MISSOURI CONSERVATION HERITAGE FOUNDATION

STREAM STEWARDSHIP TRUST FUND – GRANT PROGRAM

REQUEST FOR MITIGATION PLAN APPROVAL

The Stream Stewardship Trust Fund is available to restore, enhance, and/or protect stream systems and associated riparian habitats. Proposed projects will be prioritized and funded by the Foundation based on regional stream needs, maximum return on expended monies, level of threat to the stream system, and overall anticipated benefits to stream resources. Proposed projects should be located within the ecological drainage unit (EDU) where participating stream impacts occurred. Approval will be limited to projects that restore, enhance, or preserve Missouri's diverse stream systems.

This request form will be used by MCHF Board members assigned to the Stream Stewardship Trust Fund – Grant Program Action Team. Proposals submitted for funding consideration need to clearly explain elements of stream-based projects listed below which warrant consideration during the approval process. Spaces provided in the elements below are not to be considered limiting, and the attachment of additional pages of explanation is encouraged in order to provide full details.

The Goal of the MCHF's Stream Stewardship Trust Fund is to provide an innovative tool for the restoration, enhancement, and protection of Missouri's streams and aquatic resources.

1) Project Title Wolfe Tract Acquisition; addition to Mule Shoe Conservation Area
   Landowner Name Ruth A. Wolfe Family Trust

2) County Hickory MDC region Southwest

3) Project objectives: We are proposing this project because we believe it will fulfill the following objectives. One objective of the project is to enhance and maintain bottomland forest habitats. A second objective is to enhance and maintain riparian corridor habitat. A third objective is to use high quality habitat communities as examples during demonstrations and field days while engaging private landowners within the watershed to promote conservation practices on private lands. These objectives will also address specific areas of concern discussed in the Compensation Planning framework for the Ozark/Osage EDU including aquatic resource problems, water quality problems, and aquatic resource conditions. The portions of the Little Niangua River near other tracts of Mule Shoe CA, Burnt Mill Cave CA and Fiery Fork CA will be used as a reference reach to help establish achievement of the defined objectives.

4) The project submitted for consideration is in the Little Niangua River watershed and is considered a priority by MDC for the following reasons (include how project achieves watershed objectives and describe the rationale for site selection). The Little Niangua River watershed is one of nine priority geographies identified by the Missouri Department of Conservation through the Comprehensive Conservation Strategy and identified as a priority watershed by the Department's Fisheries Division. The Little Niangua River watershed is the best example of a diverse Ozark border stream system within the Upper Ozark portion of the Ozark Highlands in Missouri. The Little Niangua River contains 61 species of fish and 15 species of mussels. Within the Little Niangua River priority geography there is a Habitat Conservation Initiative with a goal to restore, enhance and maintain this high quality Ozark stream and surrounding watershed to improve habitat for a wide range of fish and wildlife; and, establish a model of comprehensive conservation. This project would achieve multiple objectives outlined in the Little Niangua River priority geography team work plan, including: Objective 2.a. Improve natural community [woodland and bottomland forest] habitat on public land within the Little Niangua River priority geography; Objective 2.b. Improve riparian habitat on public lands; Objective 4.b. Promote unique natural features of the Little Niangua River priority geography; and Objective 5.a. Engage landowners within the Little Niangua River priority geography, emphasizing good riparian corridor management.

5) Site protection instrument (circle):

Acquisition Perpetual easement Special management agreement

6) Describe the details of the site protection instrument (ownership, legal arrangements, how the instrument assures the long term protection of the proposed mitigation site): This project would include acquiring 2,800 linear feet of 1st order stream (tributary of the Little Niangua River) and 38.5 acres of riparian habitat, as part of a larger 120 acre tract of land that would be an addition to Mule Shoe Conservation Area. The tract would then be managed under the Mule Shoe Conservation Area, area plan and the Little Niangua River priority geography team work plan.

