Montana Trout Foundation

P.O. Box 3165 Bozeman, MT 59772 Founded 1976

Wednesday, February 26, 2003

To: Members of the MTF Grant Application Review Committee
Harry Miller
Joel Shouse
Bud Lilly
Gordon Haugen
Tim Crawford

Enclosed for your review and scoring are copies of 11 grant applications that were received by the grant application deadline of February 20, 2003. Also included is a scoring sheet for the 11 grant applications. Each proposal needs to be scored on a scale of 1 – 10 based on how strongly you feel that the application should receive some or all of the requested funding. On this scale 10 is the highest rating possible and 1 the lowest. The five areas of interest defined by the Board of Directors are: 1- Enhancement of wild trout fisheries; 2 – stream preservation; 3- water resources education; 4 – enhancement of stream flows; and 5 – whirling disease research.

When you finish the scoring please return to me by either e-mail Vindachs@imt.net ; phone 406-587-0034 or by mail at P. O. Box 3165, Bozeman, MT 59771. I will summarize all the scores for the March 15th Board of Directors meeting.

Sincerely,

E. Richard Vincent
220 Cirque Dr
Bozeman, MT 59718

MONTANA TROUT FOUNDATION

Date: 2-19-03

I. Applicant: Montana Outdoor Science School

Address: PO Box 502, Bozeman, MT 59771

Phone: 406.582.0526

II. Project Title: Watershed Resource Awareness Through the 6TH Annual Community Watershed Festival

III. Project Director: Bobbi J Geise

IV. MTF funds requested $1,500 **Local Cash** $5,000 **In-Kind** $9,000

V. Proposed Date of Project: September 20, 2003

VI. and VII. Project planners/ Steering committee:

Bobbi J Geise, Executive Director, MOSS Rab Cummings, National Project WET Coord.

Greg Kindschi, Asst Dir. USFWS Fish Tech. Ctr. Cassie Carter, Dir.of Education, MOSS

VIII.

ABSTRACT

Watershed Resource Awareness through the Sixth Annual Community Watershed Festival

A proposal submitted to the Montana Trout Foundation
by Montana Outdoor Science School
PO Box 502
Bozeman, MT 59771
Ph (406) 582-0526
Fx (406) 586-3489
email: director@outdoorscience.org
www.outdoorscience.org

Montana Outdoor Science School is dedicated to providing quality educational programming through promoting an appreciation and understanding of the region's natural resources. This proposal seeks $1,500 from the Montana Trout Foundation to continue to offer and enhance the successful free Annual Community Watershed Festival to the people of southwest Montana. **The goal of the festival is to promote the awareness of and responsible stewardship towards the diverse natural resources found within our watershed.** This goal will be achieved through the following measurable objectives, for which detailed tasks are outlined in the attached proposal:

1. offer a free, fun-filled educational day for all ages centered around the watershed theme;
2. increase Festival attendance and business / agency participation by 15%;
3. expose the public to watershed concepts and to their personal role in watersheds using hands-on activities, presentations, displays, and tours, by local agencies and organizations;
4. increase awareness among the public of the need for and value in healthy fisheries and healthy watersheds.

VIII (continued)

NARRATIVE

Background

As a result of ongoing and successful Montana Outdoor Science School ("MOSS") natural science programs and a growing population in Gallatin Valley, MOSS continues to recognize the need for free, fun, and accessible watershed education in the greater Gallatin Valley community. Teachers, citizens, agencies, businesses, and parents continue to request information and programs about our local ecology, including the water supply and water quality within their watershed. MOSS responded by offering the First Annual Community Watershed Festival in 1998. Attendance at and recognition of the Festival has contributed to both community and financial support every year as the Festival grows into a sought after annual event. Programs like the Community Watershed Festival have earned MOSS statewide recognition for outstanding watershed and fisheries education, awarded by the Montana Chapter of the American Fisheries Society. In 2002 MOSS also collaborated with Project WET to be one of the national *Make a Splash!* sites, and reached an additional 200 area fourth grade students during a "pre-festival" program on September 20th. This collaboration allowed MOSS to reach a broader and larger audience as well as share Community Watershed Festival facilities, educators and resources the following day. Many *Make a Splash* participants visited Saturday's festival, sharing their information and resources with friends and family members.

Hosted at the USFWS Fish Technology Center in beautiful Bridger Canyon, the daylong Festival is free to the public and offers a diverse selection of educational watershed-related 'stations' and displays for all ages. In 2002, 17 sponsors, 56 presenters and a total of 95 volunteers sponsored one hundred percent of Festival expenses. Nineteen educational stations and 3 informational walks were offered in 2002. The 580 plus participants, and increase in presenter diversity are testimony to the growing public interest in local watershed information and management issues. Completed surveys consistently indicate 100% of participants learn something new about their watershed such as: how water moves underground, how extensive and interdependent a watershed is, what macroinvertebrates live in the water and how to tie a fly to match the species present, the importance of clean water and habitat, how wells are dug, noxious weed and fish identification, and the variety of research and resources USFWS Fish Technology Center provides. Surveys also indicate that participants enjoy the festival and want more of the same; learning about the physical and ecological characteristics and about the current management of their watershed.

Montana Outdoor Science School staff, Board representative, and a volunteer Watershed Festival Advisory Committee plan the educational stations and solicit presenters. The Committee takes into consideration popular water-related topics, current issues, successful water lessons, and past evaluation results when planning for the Festival. Even the entertainers are asked to cater their performance to watershed concepts. MOSS organizes and facilitates the Festival as well as instructs some of the educational stations. All presenters and exhibitors contribute their time and expertise. In addition to being a lead sponsor, the USFWS Fish Technology Center contributes use of the facility, valuable facility tours, and maintenance during the Festival. MOSS contributes the supervision of the Event Coordinator, Festival instruction, event-related office overhead, and most educational materials.

All participants receive valuable information about a variety of fisheries and watershed topics through their hands-on participation, on-site educational hands-outs and interactive displays. Whether touring the Hatchery, learning about ground and surface water through games, identifying riparian animal and plant species during a walk, or 'playing with fire' with the USFS, participants directly experience many integral components of a healthy watershed. *By providing a broad base of natural science*

information, MOSS strives to develop a more informed citizenry that in turn may take an active and educated role in local watershed management and decision-making.

The Festival and Montana Trout Foundation

The Festival has provided valuable watershed resource education opportunities for both participants and presenters as demonstrated by the tremendous annual turn out, new participant audiences, impressive sponsor support, new partnerships, positive evaluations and ongoing Festival inquiries. In addition to these successes, sponsors have been pleased with positive public response and the amount of advertising and public recognition they receive for supporting the Festival (see enclosed prospectus). As well as printed and radio promotions, sponsors are encouraged to submit displays, supply educational handouts, and offer presentations on watershed-related topics. As a premier sponsor, MTF would receive all the benefits of a Lead Sponsor as well as the option of displaying a banner on site during the Festival.

With past year's successes and 2003's embellishments, the goal of the Watershed Festival remains the same, **to promote the awareness of and responsible stewardship towards the diverse natural resources found within a watershed.**

Achieving Festival Objectives

The goals of the Community Watershed Festival will be achieved through the following four objectives and tasks:

1. Offer a free, fun-filled educational day for all ages centered around the watershed theme
   Task 1a. Contract Festival Coordinator to detail and implement planning tasks
   Task 1b. Coordinate Watershed Festival Advisory Committee
   Task 1c. Solicit sponsorship support: $8,000 for direct event expenses and $8,000 for in-kind expenses

2. Increase Festival attendance by 15%
   Task 2a. Increase advertising by 20%; target more teens, adult aged, fisheries-related participants, and university watershed-related research personnel and presentations
   Task 2b. Solicit a variety of high-profile entertainment throughout event

3. Expose the public to watershed concepts and their personal role in watersheds using hands-on activities, presentations, displays, tours, and demonstrations
   Task 3a. Target current watershed-related issues/topics for a minimum of 2 new displays and 2 presentations (e.g.: forest planning, mapping techniques, resource management, whirling disease, habitat enhancement…). Also see 2a above.
   Task 3b. Display a minimum of 5 interactive watershed-related displays (e.g.: fish identification, geology, mammals, forestry, noxious weeds, forest fires, macroinvertebrates…)

   Task 3c. Provide opportunity for local natural resource agencies and non-profits to display and present watershed-related information (e.g.: USFS, NRCS, MACD, Farm Bureau, MSU- Extension services, American Wildlands, Gallatin Valley Land Trust, Montana Wilderness Association, Whirling Disease Foundation, Local Water Quality District, Federation of Fly Fishers, Gallatin County Planning Office, Weed Control District…)

4. Increase awareness among the public of the need for and value in healthy fisheries and healthy watersheds (including stations and displays on mammals, birds, invertebrates, vegetation, open space).
   Task 4a. See objective 3 above
   Task 4b. Provide resources and a development opportunity to presenters on creating successful and effective presentation formats and understanding learning styles
   Task 4c. Solicit Festival evaluations from participants
   Task 4d. Debrief Festival and evaluations
   Task 4e. Summarize and report total participants, presenters, volunteers, and evaluations for sponsors, presenters and MOSS

The four project objectives will be met within a month after the completion of the Sixth Annual Community Watershed Festival on September 20, 2003.

IV. Evaluation

The Community Watershed Festival lends itself to a number of useful evaluations, which effectively measure the success of the proposed objectives. In order to continually incorporate new information and improvements MOSS has organized a Watershed Festival Advisory Committee. The committee discusses and plans methods to target a broad audience, incorporate results of past evaluations and provide up to date and improved watershed-related hands-on displays and handouts. Evaluative assessments are made on two levels: festival success and individual station / presenter success.

1. Festival success is measured through the number and diversity of attendees (new and returning), number of presenters and presentation diversity (Did we offer a variety of topics? Did the stations target multiple age levels? Were the stations well attended? Did we attract new audiences?). MOSS staff, student volunteers, and retired senior volunteers help solicit completed evaluations from participants before they depart. An additional evaluative measure of overall Festival success is the continued support of sponsors, in-kind contributions, and volunteers that enable MOSS to continue to offer this fabulous event free to the public!
2. The numbers of station attendees, journals, presenter evaluations, and comments, are used to measure individual presentation success. As importantly, some station lessons have an inclusive participant evaluation component, which offers a quick individual assessment of topic understanding. Two examples include: a) free festival journals, and b) presenters ask participants questions and/or provide scenarios for on the spot problem solving as part of a presentation. Inclusive evaluations are often low-cost, effective and generally fun for the participants.

Assessing the effectiveness of the Community Watershed Festival and applying our findings, has been an integral component of its annual success. With this in mind, MOSS plans on providing a training opportunity in 2003 to interested presenters on how to develop effective and interactive presentations for all learners (see objective 4e).

X. Curriculum Vitae (included: Bobbi j Geise)

XI. Budget

The overall success of the Community Watershed Festival is contingent upon funding from a diverse combination of sources: business sponsors, individuals, in-kind contributions, agencies, various organizations and volunteers. Montana Outdoor Science School is kindly requesting $1,500 from the Montana Trout Foundation to support the development of educational materials and supplies for the Sixth Annual Community Watershed Festival. Total proposed Festival budget for 2003 is $16,395, of which approximately fifty percent comes from generous cash contributions and the remaining fifty percent from in-kind charitable contributions. Please review budget below.

Proposed Budget	MTF Funds	Local/In-Kind Funds	Cash Sponsors
1. Personnel			
Presenters (20@$100/day)		**$ 2,000**	
Entertainment			**$ 600**
Festival Coordinator			**$ 2,500**
Volunteers (20@$50/0.5day)		**$ 1,000**	
Event Supervisor			**$ 2,000**
2. Travel	**N/A**		
3. Equipment			
Tent Rentals	$ 900	$ 350	$ 200
Facility		$ 1,000	
Office Use (space, phone, copier)		$ 750	$ 600
Tables, Chairs, Tent Delivery		$ 250	
Porto Potties		$ 50	$ 190
4. Materials			
Schedules/journals	$ 200	$ 20	
Supplies	$ 300	$ 450	$ 250
Evaluations	$ 25		
Posters	$ 75	$ 75	
5. Other			
Postage			$ 60
Advertising		$ 2,000	$ 400
Film & developing		$ 50	$ 100
Totals	**$ 1,500**	**$ 7,995**	**$ 6,900**
Total Event Cost	**$ 16,395**		

AGREEMENT: It is understood that any funds granted as a result of this request are subject to the following conditions:

1. The funds granted your proposal are to be used only for the purpose set forth therein.

2. Thirty percent of this grant will be withheld until you have submitted 1) a concluding report of expenditures and remainders (if any), (2) a detailed evaluation of the project, and 3) a one-paragraph abstract of the evaluation. The concluding report, evaluation, and abstract must be submitted within 30 days of the completion of the work proposed in your application.

3. All publications or news releases relevant to this project must include appropriate acknowledgement of MTF funding.

4. MTF reserves, and you do hereby grant to MTF, the right to copy, reprint, reproduce, publish, republish, disseminate and to otherwise make use of all reports, studies, data findings, conclusions, recommendations, and all other written, graphic, or pictorial material resulting from your project whether or not copyrighted, published, or otherwise protected under a proprietary claim by you or your designee; provided, that if such work be claimed or protected under such proprietary protection, then MTF agrees to provide a disclosure to that effect along with a statement that the work is being used with the permission of its author.

5. You shall pay, indemnify and forever hold MTF harmless from any liability arising out of the contract work, including, but not limited to, any claim arising out of libel, slander or copyright, patent, trademark, trade name or other proprietary infringement.

Bobby Stone Date 19 Feb, 2003
Project Director (signature)

Same Date _____
Person responsible for financial records/reports, if other than Project Director (signature)

BOBBI JOLENE GEISE
418 South 15th Avenue
Bozeman, MT 59715
(406) 582 -1540

EDUCATION:

Montana State University, Bozeman, MT.
Secondary Teaching Certificate- Broadfield Science, 1997

The University of Vermont, Burlington, Vermont.
BS - Wildlife Biology, Graduated May, 1990

EMPLOYMENT HISTORY:

♦ **EXECUTIVE DIRECTOR, MONTANA OUTDOOR SCIENCE SCHOOL** Bozeman, MT
Develop and execute long term strategic and annual operating plans and corresponding budgets, including marketing and administration of outdoor and classroom natural science experiential education curriculum for preschool-tenth grade, adult educators, community events and collaborative programs. Hire, train, schedule, and supervise year-round and seasonal staff, volunteers, and contract specialists. Develop, implement and administer policy, employee contracts, public relations, fund raising events and donor solicitations. Work directly with Board of Directors and committees. 2/97 - present

♦ **DIRECTOR, BIG SKY WILDCARE, INC.** Bozeman, MT
Managed and coordinated 15+ volunteers, fundraising, grant writing, membership and data base development, public relations, office duties and the raptor rehabilitation facility. Designed, scheduled and implemented public outreach, school, civic group and adult education programs. Supervised raptor retrievals, care, research including banding and telemetry, and release. Worked in direct conjunction with Rehab Coordinator and Board of Directors. March 1995-February 1997

♦ **PRESERVE NATURALIST, THE NATURE CONSERVANCY** Ten Sleep, WY
Co-instructed college ecological inventory technique course, developed natural history and interpretive education programs for school groups and adult visitors, scheduled and managed week-long guest programs, lead natural history hikes, developed trail guides and kiosk, coordinated volunteers, instructed staff training, developed and assisted with field research projects. May-September 1994

♦ **FIELD INSTRUCTOR, NEW PERSPECTIVES** Monument, CO / Mexico
Natural history guide and instructor for middle school – Elderhostel participants throughout the Sea of Cortez and Baja. Instructed: marine ecology, desert ecology, conservation biology, cetacean biology and behavior, ornithology, snorkeling, natural history. Other necessary skills: Spanish language, driving motor boats, scuba, extended camp setup/breakdown, working with Mexican and Seri Indian staff, driving 20 passenger bus. October 1993 - April 1994

♦ **OUTREACH FACULTY, TETON SCIENCE SCHOOL** Kelly, WY
Developed, coordinated and implemented the first tri-state traveling classroom education programs for public schools on energy, field research and associated natural science topics, contract program planning, presenter for conferences and teacher training workshops. Instructed participants (School-aged students, Elderhostel, Smithsonian) in year-round environmental

(Continued)

Outreach Faculty (Cont.)
environmental interpretation in classroom and outdoor settings. Topics include: field research, stream ecology, winter ecology, natural history, wildlife biology, safe outdoor travel. Seminar host. January 1991-August 1991, January 1992-June 1993.

