LAKES, PONDS, AND IMPOUNDMENTS OF JURISDICTIONAL WATERS; ADJACENT WETLANDS; INUNDATION BY FLOODING

Regulatory Division - Savannah District
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OVERVIEW

- (a)(3) lakes, ponds, and impoundments of jurisdictional waters
- (a)(4) adjacent wetlands
- Tools for determining inundation by flooding

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REFRESHER

Paragraph (a)(1) – (a)(4) waters are:

(a)(1) territorial seas and TNWs
(a)(2) tributaries
(a)(3) certain lakes, ponds, and impoundments of jurisdictional waters
(a)(4) adjacent wetlands

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Typical Year Definition

When precipitation and other climatic variables are within the normal periodic range (e.g., seasonally, annually) for the geographic area of the applicable aquatic resource based on a rolling thirty-year period.

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WHAT ARE LAKES, PONDS, AND IMPOUNDMENTS OF JURISDICTIONAL WATERS?

- Defined in the NWPR in paragraph (c)(6)
    - Standing bodies of open water

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LAKES AND PONDS

- Are naturally formed through a variety of events, including fluvial, glacial, tectonic, and volcanic activity.

- Natural lakes and ponds can also be subsequently modified to change surface elevation, depth, and size. Some people may refer to these as impoundments.

- Lakes, ponds, and impoundments can be man-made features constructed for industrial and agricultural uses, power generation, domestic water supply, or for aesthetic or recreational purposes.

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ARTIFICIAL VS. NATURAL

- The Rule makes a distinction between artificial and natural lakes and ponds for the purposes of exclusion (b)(8).
  - Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in uplands or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) are excluded.

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WHEN IS IT A WATER OF THE US?

Lakes, ponds, or impoundments of jurisdictional waters (LPIs) are jurisdictional if any of the following apply:

1. Meets the definition of an (a)(1) water
   - Jurisdictional as an (a)(1) water
2. Contributes surface water flow to a water identified in paragraph (a)(1) in a typical year either directly or indirectly through one or more waters identified in paragraph (a)(2), (a)(3), or (a)(4) or through channelized non-jurisdictional features
   - Jurisdictional as an (a)(3) water
3. Is inundated by flooding from a paragraph (a)(1) through (a)(3) water in a typical year.
   - Jurisdictional as an (a)(3) water

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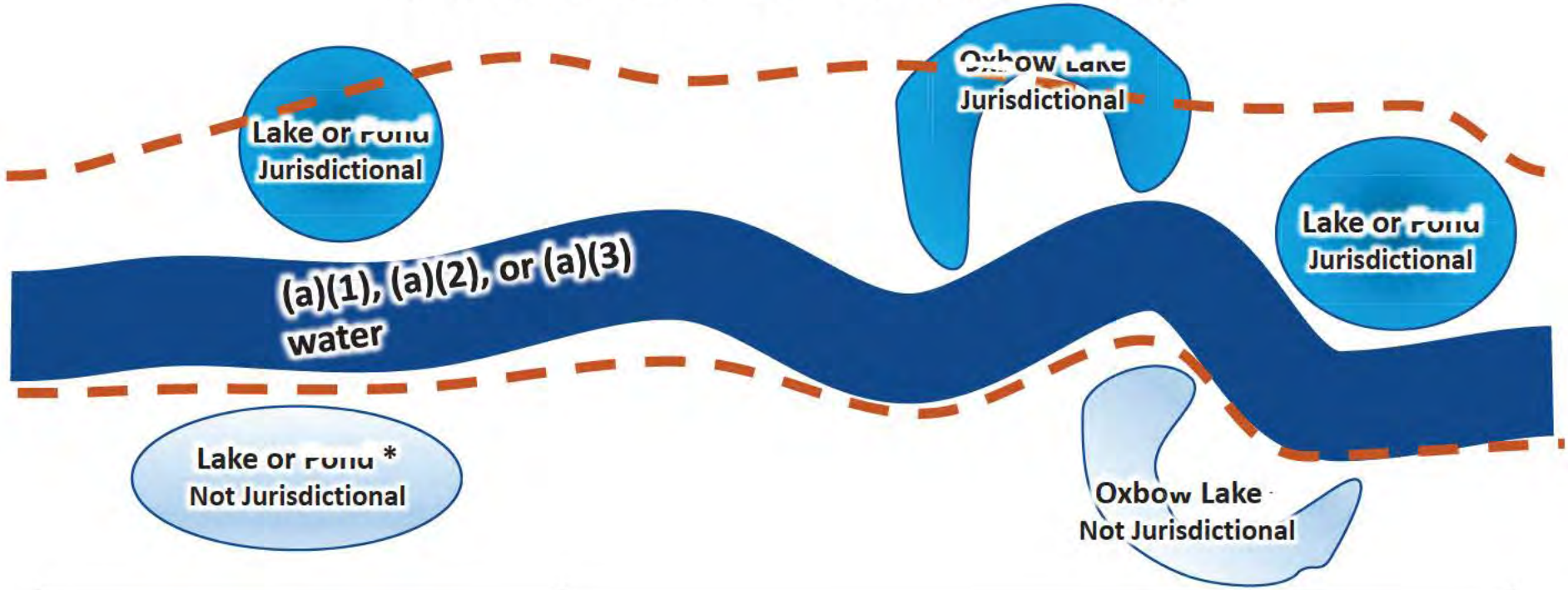
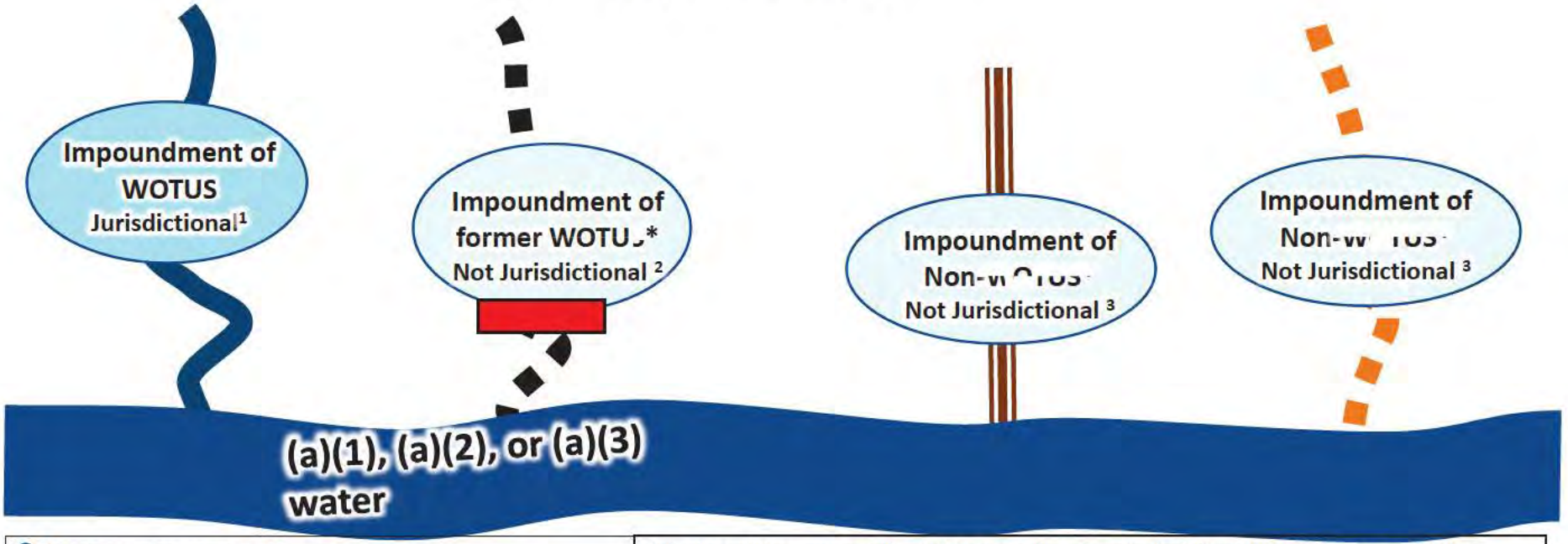
Lakes and Ponds – Inundated by Flooding



Extent of inundation by flooding from the (a)(1), (a)(2), or (a)(3) water in a typical year	A lake, pond, or impoundment of a jurisdictional water is also jurisdictional if, in a typical year, it is inundated by flooding from a territorial sea or traditional navigable water, or tributary, or from another jurisdictional lake, pond, or impoundment.

