EMBRACE-A-STREAM
2009 GRANT APPLICATION FORM

Applicant: (TU Chapter or Council) Michigan Council of Trout Unlimited

Project Title: Michigan Council of Trout Unlimited Volunteer Data Collection Program

Project Location: (e.g. Stream, Watershed, City, State – add GPS coordinates if available) Statewide; Prairie Creek, Grand River Watershed, Ionia, MI. Kalamazoo River Watershed, Kalamazoo, MI. Rogue River Watershed, Rockford, MI. Menge Creek, Baraga, MI. Au Sable River Watershed, Grayling, MI. Cedar River, Tittabawasee River Watershed, Gladwin, MI. Sturgeon River, Pigeon River, Black River, Cheboygan River Watershed, Gaylord, MI.

Salmonid Species and Threatened/Endangered Status (if applicable): Brook Trout (*Salvelinus fontinalis*), Brown Trout (*Salmo trutta*), Rainbow Trout (*Oncorhynchus mykiss*), Chinook Salmon (*Oncorhynchus tshawytscha*).

Please check which conservation strategy your project best fits with:

X **Protect** *(Public lands policy, Land trust partnerships, Defense from unwise development defense, Pacific Salmon Treaty, etc...)*

X **Reconnect** *(Passage barrier removal, Instream flow enhancement, Water law advocacy – surface or groundwater, etc...)*

X **Restore** *(Watershed and habitat restoration projects, Policy to provide restoration incentives and funding, Improved hatchery design, Private landowner stewardship recognition, etc...)*

X **Sustain** *(Youth education, Trout in the Classroom, Coalition building, Chapter or Council Strengthening, etc...)*

Date initial contact made with regional EAS Committee Representative: 11/14/2008

Amount Requested from Embrace-A-Stream: $9,737.38

Beginning & Ending Dates of Proposed Project: December 2009 – January 2010

Has chapter received EAS funds before? If so, indicate project(s), year(s) and amount(s) for last 5 years:
No, the Michigan Council of Trout Unlimited has not received EAS funds before.

Has chapter submitted final reports for all projects outlined above? If not, please explain below:
NA

To help with EAS publicity please list the names of three or four local and state newspapers

Lansing State Journal, Grand Rapids Press, Kalamazoo Gazette, Crawford County Avalanche

TU Project Contact: (Person to contact if there are questions about the proposal. Cannot also be Sponsoring Professional.)

Bryan Burroughs	bryanburroughs@mctu.org	(616) 460-0477
name	email	phone

Bryan Burroughs 12/11/08

signature date

Sponsoring Professional: (Agency official responsible for project oversight, if applicable. Sponsoring Professionals CANNOT also be a funded consultant.)

Mark Tonello	tonellom@michigan.gov	(231) 775-9727
name	email	phone

Fisheries Biologist	Michigan Department of Natural Resources
title	agency

See attached email confirmation

signature date

TU Chapter President:

Jim Bedford	gairdneri@comcast.net	(517) 484-5178
name	email	phone

See attached email confirmation

signature date

TU Council Chair: (For states with an existing TU Council - Executive Directors not eligible.)

Kimberly Wetton	kwetton@mctu.org	(906) 475-4148
name	email	phone

See attached email confirmation

signature date

(My signature shows that I have reviewed this application and am aware that it occurs within my Council area and that the proposed project is consistent with TU national conservation policies.)

Landowner: (if applicable)

N/A		
name	email	phone

signature date

To: '"Bryan Burroughs"' <burrou15@msu.edu>
From: Bryan Burroughs <burrou15@msu.edu>
Subject: FW: FW: eas grant application due today
Cc:
Bcc:
Attached:

-----Original Message-----
From: Mark Tonello [mailto:TONELLOM@michigan.gov]
Sent: Friday, December 12, 2008 3:04 PM
To: Kristin Nelson
Subject: Re: FW: eas grant application due today

Kristin,
This email serves as my signature, and thus shows that I have reviewed this application and that the proposed project is consistent with the TU National conservation policies and is supported by the Michigan Department of Natural Resources. Signed - Mark A. Tonello.