♦ **RESEARCH ASSOCIATE, TETON SCIENCE SCHOOL** Kelly, WY
Mist net and banded passerine populations for burn regeneration and riparian corridor census, developed/implemented impact study for long term Biophysical Monitoring Program, field data collection for published *Hoofed Mammals of Jackson Hole* Guide, designed field research projects, cataloged extensive Murie Museum collection, presented information at associated conferences and teacher training workshops. August 1990-January 1991, August 1991-January 1992

ASSOCIATED EXPERIENCE:
Professional Associations & Certifications
Montana Environmental Education Association, Board President
Friends of Regional Park, former Board co-Vice President
Certified Secondary Science Teacher, Montana
First Aid and CPR Certified (former W-EMT)
Scuba Certified

Member
Association for Nature Center Administrators
Montana Education Association
Montana Environmental Education Association
National Science Teacher Association

Educational
Awarded *'Who's Who in America's Teachers'* 1991
Contract Instructor: Museum of the Rockies • Montana State University Extension Services • Yellowstone Institute • Bozeman Adult Community Education
Leopold Education Project Facilitator
Project Wild / Wet /Learning Tree Certified
Graduate: Community Systems grant writing seminar
Graduate: Environmental Institution Management Course

Professional Presentations
Montana Environmental Education Association • Colorado Association for Environmental Education • Wyoming Association for Environmental Education • Greater Yellowstone Coalition • Expanding Your Horizons • Star Valley Student Career Day • Montana – Wyoming Recycling Alliance • Bozeman Chamber of Commerce • Multiple civic groups

Personal Interests
Skiing • Soccer • Hiking • Natural history • Biking • Journaling • Mandolin

2002 Make a Splash with Project WET

Final Report Form

Please complete this form either electronically or in hard copy and return to Pete Schade by ***November 1, 2002.***

Coordinator name: Montana Outdoor Science School – Cassie Carter - director of education
Festival location(s): USFWS Fish Technology Center, Bridger Canyon

Number of participating schools: 4
School names: Anderson Elementary School; Emily Dickinson Elementary; Learning Circle Montessori; Morning Star School

Number of students: 238
Number of teachers: 9
Number of parents and other volunteers (including presenters): 28
Number of people trained to help with your festivals: 12

List any media coverage your festivals received.
Just the coverage arranged by Project WET. A press release was sent to the Bozeman Chronicle announcing the event.

List any sponsors (other than Nestle' and Hach) who supported your 2002 Make a Splash festivals
Montana Association of Conservation Districts – major sponsor at $2,850
Morning Star School - $200
Project WET - $130 for presenter lunches

List any special guests (elected officials or others) who attended
Project WET Director Dennis Nelson, Rab Cummings, Nonnie Hughes – Principal at Morning Star

Event date 9-20-03 (a "pre" watershed festival program)

On a separate page, please describe your Make-A-Splash Festival including the following:

- Overview of the Festival

Teachers submitted applications to participate several months in advance. They described how the program supported their curriculum. They received Project WET materials two to three weeks in advance of the festival and were strongly encouraged to prepare their students through pre-visit activities. The program was divided into a morning session and an afternoon session with approximately 115 students at each. Students rotated through four of a possible five stations, spending 40 minutes at each. Each station had an A and B section with one presenter at each that ran simultaneously. This allowed the group size to be reduced from thirty down to fifteen students. The stations included:

1. **Get the Ground Water Picture** where students discussed groundwater flow using the demonstration flow model. Elements from Healthy Water, Healthy People were also used at this station to illustrate water quality issues. The presenters were Tammy Crone (afternoon) and Alan English (morning) from Gallatin Valley Local Water Quality District, and Levia Jones.
2. **Incredible Journey** where students participated in a running game to illustrate and reinforce the steps of the water cycle. The presenters were Genevieve Walsh and Reid Swan.
3. **Springing to Life** where students discovered how springs are formed through a model that explored permeability. The presenters were Sue Higgins, Bobbi Geise and Melynda Coble.
4. **H2O Olympics and Is there Water on Planet Zork** were combined to create a dynamic series of activities where students experimented with the physics of water. This station helped connect issues with water quality and ecosystem functioning. The presenters were Kristi Neptun and Leslie Dominick.
5. **Watershed Mural** – this final station presented an opportunity for all students to contribute to a large Watershed Mural that was displayed the following day at the 5th Annual Community Watershed Festival, organized by MOSS at the same location. The lead presenters at this station were Krista Wright and Ciara Skinner. Volunteers, including two classroom teachers who had time in their schedule and six pre-service teachers who are students at MSU in the School of Education, also supported this station.

Students and teachers were welcomed as a group and then divided into four groups named after rivers in southwestern Montana watersheds – Yellowstone, Gallatin, Madison and Jefferson. The presenter leading that station escorted the students to their first station and then 45 minutes later volunteers or the next presenter guided them to the next station. Most groups enjoyed their lunches on the lawns at the Fish Technology Center, arriving early or remaining after their program was complete. Stations were spread several hundred feet apart throughout the Center. Each station had access to pavilion style tents to provide shelter from the weather.

Make-a-splash was very well received by students, teachers and presenters. Ashley Atwood, a teacher from the Learning Circle Montessori commented that it was one of the best-organized events she had participated in. Mary Gaworski, a veteran teacher at Morning Star, asked for the opportunity to discuss the value of the festival on film. She talked with most of the presenters, exploring ideas for extensions into her curriculum. Nonnie Hughes, the principal at Morning Star, which brought over 100 4th graders to the festival, said that she was extremely pleased with the quality of the curriculum, presenters and organizational structure.

Students enjoyed the event, not even realizing that they were learning as they had fun. Many thanked the presenters and shared new discoveries with their teachers and parents as they ate lunch and waited for the bus. During the activities, students were engaged and involved, often surprised that one station was ending and it was time to move to the next. At least a dozen students returned the next day to MOSS's 5th Annual Community Watershed Festival with their families to show them the mural and share their

excitement about water-related activities.

All of the presenters commented that they had a great time at the event. The high quality of the curriculum, the enthusiasm of the teachers and the excitement of the students were cited as elements that made the experience positive and memorable. Several MSU student volunteers returned the following day to continue facilitating the creation of the watershed mural.

Summary:
The Project WET curriculum is well designed and easy for presenters with a variety of backgrounds to successfully facilitate. The connection between Make-a-Splash and the Community Watershed Festival enhanced both programs. All of the participating teachers said that they are eager to return with a new batch of fourth graders next year. The length of the stations seemed about right, however the first station was a bit rushed since a few minutes were used to welcome and organize. It was nice to accommodate a large number of 4th graders, but that unfortunately limited the amount of time spent at stations. Gathering, organizing, and distributing the materials was labor intensive for MOSS, but it was appreciated by the teachers and therefore worthwhile. Overall this was a successful and valuable event, created strong positive exposure for both Project WET and Montana Outdoor Science School.

For the future: The basic structure, organization and content of the event were strong and we would recommend only slight modifications. The planning and logistics were very time consuming and support from Project WET, perhaps in the form of work study assistants to organize and distribute materials would be very helpful. Also funding or resources to support a greater depth of presenter training and pre- and post-visits to the schools could increase the value of the experience for both students and teachers. The only "glitch" was t-shirts arriving after the event- most of the students were unaware that they might receive t-shirts and therefore were not disappointed. Not too bad for 238 students in one day!

Overall, Make a Splash! was a valuable and very worthwhile event, and MOSS would enjoy serving as a coordinator again in 2003. Thank you for such a wonderful opportunity and for your community support.

2002 SUMMARY
5th Annual Community Watershed Festival
Montana Outdoor Science School

Location: USFWS Fish Technology Center (fish hatchery), Bridger Canyon
Date: Saturday, September 21, 2002, 10am - 3pm
Participants: 583

Presenters (56):

- Steve Eshbaugh, MEEA
- Bob and Cyndi Crayton, Integrated Weed Management
- Don Heyden, Headwaters Fly Fishers (+18)
- Rick Arnold, Trout Unlimited (+8)
- Jim Stoltz, Musician "Walkin' Jim Stoltz"
- Molly Bruggeman, Ian Nicklin, Elise Vokt, Stephanie Scarff, Four Season String Quartet
- Jennifer Towler, Sacajawea Audubon Society (+1)
- Greg Kindschi, USFWS Fish Technology Center
- Wally Mclure, USFS (Bozeman)
- Francie McLean, Molly Ward, Museum of the Rockies
- Tammy Crone, Alan English, Gallatin Local Water Quality District (+2)
- Scott Schmidt, Bridger Bowl Avalanche Dogs
- Mary Boucek, Montana Raptor Conservation Center (+1)
- Claire Emery, Science Illustrator (+1)
- Joan Diamond, Balloon Artist/storyteller
- Kari Vannice, USFS (Livingston) (+3)
- Vanna Boccadori, Big Sky Institute (+1)
- Montana Outdoor Science School Staff, Board of Directors, Volunteers (18)

Stations (19): *See attached schedule.*

Walks (3):

- Bird Walk
- What about Weeds?
- Fish Hatchery Tour

Sponsors (17):

Premier Sponsor (>$1500 cash)-- Montana Association of Conservation Districts
Lead ($1500 Cash or $1200 In Kind)-- US Fish and Wildlife Service Fish Technology Center, Montana Trout Foundation, KSCY/Clear Channel Communications, Bozeman Daily Chronicle, Montana Watercourse
River ($500 Cash or $650 In Kind)-- Gallatin Local Water Quality District
Stream ($250 Cash or $350 In Kind)-- SIMMS Fishing Products, Trout Unlimited
Tributary (up to $249)--ABC Rental, Big John's, Big Spring Water, Bozeman Brick, Kevin Haggerty Drilling Inc.
Silent Auction Donors--Barbara Mutter Swim Lessons, Barrel Mountaineering, Big Sky Ski and Summer Resort, Big Spring Water, Bob Ward and Sons Inc., Bohart Ranch Cross-Country Ski Center, Bozeman Recreation Department, Bridger Bowl, Julie Geddes, Montana Whitewater, Northern Lights Trading Company

Event Financials:

Total Costs: $15,000

Total Money Raised:

Cash- $6,400

In Kind- $8,000

Advertising:

Bozeman Daily Chronicle • Tributary • BoZone • Explore! • Exponent • Headwaters Flyfishers newsletter • KMMS AM & FM • KSCY • US Bank Pagoda • 1st Security Bank lobby • Gallatin Valley school newsletters (approximately 5) • Gallatin Valley public libraries • Approximately 50 posters distributed around the community.

Volunteers (95):

- Montana Outdoor Science School Board of Directors (4)
- USFWS Fish Technology Center staff (2)
- Presenters (56)
- Montana Outdoor Science School staff (5)
- Friends of Montana Outdoor Science School (15)

Total Volunteer Hours =300+

5th Annual Community Watershed Festival Evaluation Summary

1. How did you hear about the Community Watershed Festival?
Well advertised, radio and posters most effective.

2. What was your favorite station? Why?
Walkin' Jim was great! Several new stations. A lot of kids came back to work on mural started at Make-A-Splash. "Mammal presentation good, helpful." Ground water trivia arcade fun. Fly casting and tying popular, as was making animal tracks. Classical music nice background.

3. Was there anything that you would suggest changing for next year?
Parking was a little crazy due to "M" construction. "More raptors". Better signs to direct people to various tents. Involve more children in entertainment.

Thank you for attending the 5th Annual Community Watershed Festival.

Hopefully you have found this day to be educational and fun. To help in planning our future festivals, we would appreciate your comments on this evaluation.

1. How did you hear about the Community Watershed Festival? (Circle one)
   Newspaper Radio TV Newsletter School newsletter Other _____
2. What was your favorite presentation? Why?

3. Were there any presentations that you would suggest changing for next year?

4. What did you learn about your watershed today?

5. What would you like to see at the Watershed Festival next year?

6. Did you know about Montana Outdoor Science School before the Festival? (Yes/No).
   If you would like more information about Montana Outdoor Science School, please write down your name, address, phone and e-mail. We'll keep you posted un upcoming programs and events.

Thank you for taking the time to complete this evaluation. We hope you had a great day and we'll see you next year!!!

5th Annual Community Watershed Festival.

Hopefully you have found this day to be educational and fun. To help in planning our future festivals, we would appreciate your comments on this evaluation.

1. How did you hear about the Community Watershed Festival? (Circle one)
   Newspaper Radio TV Newsletter School newsletter Other _____
2. What was your favorite presentation? Why?

3. Were there any presentations that you would suggest changing for next year?

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   If you would like more information about Montana Outdoor Science School, please write down your name, address, phone and e-mail. We'll keep you posted un upcoming programs and events.

Thank you for taking the time to complete this evaluation. We hope you had a great day and we'll see you next year!!!

6th Annual Community Watershed Festival

Presented by

Montana Outdoor Science School

2003 Premier Watershed Sponsor Prospectus

Event Overview

The Montana Outdoor Science School (MOSS) is a local non-profit organization offering natural science education for children and adults. MOSS is dedicated to providing quality outdoor science education while promoting understanding and appreciation of our region's natural resources. Concurrent with our mission, we offer an Annual Community Watershed Festival. The Festival promotes the awareness of and responsible stewardship towards flora and fauna found within a watershed through fun 'hands-on' activities, games, displays and tours for both children and adults. **Free to the public, the 6th Annual Festival will be held Saturday, September 20th** at the US Fish and Technology Center in Bridger Canyon. Close to 600 participants and 56 presenters from across Montana attended the 5th Annual Festival thanks to the 17 sponsors and many, many volunteers. The goals of the Festival are to:

- Offer a free, fun-filled educational day for all ages centered around a "Watershed" theme;
- Expose the public to ecological concepts and their role in watersheds using 'hands-on' activities, displays and demonstrations;
- Awaken wonder, appreciation, and understanding of the local natural resources within watersheds and the management there of.

Sponsor's Role

Support is sought to underwrite expenses, lend credibility and leverage promotional efforts, and enhance overall community involvement. Sponsor participation and support include:

1. Underwriting the partial cost of promotional and operating expenses, including broadcast, print, internal ads, equipment rental, etc.
2. Promotional and operational assistance to the extent possible. We welcome any ideas and assistance from the sponsor regarding promotional execution of the Festival. We are especially interested in ideas that enhance sponsor's benefits for participation in the effort.