*Lake or pond is not otherwise jurisdictional as another paragraph (a) water.

Impoundments



- Perennial Tributary (jurisdictional)
- Ephemeral Channel (not jurisdictional)
- Perennial or Intermittent Ditch (not jurisdictional)
- Relict Tributary- no longer meets tributary definition because it does not contribute flow in a typical year due to artificial feature but was jurisdictional at the time of impoundment (not jurisdictional)
- Artificial feature - does not convey surface water flow in a typical year (not jurisdictional)

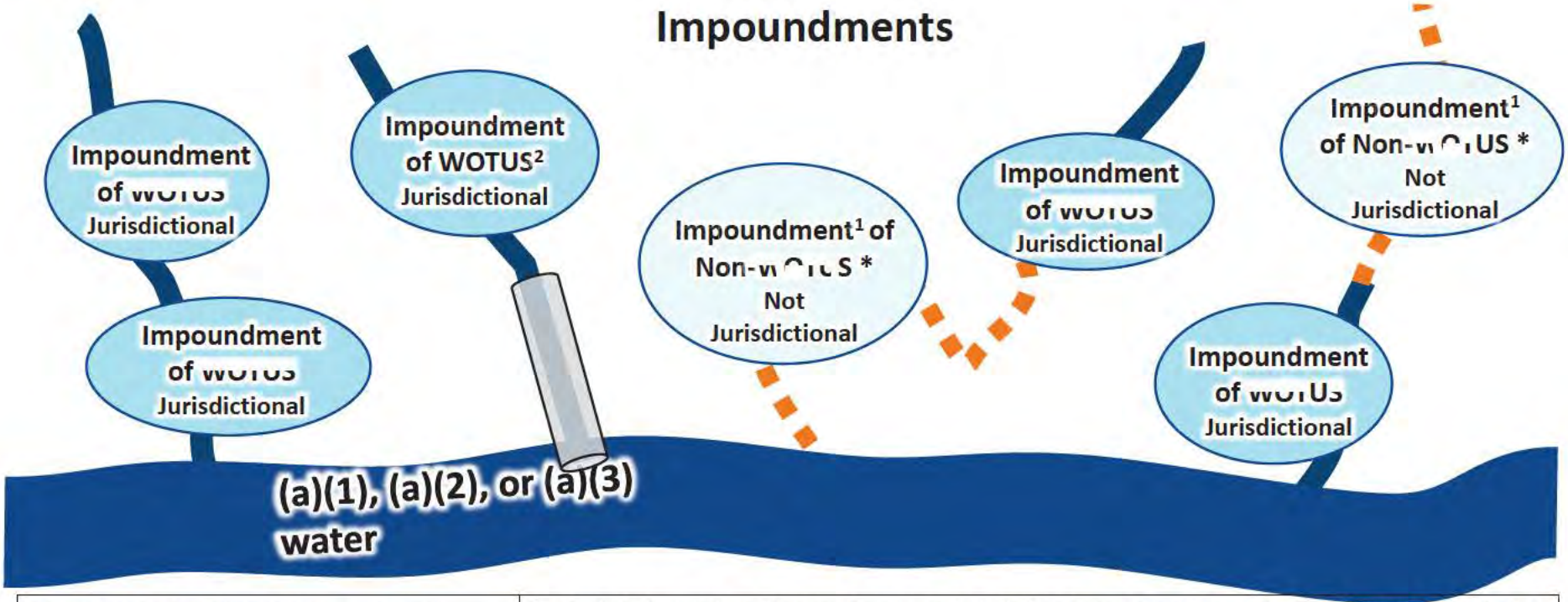
[1]The term lakes and ponds, and impoundments of jurisdictional waters means standing bodies of open water that contribute surface water flow to a paragraph (a)(1) water in a typical year either directly or through one or more paragraph (a)(2) through (a)(4) waters.

[2]Impounded water that lacks a sufficient surface water connection to a downstream paragraph (a)(1) water in a typical year is not a water of the United States.

[3]To be jurisdictional, an "impoundment of a jurisdictional water" must be an impoundment of a territorial sea or traditional navigable water, tributary, jurisdictional lake or pond, or an adjacent wetland, and must meet the conditions in paragraph (c)(6) of the final rule.

*Impoundment does not meet (a)(1).

Impoundments



Perennial Tributary (jurisdictional)

Ephemeral Channel (not jurisdictional)

Culvert- conveys surface water flow in a typical year (not jurisdictional)

*Impoundment does not meet (a)(1).

[1]To be jurisdictional, an "impoundment of a jurisdictional water" must be an impoundment of a territorial sea or traditional navigable water, tributary, jurisdictional lake or pond, or an adjacent wetland, and must meet the conditions in paragraph (c)(6) of the final rule.

[2]A lake, pond, or impoundment of a jurisdictional water does not lose its jurisdictional status if it contributes surface water flow to a downstream jurisdictional water in a typical year through a channelized non-jurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature.

WHEN IS IT A WATER OF THE US?

- LPIs of jurisdictional waters do not lose their jurisdictional status if they contribute surface water flow to a downstream jurisdictional water in a typical year through a channelized non-jurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature.

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WHEN IT ISN'T A WATER OF THE US

- LPIs upstream of certain excluded features are NOT jurisdictional if the feature isn't channelized (e.g., diffuse stormwater runoff/directional sheet flow) or if the non-jurisdictional channelized feature, natural feature, or artificial feature (e.g., dam) doesn't convey surface water flow in a typical year. LPIs are NOT jurisdictional if the connection is groundwater.

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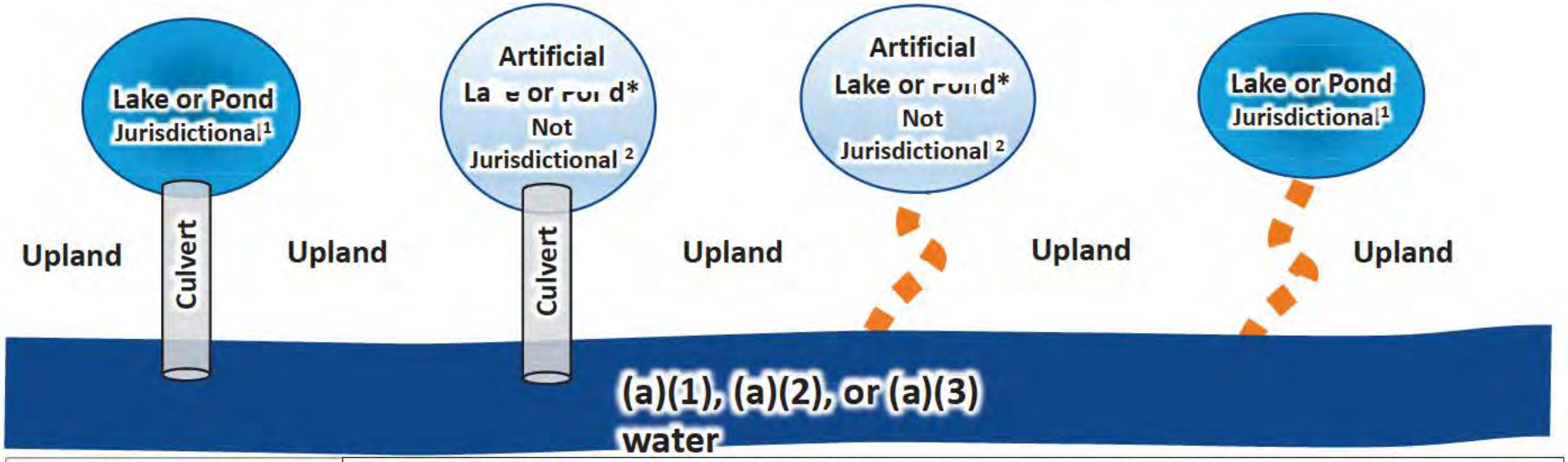
Lakes and Ponds – Contribution of Surface Water Flow



Ephemeral Channel- conveys surface water flow in a typical year (not jurisdictional)

Culvert- conveys surface water flow in a typical year (not jurisdictional)

[1]A lake, pond, or impoundment of a jurisdictional water does not lose its jurisdictional status if it contributes surface water flow to a downstream jurisdictional water in a typical year through a channelized non-jurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature.

