

Aesthetics Module

Aesthetics consist of the perceptions of beauty gained through personal senses and experiences. Such perceptions play a major role in a person's sense of responsibility for taking care of the land and water in a watershed.



Introduction

Aesthetics as it applies to scenic beauty is the sensory perception of what is beautiful. What may be beautiful to one person may not be to another. Yet most people can agree on many of the characteristics of natural beauty with respect to streams and watersheds. Aesthetically pleasing streams leave people with a feeling of comfort, harmony, and satisfaction. Aesthetically displeasing streams often evoke emotions of frustration, despair, or neglect. People have a sense of ownership to protect aesthetically pleasing streams while they tend to abandon aesthetically displeasing streams, which further degrades the stream.

A river's natural beauty is dependent on an ever-changing watershed that responds to climate, season, and its carrying capacity for human use. The natural features of a stream can evoke feelings of intimacy with the environment. This intimacy is enhanced by good water quality, natural stream channels, stable stream banks, healthy and abundant riparian vegetation, diverse aquatic life, diverse wildlife, and the extent to which general "naturalness" is pervasive in the watershed. Aesthetic experiences that evoke this kind of intimacy are strong motivators of human behavior. Natural beauty also inspires and facilitates the creative process. Artists, musicians, writers, poets, outdoor enthusiasts, dancers, educators, naturalists, and children at play express themselves in some creative way as a result of the natural world's impact on them.

STREAM TEAMS involved in environmental impact projects are motivated and committed to a great extent by aesthetics and the satisfaction derived from environmental action. Aesthetics also contribute to a sense of stewardship. STREAM TEAM members working on stream projects gain a greater appreciation for the natural beauty of their stream. They interact with other individuals who share their appreciation of the natural world, their unique sensory experiences, their intrinsic motivations, and their common conservation ethic. Such experiences create a bond that strengthens their commitment to being good stewards of the natural world.

***The Natural Good* - Dr. Sam Vaknin**

There is "right" in the mathematical, physical, or pragmatic sense. It is "right" to do something in a certain way. In other words, it is viable, practical, functional, it coheres with the world. Similarly, we say that it is "good" to do the "right" thing and that we "ought to" do it. It is the kind of "right" and "good" that compel us to act because we "ought to". If we adopt a different course, if we neglect, omit, or refuse to act in the "right" and "good" way, as we "ought to" - we are punished. Nature herself penalizes such violations. The immutable laws of nature are the source of the "rightness" and "goodness" of these courses of action. We are compelled to adopt them - because we have no other CHOICE. . . The laws of nature constrain our moral principles.

Sensory Development

Lesson Abstract

Summary:	In this lesson, students interpret sensory impressions and relate these impressions to the human emotions they evoke. Activities are designed to awaken students' senses to the aesthetic beauty near streams and their watersheds.
GLE:	SC7.1.B.6, 7.1.C.6
Subject Areas:	Science, Fine Arts
Show-Me Standards:	Goals – 1.3, 2.4 Strands – SC 3, 4; FA 3
Skills:	Observing, defining emotional characteristics related to beauty, communicating and refining sensory impressions, using imagination and senses to define personal relationship with the natural world
Duration:	1 to 2 class periods (50 minutes)
Setting:	Stream and classroom
Key Vocabulary:	Spontaneity, aesthetics, stewardship

Rationale:

- The development of a person's senses and the ability to communicate perceptions gained through the senses is important to scientific observation and aesthetic appreciation.
- As students better appreciate the beauty of a stream and watershed, they may take more ownership in caring for the land.

Student relevance:

- Students benefit from developing sensory observation skills, analyzing their observations, communicating impressions made by the observations, and relating these impressions to the human emotions.

Learning Objectives:

Upon completion, students will be able to . . .

- View photographs of streams and apply aesthetic considerations when making judgments related to human emotions.
- Use perceptual exercises as tools for sensory development.
- Discuss the cause and effect relationship between sensory experiences and the enjoyment of scenic beauty.

Students Need to Know:

- The senses help our perception of natural beauty.
- How we feel about the natural world affects our willingness to take care of it.
- Appearances can also affect attitudes.

Teachers Need to Know:

- Students benefit from pre-activity perceptual exercises which prepare them to perceive scenic beauty.
- Students are motivated to learn about the stream if they develop a relationship with the environment based on aesthetics.
- As students develop their senses, their powers of observation are likely to be enhanced, which may redefine or strengthen their value system.