Community Watershed Festival Premier Sponsorship Includes:

(Estimated value of multimedia exposure: over $1500.00)

- Logo in Bozeman Daily Chronicle advertisements (circulation 15,000)
- Sponsor mention on select radio promotions
- Logo on Community Watershed Festival posters, placards, journals, and public displays
- Mention in MOSS' fall newsletter (circulation 1,900 households)
- Recognition at Community Watershed Festival Event (est. 600+ attendees)
- Opportunity to display business (organization) banner at the Community Watershed Festival Event

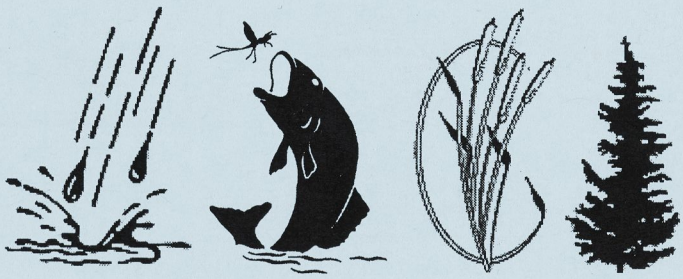
Your Investment:

$1,500.00 (Cash) or $1,800.00 (In Kind)

Welcome to the 5th Annual

Community Watershed Festival

H2O: Headwaters 2 Oceans



Presented by

MONTANA OUTDOOR SCIENCE SCHOOL

Saturday, September 21, 2002

Thank you

To all the individuals and businesses that made this event possible!

Lead Sponsors

MONTANA TROUT FOUNDATION

U.S. FISH & WILDLIFE SERVICE

96.7 The SKY

SUPPORTING Bozeman Daily Chronicle OUR COMMUNITY

The Montana WATERCOURSE

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Local Water Quality District

Stream Sponsors

Simms Fishing Products*Trout Unlimited

Tributary Sponsors

I-Ho's Korean Grill*La Parilla*ABC Rental

Auction Donors

Bridger Bowl*Big Sky Ski and Summer Resort*Bohart Ranch*Bozeman Recreation Department*Don Heyden*Barbara Mutter Swimming*Barrel Mountaineering*Bob Ward & Sons Inc.*Northern Lights*Big Spring Water*Montana Whitewater*Simms Fishing Products

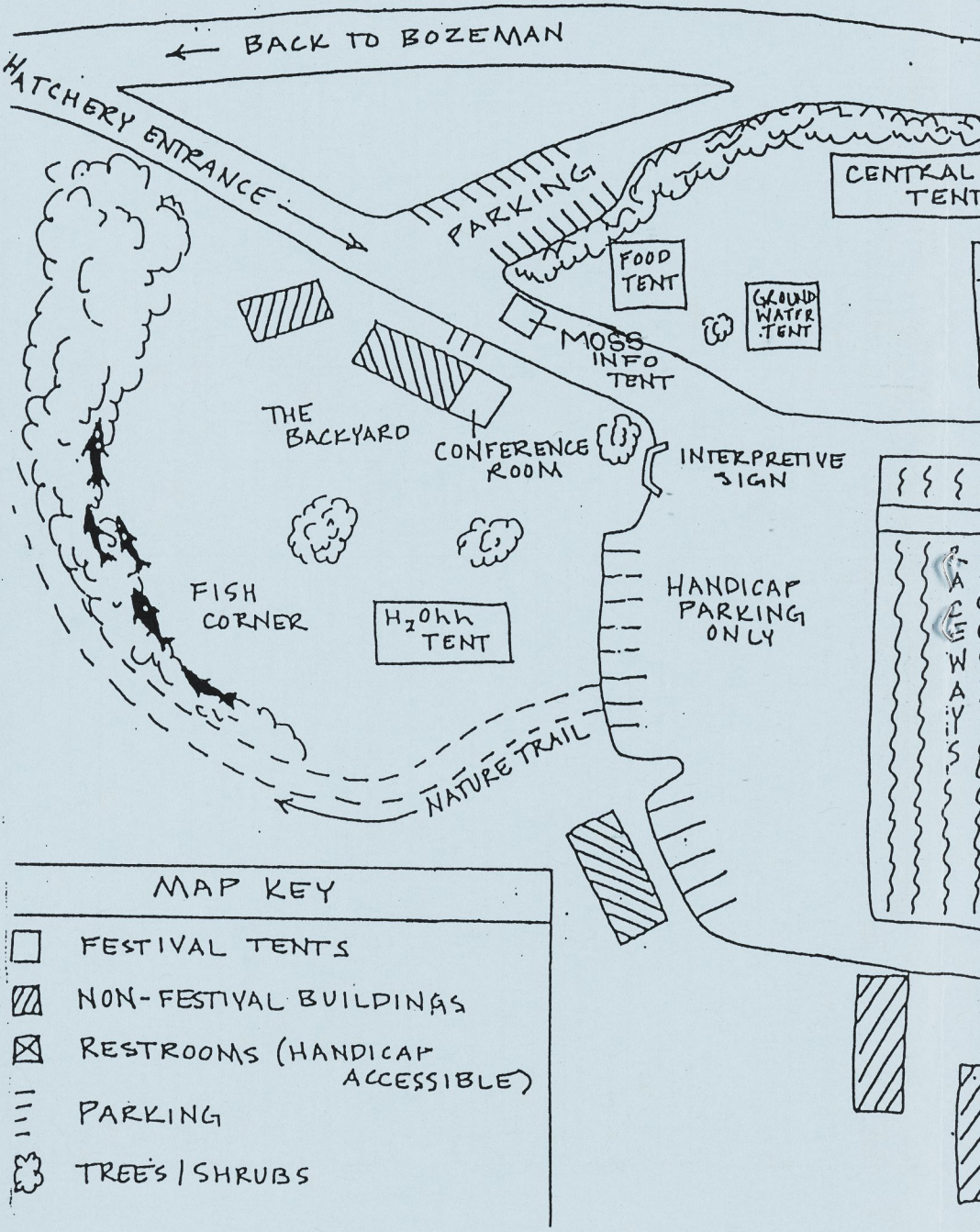
SCHEDULE OF EVENTS

5th Annual Community Watershed Festival--H2O: Headwaters 2 Oceans

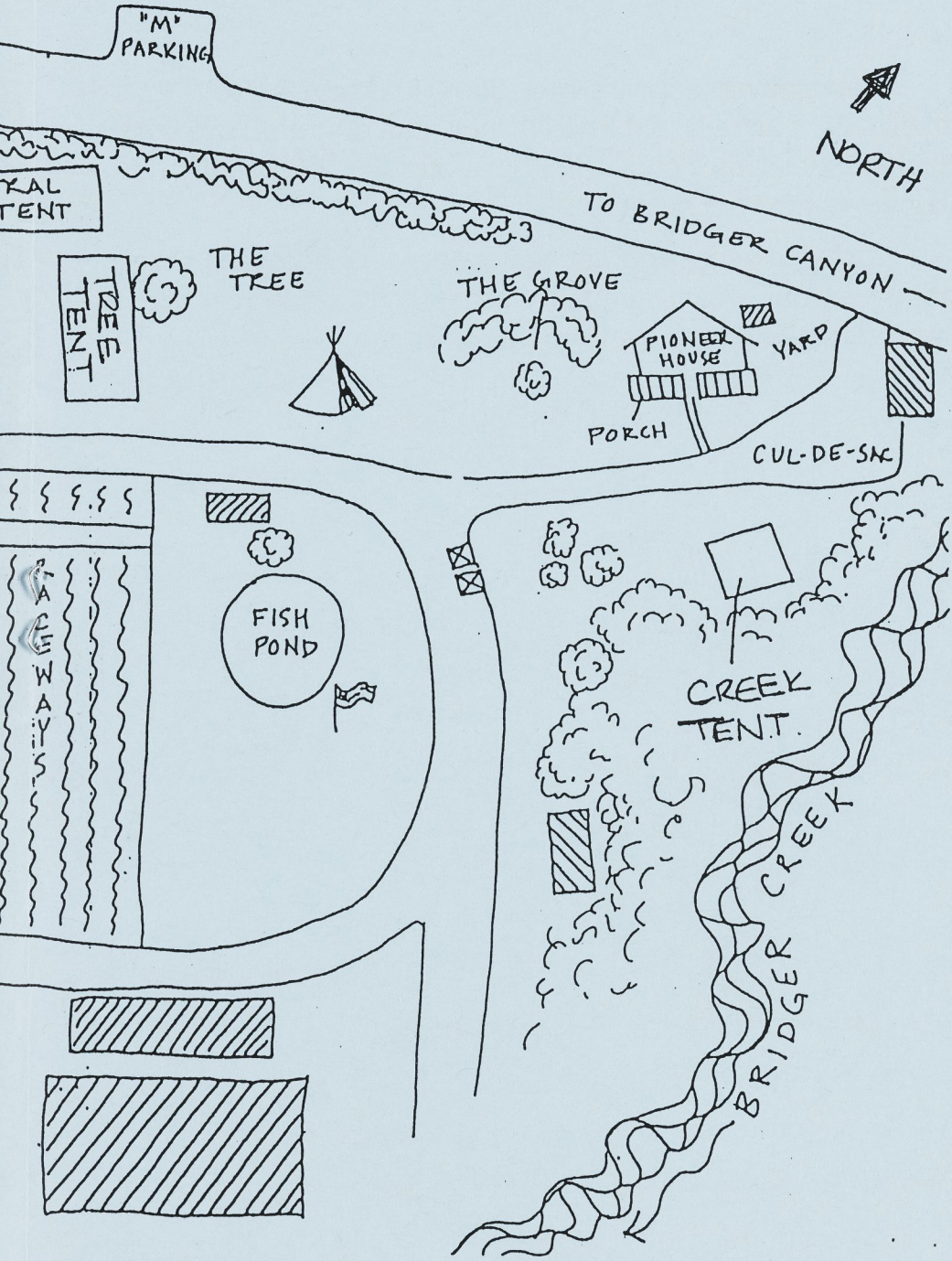
Topic	Presenter	Location	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM
ENTERTAINMENT		Central Tent	Storyteller Joan Diamond (10:30-11:30)		String Quartet (11:45-12:45)	Walkin' Jim Stoltz	
WALKS							
Bird Walk	Steve Eshbaugh, Montana Environmental Education Association	meet at MOSS tent	9:30 ALL AGES				
What About Weeds?	Bob & Cyndi Crayton, Integrated Weed Control	meet at MOSS tent		11:15 ALL AGES			
Hatchery Tour	Greg Kindschi, USFWS Fish Technology Center	meet at MOSS tent					ALL AGES
STATIONS							
Pick a Beak, Let's Eat!	Jennifer Towler, Sacajawea Audubon Society	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Montana Fishes: Form & Function	Wally McClure, Forest Fisheries Biologist, Gallatin & Custer National Forest	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Lewis & Clark	Molly Ward, Museum of the Rockies	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Avalanche Dogs	Scott Schmidt	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Entomology	Don Heyden, Headwaters Fly Fishers	H2Ohh tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Fly-Tying	Don Heyden, Headwaters Fly Fishers	H2Ohh tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Fly Casting	Rick Arnold, Trout Unlimited	Fish Corner	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Silent Auction	Montana Outdoor Science School	Groundwater tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Well Testing Information	Tammy Crone and Alan English, Gallatin Local Water Quality District	Groundwater tent	ADULTS	ADULTS	ADULTS	ADULTS	ADULTS
Groundwater Trivia Arcade	Tammy Crone and Alan English, Gallatin Local Water Quality District	Groundwater tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Fish Board	Fish Technology Center	Fish Pond	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Owls & Hawks on Display	Mary Boucek, Montana Raptor Conservation Center	Fish Pond	ALL AGES	ALL AGES	ALL AGES	ALL AGES	
Go Wild! Field Sketching & Scientific Illustration	Claire Emery, Science Illustrator	Creek tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Fire Ecology	US Forest Service	Creek tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Bear Awareness	US Forest Service	Creek tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Mammal Mania	Vanna Boccadori, Big Sky Institute	Creek tent	2-10 YEARS	2-10 YEARS	2-10 YEARS	2-10 YEARS	2-10 YEARS
Watershed Mural	Montana Outdoor Science School	Pioneer House Yard	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Build a Watershed	Montana Outdoor Science School	Cul-De-Sac	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Well Drill	Kevin Haggerty	Cul-De-Sac	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES

* Come early for a 9:30am bird walk with the Audubon Society!

5th Annual Community Watershed Fes
Saturday, September 2



d Festival—H2O: Headwaters 2 Oceans
er 21, 2002 10AM-3PM

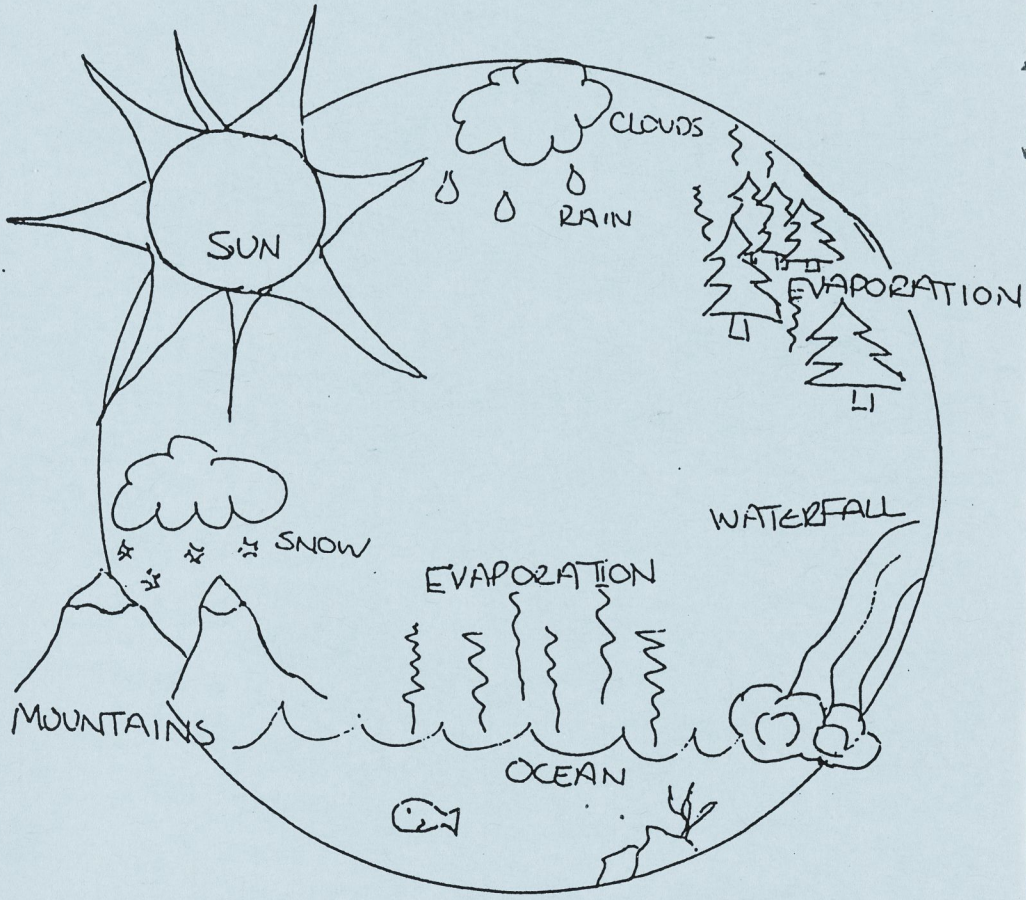


Why H2O:Headwaters 2 Oceans?

