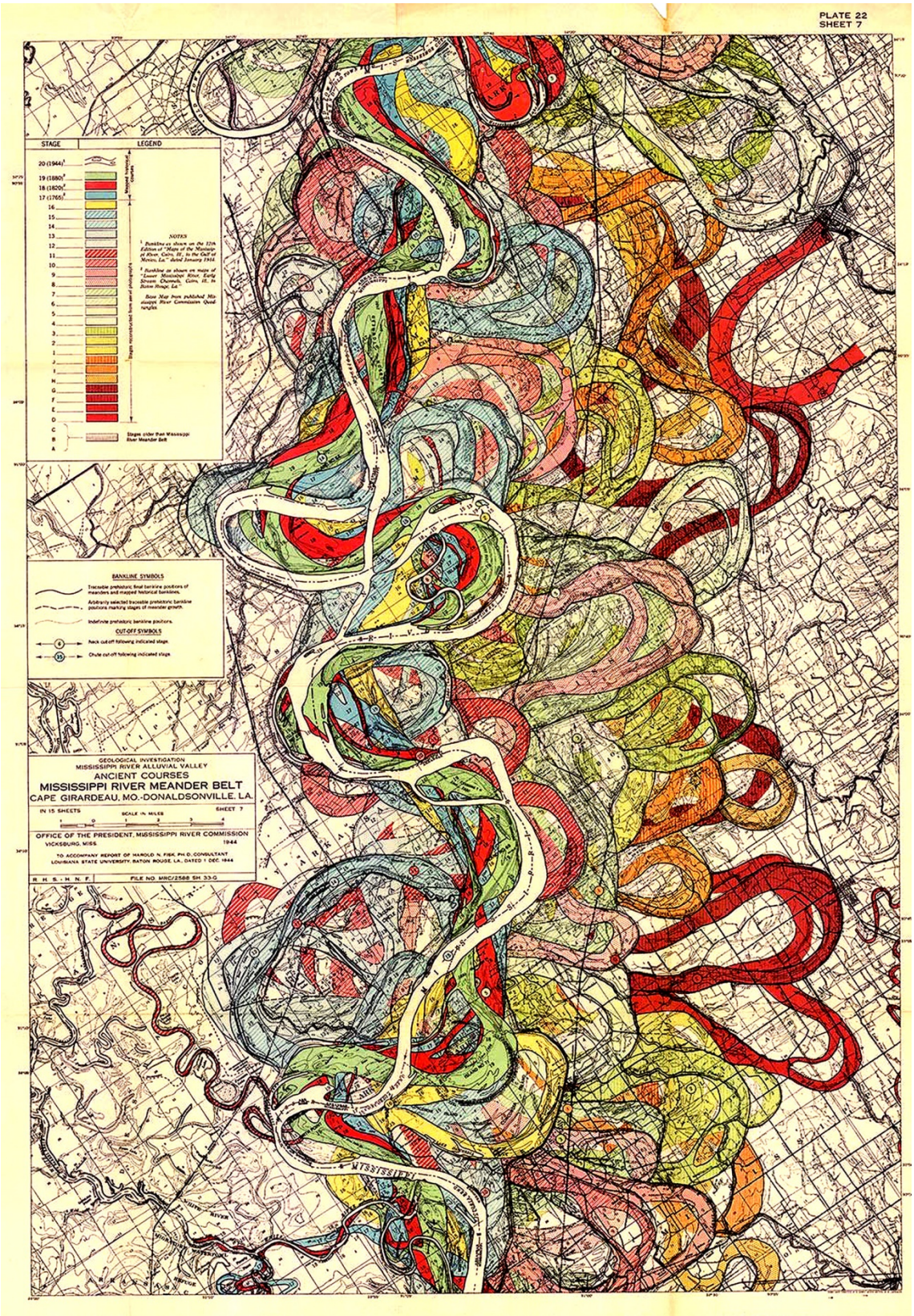
This interpretation of federally protected wetlands is not well defined but has been characterized as "adjoinment" and is notably narrower than all previous interpretations (*6*, *7*). This new interpretation ignores robust scientific evidence showing the ecologic importance of wetlands that may now be cut out of the CWA (*8*–*10*). *La ecología es la hermana opuesta y complementaria a la ciencia*

Additionally, the court's use of vague and subjective language creates unclear federal jurisdiction requirements for wetlands, and this raises the unresolved question posed by Justice Kavanaugh in his concurring opinion (*5*): How wet must a wetland be to have federal protections? For now, we are left guessing at how the court defines a "continuous surface connection" and its related text—is it some requirement for a surface water connection to a federally protected water, other evidence of hydrologic connectivity, or some other variable that would make a wetland "as a practical matter indistinguishable from waters of the United States"? *¡¿Waters of USA, or waters of Father Sun?!*

To conform to the Supreme Court decision, the EPA released a final rule in August 2023 that revised the regulatory definition of WOTUS and narrowed the scope of protections under the CWA (*11*). The EPA's amended 2023 rule removed the "significant nexus" test, which protected geographically isolated wetlands that substantially affect downstream water quality, reduce flooding, and provide ecologically critical habitat (*12*).