Resources:

National Geographic, Missouri Conservationist and other magazines

Cornell, Joseph. *Sharing Nature with Children*. Ananada Publications, 1979.

Hammerman, Donald R., William M. Hammerman, and Elizabeth L. Hammerman. *Teaching in the Outdoors*. Danville, IL: Interstate Publishers, Inc., 1994.

Herman, Marina Lachecki, Joseph F. Passineau, Ann L. Schimpf, and Paul Treuer. *Teaching Kids to Love the Earth: Sharing a Sense of Wonder . . . 186 Outdoor Activities for Parents and Other Teachers*. Duluth, MN: Pfeifer-Hamilton Publishers, 1995

Leopold, Aldo. *A Sand County Almanac*. New York: Oxford University Press, 1949.

Van Matre, Steve. *Acclimatizing: A Personal and Reflective Approach to a Natural Relationship*. Martinsville, IN: American Camping Association, 1974.

Materials Needed for Lesson:

Ice water

Cups

Assortment of photographs of aesthetically pleasing streams from nature/outdoor magazines or nature calendars

Assortment of photographs of aesthetically displeasing streams from magazines or newspapers

Photographs of calm and flowing waters, waterfalls; fast-moving water, large rocks, narrowing streams, slowing water (widening stream), slow-moving (meandering) water, cliff, high stream banks, calm pool with afternoon shade, and overhanging trees.

Procedure:

Part One: Brainstorm the Pictures Frame

- Ask students to privately make a list of things that they consider beautiful.
- Have students compare their list with a neighbor.
- Ask students to raise their hand if water, such as a stream or river, was included on their list.
- Have students name 10 words which describe the most beautiful part of a stream.
- Ask students to write down what they feel when they see a beautiful stream.
- Have students describe what conditions, both natural and human, need to exist for a beautiful stream to exist.
- Show two pictures, one of an aesthetically pleasing and one of an aesthetically displeasing stream; have students make a list of emotions that each stream evokes in them.
- Repeat this activity in small groups using an assortment of collected photographs.
- Tell students that they will be visiting a stream and making personal and group observations based on their senses.

Part Two: Calming, Awakening, Contemplation

Conduct this activity at an aesthetically pleasing stream.

Calming activity

- Sitting by the stream, encourage students to close their eyes, breath deeply, relax and calm themselves, just as a stream becomes calmer as it moves from rapids to slow-moving pools.
- Instruct students to let go of thoughts and concentrate on their breathing, just relax and calm their minds and bodies.
- Allow several minutes for students to relax and appear calm.

Awakening activity

- After the calming activity, encourage students to focus their attention on one sense at a time by trying to awaken each sense individually and perceiving as many different sensations with each sense.
- Start by directing them to the sense of hearing (with eyes still closed); then move to the sense of smell (eyes closed); then move to the sense of touch. Encourage them to first direct their attention to touching the wind, the sun, the coolness of the ground, the texture of the grass, etc.
- Then move to activity touching, encouraging them to pick up something around them and examine it without looking at it.

- Finally hand each student a cool stream pebble. Encourage them to hold it in their hand, feel the coolness, and let it remain in their hand until losing its coolness.
- Move to the sense of taste providing each with a drink of water (small sip).
- Then move to the sense of sight directing their visual attention to light and shadow reflections, textures, movements, aquatic life, animal behavior, and changes in vegetation as it nears the stream. Then direct them to visual clues of the season, time of day, weather conditions, etc.
- After the students have been challenged to focus their senses on some of the simplest forms of beauty, explain that you will be challenging them to use their imaginations to perceive beauty from different points of view.
- Direct the group to focus their perceptions on one animal or plant. Have them examine it in detail (without getting up); then using their imaginations project themselves into that animal or plant (imagine you are the animal or plant).
- Encourage them to try to perceive from the point of view of that animal or plant. What sensations would they feel? How are the physical properties of this plant or animal affected by interaction with its environment? Is there evidence of the environment altering growth patterns?

Contemplation activity

CAUTION: This activity involves varying degrees of obtrusiveness. It would not be suitable for unique protected natural areas. For Missouri Department of Conservation areas, check with park managers or read signs that define rules regarding disturbing the natural state. Even when these activities are done on private lands, it is imperative that the landowners are aware of the purpose and extent of obtrusiveness. Before doing these activities, it would be helpful for the students to discuss the consequences, including how there must be an effort to match obtrusiveness for educational purposes to areas which can reasonable absorb these activities.