7) Baseline information

   a. Describe the ecological characteristics of the proposed project site: The project site contains 2,800 linear feet of 1st order stream, which is a direct tributary to the Little Niangua River. The confluence of this stream is less than one mile from the Little Niangua River, which contains 13 miles of federally designated critical habitat and 28.5 miles of known range for the federally threatened, state endangered, Niangua Darter.

   b. Historic and existing plant communities, hydrology and soils of the proposed project site: The project site is an area of greater relief with narrow ridge tops and steep slopes. As a result the area is dominated by oak-hickory forest and woodland habitat. High quality riparian habitat exists along the stream channel. Plant and wildlife characteristic of these habitats include: **Riparian** – Gray Bat, Indiana Bat, Bald Eagle, Cerulean Warbler, Common Map Turtle, Red-Eared Slider, Western Cottonmouth ,Wood Thrush, Hooded Warbler, Prothonotary Warbler, Wood Duck, River Birch, Sycamore, River Oats, Virginia Wild Rye, Golden Glow, Nine Bark, Hazelnut, Tall Bellflower, Virginia Bluebells, Whitetail Deer, Wild Turkey; **Bottomland Forest** - Common Yellowthroat,

Eastern Wood Peewee, Hooded Warbler, Louisiana Warbler, Orchard Oriole, Prothonotary Warbler, Wild Turkey, Wood Duck, Wood Thrush, Yellow Throated Warbler, Yellow Throat Vireo, Common Map Turtle, Red-Eared Slider, Western Cottonmouth, Golden Glow, Hazelnut, Nine Bark, River Birch, River Oats, Tall Bellflower, Virginia Bluebells, Virginia Wild Rye. The watershed lies in the Salem Plateau subdivision of the Ozark Plateau physiographic region. The watershed is underlain with several hundred feet of Ordovician and Cambrian rock, largely dolomite. There is considerable subsurface movement of water in the watershed through solution dissolved channels in the fractured and jointed dolomite. As a result, karst features such as caves, sinkholes, losing streams, and springs are abundant. Soils in the watershed are classified as residual, alluvial, colluvial, and loess. Residual soils consist primarily of material weathered from cherty dolomite, dolomite, and sandstone, and occur on the surface of steep slopes. When they develop in uplands from Roubidoux formations, and Jefferson City - Cotter dolomites, an impervious fragipan usually occurs 18 to 24 inches below the surface. Colluvial soils, which are soils deposited on lower valley slopes by erosion from more elevated sites, are limited in abundance.

c. Project application must include maps identifying the proposed project boundary with lat/long boundaries in decimal degrees and a GIS shape file with metadata of the delineated boundary. See attached figures for project location and details.

d. Describe existing hydro-system connectivity between the stream project site and any wetlands or other waters including tributaries connecting to receiving waters:
High quality riparian/bottomland forest and woodland habitat currently exist within the project site. The project site is located on a 1st order stream located less than one mile from the Little Niangua River. The project site contains 2,800 linear feet of 1st order stream channel and 38.5 acres of riparian habitat; 300 foot wide riparian area on both sides of the stream channel.

8) Determination of credits as determined by the Missouri Mitigation Method (attach credit calculation worksheet or other detailed information to demonstrate the specific approach for credit calculation for this project):

a. Number of stream channel credits N/A

b. Number of riparian credits 5,348.0

c. Stream type (circle): Ephemeral Intermittent Permanent

9) Mitigation work plan

a. Specifications of the project (geographic boundaries, construction methods, timing, sequence): The project site is located adjacent to the Northern boundary of Mule Shoe Conservation Area in Hickory County, Missouri. The project site will be considered an addition to the Mule Shoe Conservation Area and managed under the area plan and Little Niangua River priority geography team work plan. No specific project or construction plans are needed because high quality stream, riparian, bottomland forest and woodland habitat currently exists. This project would allow for the acquisition of this tract of land and allow for long-term sustainability of the habitats and wildlife on the area.

b. Methods for establishing desired plant community (species composition and type, control of undesirable species, size of plants used, control of wildlife damage): Desired plant, animal and natural communities already exist within the project site. Therefore, no efforts to establish them will be required. Exotic and invasive species including Sericea lespedeza (*Lespedeza cuneata*), Tall fescue (*Festuca arundinacea*), Johnson grass (*Sorghum halepense*), Eastern red cedar (*Juniperus virginiana*), Autumn Olive (*Elaeagnus umbellata*), and feral hogs (*Sus scrofa*) are management considerations for this project site and are address in the Mule Shoe Conservation Area plan. For woodland and forest habitats we will use even aged and uneven aged silvicultural practices to correct deficiencies in composition and/or stand structure according to current structure, age, site index, and species composition. Silvicultural practices should enhance forest health and ensure long term sustainability.

c. Grading plan and elevations of constructed features (describe or attach engineering design plans): There are no construction plans for this project site.

d. Describe or attach drawings showing existing stream channel cross sections, proposed alterations to the stream channel and/or banks, a description of in-stream structures including materials used for improvements, dimensions and elevations, and riparian plantings: There are no plans to alter the stream channel or stream banks within the project site. The project site contains high quality riparian habitat; there are no plans to conduct any riparian tree plantings.