To: "'Bryan Burroughs'" <burrou15@msu.edu>
Subject: FW: eas grant application due today

-----Original Message-----
From: Jim Bedford [mailto:gairdneri@comcast.net]
Sent: Friday, December 12, 2008 3:09 PM
To: Kristin Nelson
Subject: Re: eas grant application due today

> "This email serves as my signature, and thus shows that I have reviewed
> this application and am aware that it occurs within my Chapter area and
> that the proposed project is consistent with TU National conservation
> policies. Signed - James W. Bedford".
>
> Thanks Jim

To: "Bryan Burroughs" <burrou15@msu.edu>
From: Bryan Burroughs <burrou15@msu.edu>
Subject: RE: eas grant application due today
Cc:
Bcc:
Attached:

Date: Fri, 12 Dec 2008 14:33:54 -0500

Bryan,

This email serves as my signature, and thus shows that I have reviewed this application and am aware that it occurs within my Council area and that the proposed project is consistent with TU National conservation policies.

thanks,
Kimberly Wetton

EMBRACE-A-STREAM 2009
GRANT APPLICATION
MICHIGAN COUNCIL OF TROUT UNLIMITED VOLUNTEER DATA COLLECTION PROGRAM

Executive Summary

Title: the Grassroots Volunteer Data Collection Project
Location: Michigan, statewide
Applicant: Michigan Council of Trout Unlimited
Amount Requested: $9,737.38
Matching Funds: $42,084.29
Description: Michigan Council of Trout Unlimited proposes to develop a program to engage its volunteer members in the act of collecting information which is essential to its mission of conserving, protecting and restoring coldwater fisheries. The types of data to be collected fall in to the following categories; stream flow, water temperature, aquatic insect & aquatic health indices, riverine habitat mapping, fisheries population assessments, and angler creel and economic valuation data. The uses of these data are fundamental to achieving TU's mission, and fill critical knowledge gaps need to help inform and improve management and policy for coldwater fisheries. In addition to contributing valuable information, this project will provide a valuable niche for TU's greatest strength – its grassroots members, and is expected to have the coincidental benefits of increasing member engagement and recruitment. During the following year; data collection protocols and training tools will be developed, presentations and trainings given to chapter members, data collection organized and conducted, data managed, summarized and analyzed, findings presented to participants and local media, and the program will be evaluated, refined and re-packaged for future use by all chapters in MI and elsewhere in the country. Partners in developing this program and using the resulting data will include the MI Departments of Natural Resources and Environmental Quality, the US Geological Survey and several local conservation districts specializing in stream restoration.

Background

One of the important identities of Trout Unlimited is the hands-on stream restoration that its volunteer members achieve. Through the past decades this has been a hallmark of TU. Stream restoration has been incredibly beneficial to our rivers and streams, and has provided a critical means for TU volunteers to directly contribute to our mission in a meaningful and valuable manner. In many parts of the country, this hands-on stream restoration work is still the foundation of TU work. Michigan Trout Unlimited is blessed with a wealth of highly productive partners in conservation and in particular, stream restoration. Many of our watershed councils and conservation districts (and the "RC&D's) possess a high level of capacity, many fulltime technical staff, and are very productive in performing stream restoration projects. We are fortunate for this, as performing stream restoration projects in Michigan has become administratively

demanding (engineering design requirements, grant subcontracting, etc.), at least for a volunteer-based organization such as Trout Unlimited. Hands-on volunteer involvement in these projects is often not needed (MI TU members continue to fund and advocate for these projects). In the absence of hands-on stream restoration projects TU members are left with fundraising and advocacy as their two primary means to contribute to our mission. While these modes of involvement are critically important, they do not fully utilize TU's greatest strength, its large number of members. It also appears that without a hands-on way to contribute, recruitment of new members and engagement of active members becomes even more difficult.

