

2000 Governor's Conference

Report and Proceedings on Environmental Education

Goals and Action Steps

*Iowa Conservation Education Council
June 2000*



Conference Committees

Conference Planning Committee

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Robert Rye, Iowa Department of Transportation.

Committee members:

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Jim Gillespie, Iowa Department of Agriculture and Land Stewardship
Paul Zeph, Iowa Audubon
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- Robert Rye, Iowa Department. of Transportation
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- Rich Leopold, Iowa Department of Natural Resources
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IOWA STATE UNIVERSITY
University Extension



A special thanks to the Iowa Department of Natural Resources for printing and distributing the Proceedings to attendees.

In 2005, every Iowan will serve as a steward of our natural resources.

Table of Contents

Report	Page
Executive Summary	4
Iowa's Environment, Children, Communities and Future Summary	5
Iowa's Environment, Children, Communities and Future Report	6
ICEC Strategic Planning Scheme	9
Conference Proceedings	
Conference Background, Goals and Objectives.	10
Conference Agenda	11
Governor Vilsack Address	13
State Agency Vision on Environmental Education	
Patty Judge, Department of Agriculture and Land Stewardship	17
Ted Stilwill, Department of Education	18
Sherry Timmis, Department of Economic Development.	20
Lyle Asell, Department of Natural Resources	22
Stan Johnson, Iowa State University Extension.	23
Conference Goals and Action Steps	25
Conference Closing	
Dan Cohen, Iowa Conservation Education Council	30
Appendices	
Appendix 1 – EPA 7 Leadership Clinic Action Steps	32
Appendix 2 – Day 1 Participant List	41
Appendix 3 – Day 2 Participant List	49

Report

Executive Summary

A record number of participants attended the 2000 Governor's Conference on Environmental Education, June 12. Held every five years, the event attracted elected officials, youth, and adults from business and industry, not-for-profit organizations, municipalities, state agencies, and schools.

The 200 participants learned about Iowa's rich environmental history and heard visions shared by the governor and other government leaders. Most importantly, they began developing action steps to reach environmental education goals. Eighteen Iowans continued the discussion at the July EPA Region 7 Environmental Education Leadership Conference. Steering Committee revisions produced the one-page summary, "***Iowa's Environment, Children, Communities and Future.***"

Several of the needs identified by the 2000 Governor's Conference validated findings from prior conferences and planning:

- ◆ Funding for every 5th or 6th grade child to attend a 3 or more day environmental education experience;
- ◆ Citizen-oriented education to enhance basic ecological knowledge that leads to a positive environmental ethic; and
- ◆ A center or office for environmental education to lead statewide environmental education efforts.

Planning for a State Environmental Education Coalition has begun. This group of state government agencies and regent institutions will develop an Environmental Education (EE) strategic plan as it relates to Iowa, using information from the 2000 Governor's Conference and Vision 2010.

Action steps are still needed to

- ◆ Specify how non-formal youth and family settings can make a difference in environmental education through camps, 4-H programs, boy and girl scouts, and other non-school activities;
- ◆ Identify and recognize schools that are modeling good environmental education; and
- ◆ Create adult education opportunities to promote understanding of land management systems through appropriate demonstrations, community service, and volunteerism.

The conference achieved its goal of initiating a conversation that must continue. Environmental education is not housed in one department, agency, organization, or person. It is a shared commitment to make a difference through our organizations, agencies, and individual actions.

As conference chairs, we are proud of the contributions made at the conference and through subsequent discussions. Progress is occurring through development of the State Environmental Education Coalition and the Iowa Conservation Education Council's commitment to continued progress on the residential environmental education action step. Several REAP-Conservation Education Program grants addressed issues raised at the conference. We encourage organizations and institutions to step forward and conduct the research needed to develop an environmental literacy baseline on Iowa citizens and students. We hope that more progress is made to deliver environmental education training to pre-service educators in a way that is meaningful and also leads to increased residential experiences and improved environmental literacy. We ask organizations and agencies to continue to work together to commit to quality community environmental education.

Conference Co-Chairs

Judith M. Levings, Iowa State University Extension 4-H Youth Development

Bob Rye, Iowa Department of Transportation

Iowa's Environment, Children, Communities and Future Summary

Realizing the need to improve environmental literacy in Iowa, the Iowa Conservation Education Council, Governor's office, state agency personnel, and Iowa citizens created a set of goals and action steps to further environmental education. The many citizens who created the following goals and 20 action steps believe they will do three things.

- **Improve education**
- **Improve the quality of the environment**
- **Save the state money**

Strengthening Youth Education

1. Develop a plan to assist schools with environmental education.
2. Provide funding incentives for every 4-6th grade and high school student to participate in a 3-5 day environmental education residential program.
3. Encourage schools to include "green building principles," outdoor classrooms, and community outreach in school improvement plans.
4. Develop opportunities/requirements for environmental education service learning.
5. Assist teachers in developing and integrating benchmarks and assessment tools for environmental education.
6. Develop a pre- and post-environmental literacy assessment tool for Iowa students that will be administered by the IDOE/School District.

Preparing Educators and Future Leaders

7. Put a resource guide of Iowa environmental education opportunities and resources in the hands of every educator.
8. Develop an environmental education best practices document and train Iowa teachers.
9. Develop and offer environmental education certification or endorsement for both formal and non-formal educators.
10. Incorporate environmental education in pre-K-12 pre-service university and college classes.
11. Infuse environmental education into course content for all K-12 pre-service educators.

January 2001

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Many of the recommendations and action steps were developed at the 2000 Governor's Conference for Environmental Education, and some of them came from the Iowa delegation represented at the Regional EPA Environmental Education Leadership Conference in July 2000.