Water never stops moving. Snow and rain fall to the earth from clouds. The rain and melted snow run downhill into rivers and lakes, sometimes crashing over waterfalls. Eventually the water flows into the ocean.

During evaporation, the water turns from liquid into gas, and moves from oceans and lakes into the atmosphere where it forms clouds. Then the cycle begins all over again.

It's called the WATER CYCLE!

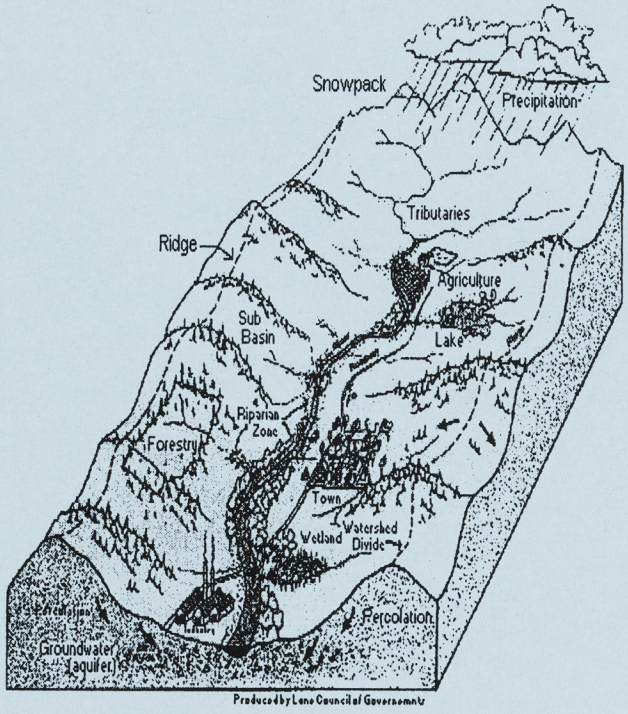


What is a Watershed?

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. John Wesley Powell, scientist geographer, put it best when he said that a watershed is:

"that area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community."

Watersheds come in all shapes and sizes. They cross county, state, and national boundaries. No matter where you are, you're in a watershed!



From: http://www.epa.gov/win/what.html

MONTANA OUTDOOR SCIENCE SCHOOL

The Montana Outdoor Science School promotes an understanding of the natural world by providing quality education for youth and the community.

www.outdoorscience.org
(406) 582-0526

SCHEDULE OF EVENTS *

5th Annual Community Watershed Festival--H2O: Headwaters 2 Oceans

Topic	Presenter	Location	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM
ENTERTAINMENT		Central Tent	Storyteller Joan Diamond (10:30-11:30)		String Quartet (11:45-12:45)	Walkin' Jim Stoltz	
WALKS							
Bird Walk	Jennifer Towler, Sacajawea Audubon Society	meet at "M" trailhead	9:30 ALL AGES				
What Can We Do About Weeds?	Bob & Cyndi Grayton, Integrated Weed Control	meet at MOSS tent		11:15 ALL AGES			
Hatchery Tour	Greg Kindschi, USFWS Fish Technology Center	meet at MOSS tent					ALL AGES
STATIONS							
Pick a Beak, Let's Eat!	Jennifer Towler, Sacajawea Audubon Society	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Mammal Mania	Vanna Boccadori, Big Sky Institute	Tree tent	2-10 YEARS	2-10 YEARS	2-10 YEARS	2-10 YEARS	2-10 YEARS
Montana Fishes: Form & Function	Wally McClure, Forest Fisheries Biologist, Gallatin & Custer National Forest	Tree tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
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Fish Board	Fish Technology Center	Fish Pond	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Owls & Hawks on Display	Mary Boucek, Montana Raptor Conservation Center	Fish Pond	ALL AGES	ALL AGES	ALL AGES	ALL AGES	
Lewis & Clark	Molly Ward, Museum of the Rockies	Lawn tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Scientific Illustration	Claire Emery, Science Illustrator	Lawn tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Forest Fire Discovery	MaryAnne Baumberger & Diane Taliaferro US Forest Service	Creek tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Avalanche Dogs	Scott Schmidt	Creek tent	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Watershed Mural	Montana Outdoor Science School	Pioneer House	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES
Build a Watershed	Montana Outdoor Science School	Cul-De-Sac	ALL AGES	ALL AGES	ALL AGES	ALL AGES	ALL AGES

* as of 9/10/02

** Come early for a 9:30am bird walk with the Audubon Society!

MONTANA TROUT FOUNDATION
GRANT APPLICATION FORM

1. Individual(s) or organization presenting proposal - Butte Ranger District,

   1820 Meadowlark Lane, Butte, MT 59701 (406) 494-2147

2. Project Title. Norton Creek Riparian Habitat Improvement Project

3. Project Director. Grant Godbolt

4. MTF funds requested: $5,000 Local Cash: $0 In-Kind: $20,832

5. Proposed dates of project: July 2003

6. Proposed dates of project: July 2003

   Grant Godbolt/Range Conservationist — Name/occupation
   Tim La Marr/Fisheries Biologist — Name/ occupation

7. Experts in the field(s) of the project who have helped plan it:

   Grant Godbolt — Name
   Forest Service Range Conservationist — Professional affiliation

   Tim La Marr — Name
   Forest Service Fisheries Biologist — Professional affiliation

8. Narrative of proposal and abstract: On a separate sheet(s), typed, double-space, describe your project, its methodology or special features, its objectives, and the manner in which they will be met. Also on a separate sheet, provide a one-paragraph abstract of your proposal.
9. Evaluation: Include in your proposal narrative, the specific ways that you will assess the results of your project. Your evaluation procedure is a critical section of the application: if funded, a significant portion (30%) of the funding will be withheld until MTF has received your concluding report, budget statement, evaluation, and a one-paragraph abstract of the work done. (see item #2 of the AGREEMENT in Proposed Budget).
10. Whenever appropriate and possible, you should include copies of *curriculum vitae* (especially one- or two-person projects) to strengthen and to facilitate judgments of the competence(s) being brought to the project.
11. *SIX* copies of your complete proposal must be submitted. MTF cannot review proposals, which do not meet this requirement. Whether or not you include the original copy is optional. Send all copies to: E. Richard Vincent, Montana Trout Foundation, P.O. Box 3165, Bozeman, MT 59715.

MONTANA TROUT FOUNDATION
Proposed Budget and Agreement

	(Itemize)* MTF Funds	Local/In-Kind Funds	Cash
Personal			
Fencing Contractor	$3,000		
Pipeline Installation		$1,800 (labor donated by grazing permittees)	
2. Travel			
3. Equipment			
4. Materials			
Fencing Materials	$2,000	$1,213 (Forest Service funds)	
Water Tank/Pipeline		$2,426 (Forest Service funds)	
5. Other			
Forest Service Salaries (planning, contract administration, etc.)		$15,393 (Forest Service funds)	
Totals	$5,000	$20,832	

TOTAL PROJECT COST **$25,832**

*** Note – willow planting costs are not included for this year as we anticipate implementing this phase the following year.**

- **MTF rates salaries a very low priority and will fund them only when extraordinary justification is presented.**

Note: MTF funds may not be used to pay indirect costs. MTF has letters on file with Vice President for Research at Montana State University and the University of Montana which state MTF's position on indirect costs.

AGREEMENT: It is understood that any funds granted as a result of this request are subject to the following conditions:

1. **The funds granted your proposal are to be used only for the purpose set forth therein.**

2. **Thirty percent of this grant will be withheld until you have submitted 1) a concluding report of expenditures and remainders (if any), (2) a detailed evaluation of the project, and 3) a one-paragraph abstract of the evaluation. The concluding report, evaluation, and abstract must be submitted within 30 days of the completion of the work proposed in your application.**

3. **All publications or news releases relevant to this project must include appropriate acknowledgement of MTF funding.**

4. **MTF reserves, and you do hereby grant to MTF, the right to copy, reprint, reproduce, publish, republish, disseminate and to otherwise make use of all reports, studies, data findings, conclusions, recommendations, and all other written, graphic, or pictorial material resulting from your project whether or not copyrighted, published, or otherwise protected under a proprietary claim by you or your designee; provided, that if such work be claimed or protected under such proprietary protection, then MTF agrees to provide a disclosure to that effect along with a statement that the work is being used with the permission of its author.**

5. **You shall pay, indemnify and forever hold MTF harmless from any liability arising out of the contract work, including, but not limited to, any claim arising out of libel, slander or copyright, patent, trademark, trade name or other proprietary infringement.**

/s/ Grant Godbolt, Range Conservationist **February 20, 2003**
Project Director (signature)

/s/ Danielle L. Price, Grants and Agreements Coordinator, **February 20, 2003**
Person responsible for financial records/reports, if other than Project Director (signature)

Norton Creek Riparian Restoration Grant Proposal Abstract

The Butte Ranger District on the Beaverhead-Deerlodge National Forest proposes to restore riparian habitat conditions in approximately 1.5 miles of lower Norton Creek (T3N, R10W, Sections 25, 26, 35, and 36), tributary to German Gulch in the Silver Bow Creek watershed west of Butte. Norton Creek supports westslope cutthroat trout as well as brook trout. Our proposal includes: 1) constructing a fence that would eliminate cattle grazing along approximately 1.5 miles of Norton Creek and, 2) within the riparian area excluded from cattle grazing, spot-planting native willows as needed to restore the vegetative community. In 2002 our grazing permittees (permit holders for cattle grazing permits) installed a pipeline and water tank in an upslope area to reduce grazing impacts on riparian areas. Total estimated project cost, including planning costs and the pipeline installation already accomplished is $25,832. The NEPA process has been completed for this work and we are trying to secure funding to accomplish the work on the ground. We are requesting $5,000 from the Montana Trout Foundation to provide fencing supplies and funding for a fencing contractor to accomplish fence construction on the ground. An estimated $1,800 in labor for pipeline installation was donated by our additional partners, our grazing permittees, in 2002. Forest Service contributions for salaries and materials total approximately $19,032. We believe this project is important to preserve the integrity of Norton Creek's aquatic habitat and to improve conditions for the native westslope cutthroat trout there.

Norton Creek Riparian Restoration Project Proposal

Norton Creek is a tributary to German Gulch located west of Butte in the Silver Bow Creek watershed approximately 20 miles west of Butte. German Gulch and its tributaries (including Norton Creek) are increasingly being recognized by a number of entities such as Trout Unlimited, MFWP, the Natural Resource Damage Program, and the Forest Service as an important westslope cutthroat trout refuge within the Silver Bow Creek watershed. Fish from lower Norton Creek (sample size of 10) were genetically tested in 1997 and were found to likely be pure westslope cutthroat trout. Cutthroat trout in German Gulch (sample size of 34) have previously been genetically tested and were found to very likely be pure westslopes. One concern with the German Gulch population that has emerged in 2001-2002 is that these fish may be experiencing detrimental effects of selenium contamination associated with a gold mining operation in the headwaters of German Gulch. Since Norton Creek is located outside the influence of this gold mine, this concern has heightened the importance of Norton Creek as a potential westslope cutthroat trout refuge for the German Gulch population as well. Norton Creek and its tributaries provide approximately 8 stream miles of habitat for westslope cutthroat trout. Efforts are in progress to address selenium contamination issues in German Gulch proper.

The primary concerns for westslope cutthroat trout in Norton Creek include the effects of cattle grazing on their habitat as well as competition with eastern brook trout. We believe that Norton Creek is potentially one of our most productive westslope cutthroat trout streams on the Butte Ranger District because of its relative size and low gradient nature (<2%). Raw data from summer 1997 reflected approximately 845 westslope cutthroat trout/mile in a reach just upstream of the project area. Raw electrofishing capture data from summer 1999 reflected approximately 528 westslope cutthroat trout/mile within the project area. Data from 2002 indicate approximately 160

westslope cutthroat trout/mile in the proposed project area. Comparison of 1997 data with 2002 data suggests that there has been a considerable shift toward brook trout dominance in Norton Creek over the past five years. MFWP and the Forest Service are committed to addressing brook trout concerns in Norton Creek. MFWP is scheduled to begin removing brook trout via electrofishing from the portion of Norton Creek proposed for fencing in 2003. These efforts are recognized as having short-term benefits to the westslope population that would buy us time to address brook trout concerns for the long-term.

Most of Norton Creek is located on National Forest System lands and is managed under multiple use objectives such as motorized recreation (one OHV trail) range, big-game winter range, and riparian emphasis. The primary land use affecting aquatic habitat at this time is cattle grazing. The stream has undergone localized widening and shallowing due to streambank trampling and vegetative loss (Photos 1-3). However, the channel is not severely downcut and is therefore still connected to its floodplain so we believe that with this proposed fencing project the stream could recover relatively quickly to its inherently narrow and deep channel type (Photo 4). The objectives of our proposal are to: 1) eliminate riparian cattle grazing and promote streambank recovery in approximately 1.5 miles of lower Norton Creek; 2) reduce width/depth ratios in lower Norton Creek, and 3) shift cattle grazing from riparian areas to upland sites.

With the cooperation of our grazing permittees, the Forest Service is proposing to: 1) construct a fence that would eliminate cattle grazing along approximately 1.5 miles of Norton Creek and, 2) within the riparian area excluded from grazing, spot-plant native willows as needed to restore the vegetative community. In 2002 our grazing permittees demonstrated their commitment to reducing cattle grazing impacts to riparian areas by installing a pipeline and water tank in an upslope area to draw cattle away from the riparian area of a Norton Creek tributary. This tank proved to be

somewhat effective in reducing riparian impacts during last year's grazing season. However we still believe a riparian fence along this key fish-bearing portion of Norton Creek is an important project for this stream and its fish population. Our proposal is to fund fence construction in 2003. Spot-planting of willows in the fenced riparian area would be assessed and conducted in 2004 or beyond once the fence is constructed and functioning properly. Upon construction of the fence, our grazing permittees have agreed to maintain the fence as part of their responsibilities on the grazing allotment. We are quite pleased with our partnership with these particular permittees. They demonstrate a strong natural resource stewardship ethic.

Project Evaluation

In the short term (one year) we would evaluate the success of this project based on its ability to exclude cattle from the 1.5 mile-long fenced project area. In the long-term (several years) we would evaluate the success of the project based on streambank recovery, willow recovery, and narrowing and deepening of the stream channel in areas that are currently overwidened. We have installed 3 permanent cross-sections within the project area of lower Norton Creek that will provide us a basis for evaluating channel changes. We will be looking for a reduction in channel width and an increase in depth. The cross-sections are referenced such that we can repeat monitoring of these sites for decades to come if we so desire. We will also establish photo points at willow planting sites to give us a visual evaluation of willow and streambank recovery in these localized areas.

Photo 1. Lower Norton Creek within proposed fencing exclosure. Area in this photo has undergone some localized widening due to bank trampling in previous years.

Photo 2. Localized channel widening due to bank trampling by cattle in lower Norton Creek project area proposed for exclosure.

Photo 3. Heavy grass and willow utilization in Norton Creek riparian area. These are the types of impacts we plan to prevent for the long-term in the lower 1.5 miles of Norton Creek.

Photo 4. Lower Norton Creek within proposed exclosure area. Desirable features here include well-vegetated undercut bank, overhanging willow vegetation, and relatively narrow and deep channel. These are features we seek to ensure in lower Norton Creek.