The amended 2023 rule also revised the definition of "adjacent" from "bordering, contiguous, or neighboring" to having a "continuous surface connection" (*11*). The terminology of a "continuous surface connection" originated from the *Rapanos* v. *United States* plurality opinion (*12*) and has not been well defined either by the *Rapanos* plurality or the *Sackett* majority opinions. *Cero opinión sobre termodinámica de sistemas naturales abiertos*

Highlighting the uncertainty introduced by the Supreme Court's language in its ruling in *Sackett* v. *EPA*, the EPA's conforming rule is already being challenged in court for allegedly defining the Supreme Court's requirement of a "continuous surface connection" too inclusively (*13*, *14*).



Harold Fisk en 1944, a petición del Army Corps of Engineers de Estados Unidos dibujó el Misisipi no sólo tal y como era entonces, sino tal y como había sido a lo largo de los siglos. En ella vemos el trazado completo del Misisipi en diferentes cursos, cada uno pintado de un color. El de 1944, el de 1880, el de 1820 y el de 1765, formando la llanura aluvial. De muchas maneras deja abierta la puerta a termodinámica de sistemas naturales abiertos y enlazados

The Supreme Court opinion in *Sackett* v. *EPA* has potentially removed federal jurisdiction from a large portion of wetlands (*6*, *15*), but there have been limited large-scale, spatially explicit estimates of the ruling's impact (*16*).

The lack of objective, science-based jurisdictional requirements for wetlands in the opinion also means that there is no clear single interpretation that can be used for that estimation. Given the importance of wetland ecosystems and their myriad beneficial downstream effects (*17*), there is a critical need to capture the full range of potential impacts of the Supreme Court's decision. Although actual federal jurisdictional status of waters and wetlands can only be determined by the EPA and USACE, prior studies have demonstrated the utility of using physical characteristics to estimate the impacts of policy changes on federal wetlands protections (*4*, *18*, *19*).

This study estimates the federal jurisdictional status of nontidal wetlands in the conterminous US using a range of potential interpretations of the Supreme Court's *Sackett* v. *EPA* majority opinion. Nontidal wetlands are the focus of this study because wetlands that are influenced by tides are expressly noted as WOTUS in the *Sackett* decision (*5*). The potential interpretations presented here explore the impacts of excluding "drier" wetlands from federal jurisdiction that may not meet the requirements detailed in the *Sackett* decision.

Notably, some potential interpretations may not comply with current federal agency rules and practices, but the goal of this study is to estimate the full range of potential long-term outcomes of the *Sackett* decision rather than its current implementation by federal agencies. To estimate the federal jurisdictional status of nontidal wetlands (*20*), the best available national-scale data of wetlands extent (*21*) and hydrography (*22*) were overlaid to estimate connections between wetlands and water bodies estimated as jurisdictional. Then, different potential interpretations of the *Sackett* decision were modeled using a qualitative measure of wetland "wetness," called wetland water regime classifications (*23*), to exclude drier wetlands from federal jurisdiction even if they intersect a jurisdictional water (fig. S1).

Results for each potential interpretation are presented as a range of federally nonjurisdictional (hereafter, "nonjurisdictional") wetland area to indicate uncertainty in the estimated jurisdictional status of water bodies. Finally, a national public lands dataset and the presence of state-level wetlands protections, which vary greatly across the country, were used to determine which states may have the most unprotected wetland area.

Most nontidal wetlands could be without federal protections

For the conterminous US, nontidal wetland area estimated as nonjurisdictional ranged from 17.3 million acres (15 million to 25.9 million acres), or 19%, of nontidal wetland area to nearly all 90 million acres of nontidal wetland area (Fig. 1). The lower bound of estimated nonjurisdictional nontidal wetland area (17.3 million acres, 19%) only represents geographically isolated wetlands; it does not exclude any wetlands for being too "dry," so the only requirement for estimated jurisdiction for a spatially contiguous group of wetland polygons is an intersection with an estimated jurisdictional stream or water body (*20*).