10) Maintenance plan:

a. Description and schedule of maintenance following initial construction: No construction activities are planned for the project.
b. Mowing frequency and timing: N/A
c. Herbicide applications (chemical used, method, timing, frequency): The only herbicide application would be for the eradication of invasive plant species, on an as needed basis.
d. Irrigation plan (include source of water): N/A
e. Passive water control and instream structure description and required maintenance (type and frequency): N/A

11) Performance standards

a. Description of the performance standards used (include metrics for determining project success):

Riparian: As part of the Little Niangua River priority geography Habitat Conservation Initiative, there is an objective to increase the amount of quality riparian habitat throughout the Little Niangua River watershed. The 38.5 acres of riparian habitat on this project site will be included in metrics for determining the Habitat Conservation Initiative accomplishments.

Stream Channel: N/A

Reference stream(s) used (if any): N/A

b. Describe how the performance standards relate to the objectives of the mitigation site (include description of the desired resource type, expected functions or services being

measured, or any other applicable metrics): High quality riparian habitats provide a wide variety of benefits including: reduced soil erosion, improved water quality, stream channel stability, in-stream habitat, shading and the ability to filter nutrients and soil particles from flood waters.

12) Describe the method and frequency of project monitoring to determine when performance standards are being met (project site must be monitored for an appropriate period not less than 5 years after initial construction/planting), who will be conducting the monitoring, and the frequency monitoring reports will be submitted: It is expected that performance standards are currently being met because the project site already contains high quality riparian habitat. The project site will be monitored to detect issues that need to be addressed as they arise in accordance with area management and maintenance.

13) Long-term management plan:
    a. Describe how the project site will be managed after performance standards have been met: Within the project site the riparian habitat will be managed as a natural uneven aged bottomland forest community.
    b. Annual cost estimate for management: $ 0
    c. Funding mechanisms will be used to finance long term management (including responsible party: Any potential funding needed to manage the project site will be part of the Missouri Department of Conservation's budget for managing and maintaining conservation areas.
    d. Long term management responsibilities transferred to (include description of their long term management plan and a written stewardship commitment that includes a financing plan): The Missouri Department of Conservation will have long term management responsibility. More specifically, Forestry Division is the administering unit responsible for managing the Mule Shoe Conservation Area, with the guidance of an area management plan developed by an interdisciplinary planning team.

14) Adaptive management plan (due to inability to construct project in accordance with approved plans, monitoring revealing that the project is not meeting performance standards, remedial measures resulting in project modifications, design changes, revisions to maintenance requirements, revised monitoring, etc):
    a. Description of strategy to address unforeseen changes in the project: There is no construction or direct action that needs to be taken to develop the desired future condition for this project site. If the project site is adversely affected by catastrophic events or invasive species, remedial action will be implemented.
    b. Party (ies) responsible for implementing adaptive management: Missouri Department of Conservation and the Little Niangua River priority geography team.

15) Financial Assurances:

The MCHF has previously demonstrated its ability to fund good stream projects and is committed to the installation, monitoring, and long term management of its compensatory mitigation projects. Since an important basis for project selection is a project's fit into MDC's statewide stream management plan, a commitment of the biological, engineering, and legal resources of MDC also accompanies each project. In addition to MDC's support, the MCHF has incorporated financial assurances into its cost-per-credit and will retain financial assurances not to exceed 10%

of each project's estimated completion cost to establish a continuous contingency fund balance of $250,000.00.

16) Total cost of the project is estimated at $ 108,000 . SSTF Resources are requested in the amount of $ 34,650 .

17) Partner funds in the amount of $ 73,350 are being contributed by: (if applicable): Missouri Department of Conservation

18) Total stream length of the project 2,800 linear feet Total Riparian corridor acreage 38.5

19) Total cost per credit (including all costs) estimated at $ 6.48 .

20) If the project is leveraged with contributions from others, SSTF Resources are requested to fund which practices/products/costs activities? Acquisition of 38.5 acres of riparian habitat within a total 120 acre tract of land offered for sale.