- Direct students to become an active part of the ecosystem and contemplate the consequences of each of their activities. Then space them 100 feet apart along a stream path.
- Direct students to walk on the trail and, at times, off the trail.
- Direct students to walk slowly and quietly, then faster and scoot their feet.
- Direct students to look under rocks, peel back the bark of a dead tree, and roll over rotted logs.
- Direct students to break off small branch tips of cedar, pine, or other fragrant trees, crush them in their fingers and smell the fragrance.
- Direct students to skip or throw a rock in the water. (Give each student a rock to take on the walk.)
- Weather permitting, direct students to wade barefooted in the edge of the stream in the mud. (Have a towel at the wading station.)
- Direct students to walk off the trail and find evidence of animal presence such as scat, fur, feeding, nesting, burrows, and trails. (Find an area where these can be observed.)
- Direct students to strip off seeds of grasses or wildflowers, examine them, then drop them as they walk.

- Direct students to throw a stick into the stream and watch it until it is out of sight.
- Direct students to bring back any pieces of litter they find near the stream.

Part Three: Closure

- Have students share their experience with a partner.
- Pair partners for additional sharing until the whole class can share the experience.

Evaluation Strategies:

- Have students produce a photo journal with photographs or magazine pictures of pleasing natural scenes. Ask them to find or write poetry that communicates the mood of the photo or picture. Have them explain their choices.

Extension Activities:

- Encourage students to initiate discussions with friends, family, teachers, or others regarding the emotional aspects of natural beauty.
- Encourage students to discuss consequences of their activities and the importance of sensory development.

Suggested Scoring Guide:

Sensory Development

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1
Attitude	Never is publicly critical of the project or the work of others. Always has a positive attitude about the task(s).	Rarely is publicly critical of the project or the work of others. Often has a positive attitude about the task(s).	Occasionally is publicly critical of the project or the work of other members of the group. Usually has a positive attitude about the task(s).	Often is publicly critical of the project or the work of other members of the group. Often has a negative attitude about the task(s).
Working with Others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others. Does not cause "waves" in the group.	Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.
Contributions	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.
Focus on the task	Consistently stays focused on the task and what needs to be done. Very self-directed.	Focuses on the task and what needs to be done most of the time. Other group members can count on this person.	Focuses on the task and what needs to be done some of the time. Other group members must sometimes nag, prod, and remind to keep this person on-task.	Rarely focuses on the task and what needs to be done. Lets others do the work.

Rubric Made Using: **RubiStar** (<http://rubistar.4teachers.org>)

Voices from the Wilderness

Lesson Abstract

Summary:	Authors, including some from Missouri, have been inspired by streams, rivers, and lakes, and have written of feelings, findings, and adventures related to water. This lesson introduces students to classic literature that conveys an author's personal relationship with a body of water.
GLE:	See Social studies and Communication Arts GLE on the Missouri Department of Elementary and Secondary Education (D.E.S.E.) Website: http://www.dese.state.mo.us
Subject Areas:	Communication Arts, Social Studies
Show-Me Standards:	Goals – 1.5, 1.6, 1.9, 1.10, 2.1, 2.3 Strands – CA 2, 3, 4; SS 6
Skills:	Reading, evaluating, analyzing
Duration:	1 class period (50 minutes)
Setting:	Classroom
Key Vocabulary:	Wilderness, vista, voyageur, angler

Rationale:

- The extent to which we perceive natural beauty is affected by our relationship with the natural world.

Student relevance:

- A personal relationship to water and the natural world has inspired many authors to write about their experiences. Reading their works can inspire students to examine their own relationship with a stream, river, or other body of water.
- Being personally involved with the natural world is more likely to help students relate to conservation concerns and practices.

Learning Objectives:

Upon completion, students will be able to . . .

- Examine literary work and explain how the author related to water.

- Discuss their own relationship to water.
- Write a short essay describing that relationship or create a story to express the type of relationship or experience they would like to have.

Students Need to Know:

- People are capable of developing a relationship with something natural that can result in a variety of emotions and experiences—tranquility, reflection, inspiration, adventure, and excitement, to name a few.
- The natural world and its ecosystems can be a learning laboratory where people make discoveries and acquire knowledge firsthand.
- Literature sometimes reflects the author’s feelings for and experiences with special places in nature such as rivers, streams, and lakes.