This fact sheet is a simple listing of the recommendations. More complete descriptions will appear in the Proceedings of the 2000 Governor's Conference on Environmental Education. We invite you to read the following action steps and then work with us to insure that Iowans have the knowledge to make informed decisions about their environment.

Strengthening Community Stewardship

12. Conduct a statewide survey to determine the current level of environmental literacy of Iowa citizens and educators. Include the survey as part of an Iowa Environmental Report Card.
13. Strive to include environmental education opportunities when communities conduct need assessments.
14. Develop and train community resource teams to respond and educate the public when local environmental issues arise.
15. Conduct a statewide marketing plan to promote environmental education and environmental stewardship learning opportunities to organizations and citizens across the state.
16. Support efforts to inventory natural areas throughout the state, and provide the information to communities and educators.
17. Encourage land management agencies to host regional field days on Iowa's private and public wild places by using more comprehensive marketing and non-profit involvement.

Creating an Efficient System

18. Create a state government interagency committee to insure that state-administered environmental education programs are effective, efficient, and accessible.
19. Find a mechanism to systematically evaluate programs that deliver environmental education.
20. An office of environmental education should be established to provide and distribute appropriate research and educational tools to formal and non-formal educators to ensure the best environmental education for everyone, from pre-school to adult.

Iowa's Environment, Children, Communities and Future Report Goals and Action Steps

The following goals and action steps were developed as part of a process that includes focus groups, the Governor's Conference Proceedings, ICEC open space informational meetings, and input from various environmental educators. The 10 goals developed for, and used at, the Governor's Conference are modified into four goals that are used here. Please refer to the Governor's Conference Goals and Action Steps in the Proceedings and the Region 7 Leadership Conference Report for further clarification. This document is meant to be a working one - not a strategic plan.

We believe that for Iowans to become natural resource stewards we must help them become environmentally literate. An environmentally literate citizenry understands:

- **The basic principles of conservation, ecology, sociology, and economics**
- **The interconnections of all parts of the environment**
- **The environmental and social costs and benefits of consumer decisions**
- **The sources of energy and the relationship between energy use and lifestyle**
- **The implications of economic and human population trends**
- **The impacts of personal life styles and personal choices**
- **The importance of acting in a sustainable manner to protect the quality and diversity of the natural world**

We strive for a statewide, comprehensive approach to environmental education that focuses on individual responsibility to sustain natural systems.

Strengthening Youth Education

Environmental literacy begins with family, schools, and community youth programs where caring and committed adults, volunteers, and educators provide knowledge to Iowa youth. Such learning requires hands-on extended field experiences and a balanced and academically based curriculum. It also provides an opportunity for youth to become involved in service and local environmental issues. A cooperative and comprehensive statewide approach to student environmental education would improve government efficiency in delivering educational programs and materials.

- 1. Develop a plan for assisting and encouraging schools to develop an environmental education component for all classes.**
Suggested lead agency: IDOE
(See Governor's Conference(GC) Goal 7 in the Proceedings).
- 2. Provide funding incentives to schools for students (grades 4-6 and high school) to participate in a 3 to 5 day residential environmental education experience.**
Suggested lead agency: ICEC and the American Camping Association
(See GC Goal 10 of the Proceedings and Region 7 Leadership Clinic Action Step 6 in Appendix 1)
- 3. Encourage schools to include "green building principals," outdoor classrooms, energy efficiency, multidisciplinary curricula, and community outreach in school improvement plans.**
Suggested lead agency: IDOE, IDNR and Iowa School Board Association.
(See GC Goal 3 Action Step 2 in the Proceedings and Region 7 Leadership Clinic Action Step 5 in Appendix 1)
- 4. Develop opportunities/requirements for environmental education service learning.**
Suggested lead agency: IDOE, AEAs
(See GC Goal 6 Action Step 2 in the Proceedings)

5. **Assist teachers in developing and integrating grade-level benchmarks and assessment tools for environmental education.**
Suggested lead agency: IDOE
(See GC Goal 7 Action Step 2 in the Proceedings and Region 7 Leadership Clinic Action Step 4 in Appendix 1).
6. **Develop a pre- and post-environmental literacy assessment tool for Iowa students that will be administered by the IDOE/School District.**
Suggested lead agency: IDOE
(See GC Goal 6 Action Step 5 in the Proceedings).

Preparing Educators and Future Leaders

Students who graduate from an Iowa school should achieve a sufficient level of environmental literacy to understand how their own individual actions affect the environment and how the environment is affected by policy decisions. Current teachers, pre-service educators, and non-formal educators need resources and training to achieve this goal.

7. **Maintain and update an environmental education resource directory. Make it accessible to every teacher, conservation organization, and environmental educator. A community or county-by-county approach may be best.**
Suggest lead agency: ISUE and ICEC, local county conservation boards.
(See GC Goal 9 Action Step 1 in the Proceedings)
8. **Develop an environmental education best practices document based on validated research, and train Iowa teachers.**
Suggested lead agency: IDOE, ICEC, AEAs
(See GC Goal 9 Action Step 2 in the Proceedings and Region 7 Leadership Clinic Action Step 4 in Appendix 1 for an earlier version of this refined action step.)
9. **Develop and offer environmental education certification or endorsement for both formal and non-formal educators.**
Suggested lead agency: IDOE
(See GC Goal 9 Action Steps 3 and 4 in the Proceedings and Region 7 Leadership Clinic Action Steps 7a and 7b in Appendix 1 for an earlier version of this refined action step)
10. **Form a committee to develop a plan to recommend ways to incorporate environmental education in Pre-K-12 pre-service university and college classes.**
Suggested lead agency: a teacher training institution, IDOE, ICEC
(See GC Goal 8 in the Proceedings for an earlier version of this refined action step).
11. **Hold a conference/training session for Iowa's teacher training institutions to explore the necessity of infusing environmental education into course content for all K-12 pre-service educators.**
Suggested lead agency: a teacher training institution, IDOE, ICEC
(See GC Goal 8 in the Proceedings for an earlier version of this refined action step).

