

# **River Refugium Project (RRP)**

## **CERNUNNOS FOUNDATION**

## **BRIGHT MEADOW GROUP**

*Systems Analysis and Solutions Consulting*

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**Appendix B: National Watershed Priority Map**

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| **\*\*RIVER REFUGIUM PROJECT\*\*** Cernunnos Foundation Bright Meadow Group |  
**\*\*Appendix B – National Watershed Priority Map (Narrative Edition)\*\*** Document  
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2.0 | Supersedes: Version 1.0 (2025) \*Contact: robert@brightmeadowgroup.com |  
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| **\*\*Abstract\*\*** Appendix B provides the national deployment priority structure  
for the River Refugium Project as a narrative map defining which watersheds come  
first, why they come first, how they influence regional scaling, and which areas  
are targeted in first-, second-, and third-wave deployments. This narrative  
edition is provided in lieu of a graphic map; a visual map is planned for  
Version 2.1. The prioritization logic follows three principles: follow the  
pollution, follow the water consolidation, and follow the economic advantage.

#### # **\*\*Prioritization Logic\*\***

Three principles govern deployment sequencing. First, follow the pollution –  
nodes go where nutrient density and suspended organics are strongest.<sup>1</sup> Second,  
follow the water consolidation – nodes go where multiple rivers merge into one,  
maximizing feedstock concentration per intake. Third, follow the economic  
advantage – nodes go where land, labor, and regulatory cooperation produce  
optimal returns.

#### # **\*\*Tier 1 Priority Watersheds\*\***

Tier 1 watersheds produce the first 10–20 commercial nodes. They offer the  
highest nutrient load, most reliable flow, clearest environmental benefit,  
greatest biomass potential, lowest operational risk, and best economic  
viability.

- Lower Mississippi Basin (Primary). Memphis to New Orleans, Arkansas-  
Mississippi borderlands. Peak nutrient concentration from the entire Midwest.  
Warm climate, cheap land, abundant labor. Massive downstream Gulf Hypoxia  
impact. This is the birthplace of the RRP industry.
- Ohio River Basin. Cairo to Pittsburgh. Second-largest Gulf hypoxia  
contributor. Multiple agricultural and urban inputs. Large industrial corridor.
- Missouri River Lower Basin. Kansas City to St. Louis confluence. High sediment  
and nutrient load from Great Plains and agricultural zones.
- Arkansas River Basin. Tulsa to Pine Bluff. High nutrient inflow. Warm Southern  
climate. Strategic duplication site for Mississippi-style nodes.
- Red River Basin. Southern Oklahoma, northern Texas, Louisiana. Nutrient-rich  
with severe seasonal impacts.

#### # **\*\*Tier 2 Priority Watersheds\*\***

Tier 2 watersheds have high viability with either seasonal constraints, mid-  
range nutrient load, or moderately more complex regulatory landscapes. Produces  
nodes 20–40.

- Illinois River – one of the most nutrient-rich rivers per mile in the U.S.  
Direct pipeline to Mississippi.
- Chesapeake Bay Tributaries – Susquehanna, Potomac, James, Patuxent. High  
political will, large funding streams, strong academic infrastructure.
- Central Valley, California – nutrient-rich agricultural drainage, water  
scarcity requiring regenerative solutions.

- Florida Nutrient Hotspots – Lake Okeechobee, St. Lucie, Caloosahatchee. Massive algal bloom issues, warm climate, exceptional biomass potential.

- Great Lakes Tributaries – Maumee, Fox, Milwaukee, Saginaw. Major algal bloom drivers, high political and academic interest.

#### # \*\*Tribal Priority Corridors (Cross-Tier)\*\*

Tribal lands create special opportunity zones due to sovereign permitting, unique incentive structures, local land control, water rights flexibility, and desire for nation-to-nation environmental restoration.<sup>2</sup> High-potential tribal corridors include Cherokee Nation (Arkansas River tributaries), Choctaw and Chickasaw (Red/Arkansas basins), Navajo Nation (San Juan watershed), and Ojibwe and Odawa (Upper Midwest and Great Lakes). Tribal nodes can skip tiers because sovereignty changes the economic and political calculus.

#### # \*\*Note on Visual Map\*\*

A geographic map showing tier rankings, watershed boundaries, and priority site locations is planned for publication in Version 2.1 of the RRP document series. The narrative edition in this appendix conveys the full deployment logic; the visual map will provide the spatial reference required for congressional, agency, and press contexts.

#### \*\*Notes\*\*

\*Citations follow Chicago Notes-Bibliography style. Internal Bright Meadow Group / Cernunnos Foundation documents are cited by document title and year. Figures marked ■ are provisional academic proxies pending replacement by RRP pilot data per RRP8.\*

- \*\*1. \*\*\*USGS, SPARROW Model – Nutrient Load Estimates for Major U.S. Basins. National Water-Quality Assessment Program, print edition.\*

- \*\*2. \*\*\*Bright Meadow Group, \*\*\*\*\*RRP7 – Governance, Regulatory \*\*&\*\*\* Community Integration,\*\*\*\*\* Version 2.0. CF/BMG, 01 April 2026. Section 2, Tribal Sovereignty Integration.\*