[2]An artificial lake or pond will be excluded even if it satisfies the definition in paragraph (c)(6), so long as it was constructed or excavated in upland or in non-jurisdictional waters and is not a jurisdictional impoundment. In other words, paragraph (b)(8) is designed to exclude artificial lakes and ponds that are constructed in upland or non-jurisdictional waters, even where they may have a surface water connection to a downstream jurisdictional water in a typical year.

*Lake or pond is not a jurisdictional impoundment and is not otherwise jurisdictional as another paragraph (a) water.

WHAT ABOUT IMPOUNDED WETLANDS?

- Impoundments of wetlands are jurisdictional as "impoundments of jurisdictional waters" if the wetlands being impounded first meet the definition of "adjacent wetlands" and then meet the conditions of the lakes, ponds, and impoundments of jurisdictional waters category.
  - If an adjacent wetland is impounded and now meets the conditions of (c)(6), it is jurisdictional under (a)(3)
  - If an adjacent wetland is impounded and continues to satisfy the definition of adjacent wetlands (i.e. paragraph (a)(4) water) it would remain jurisdictional as an (a)(4) wetland

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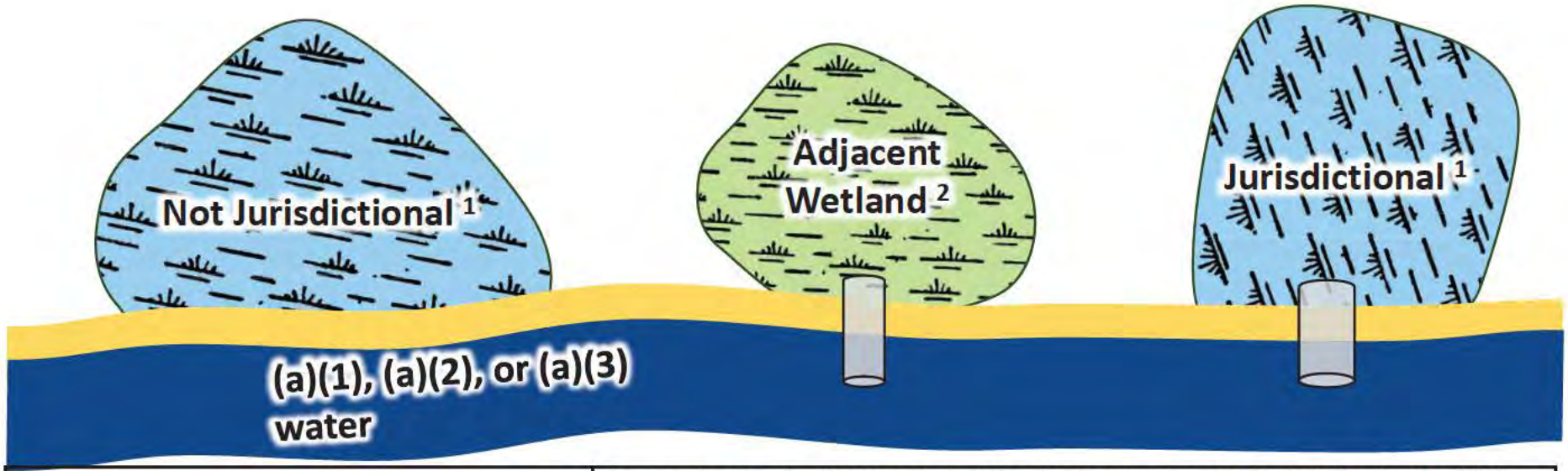
Impoundments of Adjacent Wetlands



- Adjacent Wetland
- Impounded Adjacent Wetland Turned Pond
- Artificial Levee
- Culvert- conveys surface water flow in a typical year (not jurisdictional)

[1]Impoundments of wetlands are jurisdictional as "impoundments of jurisdictional waters" if the wetlands being impounded first meet the definition of "adjacent wetlands" and then meet the conditions of the lakes, ponds, and impoundments of jurisdictional waters category. Adjacent wetlands that are impounded frequently become ponds and may lose their jurisdictional status as adjacent wetlands because they no longer satisfy all three factors of the "wetlands" definition. The final rule would ensure that these waters remain jurisdictional if they satisfy the elements of paragraph (c)(6). Impoundment in depiction does not meet (a)(1).

[2]If those impounded wetlands, however, continue to satisfy the definition of "adjacent wetlands," they would remain jurisdictional as adjacent wetlands.

ADJACENT WETLANDS

(a)(4) ADJACENT WETLANDS

As defined in the NWPR (a)(4) wetlands are adjacent and thus jurisdictional waters when they:

- i) abut, meaning that they touch at least at one point or side of, an (a)(1) – (a)(3) water;
- ii) are inundated by flooding from an (a)(1) – (a)(3) water in a typical year;
- iii) are physically separated from an (a)(1) – (a)(3) water only by a natural berm, bank, dune, or similar natural feature; or
- iv) are physically separated from an (a)(1) – (a)(3) water only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.

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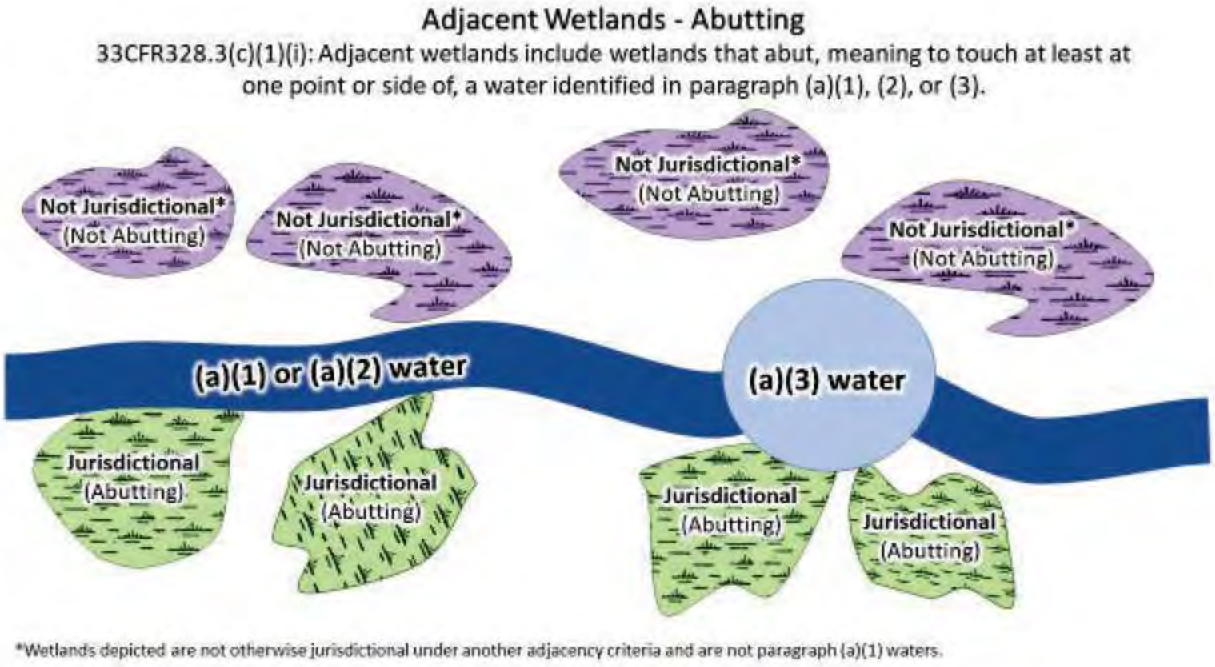
ADJACENCY - JURISDICTIONAL