The GLACIER INSTITUTE

Educating Today For A Sustainable Tomorrow

February 17, 2003

E. Richard Vincent
P.O. Box 3165
Bozeman, MT 59715

Dear Mr. Vincent;

Please accept the following proposal from the Glacier Institute. The Montana Trout Foundation has been a great supporter of our aquatics programs and your generous contributions have allowed us to keep the cost of the programs affordable to all children.

Thanks for your support.

Sincerely yours,

Lou Thompson
Executive Director

137 Main Street • P.O. Box 7457 • Kalispell, MT 59904 • Tel: (406)755-1211 • Fax: (406)755-7154
glacinst@digisys.net • www.glacierinstitute.org

MONTANA TROUT FOUNDATION
GRANT APPLICATION FORM

1. **Individual(s) or organization presenting proposal.** THE GLACIER INSTITUTE

2. **Project Title.** AQUATIC ECOLOGY EDUCATION FOR GRADES K-12

3. **Project Director.** ROBERT J. DEVITT / LOU THOMPSON

4. **MTF funds requested** $856.40 **Matching Funds** -

5. **Proposed dates of project** APRIL 1, 03 - DEC. 1, 03

6. **Project participants:**

Name/occupation	**Name/ occupation**
Name/occupation	**Name/occupation**

7. **Experts in the field(s) of the project who have helped plan it:**

JOHN FRALEY	MONTANA FISH, WILDLIFE & PARKS
Name	**Professional affiliation**
CLINT MUHLFELD	MONTANA FISH, WILDLIFE & PARKS
Name	**Professional affiliation**

8. **Executive Summary: Please attach an executive summary of your project which is complete enough so a reviewer can fully understand the project.**
9. **Evaluation: Include in your proposal narrative, the specific ways that you will assess the results of your project. Your evaluation procedure is a critical section of the application: if funded, a significant portion (30%) of the funding will be withheld until MTF has received your concluding report, budget statement, evaluation, and a one-paragraph abstract of the work done. (see item #2 of the AGREEMENT in Proposed Budget).**
10. **Whenever appropriate and possible, you should include copies of *curriculum vitae* (especially one- or two-person projects) to strengthen and to facilitate judgments of the competence(s) being brought to the project.**
11. ***SIX* copies of your complete proposal must be submitted. MTF cannot review proposals, which do not meet this requirement. Whether or not you include the original copy is optional. Send all copies to: E. Richard Vincent, Montana Trout Foundation, P.O. Box 3165, Bozeman, MT 59715.**

MONTANA TROUT FOUNDATION
Proposed Budget and Agreement

(Itemize)*	MTF Funds	Matching Funds
Personnel		
2. Travel		
3. Equipment	SEE ADDENDUM	
4. Materials		
5. Other		
Totals		

TOTAL PROJECT COST $8560

- **MTF rates salaries a very low priority and will fund them only when extraordinary justification is presented.**

Note: MTF funds may not be used to pay indirect costs. MTF has letters on file with Vice President for Research at Montana State University and the University of Montana which state MTF's position on indirect costs.

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5. **You shall pay, indemnify and forever hold MTF harmless from any liability arising out of the contract work, including, but not limited to, any claim arising out of libel, slander or copyright, patent, trademark, trade name or other proprietary infringement.**

_____ **Date** 2/15/03

Project Director (signature)

_____ **Date** 2/15/03

Person responsible for financial records/reports, if other than Project Director (signature)

BUDGET ADDENDUM

Our request is for equipment only, which is detailed below. In-kind matches will come in the form of donated services that help us develop and evaluate our programs. This grant will help us from raising the costs of our programs thus allowing children from all sectors participate in our programming.

Aquatic nets for macro invertebrate sampling 6 @ 61.50 ea..... $369.00

Adirondack Insulated Waders 8 @ 60.95 ea..... $487.60

TOTAL..... ***$856.60***

Glacier Institute

NARRATIVE OF PROPOSAL:

Over the past 13 years, thousands of Montana's future decision makers, anglers, natural resource managers, parents, taxpayers, land owners, and all-around outdoor enthusiasts have walked through the Glacier Institute's doors.

The Glacier Institute is a private, nonprofit educational organization dedicated to teaching children and adults about the natural and cultural values of the Crown of the Continent Ecosystem. As a non-political organization, the Glacier Institute strives to provide people with scientifically-based information that will enable them to make informed decisions that will promote the sustainability of this important ecosystem.

Since 1989 the Glacier Institute has been offering northwest Montana kindergarten through 12th-grade students the opportunity to study aquatic ecology, wildlife biology, forestry, and other subjects at the Big Creek Outdoor Education Center, located on the banks of Big Creek in the North Fork of the Flathead River drainage. Typically, classes spend two and a half days at the Big Creek Center. To date, more than 10,000 children have participated in the aquatic ecology curriculum offered at Big Creek. Many of those children are now adults.

The goal of the aquatic ecology program is to provide children with the information and tools they need to make good decisions. As children mature into adults, our hope is that they will continue to utilize what they learned at Big Creek to the benefit of Montana's aquatic systems.

As part of the aquatic ecology curriculum, children learn what a watershed is and how Big Creek relates to the Flathead River drainage and ultimately to the Columbia River Basin and Pacific Ocean. By focusing on activities that occur within the Big Creek

drainage, including recreational, industrial, and natural, children learn that what occurs on the land will eventually end up in the water, potentially affecting people, fish and other wildlife downstream.

As a bull trout spawning stream, Big Creek serves as an excellent classroom for children to learn about Montana's native trout, their habitat requirements, the challenges they face, and the importance of healthy streams and rivers to their survival.

Children are taught some basic tools for gauging aquatic health, including measuring water temperature, dissolved oxygen content, pH, sediment levels, and the presence of macro invertebrates. Measurements are taken at the creek and samples are brought back to the lab for further analysis under stereoscopes. Through these exercises, children learn about scientific research methods and how they are used to manage Montana's native fisheries.

EVALUATION:

Because education is an ongoing process, the Glacier Institute can not evaluate the immediate results of our aquatic ecology program. We are encouraged by the positive evaluations we receive from teachers at the end of each program. Especially rewarding is when a former elementary school student, now an adult, contacts us to report that he or she has chosen a career in natural resources as a result of their Glacier Institute experience. The impacts of our educational efforts may not be known for many years to come. If in 100 years, Montana still has wild native trout swimming in its streams and lakes, we believe it will be due in large part to aquatic ecology educational programs such as those provided by the Glacier Institute at Big Creek.

Glacier Institute

ABSTRACT:

The Glacier Institute seeks support for its aquatic ecology education program for kindergarten through 12th-grade students from northwest Montana at the Big Creek Outdoor Education Center in the North Fork of the Flathead Valley. Annually, approximately 1,000 children and young adults participate in this program. The ultimate goal is to provide children with the information and tools they need to make good decisions that will benefit Montana's aquatic systems for years to come. To achieve this goal, children learn about watersheds, water quality, native fisheries, scientific research methods, and management techniques.

Robert J. Devitt
PO Box 812
Whitefish, Montana 59937
(406) 253 - 1211

Education

State University of New York at Cortland
Bachelor of Science, Recreation
Concentration: Outdoor Education
Graduation: May, 1992

Professional Experience

11/97-Present — Program Director at The Glacier Institute's Big Creek Outdoor Education Center, Kalispell, Montana

- Responsible for the operation, planning, and management of a residential outdoor education center in a remote location
- Design, plan and organize weeklong summer science camps for children ages 7 - 13
- Supervise all Big Creek educational programs for school groups and instruct classes
- Instructor for adult, child, and family aquatic education and fly fishing classes
- Interview, hire, and train seasonal staff
- Responsible for supervising appropriate maintenance and opening/closing a seven building facility seasonally
- Supervise, review, and participate as appropriate in development of curriculum for Big Creek Programs

4/96-10/97 — Assistant to the Director at The Glacier Institute's Big Creek Outdoor Education Center, Kalispell, Montana

- Worked with Director to manage Outdoor Education Center
- Coordinated kitchen program; purchased food and supplies
- Responsible for general facility operations
- Managed Staff in general upkeep of facility
- Taught environmental education lessons for people of all ages
- Coordinated two weeks of Summer Science Camps
- Assisted Director in Staff trainings

6/92-9/95 — Outdoor/Adventure Educator; Summer Trip Leader and Director; Intern Coordinator at Green Chimneys School's Hillside Outdoor Education Center, Brewster, New York

- Facilitated High Ropes Course, Group Challenge Course and Climbing Tower
- Instructed skills in Rock Climbing, Caving, Canoeing and Wilderness Travel
- Planned and taught lessons in environmental science
- Planned, directed and led summer adventure trips
- Coordinated and supervised student interns from various colleges and universities
- Performed various duties associated with running an outdoor center, i.e.- maintenance, equipment, program development, etc.

Populations Served

-School Groups
- General Public
- Youth Groups
- Corporate Groups
- Psychiatric Outpatients
- Juvenile Offenders
- Emotionally Disturbed
- Learning Disabled

Internships

1/93-3/93	Green Chimneys School Farm and Wildlife Center Brewster, New York
11/91-12/91	Greenkill Outdoor Environmental Education Center Huguenot, New York
9/91-10/91	Hillside Outdoor Education Center Brewster, New York

Certifications

Montana Commercial Drivers License
Red Cross CPR
Wilderness First Responder
Low and High Ropes by Cradlerock Outdoor Network
SAREP Fishing Instructor - **S**portfishing and **A**quatic **R**esources **E**ducation **P**rogram

MONTANA TROUT FOUNDATION
GRANT APPLICATION FORM

1. **Individual(s) or organization presenting proposal.** MT. DNRC WATER RESOURCES, KALISPELL REGIONAL OFFICE

2. **Project Title.** ASHLEY CREEK WATER MONITORING EDUCATIONAL PROJECT

3. **Project Director.** KURT HAFFERMAN

4. **MTF funds requested** $1,036 **Matching Funds** $4,090

5. **Proposed dates of project** JULY 1, 2003 – AUGUST 1, 2003

6. **Project participants:**

KURT HAFFERMAN/MANAGER
Name/occupation

JAMES ALBRECHT/WATER RESOURCES SPEC
Name/ occupation

Name/occupation

Name/occupation

7. **Experts in the field(s) of the project who have helped plan it:**

KURT HAFFERMAN, CIVIL ENGINEER, WATER RESOURCES SPECIALIST
Name **Professional affiliation**

Name **Professional affiliation**

8. **Executive Summary: Please attach an executive summary of your project which is complete enough so a reviewer can fully understand the project.**
9. **Evaluation: Include in your proposal narrative, the specific ways that you will assess the results of your project. Your evaluation procedure is a critical section of the application: if funded, a significant portion (30%) of the funding will be withheld until MTF has received your concluding report, budget statement, evaluation, and a one-paragraph abstract of the work done. (see item #2 of the AGREEMENT in Proposed Budget).**
10. **Whenever appropriate and possible, you should include copies of *curriculum vitae* (especially one- or two-person projects) to strengthen and to facilitate judgments of the competence(s) being brought to the project.**
11. ***SIX* copies of your complete proposal must be submitted. MTF cannot review proposals, which do not meet this requirement. Whether or not you include the original copy is optional. Send all copies to: E. Richard Vincent, Montana Trout Foundation, P.O. Box 3165, Bozeman, MT 59715.**

MONTANA TROUT FOUNDATION
Proposed Budget and Agreement

(Itemize)*	MTF Funds	Matching Funds
Personnel		DNRC WATER RESOURCES
5% FTE for 2 yrs		$1920.00/yr = $3840
2. Travel		$50.00/yr = $100.00
3. Equipment	$ 1,036.00	
4. Materials		$75.00/yr = $ 150.00
5. Other		
Totals	$ 1,036.00	$4,090.00

TOTAL PROJECT COST $ 5,126.00

- **MTF rates salaries a very low priority and will fund them only when extraordinary justification is presented.**

Note: MTF funds may not be used to pay indirect costs. MTF has letters on file with Vice President for Research at Montana State University and the University of Montana which state MTF's position on indirect costs.

AGREEMENT: It is understood that any funds granted as a result of this request are subject to the following conditions:

1. **The funds granted your proposal are to be used only for the purpose set forth therein.**

2. **Thirty percent of this grant will be withheld until you have submitted 1) a concluding report of expenditures and remainders (if any), (2) a detailed evaluation of the project, and 3) a one-paragraph abstract of the evaluation. The concluding report, evaluation, and abstract must be submitted within 30 days of the completion of the work proposed in your application.**

3. **All publications or news releases relevant to this project must include appropriate acknowledgement of MTF funding.**

4. **MTF reserves, and you do hereby grant to MTF, the right to copy, reprint, reproduce, publish, republish, disseminate and to otherwise make use of all reports, studies, data findings, conclusions, recommendations, and all other written, graphic, or pictorial material resulting from your project whether or not copyrighted, published, or otherwise protected under a proprietary claim by you or your designee; provided, that if such work be claimed or protected under such proprietary protection, then MTF agrees to provide a disclosure to that effect along with a statement that the work is being used with the permission of its author.**

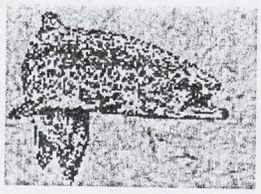
5. **You shall pay, indemnify and forever hold MTF harmless from any liability arising out of the contract work, including, but not limited to, any claim arising out of libel, slander or copyright, patent, trademark, trade name or other proprietary infringement.**

Kurt Hilton _____ **Date** February 21, 2003

Project Director (signature)

_____ **Date** _____

Person responsible for financial records/reports, if other than Project Director (signature)



Montana Trout Foundation Grant Application

for the

DNRC Water Resources Water Monitoring Educational Project

February 21, 2003

From

Kurt Hafferman, Manager

DNRC Water Resources, Kalispell Regional Office

Kalispell,Montana

Table of Contents

Montana Trout Foundation Grant Application

DNRC Water Resources Water Monitoring Educational Project

Executive Summary

The purpose of this project will be to purchase the necessary equipment to establish a 2-year educational water quantity and water quality monitoring program for elementary students within Kalispell Montana's School District 5. Purchasing good equipment and helping to establish the program will encourage elementary school age children to take an interest in the sciences and will encourage the Kalispell school system to become involved, fund, and support water shed programs and education.

This project will use the experience and resources of the Montana Department of Natural Resources and Conservation, Water Resources Division, Kalispell Regional Office staff to help develop and carry out the program. The Montana Trout Foundation grant funds will be used to purchase the equipment to set up the educational water quality monitoring program.

A stream monitoring station will be established by the DNRC Water Resources Kalispell Regional Office on a local water quality impaired stream, Ashley Creek, which will measure flow rate monthly, for two years. The DNRC Water Resources staff will arrange field trips with local schools 8 times a year for two years and help the students take temperature, pH, and turbidity readings. The DNRC Water Resources staff will combine the flow data with the schools data to develop numerical and graphical results that can be used in science and math curriculum.