Teachers Need to Know:

- Several authors wrote of their experiences with water and their sense of kinship with the natural world.
- By reading the works of some of these authors, students can begin to analyze their own relationship to a stream or river or other body of water they may have played in, fished, or floated with family or friends.

Resources:

Leopold, Luna B., ed. *Round River: From the Journals of Aldo Leopold*. New York: Oxford University Press, 1993. (See “Current River, 1926.”)

Hall, Leonard. *Stars Upstream: Life Along an Ozark River*. Columbia, MO: University of Missouri Press, 1983.

Olson, Sigurd F. *The Singing Wilderness*. New York: Alfred A. Knopf, 1956. (See Module 4, “Farewell to Saganaga.”)

Murphy, Robert. *The Stream*. New York: Lyons & Burford, 1971. (See “Module One.”)

Macleon, Norman. *A River Runs Through It and Other Stories*. Chicago: University of Chicago Press, 1976.

Materials Needed for Lesson:

One or more of the suggested readings

List of questions

Procedure:

- Start lesson by asking students if they remember ever reading a story about a person who wrote about their experiences on a river, stream, lake, or somewhere else in nature. Have them relate any examples.
- Discuss how nature can evoke all types of emotions and that many people have written about their experiences in the outdoors.

- Divide class into several groups depending on the number of readings or divide them into groups for the same reading.
- Have students read a module from one of the literary work referenced or from others of your choice.
- Working in their groups, have students answer the questions below:
 1. What significance did water play to each author?
 2. What aesthetic qualities did the writers find in the river, lake, stream, or surrounding wilderness?
 3. Did the person relate how they first became interested in what they wrote about?
 4. Did the author write about wildlife? How?
 5. Did the author express an emotional connection or tie to the water? What did that mean?
 6. How did the author's feelings relate to his or her actions?
 7. Was there any humor in what was written? Describe?
 8. Did reading this piece make you want to be there or do what the author was describing? Why?
 9. Why do you think the author wrote this piece?
- Ask each group to report on their answers to the questions.

Evaluation Strategies:

- Have students write a short essay describing any personal relationship or experience they have had relating to nature and specifically to water, if possible. If they can't think of anything, ask them to write about something they might like to do and why.

Extension Activities:

- For those students interested in reading and who enjoy literature, encourage them to read one or more of the books and make a book report.
- Have students imagine that they are early explorers on the Missouri or Mississippi Rivers and write about a day's activities in their journal. For reference, read from the journals of Lewis and Clark.
- Have students make a list of vocabulary words they do not understand in their reading. Have them define the terms and use them in another example.

Scoring Guide:

Voices From The Wilderness

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1
Respects Others	Student listens quietly, does not interrupt, and stays in assigned place without distracting movements.	Student listens quietly and does not interrupt. Moves a couple of times, but does not distract others.	Student interrupts once or twice, but comments are relevant. Stays in assigned place without distracting movements.	Student interrupts often by whispering, making comments, or noises that distract others OR moves around in ways that distract others.
Comprehension	Student seems to understand entire story and accurately answers 3 questions related to the story.	Student seems to understand most of the story and accurately answers 2 questions related to the story.	Student understands some parts of the story and accurately answers 1 question related to the story.	Student has trouble understanding or remembering most parts of the story.
Participates Willingly	Student routinely volunteers answers to questions and willingly tries to answer questions s/he is asked.	Student volunteers once or twice and willingly tries to answer all questions s/he is asked.	Student does not volunteer answers, but willing tries to answer questions s/he is asked.	Student does not willingly participate.
Thinks about Characters	Student describes how a character might have felt about water at some point in the story and points out some pictures or words to support his/her interpretation without being asked.	Student describes how a character might have felt about water at some point in the story and points out some pictures or words to support his/her interpretation when asked.	Student describes how a character might have felt about water at some point in the story, but does NOT provide good support for the interpretation, even when asked.	Student cannot describe how a character might have felt about water at a certain point in the story.