21) Schedule for project completion and/or installation: The acquisition would follow normal procedures through the Missouri Department of Conservation's Reality Services protocol for land acquisition.

Note: Proposal must include appropriate on-site photographs, county maps locating the proposed project, related topographic, soils, or other maps, drawings and materials necessary to describe planned activities. In order to reproduce color photographs and maps, a complete electronic file is requested with project proposals.

MDC Region: Southwest Date: 4/24/15

Name of project leader, and Division: Steven LaVal, Forestry

Regional Supervisor or Unit Chief Approval: John Turtle Date 5-7-15

Lead Division Administrator Approval: Pierce G Alexander JTG Date: 5/7/15

MDC Director Approval: [signature] Date: May 14, 2015

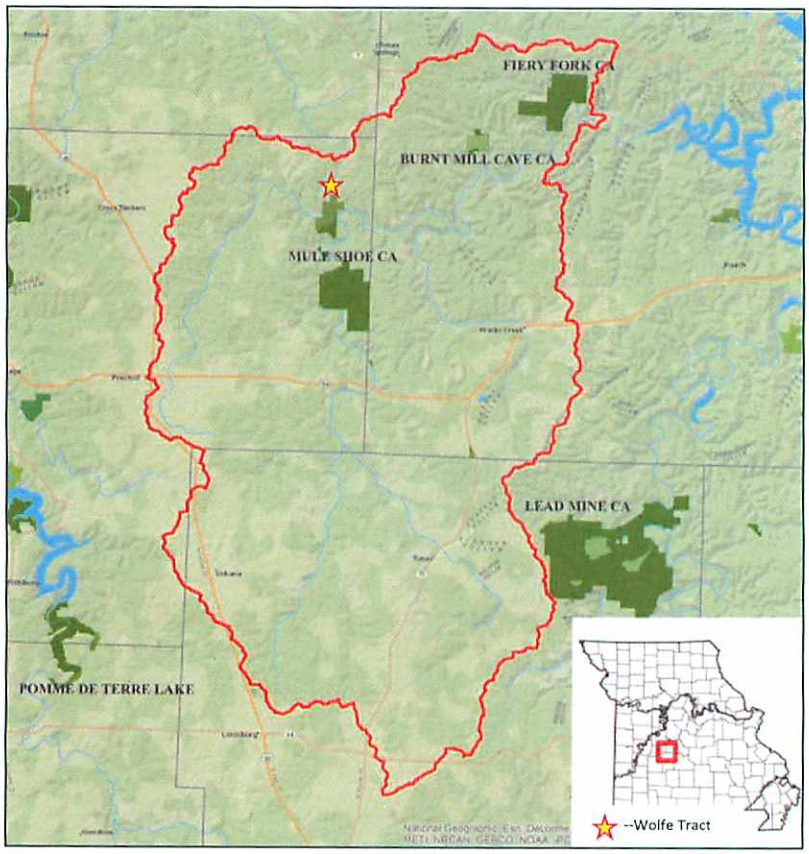
TAD JS

Please return to the Executive Director of the Missouri Conservation Heritage Foundation.

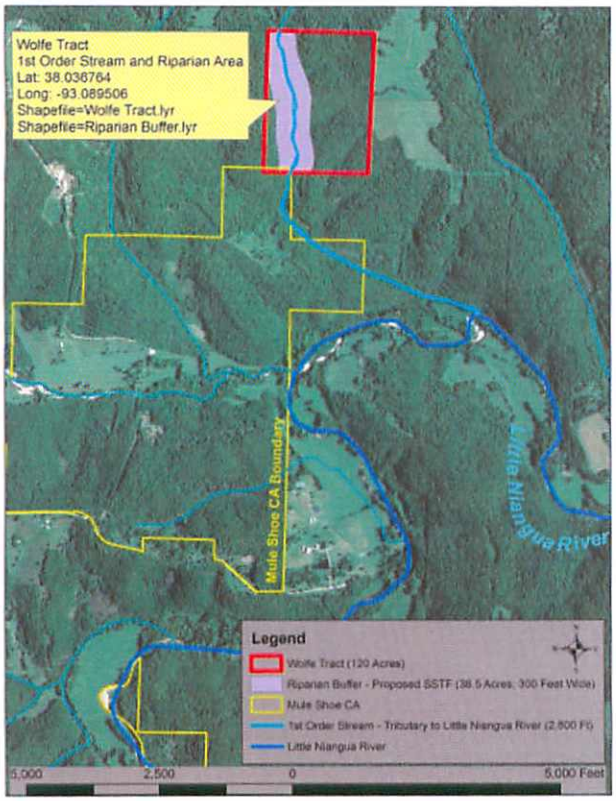
MCHF Approval: C.B. [signature] **Date:** 5-19-15