Strengthening Community Stewardship

Iowans are a community-oriented people. We value the schools, businesses, churches, and service groups that comprise our communities. Too often, however, we fail to recognize that natural communities sustain our human communities. It is only through knowing these natural systems that we learn to understand and value them. We develop stewardship through this process.

12. **Conduct a statewide survey to determine the current level of environmental literacy of Iowa citizens and educators. Include this survey as part of Iowa's Environmental Report Card.**
Suggested lead agencies: ISUE, IDNR, IEC, INHF, ICEC, etc.
(See GC Goal 4 Action Step 2 in the Proceedings)

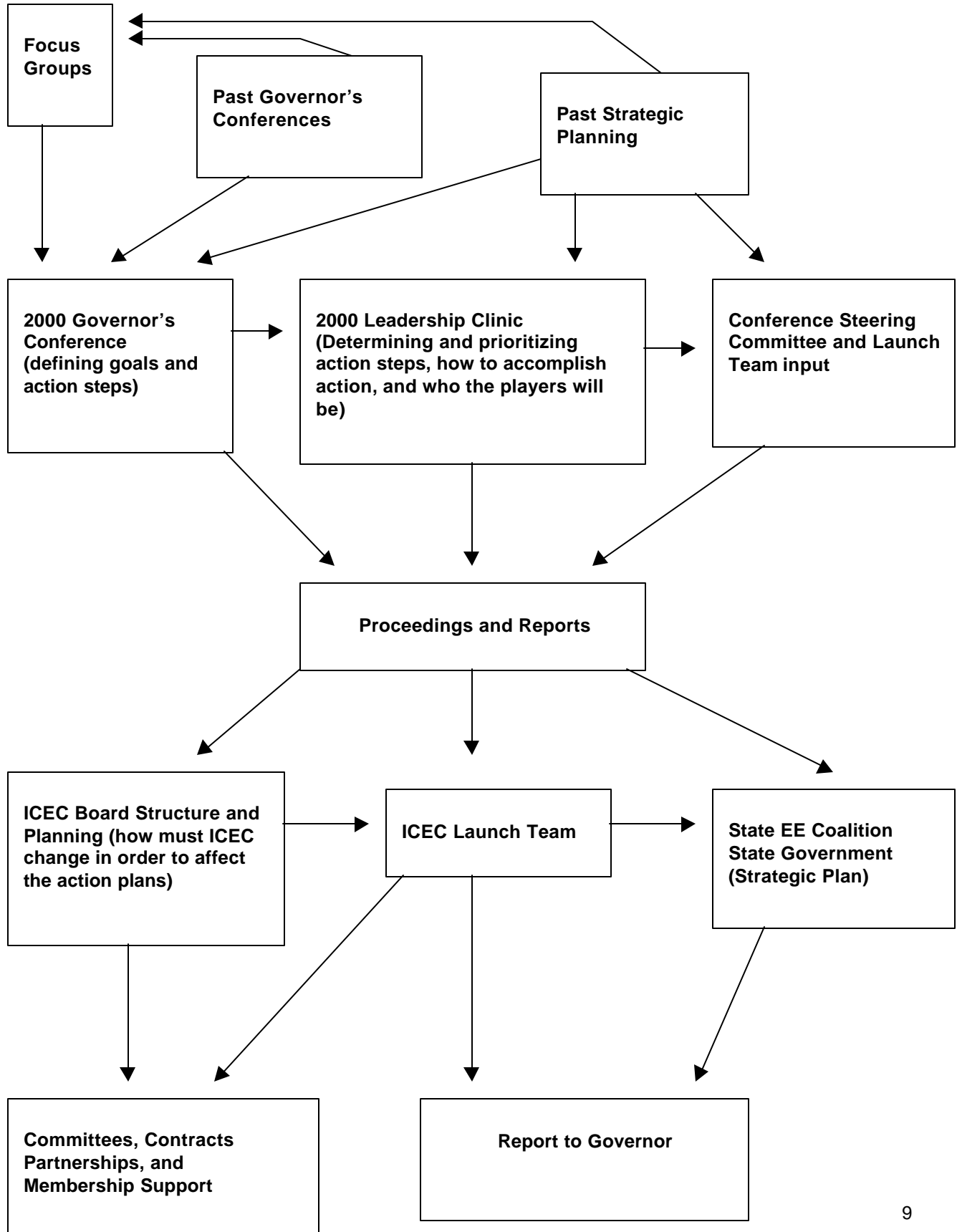
- 13. Strive to include environmental education opportunities when communities conduct need assessments.**
Suggested lead agencies: EarthYear 2000 community committees, ISUE, CCB, DNR, SWCD/watershed groups, ISU Extension & community leaders, chamber of commerce, local government, local service organizations, school districts, commodity groups, local non-profits, leadership groups.
(See GC Goal 2 Action Step 2 in the Proceedings)
- 14. Develop and train community resource teams to respond and educate the public when local environmental issues arise.**
Suggested lead agency: CCB, ISUE, SWCD/watershed groups.
(See GC Goal 2 Action Steps 2-4 in the Proceedings and Region 7 Leadership Clinic Action Step 3 in Appendix 1.)
- 15. Conduct a statewide marketing plan to promote environmental education and environmental stewardship learning opportunities to organizations and citizens across the state.**
Suggested lead agency: ICEC, IAN, ISUE, IDOE
(See GC Goal 2 Action Step 1 in the Proceedings and Region 7 Leadership Clinic Action Step 1 in Appendix 1).
- 16. Support efforts to inventory natural areas throughout the state, and provide the information to communities and educators.**
Suggested lead agency: IDNR
(See GC Goal 3 Action Step 1 in the Proceedings).
- 17. Encourage land management agencies to host regional field days on Iowa's private and public wild places by using more comprehensive marketing and non-profit involvement.**
Suggested lead agency: ISUE, IDNR, non-profits
(See GC Goal 3 Action Step 6 in the Proceedings)

Creating an Efficient System

Iowa's system of environmental education is found in state, federal and county agencies as well as non-profit programs. This system could be enhanced through coordination to decrease duplication of services and to identify and correct gaps. The limited funds provided to increase environmental literacy to our citizens need to be expended wisely and efficiently.