Proposal Narrative

Most of Kalispell's District 5 schools are intercity elementary school that consists of low to middle income students with some access to watershed education and activities and some knowledge of water quality issues. Most of the schools are in close proximity to a local water quality impaired streams and water bodies; one of which is Ashley Creek. There are currently on-going water shed group involved in stream and water shed improvement projects in the Upper Ashley Creek basin. **This project will use MTF funds to purchase water quality monitoring equipment** that will offer the benefits of **introducing 3rd, 4th, 5th and 6th grade elementary students to water quality education, data gathering, and to water shed organizations and agencies.**

The DNRC Water Resources division, through its Kalispell regional office, will commit 5% of one employees time to establish a water quality and stream flow monitoring station and to assist the schools with field visits that will introduce students to the methods used to take monthly water quality and stream flow measurements. The grant money will be used purchase the water quality monitoring equipment. The department will provide the use of current meters and the associated equipment to take the stream flow measurements. The two-year program will collect data for the follow water parameters;

1. Stream flow in cubic feet per second (cfs) and total acre-feet (AF) per each year.
2. Temperature
3. Turbidity
4. pH
5. Estimates of suspended materials

By purchasing new, slightly better than average grade educational water quality testing equipment, and with the departments experience and advice, it is hoped that the data gathered will provide two purposes. The first and most driving reason for the department's effort is the obvious educational, hands on experience that will be provided to the school children. As has been stated so many times, all the program has to do is influence one child to become a scientist or engineer and have that child return to the Flathead valley someday with the education, experience, and memories to make a difference, and the program will pay off ten fold.

Secondly, it is intended to provide data gathered under the program to the schools to be used in science and math curriculum using graphing programs such as Excel®. Having live data such as flow and temperature graphed over time will give the students a simple but realistic look at scientific data gathering and use.

It is hoped that, with the departments experience and guidance, and with the use of better than average education equipment, the data gathered may be of sufficient quality to be used by other state professionals or local groups or agencies concerned with water quality or water quantity data or for use in any planned or existing water quality programs. The data will be gathered near a site that has been previously used by other agencies for similar purposes. The last data gathered at this site was in 1970. A copy of some of the data reported by the USGS for this site is shown in Exhibit 1 to this narrative. The data gathered by this new program will be some of the same data as gathered previously and comparisons of the data over time might also be made by the school program and hopefully by other agencies and groups.

Lastly the department will also benefit from this program. Using the experience of the Kalispell office manager, the stream flow measurement site will be used to train DNRC personnel in the use of current meters, staff gauge installation and maintenance, and hydrography information

gathering. The stream gauge height data will be monitored by the department on a continuous basis using a department provided AquaRod®.

Kurt Hafferman, the KRO manager, will be Project Director, project participant, and the expert in the field of civil engineering that has helped plan the project. A copy of Mr. Hafferman's resume is enclosed as Exhibit 2. James Albrecht, DNRC Water Resources Specialist in the KRO will also be a project participant and will assist with stream flow measurements.

If funds are obtained from the MTF grant, the money will be placed in the budget of the DNRC Water Resources with the spending authority for private funds granted to the Kalispell Regional Office. The Project Director will purchase the monitoring equipment through the state purchasing procedures. The Project Director will establish the Memorandum of Understanding (MOU) between the School and the State and between the School, the State, and the landowner of the monitoring station, and will establish the hydrography and water quality monitoring program. The Project director will assist the students to gather and record all the data. The Project director will also provide data to other agencies and complete all final reports.

Project Evaluation:

The first task will be to establish MOU's with the school and the State and with the property owners where the monitoring station will be established. The MOU will state the project purpose and provide indemnity for all parties. The first evaluation measurement will be completing the MOU process.

The second task of the project will be to purchase the equipment. The department got advice for the purchase of the equipment from local and state DEQ personnel and will assure that the equipment is of sufficient quality to provide accurate results, and yet allow educational hands on experience. Purchasing the equipment will be the second evaluation measure.

The educational task of the program will be to establish the stream monitoring station, take measurements, conduct a field trip with students, and provide the data to the school system. Having the students return a report to the department on their trip with graphs of the data collected will be the final evaluation measure.

Once the first class of students has visited the site and returned a report to the department, a concluding report, budget statement, evaluation and abstract would be completed and the MTF funding process concluded. It is intended to complete the grant funding process within the 2004 State fiscal year.

Although it is intended to conclude the MTF grant evaluation when these three evaluation criteria are met, over the two-year span of the program it is planned to have 16 different classes of elementary students visit the site. The department will complete the two-year program, complete a departmental summary report and the MTF will be provided with final copies. In addition, the department will promote the program, the MTF grant, and the schools involvement in local "Know Your Watershed" and with local conservation district and watershed groups.

Project Proposed Equipment Budget

All item costs below are from the Ben Meadows Company, Outdoor Equipment Catalog. Copies of pages from the catalog are shown in Exhibit 3

Item Name	Page	Cost ea.	Total Cost
Hanna Portable Turbidity Meter	366	$575.00	$575.00
Water Sampler	326	$56.20	$56.20
Transparency Tube	326	$52.95	$52.95
Combo pH/temp. Tester	372	$179.00	$179.00
Stream Gauges	339	$37.35	$37.75
Protector Case	585	$68.00	$68.00
Sample Bottles	448	$20.00	$20.00
Miscellaneous Equipment from local suppliers			
Stream Gauge Post		$12.00	$12.00
Misc. Nuts and bolts		$10.00	$10.00
Printing/paper costs for graphing		$25.00	$25.00
Total Equipment Cost			$1,036

Exhibit 1, Historic Water Quality Data
Ashley Creek

USGS

Water Resources

Data Category: Water Quality | Geographic Area: Montana | GO

Water Quality Samples for Montana

USGS 12367500 Ashley Creek near Kalispell MT

Available data for this site: Water-Quality: Discrete samples GO

Flathead County, Montana
Hydrologic Unit Code 17010208
Latitude 48°09'58", Longitude 114° 25'45" NAD27
Drainage area 201.00 square miles
Gage datum 3,130 feet above sea level NGVD29

Output formats

- Parameter Group data summary
- Inventory of available water-quality data
- Inventory of water-quality data with retrieval
- Tab-separated ASCII file, serial order
- Tab-separated ASCII file, wide order
- Reselect output format

Parameter Code	Count	First Date	Last Date	Parameter Code Complete Name
00010	4	1969-07-08	1970-04-14	TEMPERATURE, WATER (DEG. C)
00020	1	1969-07-08		TEMPERATURE, AIR, DEGREES CELSIUS
00027	1	1969-07-08		AGENCY COLLECTING SAMPLE (CODE NUMBER)
00060	4	1969-07-08	1970-04-14	DISCHARGE, CUBIC FEET PER SECOND
00070	4	1969-07-08	1970-04-14	TURBIDITY (JACKSON CANDLE UNITS)
00080	4	1969-07-08	1970-04-14	COLOR (PLATINUM-COBALT)
00095	3	1969-10-14	1970-04-14	SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)
00300	4	1969-07-08	1970-04-14	OXYGEN DISSOLVED (MG/L)
00310	4	1969-07-08	1970-04-14	BIOCHEMICAL OXYGEN DEMAND, 5-DAY AT 20 DEGREES CELSIUS (MG/L)
00400	4	1969-07-08	1970-04-14	PH, WATER, WHOLE, FIELD, STANDARD UNITS
00410	4	1969-	1970-	ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, FIXED ENDPOINT

Exhibit 2, Resume

KURT HAFFERMAN, MANAGER

DNRC Water Resources, Kalispell Regional Office
109 Cooperative Way Suite 110
Kalispell, Montana 59901

EDUCATION

- 1973 - High School, Libby, Montana
- 1985 - 1988 Flathead Valley Community College.
- 1988 - 1990 Montana State University
  - BS Civil Engineering GPA: 3.24
- December 1990 - March 1991 Graduate Studies in:
  - Advanced Open Channel Hydraulics
  - Highway Traffic Engineering

EXPERIENCE

- 1985 - 1991 BS education at FVCC and MSU
- 1991 - 1997 DNRC State Water Projects Irrigation Project Engineer
- 1996 - Passed P.E. Exam, Certificate No. 10457 PE
- 1997 - 1998 DNRC Dam Safety Program Engineer
- 1998 - Present DNRC WRD, Regional Office Manager, Kalispell

SIGNIFCANT WORK PROJECTS

State Water Projects: Nevada Creek Canal, Exposed HDPE Lining project; Nevada Creek Spillway Repair Project; Bair Dam Spillway Slab Replacement Project; Nilan East Canal Buried PVC Liner project; Barber Canal Drop Structure Project; Broadwater-Missouri Pipe Span Coating and Lining Rehabilitation Project; Livingston Ditch Geomorphilogicial Study; Nevada Creek Water Quality Monitoring Project; Careless Canal HDPE Drop Structure Project; Petrolia Dam Rehabilitation, Project Engineer; Deadman's Basin Diversion Dam Repair Project; Barber Canal Grant Award. **Water Operations Bureau, Dam Safety Program**: Montana Spillway Standards Committee member; Little Sleeping Child DAMBRK-HEC-1 Breach Routing. **Water Rights Bureau**: Fisheries Pond Policy; Permit Verification Project; BNSF Paradise Groundwater Closure; Glacier National Park Compact Administration; and CSK Tribe, Montana Supreme Court Ruling Administration of Water Rights on the Reservation. **Water Management Bureau:** Glen Lake Irrgation District, Seepage Evaualtion Grant, Glen Lake Irrigation District 2001-2002 Hydrography prgram

INTERESTS

Professional interests include construction project management, water resources related subjects including western water law, the current state of fluvial geomorphology and its relation to the design of hydraulic structures, hydrology, open channel hydraulics, floodplain characterization using HEC-RAS modeling, and dam breach modeling and safety of dams issues. Personal interests are also water related and include swimming, fishing, sailing, and both flat water and sea kayaking.

Exhibit 3, Equipment Catalog Pages

HANNA Instruments Portable Turbidity Meter

Microprocessor based field meter with lab-grade accuracy.

The ***Hanna Turbidity Meter*** is the only meter equipped with a High Emission Infrared LED light source. Unlike standard lamps, the infrared LED has a long life and maintains constant emission for the life of the instrument. The infrared LED produces the required intensity of diffused light in samples with low turbidity, and reduces interference from colors. To insure accurate calibration schedules, the meter also has a unique GLP (Good Laboratory Practice) feature that automatically stores and retrieves the last calibration data with time and date. For best field accuracy, the meter measures from 0–50 FTU in steps of 1/100th FTU that is ten times better than comparable models that measure 10 to 50 in tenths. Added features include an easy to use four button keypad, automatic troubleshooting functions and auto shut-off after five minutes.

Range: 0.00–50.00 FTU / 50–1000 FTU, 1 FTU (Formazine Turbidity Unit) = 1 NTU (Nephelometric Turbidity Unit). Resolution: 0.01 FTU/1 FTU. Accuracy: ±0.5 FTU or ±5%. Light Detector: Silicon Photocell. Dim.: 8.7" x 3.2" x 2.6". Weight: 18 oz.

Meter sold in kit form with meter, carrying case, calibration solutions, cleaning solutions, cleaning towels and two measurements cuvets. Requires four AA batteries, included.

No.	Description	Weight	Each
3JB-224816	Turbidity Meter Kit	5.0 lb.	$575.00
3JB-224818	Measurement Cuvets, Pkg. of 4	0.5 lb.	13.00
3JB-224819	0 FTU AMCO-EPA-1 Standard Solution (30mL)	0.5 lb.	14.00
3JB-224820	10 FTU AMCO-EPA-1 Standard Solution (30mL)	0.5 lb.	20.50
3JB-224821	Cleaning Solution for Cuvets (230mL)	0.5 lb.	15.70
3JB-224822	Cleaning Towels (Four Towels)	0.3 lb.	20.00

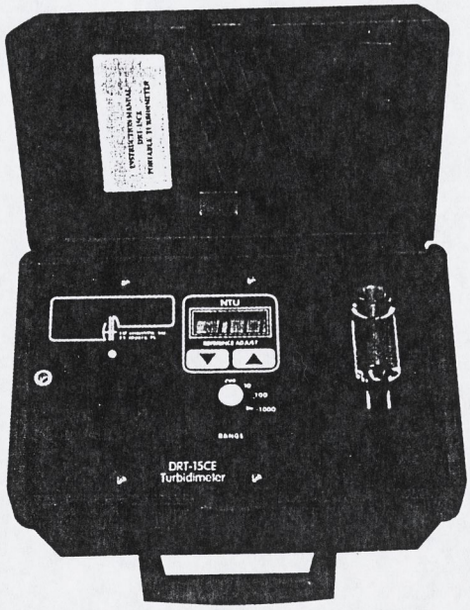
LaMOTTE® Portable Turbidity Meter

New hand-held design weighs less than one pound.

The Model 2020 Nephelometric turbidity meter meets or exceeds EPA design specifications for NPDWR and NPDES monitoring programs as specified by USEPA Method 180.1. There is also a separate EPA compliance reading mode that automatically rounds the reading to meet EPA requirements. This makes the Model 202 valuable tool for testing municipal waters, processing waters and surface waters. Additional features include a large LCD for easy reading and a comfortable ergonomic case design.

Size: 3.5" x 6.5" x 2.5". Range: 0–1100 NTU. Resolution: 0.01 on 0–11 range, 0.1 on 11–110 range, 1 on 110–1100 range. Accurac ±2% of reading below 100 NTU, ±3% above 100 NTU. Light Sour Tungsten filament. Requires one 9V battery, not included.

No.	Description	Weight	
3JB-54120	Portable Turbidity Meter	7.0 lb.	$75
3JB-9879	9V Battery	0.5 lb.	



Rugged Field Turbidimeter

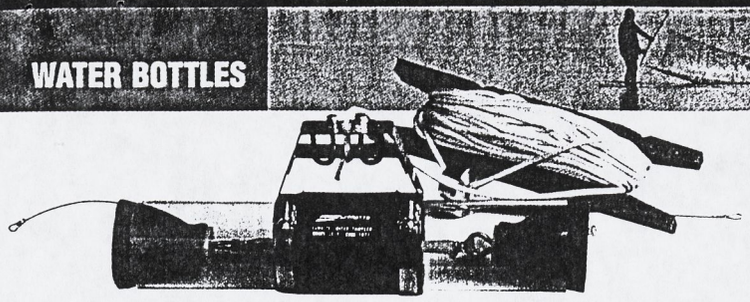
Meets all EPA specifications.

This outstanding portable ***Turbidimeter*** requires only 16ml of sample and is particularly designed for use in a wide range of field applications including lakes, streams, wells and more. Designed for a variety of field conditions, the turbidime is housed in a rugged NEMA 4 case and measures across three ranges: 0–10.0 ±1%; 0–100.0, ±2%; 0–1000, ±5%. A common zero point allows one point standardization regardless of selected range.

Includes an AC charger, one cuvet with a light shield cap and a reference stand The unit features a special 20-hour continuous-use 6V gel cell battery for field u plus an AC adaptor for lab use. 5" x 7" x 11".

No.	Description	Weight	
3JB-224263	Field Turbidimeter	8.0 lb.	$5
3JB-224264	12V Automobile AC adapter	1.0 lb.	
3JB-224265†	Secondary Calibration Stds.	0.5 lb.	
3JB-224266	Repl. Sample Cuvets, Set of 3	0.5 lb.	

†Sealed latex, set of four: 0.02, 10.00, 100.0, 1000



Van Dorn-Style Bottle

Ideal for students and field technicians.