Fortunately, volunteer data collection offers TU members an ideal opportunity to contribute in a hands-on manner, while capitalizing on the greatest strength of TU at a time when governmental agencies need this type of assistance more than at any other time in history. In addition, volunteer data collection engages members and educates them about coldwater resources, and contributes needed information that is the foundation to achieving any component of our conservation mission.

Several types of information, which are not collected by any other agency, are desperately needed to aid coldwater fisheries conservation. I will outline the main categories of this data here, so as to provide justification as to why this data is critical, and will not be collected unless TU does so.

- Stream Flow data. With the passing of the Great Lakes Compact (2008), great Lakes states are required to develop a framework for preventing adverse resource impacts to water dependent natural resources within each state. Michigan is the only state to have begun this work, and currently has a tool to predict the impact of groundwater withdrawals on stream flows, and its impact to fish. This predictive tool relies on limited stream flow data (from ~130 USGS gaging stations) to predict stream flows for the other ~8,000 stream segments in Michigan. Despite the crudeness of these resulting stream flow predictions, large-quantity water withdrawals will be permitted on the basis of these predictions. The MI Department of Environmental Quality (MDEQ) and the USGS have begun developing criteria and tools for using volunteer collected flow data to help improve the flow predictions that determine policy. However, no other governmental agency or conservation organization is currently planning on developing a program to address this new need. TU Nat'l is working with MI TU to develop two new "HomeRivers Projects", as well as exploring the possibility of a "Midwest Water Project" here in MI. Both of these projects will emphasize this critical need for stream flow data to be collected by volunteers.
- Water Temperature data. The essence of the TU mission demands that we identify our coldwater fisheries so that we may conserve, protect and restore them. However, in reality the water temperature data to accomplish this frequently does not exist. Where it does exist, it has been used to identify areas of groundwater recharge in streams (with important implications of fishery management), it has been used to document the impacts of dams that warm water temperatures past levels of tolerance to trout, and is also critical to the state's new water withdrawal assessment tool (the predictive tool mentioned above). Collecting this data would allow us to aid coldwater

fisheries management in incredible ways. It would also greatly aid in the development of our strategic dam removal initiative. In this, we seek to target for removal, those dams that are having the greatest impact by warming temperatures in our trout streams. Having water temperature data above and below dams is foundational to this effort. Again, no one agency has any consistent program or initiative to consistently gather this information.

Aquatic Macroinvertebrates and Biotic Indices of Aquatic Health. Aquatic macroinvertebrate sampling in widely used to assess the overall health of aquatic systems (most appropriately, wadeable streams). In the Great Lakes states, there is a simple and acceptable protocol to collect this information, referred to as Procedure 51. This protocol is used by governmental agencies including the MDEQ. This information can be used to survey sections of streams that have not been surveyed recently for a quick assessment of water quality. In addition, they can be used repeatedly in the same locations to monitor water quality in a particular stream segment and they can be used upstream and downstream of a pollution source to document the scope and relative severity of the pollution impacts. There is a governmentally funded program in MI that provides funding and assistance to help encourage and support volunteer conservation organizations to collect this data (the program is referred to as "MiCorps"). There currently are not enough organizations participating, or focusing on coldwater systems. This type of data would be particularly useful to our MI TU chapters in developing pollution monitoring and documentation in areas where active mining operations and concentrated animal feeding operations exist on coldwater fisheries.

- Stream Habitat data. In order to determine and prioritize the restoration needs of any river or stream a comprehensive survey of the entire river (or preferably the watershed) is needed. This provides a measure of what the river currently is, and provides a basis for determining restoration needs. Currently there is no program within any agency or organization that is aimed at collecting this information. The Department of Natural Resources collects information on stream habitat from single randomly selected sites on randomly selected rivers and watershed planning reports often contain watershed-wide maps of stream crossings and bank erosion locations. However, none of these provide a river-wide assessment of all the characteristics of importance to stream quality for coldwater fisheries. For example, there is currently no program in place to collect data that would identify if a river needed additional woody debris or had sufficient spawning gravel available. As the basis for justifying and prioritizing all future restoration efforts on our coldwater fisheries, TU volunteers propose to collect this information.
- Fisheries Population data. Setting appropriate harvest regulations on coldwater fisheries is one of the primary tools managers possess to help enhance these fisheries. Ensuring that appropriate regulations are in place on any given stream requires some basic information about the fish population in the stream. For example, how many are there (density), how variable is the population (density variability), how fast do they grow (growth rates), and