- 18. Create a state government interagency committee to insure that state-administered environmental education programs are effective, efficient, and accessible.**
State Environmental Education Coalition
Suggested lead agency: IDOE, IDNR, ISUE
- 19. Find a mechanism to systematically evaluate programs that deliver environmental education.**
Suggested lead agency: IDOE, ISUE, higher education
(See GC Goal 5 Action Steps 1 and 2 for an earlier version of this refined action step)
- 20. Create an office/center of environmental education to provide and distribute appropriate research and educational tools to formal and non-formal educators. This office/center would ensure the best environmental education for everyone, from pre-school to adult**
Suggested lead agency: IDOE, IDNR, ICEC, IAN, CCB, ISUE, regent institutions, and non-profits
(Carry over from previous conferences)

ICEC Strategic Planning Scheme for the Year 2000-2001



Conference Proceedings

Conference Background, Goals, and Objectives

Project Background

The Iowa Conservation Education Council has been the lead organizer and financial agent of this conference series since its inception in 1977. The conferences were held in 1977, 1990, and 1995. They, along with the IDNR, IDOE, ISUE, IAN, UNI, INHF, US Fish and Wildlife Service, IEC, Des Moines Metro Waste Authority, etc., have been involved in the past. Priorities established at the 1990 Governor's Conference and 1995 Conference are still used today in developing county conservation board EE plans, selecting REAP-CEP grants, and developing programs and priorities.

Conference Goal: Develop goals and action steps to assist Iowa environmental educators, state government, citizens and communities in creating an environmentally literate populace.

Audience: The environmental/conservation education community in the broadest sense.

Conference Objectives:

1. Identify educational strategies to implement Iowa citizen's vision for our state's environment.
2. Recognize past and present educational accomplishments to improve Iowa's environment.
3. Celebrate our past, present and future as natural resource and environmental educators.

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Dusky Terry, Governor's Policy Advisor
Dan Cohen, Chair Iowa Conservation
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Lynn Betts, Natural Resources Conservation
Service
Paul Zeph, Iowa Audubon
Ross Harrison, Iowa Department of Natural
Resources
Jean Eells, Iowa Department of Natural
Resources

Acronyms:

ICEC Iowa Conservation Education Council

IDED Iowa Department of Economic
Development

IDOE Iowa Department of Education

IAN Iowa Association of Naturalists

IEC Iowa Environmental Council

CCBs County Conservation Boards

IDNR Iowa Department of Agriculture

Agenda

June 12, 2000

- 8:30 a.m. **Registration/ View Displays**
Music by Paul Micich – CoffeeHouse Productions
- 9:00 a.m. **Welcome and Challenge**
The Honorable Thomas J. Vilsack, Governor of Iowa
- 9:25 a.m. **Welcome and Housekeeping**
Conference Co-Chairs:
Judy Levings, Iowa State University Extension
Robert Rye, Iowa Department of Transportation
- 9:35 a.m. **Who Wants to Be an Environmental Educator?**
Game Show Host: Paul Zeph, Iowa Audubon
- 10:15 a.m. **What's Happening in Environmental Education?**
Concurrent Session I:
- **E LEAP – Is it for you?** – Pat Boddy
 - **Landowners, Wild Places, and Wild Things** – Dr. Jim Pease & Gail Kantak
 - **Success/Shortfalls of Mass Media** – Wendy Zohrer
 - **Restoration Management** – Kirk Henderson & Steve Holland
 - **Study of State Offices of Environmental Education** – Paul Zeph
 - **Overview – NAAEE Guidelines for Excellence** – Kathy McKee
 - **Linking Volunteer Service and EE** – Diane Ford-Shivvers, Gerald Schnepf & Rich Leopold
 - **Funding for EE** – Vern Fish
 - **Pre-service and In-service Opportunities for EE** – Beverly Brand & Linda Scheurmann
 - **The Environment – What is industry doing?** - Bryce Harthoorn
- 11:00 a.m. **What's Happening in Environmental Education?**
Concurrent Session II
(Sessions above repeated)
- 11:45 a.m. **Agency Vision for Environmental Education**
Stan Johnson, Iowa State University Extension, moderator
The Honorable Patty Judge, Iowa Secretary of Agriculture
Ted Stilwill, Iowa Department of Education
Sherry Timmins, Iowa Department of Economic Development
Lyle Asell, Iowa Department of Natural Resources
- 12:30 p.m. **Lunch**
Margo Underwood, Governor's Strategic Planning Council and Dr. Jim Pease, ISU Extension

- 1:30 p.m. **Facilitated Planning Sessions**
- 3:00 p.m. **Break/View Displays**
- 3:15 p.m. **Group Report on Actions (Headlines)**
Wrap Up and Action Plan Development
Dan Cohen, Chair Iowa Conservation Education Council
Evaluation
- 4:30 p.m. **Adjourn**

June 13, 2000

- 8:00 a.m. **Continental Breakfast** (Funded by REAP/CEP)
- 8:30 a.m. **Welcome**
Conference Co-Chairs:
Judy Levings, Iowa State University Extension
Robert Rye, Iowa Department of Transportation
- General Session – Planning**
 Small Group Planning
Facilitators:
Margo Underwood & Dr. Jim Pease
- 10:30 a.m. **Break**
- 10:45 a.m. **Continue Small Group Planning**
Develop action strategies for EE Goals
- Noon **Lunch**
- 1:00 p.m. **Continue Small Group Planning**
- 3:00 p.m. **Wrap-up and Adjourn**

Governor Vilsack Address

I want to talk to you for just a few minutes today about what I perceive to be a significant and substantial threat to our open spaces and natural resources from some new land uses and some old land uses and to underscore the importance of the work that you do.