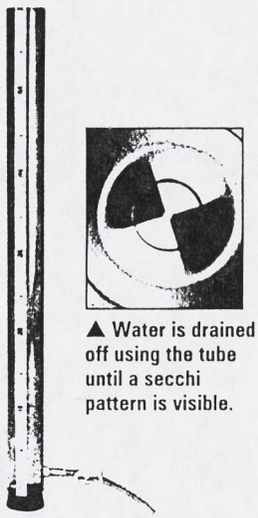
Lightweight and compact, this one liter water sampler comes with 20m of calibrated nylon line and a lead collar which assures rapid descent and minimal drift. The trigger release mechanism seals the sampler chamber at the desired depth. For removal of water samples, outlet is mounted on side.

No.	Description	Weight	Each
3JB-224250	Van Dorn Bottle	9.3 lb.	$195.00
3JB-224251	Replacement Body	2.0 lb.	81.00

Transparency Tube

Estimate stream quality as it relates to suspended materials in water.

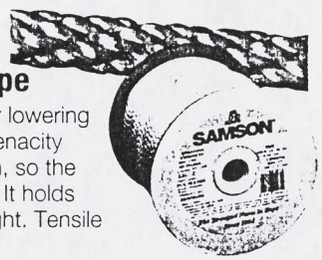
Just as a secchi disk is used as a measure of lake quality, the transparency tube is an excellent reference for the study of water quality. The 1¾"-dia. clear PVC tube is marked in cm from 0 to 120 with a secchi pattern at the bottom of the tube. To use, the tube is filled with water and drained off using the drain tube until the secchi pattern appears. The height of the water column is then recorded. Each reading becomes a reference for measuring changes.



▲ Water is drained off using the tube until a secchi pattern is visible.

No.	Description	Weight	Each
3JB-224196	Transparency Tube	2.0 lb.	$52.95

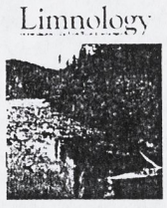
SAMSON Solid-Braided Polyester Rope



Durable, 3/16" polyester rope is ideal for lowering and retrieving bailer in well. The high-tenacity polyester fiber doesn't shrink like nylon, so the cord stays flexible and easy to handle. It holds knots well and is not affected by UV light. Tensile strength is 620 lbs.

No.	Description	Weight	Each
3JB-132306	500' Spool	5.0 lb.	$48.50

Limnology: An Introduction To Fresh Water Environments



For instructors or students.

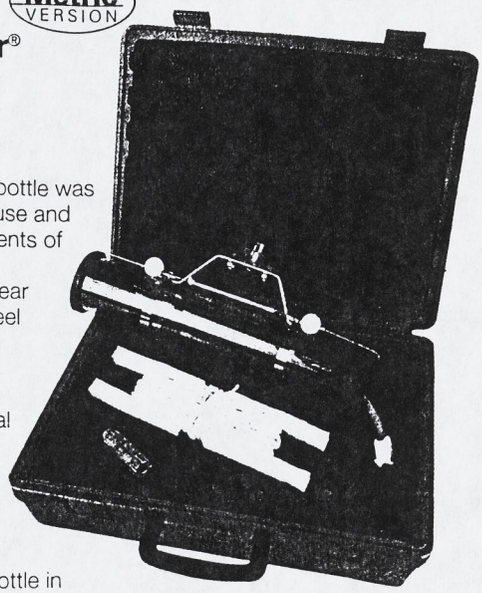
Illustrated manual covers basic chemical, biological and physical processes. It is well written to provide complete information in a well organized and systematic format.

No.	Description	Weight	Each
3JB-221514	Limnology Handbook	0.3 lb.	$4.90

Metric VERSION

wildco Fieldmaster® Water Bottle Kit

Student kit with horizontal sampler.

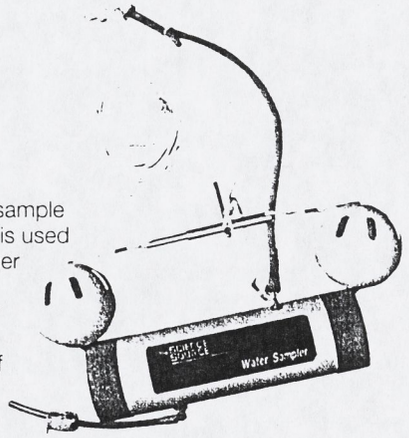


The Fieldmaster water bottle was designed for repeated use and rough handling by students of any age. Each bottle is constructed of tough clear acrylic with stainless steel hardware for durability. Water-resistant polyurethane end seals provide an excellent seal that is resistant to cracks and tears. Simple drain tube with stopcock allows easy removal of sample.

Kit contains one 1.2L bottle in horizontal sampling position, 8-oz. messenger, 20m (65') of uncalibrated 3/16" line on winding float, instructions and a plastic carrying case with foam lining.

No.	Description	Weight	Each
3JB-223480	Metric Water Bottle Kit with Horizontal Sampler	4.0 lb.	$286.00

Water Sampler



An efficient, inexpensive way to sample water at any depth. A single line is used to lower the sampler and to trigger the closing mechanism, sealing the collection chamber. Sampler uses a flow through design and holds a complete 1.5L volume of water for determining temperature, pH and dissolved oxygen. 3.5" x 1.5'.

No.	Description	Weight	Each
3JB-224195	Student Water Sampler	3.0 lb.	$56.20

wildco Split Messenger

For use with wildco water bottles.

Split-barrel, tapered nose messenger is made of 316 stainless steel for exceptional corrosion resistance. Enclosed spring mechanism keeps the barrel closed and has a built-in hole for safety lanyard attachment. Easy one-hand operation to place on sampling line.

Usable on lines from 3 to 6mm (1.8" to ¼") in diameter.

No.	Description	Weight	Each
3JB-223496	Split Messenger, 8 oz.	1.0 lb.	$37.00
3JB-223497	Split Messenger, 11 oz.	1.0 lb.	49.00

HANNA instruments Combo Waterproof Testers

Excellent for routine measurements of pH, conductivity, TDS and temperature.

This rugged, floating, waterproof tester allows you to accurately measure the pH, conductivity, TDS or temperature of a solution without switching meters.

Performs a self check at startup, then displays battery level. Testers include automatic temperature and compensation, autocalibration, a stability indicator and a "hold" feature to ensure proper measurement and to freeze the display for accurate recording. Comes with pH electrode, four 1.5V batteries and an electrode replacement tool. ***Replacement Electrode*** sold separately.

WATERPROOF TESTERS SPECIFICATIONS

	No. 89306	No. 89307
Range:		
EC	0 to 3999 µS/cm	0.00–20.00 mS/cm
TDS	0 to 2000 ppm	0.00–10.00 ppt
pH	0.00–14.00pH	
Temperature	0.0– 60.0° C or 32.0 –140.0°F	
Resolution:		
EC	1 µS/cm	0.01 mS/cm
TDS	1 ppm	0.01 ppt
pH	0.01pH	
Temperature	0.1°C or 0.1°F	

No.	Description	Weight	Each
3JB-89306	Low-Range Combo Tester	0.4 lb.	$129.00
3JB-89307	High-Range Combo Tester	0.4 lb.	129.00
3JB-78290	Replacement Electrode	0.1 lb.	26.00

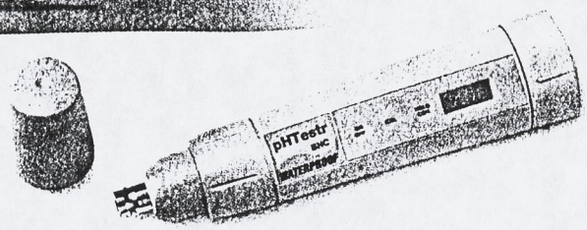
EXTECH INSTRUMENTS Waterproof Meters

Effectively measure pH or ORP levels.

These portable and waterproof measuring devices feature a large display with bargraph, 15 reading memory with recall and easily replaceable electrode modules. Rubberized, no-slip grip housing floats in water.

Meters come complete with electrode, protective sensor cap, sample cup, four LR44 button batteries and neckstrap. pH Meter operates in temperatures from 23°F–194°F. The analog bargraph starts at pH 7.00 and fluctuates from left to right based on the pH level. Automatic temperature compensation. ORP Meter has an automatic electronic self calibration and a simulated analog bargraph displaying any change in the ORP reading. Weighted Base holds a plastic cup and meter.

No.	Description	Range	Accuracy	Weight	Each
3JB-91896	ExStik pH Meter	0.00–14.00 pH	0.01pH	0.4 lb.	$79.00
3JB-91897	Replacement pH Electrode			0.2 lb.	29.00
3JB-91898	ExStik ORP Meter	–999 to 999mV	1mV	0.4 lb.	99.00
3JB-91899	Replacement ORP Electrode			0.2 lb.	49.00
3JB-91900	Weighted Base with 5 Cups			0.6 lb.	15.00



OAKTON® Waterproof pHTestr BNC

Interchangable electrodes for more applications.

Don't worry about dropping this tester in a tank or pond. Not only is it rugged—it floats. Features ±0.02 pH accuracy.

Durable IP67-rated housing is waterproof and dustproof. BNC connector makes changing electrodes quick and easy. Auto-buffer recognition and push-button, three-point calibration ensure accurate readings. Includes Hold and Auto-off functions. Order electrode separately.

WATERPROOF PHTESTR

Range:	0.00–14.99 pH
Resolution:	0.01 pH
Accuracy:	±0.02 pH
Calibration:	Up to 3 points: 4.0, 7.0 or 10.0

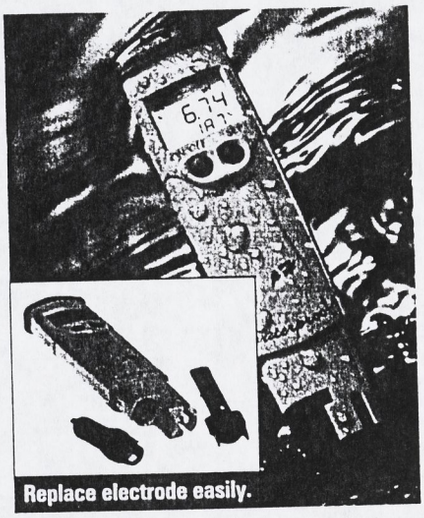
No.	Description	Weight	Each
3JB-95116	Waterproof pHTestr BNC Single Junction Electrodes	0.4 lb.	$74.00
3JB-23748	Epoxy Electrode Direct Connection	0.3 lb.	45.90
3JB-16992	Epoxy Electrode 3' Cable	0.3 lb.	35.50
3JB-23747	9mm Epoxy Electrode Direct Connection	0.2 lb.	42.20
3JB-23749	Glass Spear Tip Direct Connection Double Junction Electrodes	0.3 lb.	92.80
3JB-40497	Epoxy Electrode 3' Cable	0.4 lb.	191.00

NEW

HANNA instruments pHep Waterproof Testers

Increased longevity reduces costs.

Rugged, waterproof testers float, making it ideal for the most difficult working conditions. Replacement electrode helps save on costs.

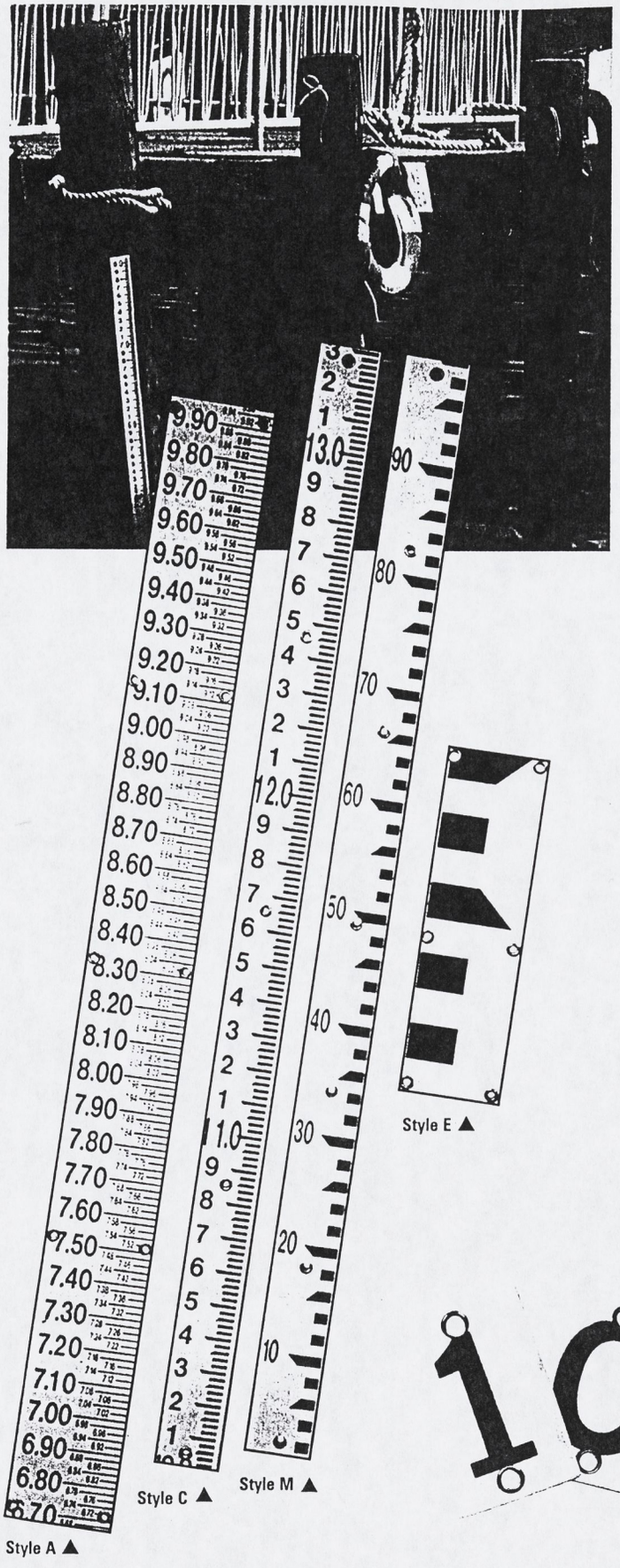


Replace electrode easily.

Displays temperature in °C or °F and pH simultaneously. Automatically calibrates to N.I.S.T. or U.S. standard buffers, compensates for temperature and shuts off after eight minutes of inactivity to conserve power. Includes stability indicator and battery level at start up. Electrode with cloth, renewable junction to increase longevity.

	No. 78288	No. 78289	Nos. 78288 & 78289
	pH	pH	Temperature
Range	0.0–14.0	0.00–14.00	0.0 to 60.0°C/0.0 to 140.0°F
Resolution	0.1	0.01	–
Accuracy	±0.1	±0.05	±1.0°F/0.5°C

No.	Description	1–3	4+
3JB-78288	pHep4 Tester	59.20	57.50
3JB-78289	pHep5 Tester	69.20	67.20
3JB-78290	Repl. Electrode Cartridge for Nos. 78288 and 78289	26.00	25.30



BEN MEADOWS℠

Stream and Staff Gauges

Accurately measure water depths in streams, irrigation channels, sewage plants, wiers and flumes.

Ben Meadows Stream Gauges are made from highly durable materials. Each gauge consists of an iron frame coated with backed enamel to resist corrosion and discoloration. These instruments can even be used in salt water. Four standard styles are available. Each section is accurately graduated and provided with grommeted holes for fastening with a number 8 x ¾" round head, brass-wood screw.

STYLE A

4"W, marked at every foot, tenth and 0.02' with total elevation. Available in 3⅓'L sections for numbering to 13.33'L.