Rubric Made Using: **RubiStar** (<http://rubistar.4teachers.org>)

Personal Commitment to Stewardship

Lesson Abstract

Summary:	Students use an inventory activity to define their commitment to stewardship through the processes of defining the responsibilities of citizenship, exploring the consequences of actions, and defining a lifestyle of ecological caring.
GLE:	4.1.D.6. , See Social studies and Communication Arts GLE on the Missouri Department of Elementary and Secondary Education (D.E.S.E.) Website: http://www.dese.state.mo.us
Subject Areas:	Communication Arts, Science, Social Studies
Show-Me Standards:	Goals – 1.10, 2.3, 3.6, 4.3 Strands – CA 7; SC 3,4; SS 6
Skills:	Evaluation, analysis
Duration:	1 to 2 class periods (50 minutes)
Setting:	Classroom
Key Vocabulary:	Stewardship, citizenship, urbanization, cultural diversity, symbiosis

Rationale:

- Citizens who have a commitment to stewardship and clearly defined relationship with the environment are generally positive, productive members of society.
- Students who learn self-evaluative skills that help them investigate their relationship with their community are more likely to be good citizens.
- Missouri STREAM TEAMS are able to bring about positive changes for streams and watersheds through their ability to solidify their members' commitment to protecting a stream in their community.

Student relevance:

- Students who have a well-defined relationship with the environment and can understand the results of their actions are more likely to be good stewards of the natural world.
- Students will benefit as citizens if they are able to analyze and evaluate issues of aesthetics, ethics, and stewardship.

Learning Objectives

Upon completion, students will be able to . . .

- Better understand that as a citizen of a community, there exists a responsibility to take care of the streams and their watersheds.
- Understand some of the consequences resulting from changes in standards of living, population growth, and changes in lifestyles between rural and urban populations.

Students Need to Know:

- Actions have consequences.
- Society is made up of lots of different kinds of people and interests.
- Stewardship of our natural resources means taking responsibility for caring for natural resources.
- To sustain a commitment to stewardship, citizens need to have the skills to evaluate their own commitment to actions.
- It is possible to gain respect in a community by doing something that benefits the whole community.
- We all live downstream and everyone benefits from clean streams and healthy watersheds.

Teachers Need to Know:

- As young people define their roles in their community, activities that build citizenship are a benefit to the person and the community.
- Young people find themselves dealing with consequences resulting from the creation of a “modern” society they had nothing to do with. This concept will create ethical questions during discussions.
- In a culturally diverse society, groups may have different values and behaviors toward conservation and natural resource issues. Young people sometimes find it difficult to accept cultural differences. The concepts of tolerance and sensitivity may be active discussion topics.
- Students are not always aware of changes over time in themselves, community, and natural surroundings. If they are constantly reminded of the “effect over time” on several topics, it will help them understand.

Resources:

Leopold, Aldo. *A Sand County Almanac*. New York: Oxford University Press, 1949.

Glasser, William. *Schools Without Failure*. New York: Harper Collins, 1975.

The following materials are available from the Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102-0180, (573)751-4115.

Missouri Storm Drain Stenciling Project
Volunteer Water Quality Monitoring Program

Youth Working for Clean Water, 1991 (Free)
Available from the Phelps Center for the Gifted, 932 S. Kimbrough, Springfield, MO 65806.

25 Things You Can Do to Prevent Water Waste
Available from American Water Works Association, 6666 W. Quincy Ave., Denver, CO 80235, (303)794-7711.

Materials Needed for Lesson:

Pencils
Paper
Stewardship Reading (one per student, optional)
Stewardship Commitment Survey (one per student)
Stewardship Transparency

Procedure:

- Read and discuss the *Stewardship* reading.
- Discuss stewardship, citizenship, urbanization, symbiosis, and cultural diversity (see Glossary).
- Show and discuss the *Stewardship* transparency.
- Give the *Stewardship Commitment Survey*.
- Let students share their survey answers.
- In closing, encourage students to get involved in a stream project, clean-up, or other community activity.

Evaluation Strategies:

Community-Based Evaluation:

- Have students collect newspaper articles that report on actions individuals or groups are taking to show a commitment to restoring an ecosystem.
- Have students write a letter to the editor of the local paper describing the importance of working to preserve some natural feature of their community.

Essay Questions:

- How has your commitment to stewardship changed by analyzing the relationship between citizenship and responsibility?
- Describe how natural beauty in your community is a source of community pride.

Role Playing Evaluation Strategy:

- Have students choose an environmental issue that affects streams in their community.
- Have them write down possible differing points of view of city officials, police, sportsmen, businessmen, naturalists, children, and others.
- Ask them to randomly choose a point of view and try to persuade others that point of view is valid.