Because in Iowa we are constantly trying to encourage more people to be a part of our future, you may not be cognizant of the fact that the world population is growing at staggering rates. Consider that it took us literally thousands and thousands, arguably millions of years, to get to a world population equal to one billion. Just a few months ago we celebrated, if you will, the world population reaching six billion. It will take us just a mere 12 years to get to 7 billion. Another 12 years later we will get to eight billion, another 12 years later to 9 billion. One must begin to ask the question, how many people can the world actually sustain?

I was talking to Ted Townsend, from Townsend Engineering, who indicated to me that he recently studied this issue and concluded that the world could probably support about 14 billion people. So it is highly possible in our lifetime that we will reach very close to that rate. As we see significant increases in world population and the use of open spaces, the use of natural resources will become a critical issue.

Also, that world population will significantly increase demands for goods and services which will require greater use of our natural resources in producing those goods and services. You will begin to see a continued expansion of business as we are experiencing in this country. These expansions have been taking place predominantly in open spaces -- in suburban and rural areas. They are not taking place in inner city areas. One of the reasons for this growth is that we have created a set of government programs, from tax abatements to tax increment financing, that help finance roads and sewer construction and building codes that either discourage development within inner cities or encourage expansion into open spaces.

In addition to that, we have the advent of advanced telecommunications services -- the Internet, which allows people to be connected anywhere, any time, any place. I suspect that the expansion of advanced telecommunications services will further the pressure of creating opportunities in open spaces because individuals, who have sufficient resources and who want the quiet life, will be able to purchase a home and connect themselves to the rest of the world and actually conduct their business in that home. In fact, we are seeing that phenomenon today in Iowa because for the first time in our state's history, there are actually more people living in the countryside. Now this isn't in small towns, this is actually in the country. More people are living in the countryside who are non-farmers than who are farmers.

Speaking of farming, it is clear that our farms have become more efficient and the technology more advanced, which has accelerated our ability to grow more. The problem is, that as we grow more, the price we get for the crops reflects that. As a result of congressional action, we have a farm policy today that really encourages farmers to plant more from fence row to fence row. So you have a combination of a farm policy that promotes this growth and prices that necessitate it. The result is that we are taking a lot of land that is marginal and putting it into production, and understandably so. The problem with that is it then creates additional threats to the natural resources, and we are, in fact, seeing that. We are seeing a loss of open space; we're seeing significant questions being raised about water quality and air quality as a result of the way we have used our land. We are seeing a destruction of biodiversity, which is raising serious questions about endangered species. Conversely, we are seeing a significant expansion of invasive species, all of which results in a significant threat.

Our response to these challenges has been two-fold. Some states, like Maryland, have responded by establishing what are referred to as "smart growth" principles. These principles state that no state money will be used to assist expansion and growth unless it's in a community designated as a "smart growth" community. A community that has a sense of what land use planning is about also has a sense of how to preserve natural resources.

On the other side, in the farming community, we have begun to see a significant move toward private land conservation. This move encourages the right behavior among our farmers by providing financial resources to them in exchange for their willingness to use their land in a way that enhances the natural resources. But the fact is that neither "smart growth" principles nor private land conservation has a great deal of public understanding or support.

During the course of my campaign for Governor, perhaps the most shocking thing that occurred to me was a poll that was taken during the course of my campaign. Because of all the discussions concerning hog lots, water quality, and air quality, I had assumed that the environment was something that was really on the minds of most ordinary lowans. I assumed it would be an issue that we would want to talk about and one that would motivate voters to get to the polls and respond. But, in fact, I was absolutely shocked when the environment was ranked eighth on a list of ten most significant issues. And in single digits, about eight percent of lowans indicated that the environment was an issue that would affect their voting decision. Now think about that - in a land and place where natural resources are so critical to our survival and so linked to our tradition, heritage, and culture, only eight percent of lowans thought that it was appropriate or necessary to think about environmental issues in making decisions about who was going to make environmental policy.

So that brings me to you. It seems to me that in this state and in this country we have to create an opportunity for the development of an environmental ethic. This ethic would basically make people think about the impact and effect that their decisions in day-to-day business operations have on natural resources and that government policy makers create in their day-to-day decisions about tax policy, building codes, and a variety of other incentive packages linked to economic development.

Well, how do we create this environmental ethic? I would suggest that we create it through education. That is why what you do is so extremely important. Because you are the folks who can plant the seed; you are the folks who can build the foundation for this environmental ethic. It will have to come from you - it cannot be top down. The fact is that very few people today are still conscious of environmental issues. This fact means we need to do a better job of bringing the environment down to a point where folks can realize the importance of it in their day-to-day life, and to do that requires education of young people. It requires programs and projects in local communities that constantly remind people about the importance of natural resources and makes them understand that the way we use natural resources will directly impact their ability to be prosperous in the future; their ability to have a high quality of life; their ability, and our ability collectively, to attract people to this state. We are working hard to develop opportunities for collaboration. Whether it is County Conservation Boards, or the Iowa State Extension Service, or schools, or a variety of other non-profit entities, we must work in a coordinated fashion like you are working in a coordinated fashion. The purpose of this conference is to empower and equip you with more and greater information, to instill and inspire in you the necessity of taking your most important work; and to continue it and get more people involved in it.