Wetlands that

i) abut, meaning that they touch at least at one point or side of an (a)(1) – (a)(3) water



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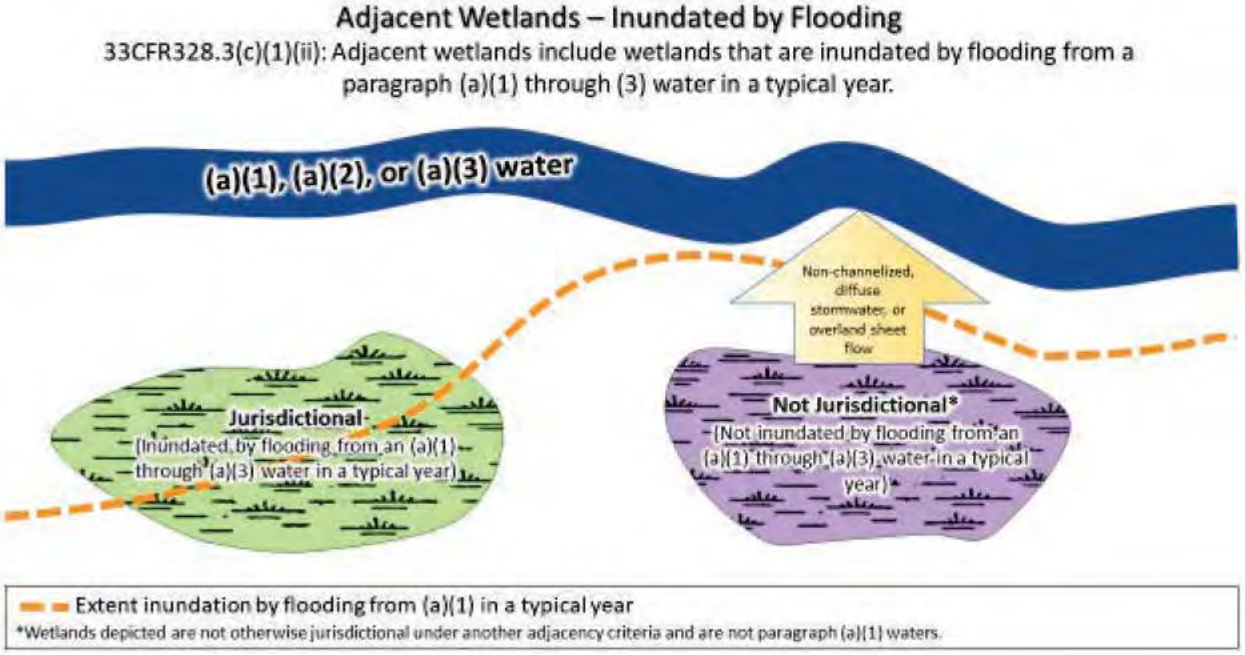
ADJACENCY - JURISDICTIONAL

Wetlands that

ii) are inundated by flooding from an (a)(1) – (a)(3) water in a typical year



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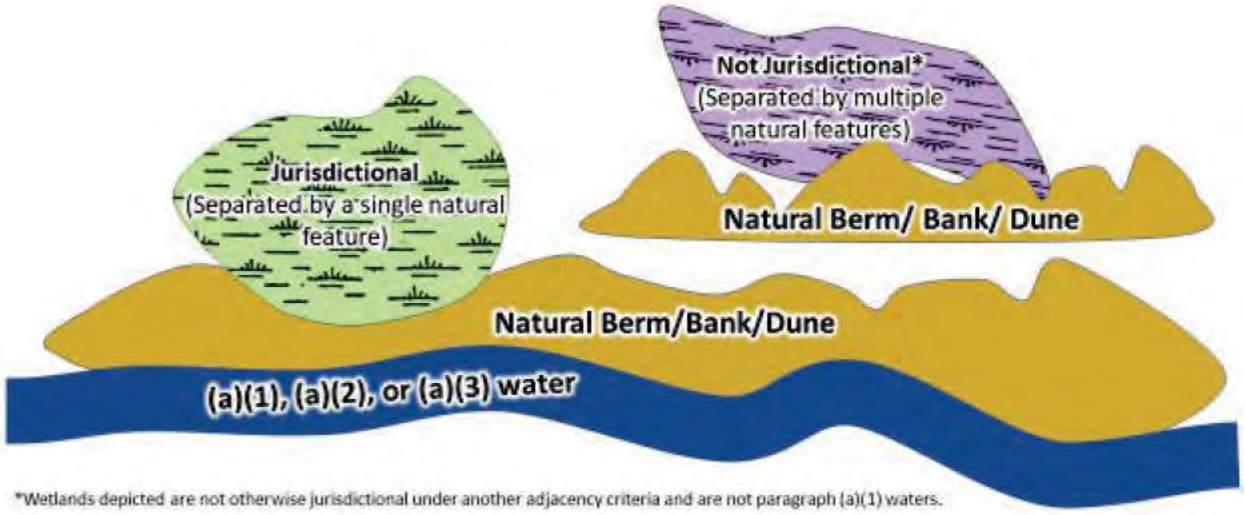
ADJACENCY - JURISDICTIONAL

Wetlands that

iii) are physically separated from an (a)(1) – (a)(3) water only by a natural berm, bank, dune, or similar natural feature

Adjacent Wetlands – Separated by Natural Feature

33CFR328.3(c)(1)(iii): Adjacent wetlands include wetlands that are physically separated from a paragraph (a)(1) through (3) water only by a natural berm, bank, dune, or similar natural feature.



*Wetlands depicted are not otherwise jurisdictional under another adjacency criteria and are not paragraph (a)(1) waters.

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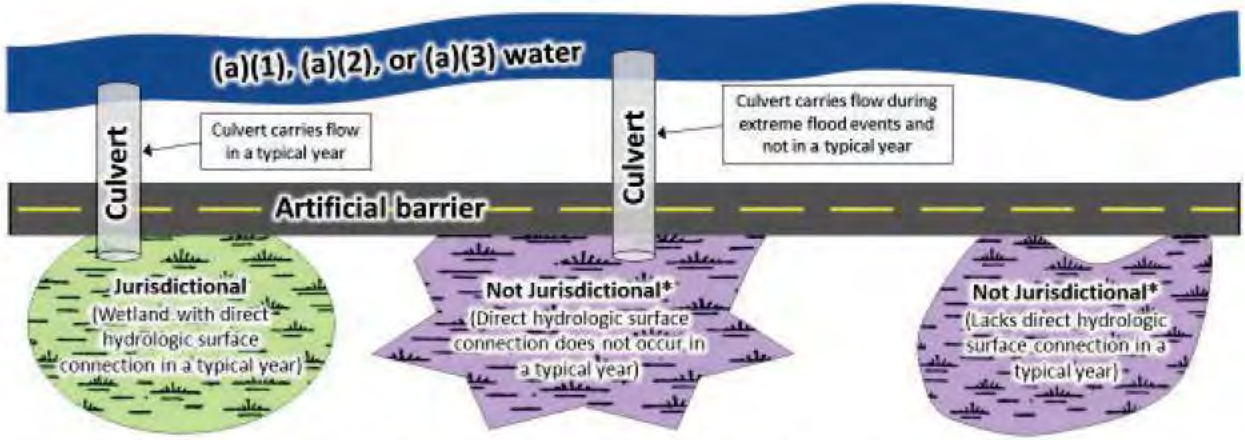
ADJACENCY - JURISDICTIONAL

Wetlands that

iv) are physically separated from an (a)(1) – (a)(3) water only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the (a)(1) – (a)(3) water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.