how well do they survive (age-specific mortality schedule). This would usually require that a fish population survey be done in a stream at least once, but preferably for about 2-3 years in a row. The state fisheries agency conducts this type of data collection. However, they conduct these surveys on a randomized basis, as to ensure valid coverage statewide. Therefore, due to the large number of coldwater fisheries in MI, the state agency will likely only sample an individual stream once in about a decade. The result is that for the vast majority of coldwater fisheries in the state, we lack information to assess whether the regulation for it is appropriate or effective. With shrinking state agency budgets, the MI Department of Natural Resources (MDNR) lacks the ability to increase its overall effort in sampling fish population. If this basic information on fish population is going to be collected, it will need to be collected by volunteer groups such as TU.

- Fisheries Creel and Economic valuation data. Similar to fisheries population data, in order for appropriate regulations to be placed on fisheries, you need to assess the angling pressure being placed on the fishery (e.g., catch & release regulations won't improve a fishery if very few people currently fish it). This information is also useful in helping to figure out who coldwater anglers are and what there preferences are (e.g., how many flyfishers versus spin fishers, how many voluntarily catch & release, how often do anglers make trips, etc.). This information, along with questions about the expenditures of fishermen, help to provide an estimate of the economic impact of a fishery – this information is critical to defending/advocating for its protection in state legislatures and congress. While the MDNR currently conducts some creel surveys, they are limited by budget, randomized across the state, and are very limited for stream fisheries (prioritization is given to creel surveying the Great Lakes fisheries). Further, the MDNR does not currently collect information that would allow economic valuation estimates for coldwater fisheries.

We are proposing to develop a concerted and strategic volunteer data collection program in Michigan. This program will require the intimate involvement of the state council and all of its chapters, and will address all of the data types mentioned previously. We will start by developing a pilot project for each type of data, in at least one chapter each. Evaluation of the pilot project will occur, and then this program will expand to include all of the MI TU chapters. It is our hope that our experiences and products developed here will be embraced and utilized by TU chapters across the country.

Location & Species Involved

During the first year pilot of this project, at least one chapter will be used for each of the main categories of data.

- Stream Flow data: Perrin Chapter (#018), Lansing, MI will collect stream flow data on Prairie Creek. This coldwater stream is tributary to the larger and warmer Grand River, and lies in an agricultural landscape (suffering from irrigation water withdrawals). Despite this, it continues to support wild steelhead (and a significant sport fishery for them) and brown trout.