There are a number of people in the audience today that I ought to take a few seconds to introduce, and then I want to finish by talking about the Strategic Planning Council's work. I think that there are at least three legislators that I know of who are here today. If I miss anyone, I apologize. I know Senator John Judge is here. Representative Mary Mascher from the Iowa City area is here and Representative Jane Greimann. We are also happy to have Bob Soukup with the Farm Service Agency; whose wife is also a state senator. The last person I want to introduce in this round is Margo Underwood. Margo is from the Mason City area and is involved in the strategic planning process.

Let me tell you a little about the strategic planning process and the importance of it. In my view, it is absolutely critical to the survival of our state that we figure out a strategy to attract more Iowans, younger Iowans, and better-paid Iowans. The key to that is the quality of life. We put a Strategic Planning Council together, now 38 Iowans who are from all political parties with some very conservative members and some very liberal members. All of them shared something in common: they are very intelligent people and they have a commitment to our state. We asked them to take a real close look at the future of our state and to suggest ways in which we could, in the next ten years, create the kind of Iowa that would be compelling. They've been meeting for almost a year.

The first thing that they did was to take a look at where we are, and the statistics are rather startling. When we became a state in 1846, there were approximately 95,000 Iowans. Within the first ten or twenty years of our existence, we rose to about 195,000; and then within another ten years, we actually had our first million Iowans. By 1900, our population grew to 2.2 million, and we were the tenth largest populated state in the country.

To give you a sense of how many people lived in Iowa, realize that more people lived in Iowa than in Florida. I'll give you a second to think about that. More people lived in Iowa than in California. I'll give you a second to think about that. More people lived in Iowa than in California and Florida combined. We had 13 people in Congress, but today we only have five. The threat is that we'll lose yet another person in Congress and the power that goes with that number.

We've taken over a hundred years and are yet to get to the third million. In fact, we are further away from it today than we were in 1980, and this is beginning to show itself in an aging population. The fastest growing segment of Iowa's population, as a percentage, is people over the age of 100. We are first in the nation of people over the age of 85 as a percentage of our population, second in people over 75, and fourth in people 60 and older. Since we began keeping statistics, this is the first time that we've had more people 74 and older than we have 5 years and under.

So, if we are worried about where workers are going to come from, or where teachers are going to come from, or where the next conservation educators are going to come from, or where our workforce in total is going to come from -- we have to begin addressing this fundamental issue. While everyone else has grown and developed around us, we have been stagnant. However, we have an opportunity because everyone else has basically done this without taking into consideration how you do it and how you balance it with the natural resources.

The 2010 Committee has put forward a series of recommendations concerning the environment and natural resources that is designed to create that environmental ethic. It is designed to support your work in environmental education and to establish a quality of life that is compelling. Young people will say, "Hey, this is the place that I want to live," because they have thought about growth, and they have organized growth, and they have preserved their natural resources

- very, very important work. They are not going to make it easy for us. Difficult choices will have to be made - difficult in terms of political choices, in terms of resource allocation, and also difficult in terms of looking within ourselves as Iowans and asking some critical questions about whether or not we are doing as good a job as we need to do. It's been an extraordinary process, and I salute them for their work. They will be making their final report the latter part of this month.

In conclusion, I want you to know that the work you do is extraordinarily important. I want you to also know that you live in a great state - a state that has unlimited potential; a state where the American Dream (this concept where if you work hard enough and think big enough, you can actually achieve your goals) is still alive and well.

As an example, I've been telling young people all across the state the story of Kurt Warner. It's the story of a young man who dreamed he wanted to be an NFL football player. He had the opportunity to realize his dream because another Iowan, Jim Foster, invented a game called arena football and located one of the franchises here in Iowa. He remembered that young person from Cedar Falls, gave him the chance to be the quarterback of his team, and designed the game in such a way that the quarterback actually had to be a little quicker than traditional NFL quarterbacks in reading defenses. Kurt succeeded, went on to the World Football League in Europe and succeeded there, and got a chance to play for the St. Louis Rams.

In most cases that's where the dream would end because the person would have accomplished the goal of actually being on a NFL football team, but Kurt Warner was raised in our state. In our state we encourage young people to dream big dreams, and we encourage them to take risks. Kurt not only wanted to be on the team, he actually wanted to play. He got his chance when the first-string quarterback got hurt. When he trotted onto the field, not very many people thought Kurt Warner would be successful because, after all, he had very limited experience in the National Football League. But again, he was an Iowan; he was raised in a family and in a community where it was O.K. to take a risk and where it was O.K. to fail. Because you could come home, and somebody would take care of you, somebody would put their arm around you and say it's all right - you can learn from your failure, and the next time you will succeed. Because he had that strong foundation in this very special place, he went out confident that he could make a difference, and indeed he did. He won the NFL's most valuable player award and was named the MVP in the Super Bowl, sort of a storybook finish to a wonderful season. But here's what's really important about that story, and this is what I want to leave with you.

There are literally thousands, and I do not exaggerate, there are literally thousands of Kurt Warners in this state. Now they might not want to be NFL football players. Their dream may be to be a teacher or an environmental scientist; they may want to be a lawyer, a doctor, a farmer, a nurse, a machinist, or whatever - but they have that dream. Our job as adults, as educators, as people in conservation, as people in farm programs, as people in government -- our job is to create the kind of state that enables them to dream those dreams and to realize those dreams. Part of that role is having a healthy respect and understanding for the importance and significance of natural resources. That understanding is why some of the most important people in this state, and some of the most important people to the future of this state, are in this room today and why what you will do today is extremely important. So I thank you for being here, and I appreciate your interest in making this state stronger and better. Thank you very much.