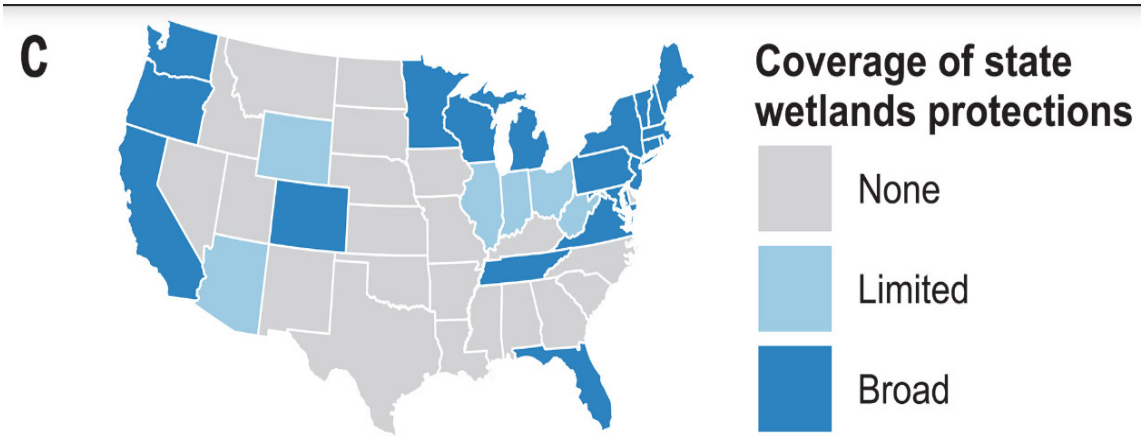


Fig. 2. State-level results and wetlands protections.

More-exclusive interpretations of the *Sackett* opinion where "drier" wetlands are not predicted to be jurisdictional even if they intersect a jurisdictional stream or water body lead to much larger estimates of nonjurisdictional wetland area. If wetlands must be at least seasonally flooded [i.e., surface water present for more than a month during the growing season (*23*); table S5] to be jurisdictional, 55 million acres (53.6 million to 59.1 million acres), or 61%, of nontidal wetlands are estimated as nonjurisdictional. If wetlands must be at least semipermanently flooded [i.e., surface water present throughout the growing season most years (*23*); table S5] to be jurisdictional, 81.9 million acres (81.4 million to 82.8 million acres), or 91%, of nontidal wetlands are estimated as nonjurisdictional.

Finally, a potential interpretation that requires wetlands to be permanently flooded excludes nearly all nontidal wetlands from federal jurisdiction. Of note, underlying data limitations mean that the nonjurisdictional estimates for more inclusive scenarios may actually be underestimates (*20*).

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Conclusions

This study estimates potential impacts of the Supreme Court's ruling in *Sackett* v. *EPA* and highlights the extreme uncertainty and potentially devastating loss of federal wetlands protections because of the decision. A loss of federal protection for a wetland would leave state-level protections, which vary greatly across the country, as the main backstop to prevent wetland degradation and loss.

The short-term impacts of the *Sackett* decision are unclear and will likely continue to be so unless Congress passes legislation to clarify which wetlands are protected under the CWA. Ongoing litigation and the end of the "Chevron doctrine" (*29*), which gave federal agencies broad authority to interpret and implement congressional acts, will add to the uncertainty.

This high-level analysis is a first step toward understanding the long-term potential impacts of the *Sackett* decision, with the hope that a greater understanding of potential impacts will inform public discussion and response. Although this study used the best-available national-scale datasets and a qualitative measure of wetland "wetness" to model potential interpretations of the *Sackett* decision, there are still questions surrounding the *Sackett* decision that cannot be answered with these data (*20*). Improvements to publicly available datasets and additional studies using quantitative measures of flooding frequency are needed to more fully understand the impacts of the *Sackett* decision.