- Water Temperature data: Schrems West Michigan Chapter (#021), Grand Rapids, MI will collect water temperature data on the Rogue River (location of an upcoming HomeRivers initiative). This river is also a coldwater tributary to the Grand River, and supports steelhead, brown trout and Chinook salmon. The focus of this data collection will be to identify coldwater areas in the watershed, and to document the temperature impacts of a key dam located midway through the watershed.
- Aquatic Macroinvertebrates and Biotic Indices of Aquatic Health: Kalamazoo Valley Chapter (#017), Battle Creek, MI will collect aquatic macroinvertebrates within the Kalamazoo River watershed. This chapter is located in southwestern Michigan where there is an abundance of designated trout waters; however, they are fragile. There is a large amount of development and agriculture in this region which could negatively impact water quality. This chapter will perform data collection on numerous coldwater fisheries in the chapter area. Wild brown trout exist in the majority of these fisheries. However, wild brook trout, steelhead and salmon are also present in streams that may be monitored.
- Stream Habitat data: Headwaters Chapter (#315), Gaylord, MI will conduct river habitat mapping on the Pigeon, Sturgeon and Black Rivers – sites of the upcoming "Headwaters HomeRivers Initiative". This data will form the foundation of future stream restoration efforts for the HomeRivers project. The Pigeon and Sturgeon rivers support wild brown trout, brook trout, and adfluvial rainbow trout. The Black River is unique in that it is exclusively managed as a wild brook trout fishery.
- Copper Country Chapter (#689), Houghton, MI will also conduct river habitat data collection on Menge Creek. This creek is important to wild coaster brook trout restoration efforts in Lake Superior. The protocol used in this pilot will follow a different experimental sampling protocol developed recently by the MI DNR for the purpose of volunteer data collection (and was used successfully in 2008 on the Huron River watershed).
- Fisheries Population data. Martuch Chapter (#250), Midland, MI will conduct fish population data collection on the Cedar River. This stream supports wild brown trout.
- Fisheries Creel and Economic valuation data: Mason-Griffith Founders Chapter (#019) in Grayling, MI and Mershon Chapter (#020) in Saginaw, MI will partner to collect fisheries creel and economic valuation data on the Au Sable River (pilot will focus on particular segments of this large river). Brown trout, brook trout and rainbow trout are the predominate species, while some steelhead and Chinook salmon do occur in the lowermost segment of the river.

Proposal Goals and Objectives

The overall goal of this project is to provide information that is required in order for TU to achieve its conservation mission; information that will not otherwise be collected. This will improve our ability to protect coldwater fisheries from future threats, conserve

them through improved management (including policy) and help ensure that restoration efforts undertaken in the future are of the greatest importance and benefit to our coldwater fisheries. A secondary goal of this project is to provide a means to utilize TU's greatest strength and most unique value – its volunteer members. We expect this project to re-engage active members and to appeal to non-members (thus helping recruitment and retention of new members). Another secondary goal of this project is to help re-establish the role of TU, principally its volunteer, in coldwater fisheries management. It will do this by drawing on the organization's unique value – its grassroots, to provide a critically important part of the management process that is not currently being filled. This niche is critically needed and TU is able to fill it.

General Conservation Objectives include:

- Developing training tools (presentations, printed guides, and chapter "monitoring leaders") on the collection of the different types of data and their uses and interpretation.
- Evaluation and refinement of these tools and the data collection implementation plans.
- Gather needed information on flow, water temperature, aquatic health, fish populations, and angler creel data and economic valuation; for specific pilot watersheds; with diverse and far reaching benefits (described in length in "Background").

Strengthening TU Objectives include:

- Develop a volunteer data collection program which provides information that will form the basis of future TU work towards its mission.
- Strengthen partnerships between MI TU conservation partners.
- Provide TU volunteers with a valuable and unique method of contributing "hands-on" to the mission of TU.
- Increase TU membership in MI by promoting the ability of members to participate in this type of program.
- Provide tools for exporting this type of project to other TU chapters in the region and across the country.

Educational Objectives include:

- Educate members on coldwater fisheries and management of them, including how these types of data can be used to prioritize future projects and protect key resources.

Communicate important findings to non-TU community through various media.

Work Plan

This pilot project will be completed during the course of the next year. We will begin by identifying and developing appropriate protocol for the collection of the various types of

data. In many of these cases, a standard and accepted protocol is well-established and documented. In these cases, established and accepted data collection protocols will be used to facilitate ease of transfer and assimilation of this data with state and federal agencies. In some cases, accepted protocols are not established. In these cases, MI TU will identify rigorous and defensible protocols from scientific literature, and will vet the developed protocols with the appropriate conservation partners. For example, a protocol and certification program for volunteer data collection is required for instream flow monitoring, but has yet to be developed. In this case, MI TU will work with the appropriate agencies to develop protocol. This coordination with other partners will also extend to selection of locations to be sampled.

Second, presentations and trainings on data collection will be provided to all participating chapters. Logistical plans will be developed for the particular pilot projects following these trainings. The actual data collection will occur at different times (given the data needs) from spring 2009 – through fall 2009.