State Agencies' Vision for Environmental Education

Patti Judge, Department of Agriculture and Land Stewardship

“We can no longer build fences around agencies - it doesn't work. It didn't work very well in the past, and it's not going to work in the future in a climate of limited resources. It is absolutely essential that we knock down those fences and that we develop collaborative efforts between our agencies.”

Because of the place that agriculture holds in Iowa, one of the things I think is overlooked or easily forgotten is the Department of Agriculture and Land Stewardship. We take very, very seriously the portion of our charge by Iowa state government - the charge to protect the land. We have a great team that works on that, and we are proud of what they do.

There has been some work done on the issue of environmental education in Iowa. The environmental issues before us today, especially those issues that involve agriculture, beg answers; and those answers need to come quickly. We now have something around 150 streams and rivers in Iowa that have been placed on an impaired water list by EPA. On Wednesday Jim Gulliford, the Land Stewardship Division director, and I are going to St. Louis where I am a member of a task force on the issue of hypoxia in the Gulf of Mexico. That dead zone in the Gulf of Mexico is attributed to agriculture in Iowa. It is a very serious situation that we have to answer. We have to be part of education efforts. Those of us involved in production agriculture do not have the luxury of ignoring these issues. We need to be there, and we need to be involved. That's a charge that I have given the Department of Agriculture and Land Stewardship.

Our money is very limited, and we try not to waste money so we partner, whenever we can, with private education – DNR, Iowa State University Extension. I think that we're doing that fairly successfully. One of the fun things that we're doing at the State Fair is a computer game called Conservation Challenge. This game is geared to grade school children, and it is lots of fun. I would challenge any of you to stop by our booth this summer and take the challenge because you might find out that some of those kids could beat you. One of my staff members found that out when he was playing the game with a couple of third grade students. It is a great computer tool, and we will be using it at State Fair for anybody who wants to participate. We'll have a little prize of some kind to sweeten the pot to try and get the kids involved.

Each year we sponsor a youth institute called the Iowa Agricultural Youth Institute at Iowa State University, and we also partner with Iowa State Extension on that. We have always included an environmental education component, and it is very important that we do so. There is always the question about our role in efforts with children and whether we ought to be spending a lot of resources there. We try to do what we can.

I want to mention one of the things we are doing with adults because it is so special. As part of the Governor's initiative we were able this year to get funding for an integrated farm and livestock management demonstration program. We had this back in the 80's, and then we got into the farm crisis and funding dropped off. We want to get that back up and going and have the money to do that in partnership with Iowa State University Extension. We really want to make a demonstration project that will show the effectiveness and adaptability of agricultural systems for pesticide and nutrient management, soil and water conservation, and erosion prevention practices. So this is a very timely issue for us and one that we are eager to undertake.

One of the problems with this kind of a venture is the way that funding comes down. The legislature passes in April, and we get the money in July. Well, if you are going to do a demonstration project on a farm, it is a little hard to start planting in July. We have to decide how to make this work and make this something other than one more farm demonstration plot. We will start out with a series of focus groups

and bring in agricultural groups and leaders and talk about what they think needs to be involved. We will be doing that in August and September. Then we are going to have an advisory group get together and make some analysis. In October and November we will select demonstration concepts and sites. In December and January we will hand our report to the legislature. Hopefully they will go with us again, and we can carry some of the money over and be in a little better position.

One other thing quickly that I want to mention in my time is another program that we are very excited about. I know that Jim Gillespie is here, and he will probably talk more with you about all these programs; but we are heavily involved in community-based watershed programs. It is very exciting work that is in partnership with community organizations, Iowa State, and DNR. Both the demonstration project and the watershed project are in partnership with the Department of Natural Resources.

In state government we can no longer build fences around agencies - it doesn't work. It didn't work very well in the past, and it's not going to work in the future in a climate of limited resources. It is absolutely essential that we knock down those fences and that we develop collaborative efforts between our agencies. I am totally committed to that effort, and I know that the other speakers that you are going to hear this morning are also committed.

We are looking to you for guidance and leadership, and hopefully we can develop a topnotch environmental educational program between our various agencies.

Ted Stilwill, Department of Education

“How well are we doing in Iowa in terms of environmental education, and how would we know if we were passing that test? The difference, before everyone at this conference, is your commitment and your interest to increase the environmental literacy of the young people and the people in Iowa generally. How would we know if we have accomplished that goal? We need to think about that question, and we need to share some common indicators and common answers to that question.”

It is a pleasure to be here, and I'm going to pick up exactly where Secretary Judge left off. There are few challenges facing the state of Iowa that can be met by any one department in state government or by state government alone. Most people believe the greatest challenging facing education in Iowa is helping young people to read and achieve a level of basic skills. I want to tell you that until Iowa gets a better childcare system, my life is going to be miserable in terms of getting first and second grade kids the ability to read. We're not going to have a better childcare system until we have a stronger economy that can nurture 2.8 million people. We're not going to have a stronger economy until we can bring folks to Iowa and assure them a quality of life as well as economic opportunity.

I'll tell you a little secret about myself that a lot of people don't know. When I went to college, I did not get an undergraduate degree in education. I got into a program at Drake University called the "The Teacher Corp" where I learned how to be a teacher and get a teaching license all in one fell swoop. My thesis for that master's degree, another nifty outcome of that program, was about environmental education in Iowa. It was based on the premise that no matter where you are in Iowa you're not going to be more than 20 or 25 miles from some kind of stream, lake, or water that kids can go in, mess with, learn from, and to be part of that environment and learn to appreciate it. Now that was a few years ago. Most of those streams or bodies of water are still there. In addition to what we know about them, we're beginning to learn again some things about the quality of that water and how important it is to us. We know that those times are learning opportunities for kids.