Acknowledgments

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Respuestas a WOTUS (Wetlands of the U.S.) y a USACE (US Army Corp of Engineers)

http://www.hidroensc.com.ar/confesionario.html

http://www.alestuariodelplata.com.ar/pendientes9.html

http://www.alestuariodelplata.com.ar/pendientes8.html

http://www.alestuariodelplata.com.ar/pendientes7.html

http://www.alestuariodelplata.com.ar/pendientes6.html

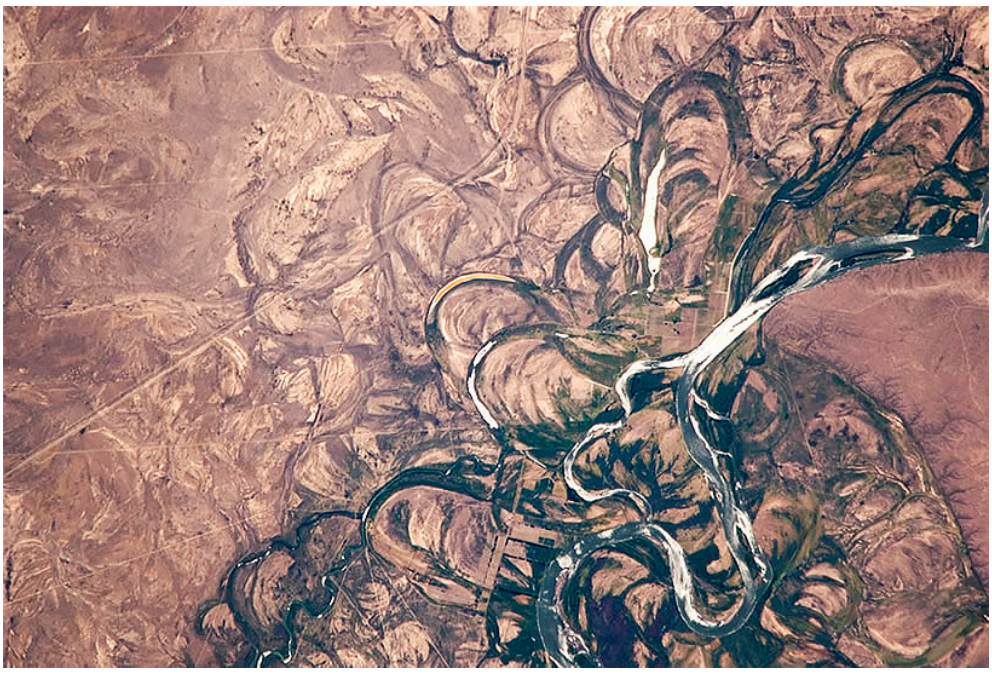
http://www.alestuariodelplata.com.ar/pendientes3.html

Al menos, estas Water Acts reconocen compromisos ligados entre humedales y ríos. Pero nada dicen de la energía solar, porque tendrían que serruchar la tapa de la tumba de Isaac Newton. Miran por pendientes en los fondos, pero reitero, nada dicen de energía solar. Por ello vale acercar estas imágenes de áreas poco menos que desérticas, donde lo único que dinamiza las aguas es la energía solar acopiada en costas blandas y bordes lábiles de los pocos humedales en las márgenes de estos ríos Negro y Santa Cruz. Ver distribución de temperaturas.

Siguen imágenes del río Negro rodeadas de arideces, mostrando la desesperada búsqueda de humedales que capturan la energía solar y por costas blandas y bordes lábiles la transmiten vía sedimentos, al cuerpo de agua mayor.


El Porvenir
©2015 Goo


Google earth



Siguen imágenes del río Santa Cruz

Temperaturas en márgenes de la ría Sta. Cruz afectada por las energías mareales

Este enorme trabajo de Horacio Ezcurra nos muestra lo nunca ilustrado. Para fundar las disociaciones térmicas bastan 0.2°. Cuestiones que la mecánica de fluidos jamás ha considerado, ni en términos convectivos, ni advectivos.