Third, data collected with be managed, including the development of databases, and exchange with relevant agencies. The data will be summarized by MI TU staff, and communicated through presentations and written articles with each of the participating chapters. Focus of the presentations will be on the relevance and implications of their findings.

Last, several forms of evaluation and communication will be performed. We will develop surveys for program participants to evaluate their experiences with the program and to solicit feedback on the program's efficiency. We will also evaluate quality control in the data collected. All of this information will feed refinements in the protocols and in the training materials used. These "supporting documents" or tools will then be updated and archived for future use in Michigan and exported to other chapters throughout the country.

Methods (further protocol-specific information)

Stream flow monitoring – Stream flow data will be collected in accordance with protocol developed by MDEQ and the USGS. These protocols are currently being created. A Global Water Flow Probe (or USGS Type AA Model 6200) will be used to measure stream flow. Current velocity measurements will be taken at 0.6 depth every 2 feet across the stream (following the generally accepted discharge estimation techniques).

Temperature monitoring – The techniques that will be used for monitoring instream temperature are consistent with those used by MDNR. Using the same technique ensures that the MDNR will be able to utilize the data provided by MI TU. HOBO® temperature loggers will be deployed in selected streams for one calendar year. The loggers will be checked once throughout the course of the year. Loggers will be placed above and below dams, above and below irrigation withdrawals, or throughout a vulnerable cold water system. Loggers will be collected after one year. The data will be downloaded and organized in accordance with MDNR standards. The data will then be provided to

MDNR and kept by MI TU. Monitoring will be repeated over time to follow trends. Data loggers will be deployed and collected by members of the Schrems West Michigan Chapter of TU. Training for temperature logger use will be provided by MI TU staff.

Aquatic macroinvertebrates and biotic indices of aquatic health – The techniques that will be used to monitor aquatic macroinvertebrates and aquatic health are consistent with those used by MiCorps (Latimore 2006). MiCorps provides data to the MDEQ. Therefore, ultimately macroinvertebrate and water quality data will be submitted to the MDEQ. Training for MI TU staff will be provided by MiCorps. MI TU staff will then train and assist the chapter volunteers. Approximately 30% of road stream crossing sites within each watershed or subwatershed will be surveyed. Surveys will be conducted in spring and early fall.

Aquatic Macroinvertebrate samples will be collected from all available habitats within the stream reach using a dip net. Habitat and substrate types from which aquatic macroinvertebrates were collected will be recorded. The aggregate sample will be placed in a sorting tray. Volunteers will then sort the collection and place the macroinvertebrates into jars of 70% ethanol for later identification. Organisms will be identified to order or suborder by volunteers using a visual key. A total stream quality score will then be calculated. These identifications will later be checked by MI TU staff and samples will be submitted to MiCorps and ultimately MDEQ. Aquatic macroinvertebrates will be sampled by the Kalamazoo Valley Chapter and the Leon. P. Martuch Chapter.

Fish monitoring – Fish monitoring procedures will follow standard protocol for coldwater streams developed by MDNR and MDEQ (MDEQ 2002). A backpack electroshocker will be used to sample fish in a 100-300 foot stretch of stream. At least 100 fish will be examined from each station. All fish collected will be placed in tubs or buckets until shocking is complete. Bucket water will be changed as necessary to prevent harming fish. Species and length of each individual collected will be recorded and fish will be released back into the stream. The amount of time spent electrofishing at each station will also be recorded. Streams will be designated as coldwater if the percentage of salmonids exceeds 1% of the total number of fish collected. Fish surveys will be conducted by the Leon P. Martuch Chapter.

Stream habitat monitoring – MDNR protocol and data sheets will be used to conduct habitat surveys. Stream substrate, embeddedness, depth, width, aquatic vegetation, bank vegetation, and large woody debris will be assessed in each 300 foot section of stream. Stream habitat will be surveyed by the Copper Country Chapter.