Adjacent Wetlands – Separated by Artificial Structure

33CFR328.3(c)(1)(iv): Adjacent wetlands include wetlands physically separated from a water identified in paragraph (a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water identified in paragraph (a)(1), (2), or (3) in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.



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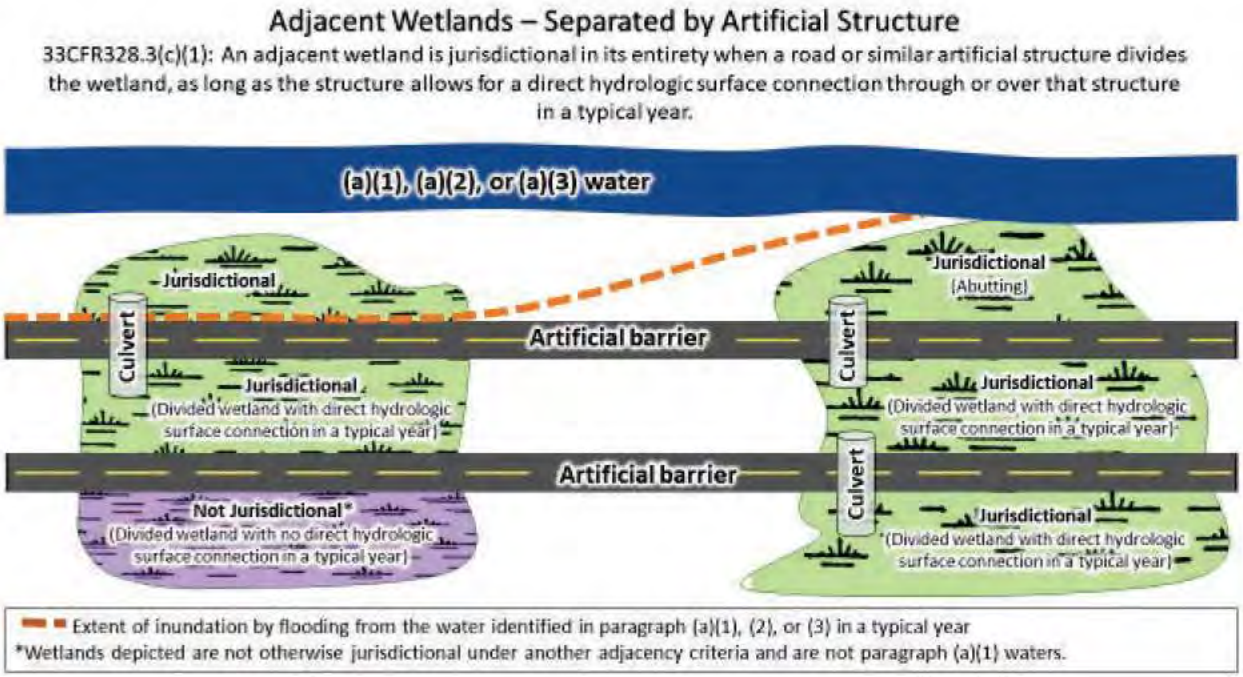
ADJACENCY - JURISDICTIONAL

Wetlands that:
Are separated by an artificial barrier or structure that allows for a direct hydrologic surface connection through or over the structure in a typical year.



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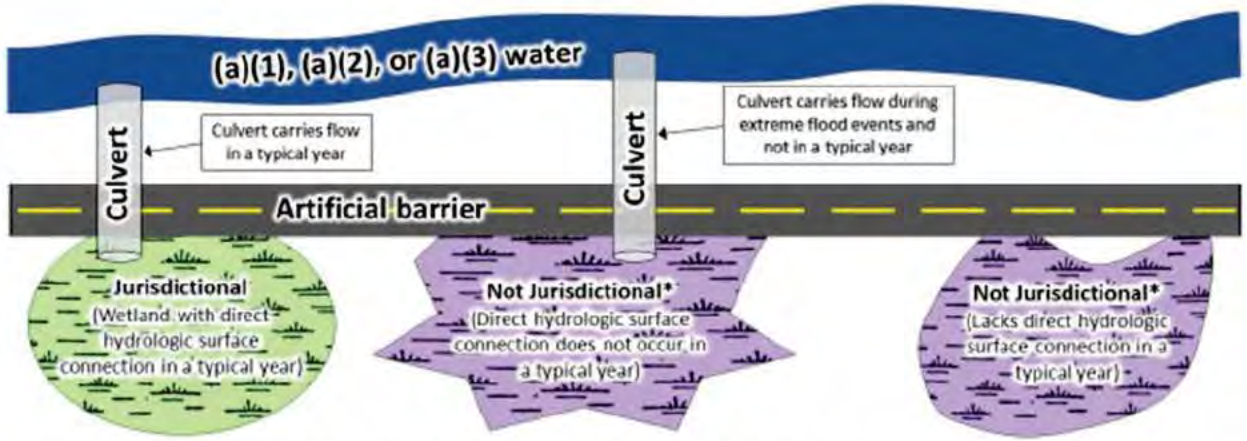
ADJACENCY - BREAKS

An adjacent wetland is not jurisdictional when a road or similar artificial structure divides the wetland, when the structure does not have or only allows for a direct hydrologic surface connection through or over that structure in extreme events.

Adjacent Wetlands – Separated by Artificial Structure

33CFR328.3(c)(1)(iv): Adjacent wetlands include wetlands physically separated from a water identified in paragraph (a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water identified in paragraph (a)(1), (2), or (3) in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.



*Wetlands depicted are not otherwise jurisdictional under another adjacency criteria and are not paragraph (a)(1) waters.

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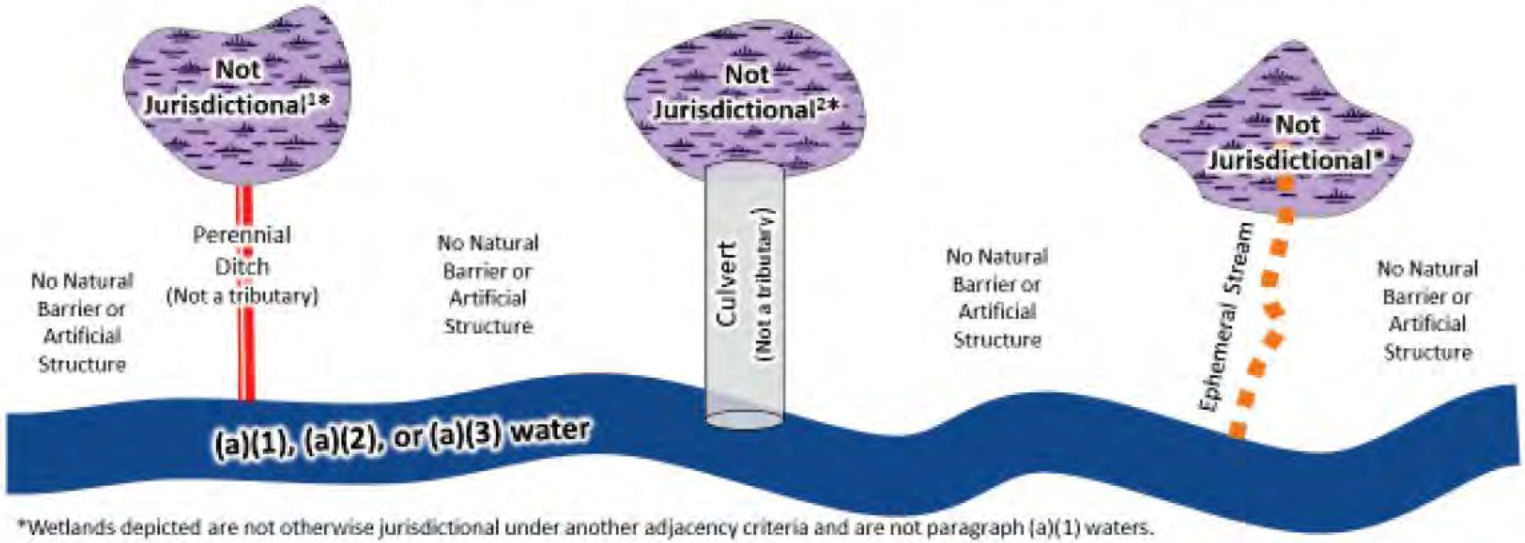
ADJACENCY - BREAKS