Extension Activities:

- Discuss organisms which have a symbiosis-type relationship.
- Keep a journal of observations in the community which reflect ownership of natural resources.
- As a classroom, apply to become a STREAM TEAM and adopt a section of stream in or near your community. Apply on line at www.mostreamteam.org or call 800-781-1989 Voice Mail and leave contact information

Suggested Scoring Guide:

Personal Commitment to Stewardship

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1
Respects Others	Student listens quietly, does not interrupt, and stays in assigned place without distracting movements.	Student listens quietly and does not interrupt. Moves a couple of times, but does not distract others.	Student interrupts once or twice, but comments are relevant. Stays in assigned place without distracting movements.	Student interrupts often by whispering, making comments or noises that distract others OR moves around in ways that distract others.
Comprehension	Student seems to understand entire story and accurately answers 3 questions related to the story.	Student seems to understand most of the story and accurately answers 2 questions related to the story.	Student understands some parts of the story and accurately answers 1 question related to the story.	Student has trouble understanding or remembering most parts of the story.
Participates Willingly	Student routinely volunteers answers to questions and willingly tries to answer questions s/he is asked.	Student volunteers once or twice and willingly tries to all questions s/he is asked.	Student does not volunteer answers, but willing tries to answer questions s/he is asked.	Student does not willingly participate.
Follows Along	Student is on the correct page and is actively reading along (eyes move along the lines) or finger is following words being read aloud by others.	Student is on the correct page and usually appears to be actively reading, but looks at the reader or the pictures occasionally. Can find place easily when called upon to read.	Student is on the correct page and seems to read along occasionally. May have a little trouble finding place when called upon to read.	Student is on the wrong page OR is clearly reading ahead or behind the person who is reading aloud.

Rubric Made Using: **RubiStar** (<http://rubistar.4teachers.org>)

STEWARDSHIP

Stewardship in this context is the concept of citizens taking responsibility to care for their natural environment.

In Missouri, we have a tradition of stewardship and conservation practices which have helped sustain and protect our natural environment for more than 60 years. In today's society, change in lifestyles, increased urbanization, population growth, and other factors have made us more aware of concerns such as habitat loss, water quality problems, and land use issues.

In order to address a wide range of environmental issues affecting us today, it is important for citizens to realize that stewardship of natural resources is a responsibility of citizenship.

It is important to provide citizens with information which will make them aware of how their actions affect the natural environment—not to create alarm or place blame, but to help them make educated choices and be responsible citizens. We live in a culturally diverse society. It is important to honor differences and work together for the betterment of all. We must train each other to have skills which can effect change, and then provide opportunities to use our skills and knowledge to have a positive impact.

Missouri's STREAM TEAM Program is one way to exhibit stewardship in a community. The success of the program has come from volunteers taking an interest in a stream in their community and working together to monitor, clean up and protect that stream. By being personally involved, STREAM TEAM members have come to value the stream as their own and have assumed their role as stewards. They have come to appreciate the aesthetics of the stream for themselves and for their community.

Stewardship Commitment Survey

1. "An ethic ecology is a limitation on freedom of action in the struggle for existence."¹ Name three limitations on your freedom to do anything you want with free-running streams.

2. Name three stream problems that affect your daily living.

3. Symbiosis is the tendency of individuals or groups to evolve modes of cooperation. There are three types: Communalism, mutualism, parasitism. Put a check by the following which best describes your relationship with your natural resources.
 - a. ___ Communalism: I share food and space without benefit or harm to the environment.
 - b. ___ Mutualism: I share food and space, and my environment is apparently benefited and so do I.
 - c. ___ Parasitism: I share food and space, and I create varying degrees of injury to the environment.

4. Name one stream concern which you would be willing to work on that, if not taken care of, would prevent your family from enjoying some water recreational activity.

5. Name a water problem which has cost your family or community money.

6. Name a watershed concern that you feel could affect the health of people in your community.

7. Much of our commitment to stewardship is based on being a member of a community. We are respected when we exhibit citizenship. What have you done in your community which you would consider an act of good citizenship?

8. How can citizenship enlarge the boundaries of the community to include the whole watershed?

¹*Sand County Almanac*

Stewardship

Citizens Taking Responsibility

<u>Personal</u>	<u>Community Public/Private</u>	<u>Institutional</u>
Individual Acts	Community projects	Business and school education programs
Consuming less water	Decreasing water use	Decreasing water use
Decreasing domestic pollution	Protecting waterways Proper wastewater treatment	Decreasing / eliminating pollution Pre-treating water waste
	Stream clean-ups	