No.	Description	Weight	Each
3JB-113470	0–3.33'L	2.3 lb.	$37.75
3JB-113472	3.33–6.66'L	2.3 lb.	37.75
3JB-113474	6.66–10.00'L	2.3 lb.	37.75
3JB-113476	10.00–13.33'L	2.3 lb.	37.75

STYLE C

2½"W, graduated to hundredths and marked every foot and every tenth. Numbered 3⅓'L sections are available to 20'L.

No.	Description	Weight	Each
3JB-113478	0–1.06'L	0.5 lb.	$20.50
3JB-113480	0–1.56'L	0.8 lb.	24.00
3JB-113482	0–2.06'L	1.0 lb.	25.50
3JB-113484	0–3.33'L	1.5 lb.	30.50
3JB-113486	3.33–6.66'L	1.5 lb.	30.50
3JB-113488	6.66–10.00'L	1.5 lb.	30.50
3JB-113490	10.00–13.33'L	1.5 lb.	30.50
3JB-113492	13.33–16.66'L	1.5 lb.	30.50
3JB-113494	16.66–20'L	1.5 lb.	30.50

STYLE M

Metric gauge, 65mm wide. Divides into centimeters with each decimeter numbered. Gauges for any elevation may be assembled by using separate figure plates.

No.	Description	Weight	Each
3JB-113504	1m section	1.5 lb.	$30.50

STYLE E

Unnumbered, 3½"W, graduated in feet and tenths. Separate figures are fastened on a plank, wall or pier to number any elevation desired.

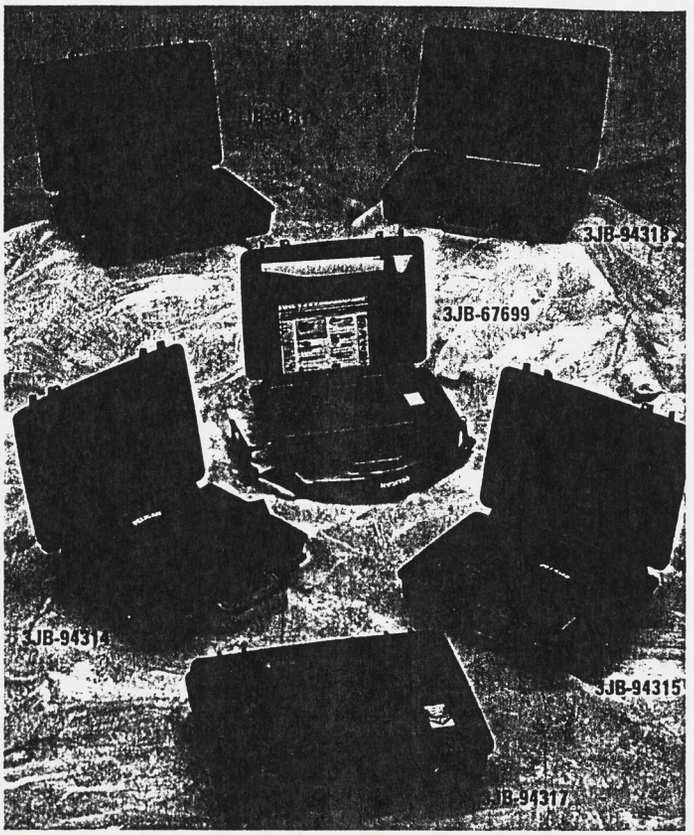
No.	Description	Weight	Each
3JB-113498	1'L section	1.0 lb.	$22.95
3JB-113500	2'L section	1.3 lb.	28.00
3JB-113502	5'L section	3.0 lb.	45.00

Figure Plates for Style E & M Gauges

These individual black figures are on 2" x 3" white porcelain enameled plates. Using a combination of these figures and Style E or Style M gauges, any elevation may be represented.

No.	Figure on Plate	Weight	Each
3JB-113510	1	0.3 lb.	$6.30
3JB-113512	1	0.3 lb.	6.30
3JB-113514	2	0.3 lb.	6.30
3JB-113516	3	0.3 lb.	6.30
3JB-113518	4	0.3 lb.	6.30
3JB-113520	5	0.3 lb.	6.30
3JB-113522	6 or 9	0.3 lb.	6.30
3JB-113524	7	0.3 lb.	6.30
3JB-113526	8	0.3 lb.	6.30
3JB-113530	Minus Figure (–)	0.3 lb.	6.30

•Protect your equipment out in the field.



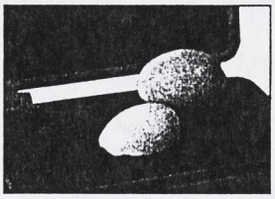
Laptop Computer Cases

Durable, multipurpose cases provide safe transport.

Hard composite case with versatile foam liners protect your equipment. Cases are ideal for transport with 2", quiet-roll urethane wheels.

Outer case is made of copolymer polypropylene resin. Interior padding is closed cell polyester foam with a molded polyurethane computer tray. Removable shoulder straps and lid organizer for storing folders, pens, CD-ROM disks, floppy disks and much more. Cam lock closure of black chrome over hard brass. ***Nos. 67699***, ***94315***, ***67698*** and ***94314*** hold laptops with up to 13" computer screens. ***Nos. 94316***, ***94317***, ***94318*** and ***94319*** hold laptops with up to 15" screens. Color is black.

No.	Description	Interior Dim. L x W x D	Weight	Each
3JB-67699	Computer Case-Deluxe	16" x 10¾" x 4"	8.0 lb.	150.00
3JB-94314	ComputerCase-Standard	16" x 10¾" x 4"	7.0 lb.	166.00
3JB-67698	Computer Case Only	16" x 10¾" x 4"	5.0 lb.	102.00
3JB-94315	Attache Case with Insert	16" x 10¾" x 4"	6.0 lb.	153.00
3JB-94316	Computer Case-Deluxe	18 1/16" x 11¾" x 4⅜"	8.0 lb.	209.00
3JB-94317	Computer Case-Standard	18 1/16" x 11¾" x 4⅜"	8.0 lb.	185.00
3JB-94318	Computer Case Only	18 1/16" x 11¾" x 4⅜"	6.0 lb.	144.00
3JB-94319	Attache Case with Insert	18 1/16" x 11¾" x 4⅜"	8.0 lb.	178.00



Pick 'n Pluck insert perforated foam system. ▶

Protector Cases

Perforated foam inserts let you customize storage.

All Pelican cases are made with an unbreakable and incredibly light structural foam resin shell that is unaffected by dents, scratches or corrosion. Watertight to a depth of 30' and airtight, all cases feature a pressure purge valve for quick equalization after altitude and temperature changes. The Travel Vault features wheels for easier transport.

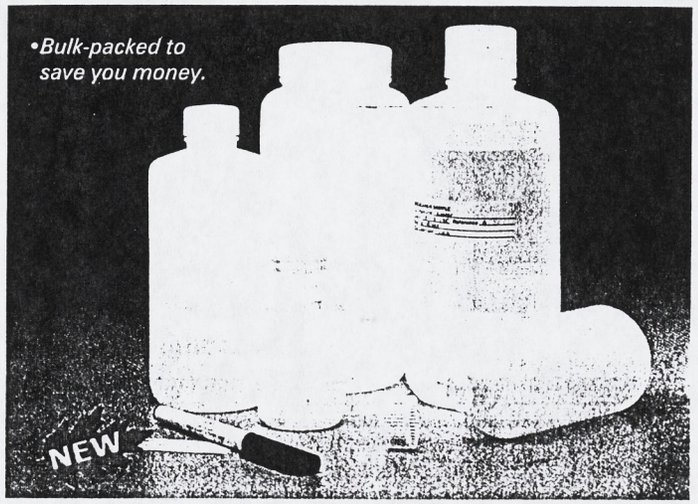
Supplied with the Pelican Pick n' Pluck perforated foam insert system that allows for a custom shaped insert to fit any instrument or shape. Travel Vault has solid foam. Replacement foam is available.

Case	Outside Dimensions	Inside Dimensions
1120* Guard Box®	8¼"L x 6 3/16"W x 3 9/16"D	7⅜"L x 4⅞"W x 3 1/16"D
1300 Case™	10⅝"L x 9 11/16"W x 6⅞"D	9⅜"L x 7¼"W x 6⅛"D
1400 Case™	13⅜"L x 11⅝"W x 6"D	12"L x 9 1/16"W x 5 3/16"D
1500 Case™	18½"L x 14 1/16"W x 6 5/16"D	17"L x 11 1/16"W x 6⅛"D
1600 Case®	24¼"L x 19 7/16"W x 8 11/16"D	21¾"L x 16 13/16"W x 7⅞"D
1750 Travel Vault®	53"L x 17 7/16"W x 6 1/16"D	50½"L x 13 7/16"W x 5¼"D

Case	Black No.	Orange No.	Blue No.	Gray No.	Weight	Each
1120*	3JB-49134BL	3JB-49134OR	3JB-49134B	–	1.5 lb.	$23.00
1300	3JB-53115BL	3JB-174013	–	–	4.0 lb.	45.00
1400	3JB-9438BL	3JB-83618OR	–	3JB-9438GR	6.0 lb.	68.40
1500	3JB-5464BL	3JB-83620OR	–	3JB-5464GR	9.0 lb.	103.00
1600	3JB-10861BL	3JB-174043	–	3JB-10861GR	9.0 lb.	150.00
1750	3JB-53118BL	–	–	–	29.0 lb.	209.00

REPLACEMENT FOAM

No.	Description	Weight	Each
3JB-174014	1300 Case™ Repl. Foam Set	1.0 lb.	$12.30
3JB-174024	1400 Case™ Repl. Foam Set	1.5 lb.	17.30
3JB-174034	1500 Case™ Repl. Foam Set	1.5 lb.	23.80
3JB-174044	1600 Case® Repl. Foam Set	2.0 lb.	51.80



NALGENE® Environmental Sample Bottles

Perfect for use in labs or in the field.

Economical, single-use bottles in ***Narrow-*** and ***Wide-Mouth*** styles in sizes from 125mL to 1000mL.

High-density polyethylene with polypropylene closures. Bottles are leakproof and break-resistant to ensure safe sampling, shipping and storage. Identify contents with ***Sharpie® Markers*** and ***Research Sample Labels***.

No.	Description	Capacity (mL/oz.)	Qty./ Case	Weight	Each Case 1–2	Each Case 3+
3JB-27201	Narrow-Mouth Bottles	125/4	500	22.00 lb.	$283.00	$269.00
3JB-27202	Narrow-Mouth Bottles	250/8	250	20.00 lb.	203.00	193.00
3JB-27203	Narrow-Mouth Bottles	500/16	125	17.00 lb.	151.00	144.00
3JB-27204	Narrow-Mouth Bottles	1000/32	50	9.81 lb.	94.70	90.10
3JB-27205	Wide-Mouth Bottles	125/4	500	29.00 lb.	316.00	300.00
3JB-27206	Wide-Mouth Bottles	250/8	250	23.00 lb.	241.00	230.00
3JB-27207	Wide-Mouth Bottles	500/16	125	20.00 lb.	170.00	161.00
3JB-27208	Wide-Mouth Bottles	1000/32	50	15.00 lb.	115.00	110.00
3JB-26522	Sharpie Markers	–	12	0.31 lb.	17.20	–
3JB-718	Research Sample Labels	–	500	0.25 lb.	17.10	–

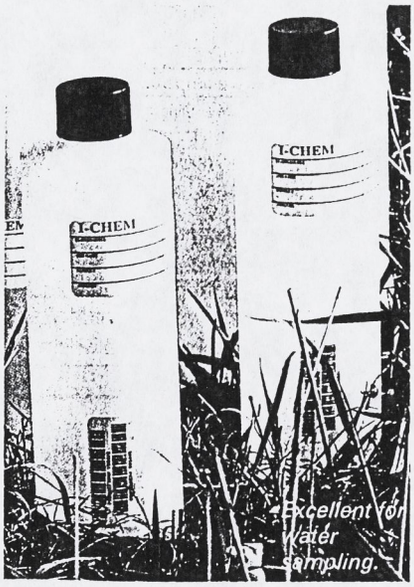
NEW

I-CHEM™ Certified® 300 Series HDPE Bottles

Certified for metal analysis.

I-CHEM Certified to meet EPA's performance-based specifications for metals analysis.

Made of high-density polyethylene. Translucent.

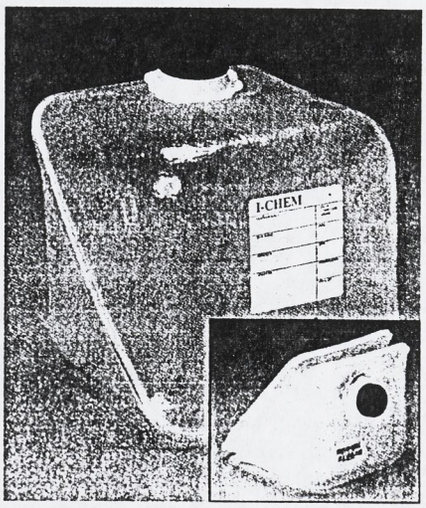


No.	Description	Cap. (mL)	Closure Size	Qty./ Case	Weight	Each Case
3JB-88287	HDPE Cylinder Round Bottles	250	24-410	24	2.5 lb.	$44.80
3JB-88288	HDPE Cylinder Round Bottles	500	28-410	24	3.2 lb.	53.70
3JB-88289	HDPE Cylinder Round Bottles	1000	28-410	12	2.3 lb.	31.50

NEW

I-CHEM™ Certified® 300 Series LDPE Cubitainers®

Collapsible—lightweight and compact when empty.



300 Series containers are supplied with a certificate of analysis. Excellent for transporting to remote sampling sites. Meet EPA's performance-based specifications for metal analysis.

Made of low-density polyethylene. Translucent.

No.	Description	Closure Capacity	Size	Qty./ Case	Weight	Each Case
3JB-88292	LDPE Cubitainer	1 qt.	38-400	12	1.75 lb.	$51.90
3JB-88293	LDPE Cubitainer	1 gal.	38-400	12	3.26 lb.	58.40
3JB-88294	LDPE Cubitainer	2.5 gal.	38-400	12	5.00 lb.	93.50
3JB-88295	LDPE Cubitainer	5 gal.	38-400	4	3.15 lb.	37.90

NEW

NALGENE® I-CHEM™ Certified® 300 Series HDPE Bottles

I-CHEM Certified for metals and water-quality analysis.

The highest quality plastic containers available! Constructed of break-resistant, high-density polyethylene. Closures are guaranteed leakproof. I-CHEM Certified for metals (group 1) and water-quality parameters.

Choose from Narrow-Mouth or Wide-Mouth HDPE Bottles.

No.	Description	Capacity (mL)	Closure Size	Qty./ Case	Weight	Each Case
3JB-88279	Wide-Mouth Bottles	125	38	72	6.0 lb.	$138.00
3JB-88280	Wide-Mouth Bottles	250	43	72	5.0 lb.	170.00
3JB-88281	Wide-Mouth Bottles	500	53	48	7.0 lb.	138.00
3JB-88282	Wide-Mouth Bottles	1000	63	24	5.0 lb.	102.00
3JB-88283	Narrow-Mouth Bottles	125	24	72	4.0 lb.	136.00
3JB-88284	Narrow-Mouth Bottles	250	24	72	5.7 lb.	168.00
3JB-88285	Narrow-Mouth Bottles	500	28	48	6.2 lb.	134.00
3JB-88286	Narrow-Mouth Bottles	1000	38-430	24	5.6 lb.	93.70