Adjacent Wetlands – Hydrologic Connections

[1]A ditch cannot render an otherwise isolated wetland an "adjacent wetland" and thus jurisdictional on that basis, unless the ditch itself is a tributary.

[2] 33CFR328.3(c)(1): Adjacent wetlands include wetlands that are physically separated from a water identified in paragraph (a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water identified in paragraph (a)(1), (2), or (3) in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.



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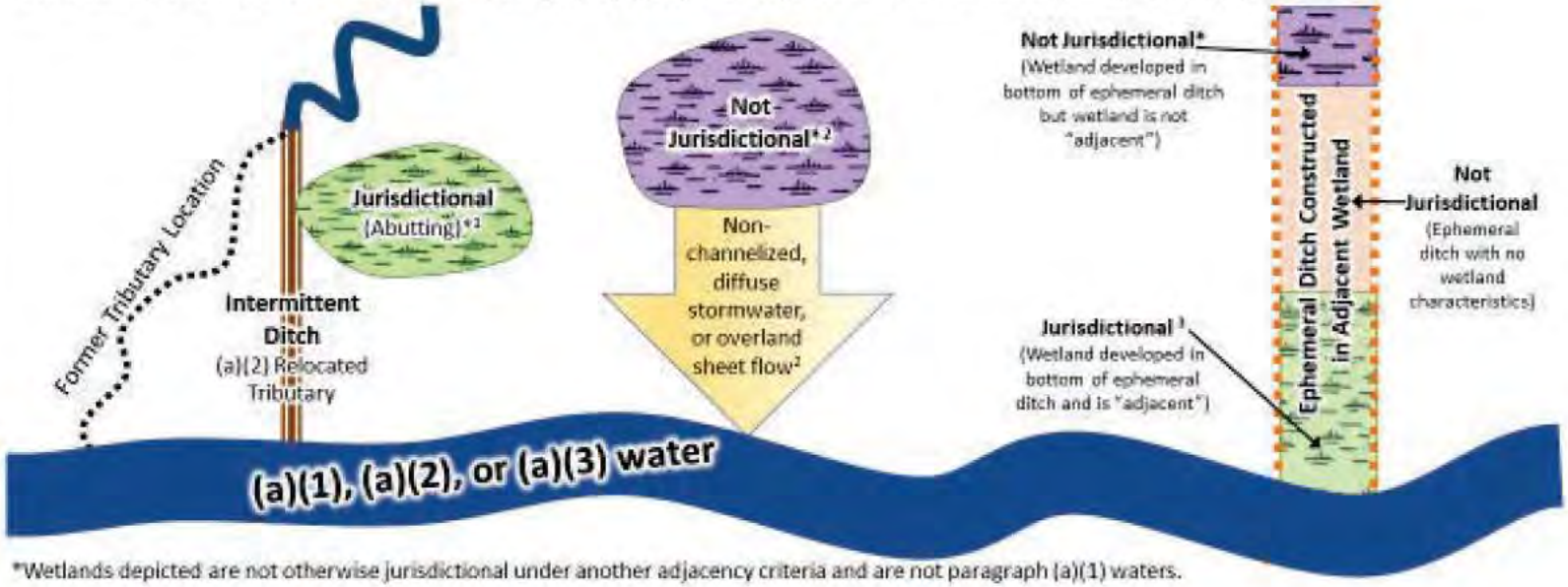
ADJACENCY - BREAKS

33CFR328.3(c)(1) Adjacent Wetlands

[1]A ditch cannot render an otherwise isolated wetland an "adjacent wetland," unless the ditch itself is a tributary.
[2]Non-channelized, diffuse stormwater and overland sheet flow cannot sustain a regular or predictable surface water connection between upstream and downstream waters and therefore cannot maintain jurisdiction between such waters.
[3]A ditch constructed in an adjacent wetland that contributes less than perennial or intermittent flow to a paragraph (a)(1) water in a typical year and that, due to lack of maintenance, gains wetland characteristics may be viewed as an adjacent wetland if it meets the definition of both "wetlands" under paragraph (c)(16) and "adjacent wetlands" under paragraph (c)(1).



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INUNDATION BY FLOODING

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USER CAUTIONS

- The remote tools and physical indicators contained in this presentation are not an exhaustive list of the available resources and data that may be used in making a determination of inundation by flooding.
- The presence of such indicators does not automatically confirm the inundation of an area was by flooding from an (a)(1)-(a)(3) water, that it occurred in a typical year, nor does it address the frequency at which the inundation occurs.
- These determinations should be made using the best available information and best professional judgment, based on a weight of evidence.

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TOOLS FOR DETERMINING INUNDATION BY FLOODING

Point-in-time data sources

- LIDAR/DEM Data
- USGS Topographic Maps
- NHD
- NWI Datasets
- Soil Surveys (Current and Historic)
- Aerial Photographs (Current and Historic)
- Stream Gage Data
- Other Data
- Physical/Visual Indicators