River Mapping – Volunteers will canoe or walk down a section of stream and make observation to be included on a map. These observations will include bedform delineation (run, riffle, pool), substrate composition, quantity and size of woody debris, aquatic vegetation quantification, bank vegetation status, depth, stream width, and amount of available fish cover. This information will then be incorporated into a map of the river reach studied. The Headwaters Chapter will create river maps of select river reaches within the Cheboygan River watershed.

Creel Surveys and Economic Valuation – MI TU will work with the MDNR and Michigan State University to develop a creel survey and an economic survey.

Schedule

Tasks	Execution Date
Develop data collection protocols and training tools.	December - February 2008/2009
Give informational presentations at chapter meetings to increase interest in data collection within each chapter.	January - March 2009
Meet with each chapter involved in monitoring to provide training and support.	February - April 2009
Data collection by each chapter involved.	May - October 2009
Organization and analysis of data by MI TU.	September - November 2009
Provide MDNR and MDEQ with data in desired format.	October 2009
Evaluate program and refine products.	October - December 2009
Publicize the project and its findings in local media; send chapter mailers highlighting the project.	November – December 2009
Write article for Trout magazine highlighting the project.	January 2010

Role of TU – MI TU members will be collecting all volunteer data. It is expected this will occur over a number of days in 2009. At least seven Michigan TU chapters will be involved in collecting data. It is expected that each chapter will organize between 3 and 20 volunteers to collect the data. In total, between 20 and 140 TU members are expected to participate in this pilot project.

The MI TU leaders of this project are Kristin Nelson and Dr. Bryan Burroughs. Kristin Nelson is a Huron Pines AmeriCorps member serving with MI TU. She has and will play a critical role in organizing, training, and troubleshooting this project. Kristin has a background in stream biomonitoring and aquatic science. She recently earned her M.S. in biology (Aquatic Science) from Grand Valley State University. The Executive Director of the Michigan Council of Trout Unlimited, Dr. Bryan Burroughs will oversee and assist Kristin with development and implementation of the volunteer data collection program. Bryan has a doctorate in fisheries management from Michigan State University.

Role of Other Partners – George Madison, Jay Wesley, and Mark Tonello with the MDNR fish Division have already contributed significantly to the development of this project. They will continue to be involved in the design and implementation of volunteer data collection practices, along with others from the Fish Division, including all relevant local fisheries biologists and selected fisheries research personnel (e.g., Todd Wills, Andy Nuhfer, Paul Seelbach). Dave Hamilton with the MDEQ will provide MI TU with protocol and training for measuring instream flow. MiCorps program staff will provide

macroinvertebrate sampling training for MI TU staff. In addition, MiCorps will provide a written manual for macroinvertebrate sampling and identification. Staff from Huron Pines RC&D and the Conservation Resource Alliance (two leading stream restoration organizations in northern MI) will provide input on the design and use of the river habitat maps. Researchers from Michigan State University will be engaged in the development of surveys intended to provide economic valuation estimates.

Outreach Plan – The justification and details of participating in this program will be communicated directly with participating chapters through in-person presentations and training sessions. Details of the overall program will be communicated to all TU members in MI via communications in MI TU's quarterly magazine, "Michigan Trout". Results and findings from this project will be communicated to the participating chapters through presentations, and important findings will be used as the basis of communications through various media outlets. Details of the program and its evaluation will be provided to the entire TU membership via an article in TROUT magazine.

Evaluation – Evaluation of this program will be based on whether we achieve the three main goals of the project:

- Collection of important and useful data needed for coldwater fisheries management. Indicators of success of this goal will include an assessment of whether the targeted data was successfully collected and an assessment of its quality and reliability. Rigorous and measurable evaluation of whether the data collected will be useful will not be feasible in the one year timeframe involved in this grant program.
- Engagement of volunteer members. Indicators for evaluation of this goal will include tracking the number of volunteer participants and a follow up survey of members in participating chapters regarding their attitudes and opinions of the program. We will also ask chapter leaders to note the participation of members that have not routinely been active previously.
- Re-establish the relevancy of TU in hands-on conservation work. Measurable indicators for evaluating the success of this will be difficult. We will however attempt to create a follow-up survey of conservation partners regarding their opinions of the usefulness and application of the data collected by TU volunteers. This will form the basis for evaluating the third main goal.