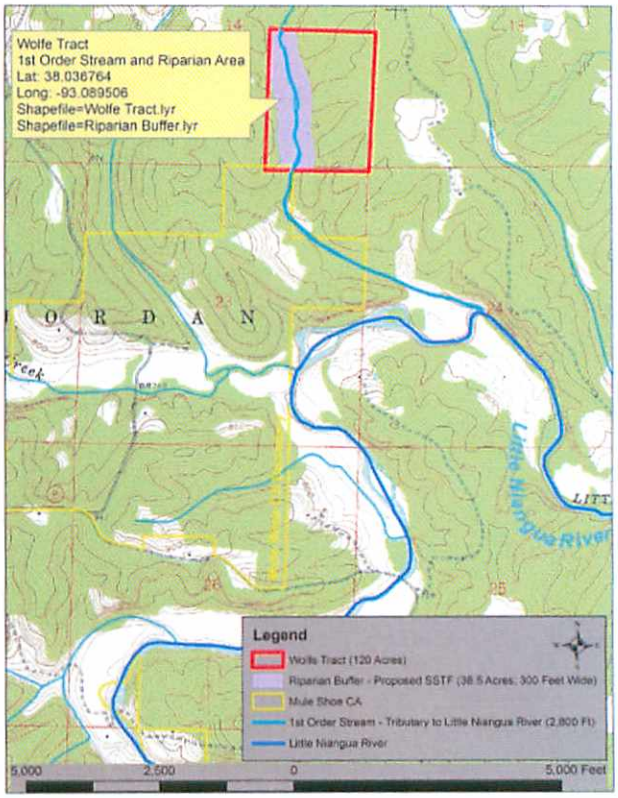
Attachment- Map of the State, Highlighting Location of the Watershed

Attachment- Map of Little Niangua River Priority Geography, Highlighting Conservation Areas



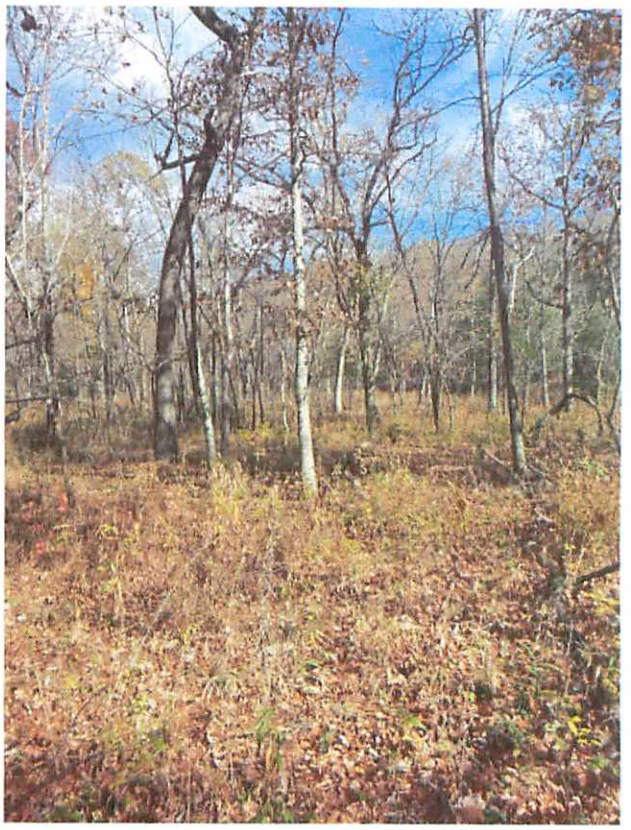
Attachment- Aerial photo and topographic map of Wolfe Tract and riparian project site with GPS coordinates and associated shapefile name.





Attachment- Pictures of the Project Site

Project Site Riparian/Bottomland Forest Habitat



Wolfe Project Site Riparian/Woodland Habitat