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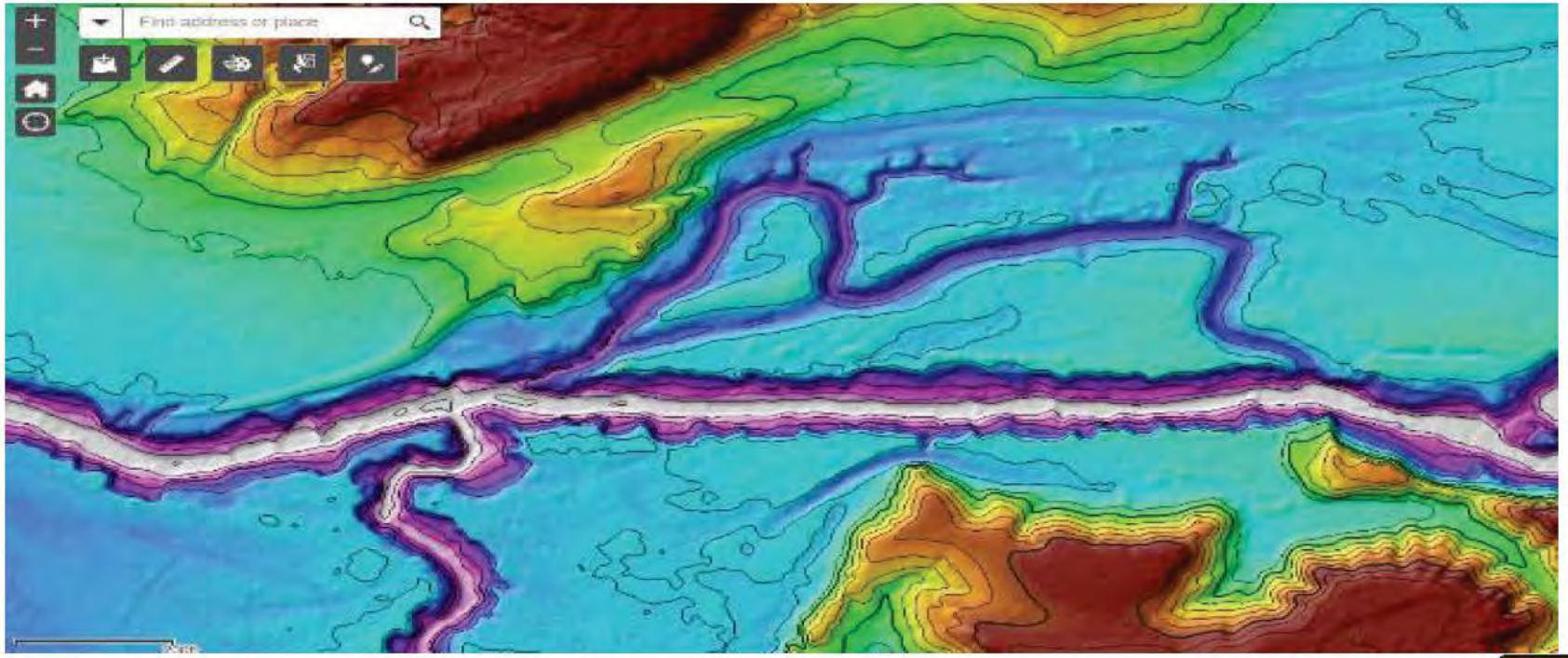
LIDAR/DEM DATA

- LiDAR and DEM data can be used to aid in identifying floodplains along tributaries as well as (a)(1) waters, and possible connections from a tributary to wetlands and LPI, as well as the possible extent to which floodwaters may cover an area at a given elevation/stage along the tributary. This information can be vital in determining if an area receives flood waters and becomes inundated from an (a)(1) - (a)(3) water in a typical year.



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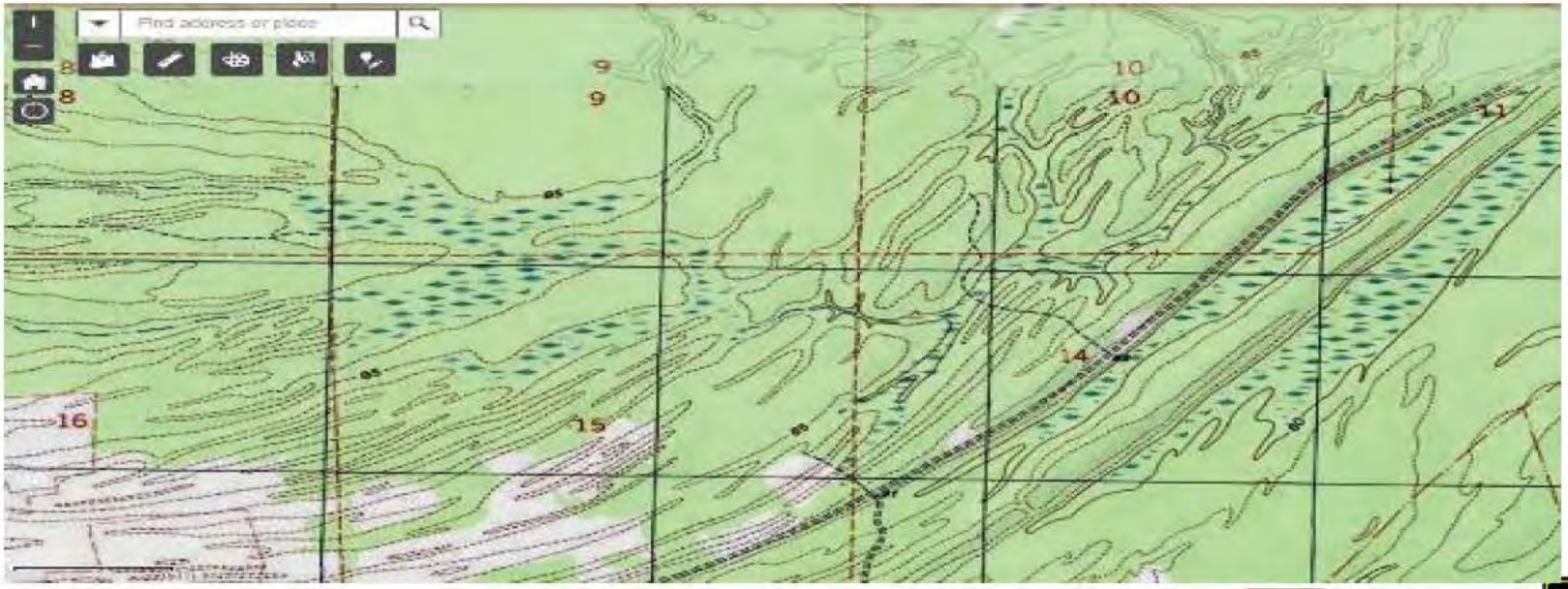
USGS TOPOGRAPHIC MAPS

USGS topographic maps use blue lines to represent rivers, streams, and canals, with different symbols depicting the type of features. They also incorporate certain symbols which indicate a marsh or another wetland type is likely present and may aid in identifying whether an area potentially becomes inundated from a nearby (a)(1) - (a)(3) water. While the USGS topographic maps identify streams in the United States, in many cases these maps may depict blue-line streams where they do not exist, or vice-versa, and the blue-line streams indicated on the map may extend much further than the stream actually extends on the ground, or vice-versa.



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NATIONAL HYDROGRAPHY DATASET (HND)

- The NHD is similar to the USGS topographic maps and are used to indicate features within a drainage network including Hydrologic Unit Codes (HUC), rivers, streams, canals/ditches, ponds, swamps/marshes, dams, and similar features. Information such as waterbody presence, waterbody type, waterbody extent, stream flow duration, and flow direction can be gathered using this source.

* NHD is not a regulatory dataset. For a discussion of the limitations of the NHD, including the fact that the NHD at High Resolution does not distinguish intermittent from ephemeral features in most parts of the country and may not accurately identify on-the-ground flow conditions, see the Resource and Programmatic Assessment supporting the rule.

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NATIONAL WETLAND INVENTORY (NWI)

- The National Wetlands Inventory (NWI) was established by the US Fish and Wildlife Service to conduct a nationwide inventory of wetlands to provide information on the distribution and type of wetlands. NWI can be a useful tool in identifying the potential presence of wetlands, tributaries, and LPI. Caution must be exercised when interpreting NWI data, since it typically has not been verified by field surveys, and the conditions on the ground often vary from the digitally presented data.