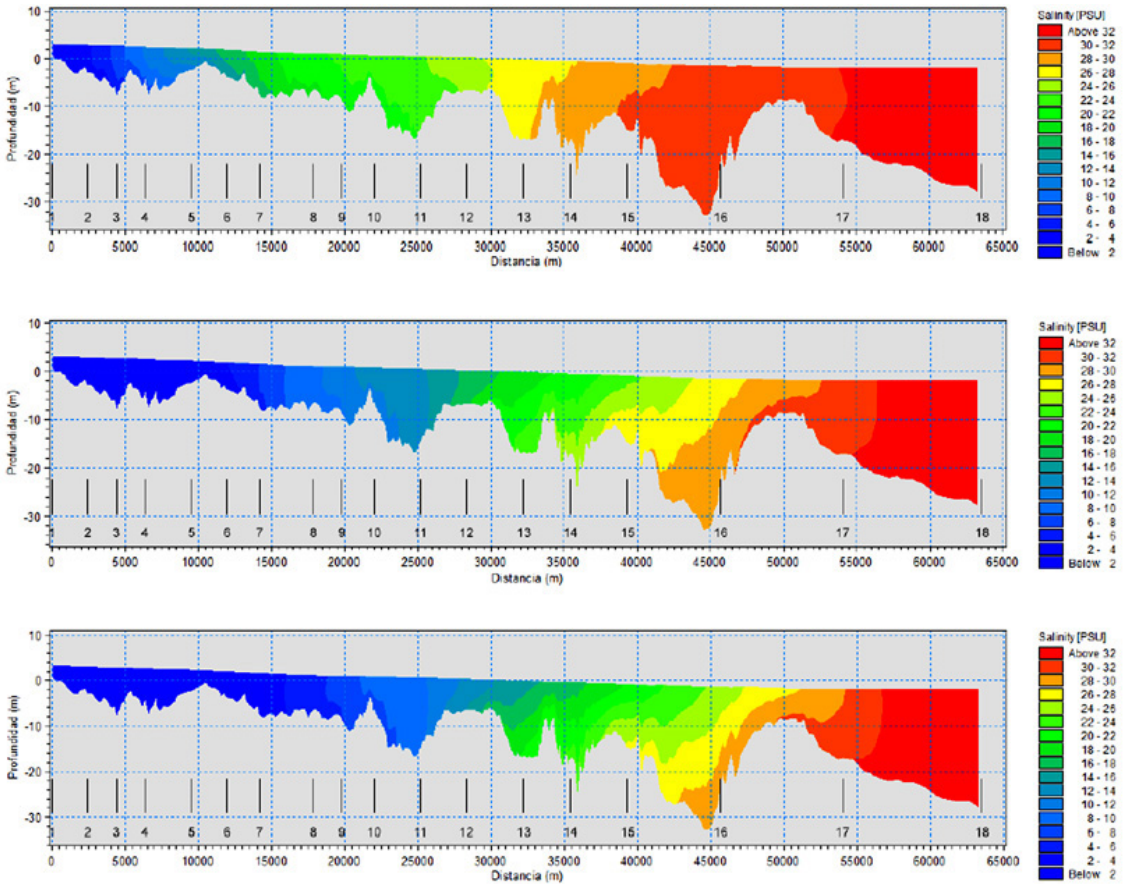


Figura 2-41. Cortes transversales de salinidad para el caudal Q_{min} = 232 m³/s (arriba), Q_{med} = 691 m³/s (medio) y Q_{max} = 1002 m³/s (abajo) para la condición de bajante.

http://www.hidroensc.com.ar/anastomasis.html

Fenomenología termodinámica estuarial

renovando acceso a la ecología de los ecosistemas *http://www.alestuariodelplata.com.ar/convec2.html*

Estuarial Thermodynamic Phenomenology

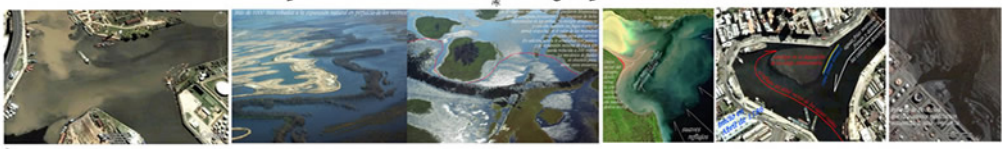
renewing access to ecosystem ecology *http://www.alestuariodelplata.com.ar/convenglish.html*

Interfuncionalidad de aguas someras, meandros, cordones litorales, deriva litoral, flujos convectivos internos y capas límite hidroquímica y térmica

Interfunctionality of shallow waters, meanders, stranded cuspate bars, litoral drifts, internal convective fluxes, hydrochemical and thermal boundary layers

Sensibilidad de los corredores de flujos convectivos internos a los provechos de la capa límite térmica. Nuevas miradas en sedimentología; acreencias naturales costaneras. Deriva litoral ligada a la eficiencia de salida de los tributarios.

Recursos culturales y naturales en relación a ecosistemas estuariales y dependencias tributarias en planicies extremas bajo presión de bordes urbanos.



Sensitivity of internal convective flux corridors to thermal boundary layer profits. New sights on sedimentology and natural shoreland accretions. Littoral drift interdependence on tributary flowing efficiency. Cultural and natural resources in relation to estuarial ecosystems and extreme plains tributary dependences under urban border's pressure. *GMI Agua*

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