2009 EMBRACE-A-STREAM - Budget Form

Item	EAS Cost	Matched Cost & Name of Contributor*	Total Project Cost
Personnel / Consultants / Contractors			
MI TU Project Coordinator (annual cost of stipend)	$4,500		$4,500
MI TU Executive Director (~$33/hour, 350 hours	$0	$11,550 (MI TU in-kind)	$11,550
TU Volunteer Labor **$19.51/hr^. x # of hrs.**			
Overall volunteer training (66 volunteers 4 hours each)		$5150.64 (MI TU in-kind)	$5150.64
Temperature data collection (5 volunteers 10 hours each)		$975.50 (MI TU in-kind)	$975.50
Macroinvertebrate data collection (10 volunteers, 8 hours each)		$1560.80 (MI TU in-kind)	$1560.80
Fish data collection (10 volunteers, 8 hours each)		$1560.80 (MI TU in-kind)	$1560.80
Flow data collection (4 volunteers, 10 hours each)		$780.40 (MI TU in-kind)	$780.40
Habitat evaluation (10 volunteers, 8 hours each)		$1560.80 (MI TU in-kind)	$1560.80
Stream mapping (12 volunteers, 20 hours each)		$4682.40 (MI TU in-kind)	$4682.40
Creel and economic surveys (15 volunteers, 8 hours each)		$2341.20 (MI TU in-kind)	$2341.20
Agency Volunteer Labor*			
Data collection protocol design and training (~$35/hr average, 10 agency personnel, 150 hours total)		$5250.00 (MDNR, MDEQ, USGS in-kind)	$5250.00
Materials / Equipment Purchases^^			
HOBO pro v2 temp. loggers (20 @ $106)	$2,120		$2,120
Macroinvertebrate 12' D Net frame (2 @ $56.50)	$113.00		$113.00
Macroinvertebrate 12' D Net (2 @ $13.35)	$26.70		$26.70
Sorting trays (4 @ $10)	$40.00		$40.00
Forceps (8 @ $3.75)	$30.00		$30.00
Global Water Flow Probe (3 @ $730)	$2,190.00		$2,190.00
Measuring tape (3 @ $29.96)	$89.88		$89.88
Yard sticks (6 @ $3)	$18.00		$18.00
Fish nets (2 @ $39.95)	$79.90		$79.90

Nikon laser range finder (2 @ $199.95 each)	$399.90		$399.90
Fish measuring board	$130.00		$130.00
Equipment Rentals			
Backpack electrofishing unit rental		$500.00 (Martuch Chapter in-kind)	$500.00
Other Expenses			
Travel for MI TU staff ($0.585/mile)			
Presentations & trainings (4000 miles)		$2340.00 (MI TU in-kind)	$2340.00
Data collection and site visits (2500 miles)		$1462.50 (MI TU in-kind)	$1462.50
Meetings with agency personnel (750 miles)		$438.75 (MI TU in-kind)	$438.75
Volunteer Travel ($0.585/mile, ~66 volunteers, ~50 miles each)		$1930.50 (MI TU in-kind)	$1930.50
TOTAL	$9,737.38	$42,084.29	$51,821.67

Notes: Please provide detailed itemizations for each EAS cost. Where applicable, please specify unit costs and quantities for materials, equipment, consultant, and contractor time, etc. Attach additional pages if necessary.

*Identify type & amount of donation & name of donor.

**Value of TU volunteer labor must be placed in "Matched Cost & Name of Contributor" column.

***Agency labor must be placed in "Matched Cost & Name of Contributor" column.

^Dollar value of volunteer time for most recent year as determined by Independent Sector.

^^Identify type & amount of donation & name of donor.