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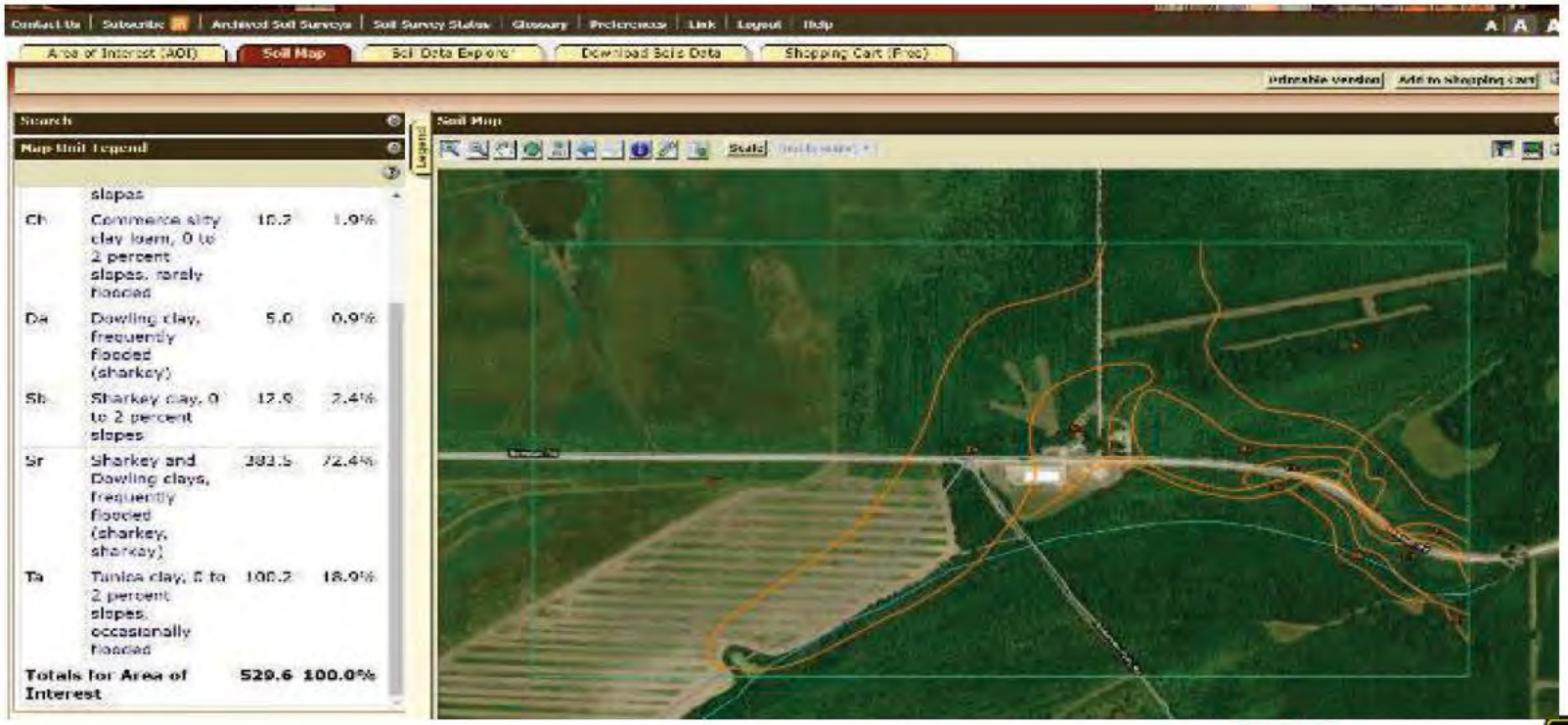
CURRENT AND HISTORIC SOIL SURVEYS

- Soil survey maps developed by the Natural Resources Conservation Service may provide evidence of drainage patterns that may indicate the potential for an area to be inundated from an (a)(1) - (a)(3) water. In addition, soil surveys identify some existing flooding or ponding regimes along soil type boundaries which may aid in determining if an area is regularly inundated or flooded.



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AERIAL PHOTOGRAPHS (CURRENT AND HISTORIC)

- Current and historic aerial photographs are one of the most valuable tools available. Aerial photographs can be examined to identify whether there are visible signs of inundation as well as the extent of the inundation. A typical year assessment should be conducted for each point in time data source, including aerial imagery. This will typically be accomplished by using the APT (Antecedent Precipitation Tool).

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STREAM GAGE DATA

- Stream gage data from Federal, state or local agencies, or other sources, may provide useful information that may assist in determining if a wetland or LPI is typically inundated from an (a)(1) - (a)(3) water during certain events or times of the year. Stream gage data can provide information on the magnitude, duration, frequency, and timing of flows along a given stream which can be used in making inundation determinations. Care should be taken to ensure that any stream gage data used is reflective of the current hydrologic regime and typical precipitation years.

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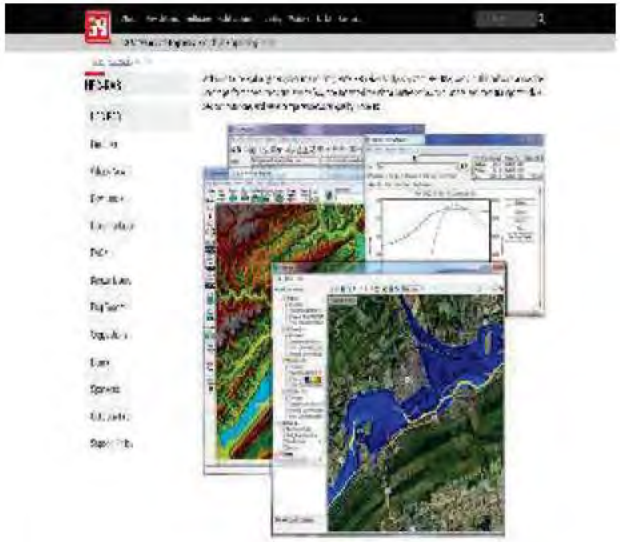
OTHER DATA

- Other information not specifically addressed here may be available to assist in remote identification of tributaries, ditches, flow regimes, and flooding probabilities and extents. Some examples may include, but are not limited to, flood predictions (e.g., from StreamStats), regional regression equations for streamflow and/or channel dimensions (e.g., bankfull regional curves), and hydrologic and hydraulic models (e.g., the Hydraulic Engineering Center Hydrologic Modeling System (HEC-HMS) or River Analysis System (HEC-RAS)).



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PHYSICAL/VISUAL INDICATORS OF INUNDATION

- Some of the physical/visual indicators of inundation which are used in wetland delineations (Wetland Hydrology Indicators) may be applicable in making a determination whether a wetland or LPI has been inundated by flooding from an (a)(1) - (a)(3) water. Some of the indicators are, but not limited to:

  - Visible Onsite Observation of Inundation
  - Water Marks
  - Sediment Deposits
  - Drift Deposits
  - Moss Trim Lines

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VISUAL OBSERVATION OF INUNDATION

- Visual observation of a wetland or LPI being inundated by flooding from an (a)(1) - (a)(3) water is the ideal method for determining inundation, however it needs to be verified that the inundation observed is representative of what would occur in a typical year.

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WATER MARKS

- Water marks are discolorations or stains on the bark of woody vegetation, rocks, bridge piers, buildings, fences, or other fixed objects. Water marks indicate a water level elevation and can be used to determine the extent of flooding in lower elevation areas.

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SEDIMENT DEPOSITS

- Sediment deposits are thin layers or coatings of fine-grained mineral material or organic matter, sometimes mixed with other detritus, remaining on tree bark, plant stems or leaves, rocks, and other objects after surface water recedes. Sediment deposits are indicative of inundation over a long enough period to allow for suspended sediments to settle out.

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DRIFT DEPOSITS

- Drift deposits consist of rafted debris that has been deposited on the ground surface or entangled in vegetation or other fixed objects. Deposits consist of vegetation, man-made debris (trash, bottles, cups etc..), or other waterborne materials. Drift material is often deposited at the high water line in ponded or flooded areas.

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MOSS TRIM LINES

- Moss trim lines on trees or other upright objects are formed when water intolerant mosses growing on tree trunks or other upright objects are killed by prolonged inundation, forming an abrupt lower edge to the moss community at the high water level. The elevation of a moss trim line can be extrapolated across a lower elevation area to determine the extent of flooding.

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QUESTIONS FROM THE FIELD

- Topics for questions include, but are not limited to, the following:
  - •Ditches
  - •Tributaries
  - •Flow Regimes
  - •Downstream flow contribution
  - •Adjacency
  - •Lakes and ponds, and Impoundments
  - •Inundation by flooding
  - •Typical year
  - •Exclusions
  - •Compliance/enforcement
  - •Compensatory mitigation
  - •Uplands

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