Let me tell you another thing that most people don't know about me or understand about the work of the Department of Education. My business card says that the purpose of our department is to help communities meet the learning needs of their children and adults. It doesn't say anything about regulating our way into reading excellence or excellence in environmental education. It says that my job is to help communities, just as Secretary Judge said and just as Stan said. It's the way things have

worked in Iowa for a very long time, and they work pretty well. People do learn from their neighbors, and neighbors help each other and help each other learn, not just build things. It works really well in Iowa; but it means that my job in my department, and I think the job of others who are represented here, is to help folks at the community level. Now there certainly isn't a better example of that than Iowa State Extension, but it means that our strategies have to be a little different. For example, we have to give people models of things that work. About a year ago our department put together a model set of strategies and content on environmental education. We didn't require it and didn't go out and pound people on the head and say, "you know, you have to use this tomorrow afternoon." However, the model is there, and its readership has been good. People who have looked at it, such as teachers in both private and public schools, have told me they think it's a good resource. Those comments let us know that we're doing our job, but it's not enough. We have to find ways to work together in Iowa to determine the degree to which a local community decides that something is important and that kids learn it. We have also found ways to think about making decisions and about what kids are going to learn and what's really important to kids and families. But are there better ways and more effective ways to really provide for that instructional learning opportunity?

Then we have to go a third step. We absolutely have to go a third step and figure out how well we're doing. I think that's a question we all have to ask ourselves because I don't think there's a perfect answer to this situation. How well are we doing in Iowa in terms of environmental education, and how would we know if we were passing that test? The difference, before everyone at this conference, is your commitment and your interest to increase the environmental literacy of the young people and the people in Iowa generally. How would we know if we have accomplished that goal? We need to think about that question, and we need to share some common indicators and common answers to that question.

Let me go back and suggest a little bit in terms of things you would like young people in particular to learn, not just models for content. Probably the main thing that I want to share with you today is the need to look at the opportunities for kids to learn about the environment, to become literate about the basics of the environment, and to learn responsibility for stewardship of that environment. Those opportunities come through every thing that kids learn in school. For a long time in education, we taught math at 9 o'clock, science at 10:30 and so on down the line. What we're learning very slowly, because we still teach math at 9 o'clock, is that we divide the content areas and we divide the subject areas pretty well. We're learning that amazingly enough; and now we actually, believe it or not, have research to support this fact - that people in the real world don't do math at 9 o'clock and science later. In fact, we're kind of asked to do those things together. We're also expected to integrate the communication skills that we've learned, in terms of writing and speaking or listening, into that same holistic performance, and we do it every day. In the four meetings that Secretary Judge attended today, she probably didn't sort content - you know, government during this period of time, and I'm going to do communication skills during this period of time. We know that would be a foolish way for us to look at our daily lives. I think we have to help kids see how education, the environment, and quality of life have to be integrated into how we learn about science and mathematics, government, and communication skills. More than ever I think that we need to help young people begin to learn what I think a lot of us in this room already believe. Young people need to have some values and some issues of character if they're going to go forward and exercise the stewardship responsibility we would like them to exercise regarding the land, air, water, and the other natural resources that are rich in Iowa.

How could we teach kids, and how could we help them learn about those concepts? You know, one of the things that has become sort of a trendy idea, particularly in secondary schools but also in elementary and middle schools, is something called "service learning." It's a great opportunity, first of all, for kids to be responsible and to learn how to take responsibility for doing things in their community. It's about giving back to their community. You may have heard about some schools that have graduation requirements that include a certain number of hours of community service. This aspect is sort of a positive side of community service as opposed to the one that comes out of the judicial system, but it's a really neat thing for kids. Kids who are very idealistic and who want to make a difference have the chance to do it. At the same time, they have a chance to demonstrate what they've learned in math, science, and communication skills by taking those skills on the road in their own community where they can make a difference. What a great place to apply all those skills! Think about teaching kids about the environment and environmental literacy through each of those content areas and then giving them the

chance to apply those skills. As all of us knew when we were about 6, and what educational research has now confirmed nicely, is that when you apply things that you've learned they have a little tendency to stick with you a little longer. Even more importantly, they stick with you and then you can transfer that learning into other kinds of situations aside from the exercises in the back of the textbook. That's what we're really looking for, stuff connected with what communities want kids to learn and what parents want kids to learn. It fits with the hopes and dreams for our young people, and it fits with the hopes and dreams for our communities and our state. If we could do that, if we can pull all those kids together into a more integrated performance, just as we would like for our kids to be able to do and we would like to be able to do on a daily basis, then we could make a tremendous difference. However, it requires a degree of collaboration we're not used to. It's much more convenient to talk about math at math content times and environmental education in environmental education content times. As a department, we don't have the luxury of doing that anymore. We don't have enough people, and we don't have enough energy. In order to help communities, we know that we're going to have to work together in those content areas. The best place to apply math concepts is in science. If you want to apply both math and science and include communication skills, character, and responsibility - what better place to apply them than in environmental education? We have an incredible opportunity. If we wait for all those content areas to come to us and if we wait to create unique strategies and opportunities that only deal with environmental education, then the size of this group won't get much larger. However, if we realize the opportunity we have to literally infiltrate all the rest of those experiences and content areas in classrooms and things that happen outside the classrooms (including recreational activities and fine art activities) and if we look at that opportunity as a different kind of game strategy, then I think that the opportunities are boundless. The opportunity for us to create a quality of life for people in Iowa that is second to none is very good. Thanks for the chance to share some thoughts with you.

Sherry Timmins, Department of Economic Development

“Now reaching our goal of having an informed citizenry who values and supports a stable economy and environment is going to require building our state’s capacity... It means that we are going to have to work at getting organized, assessing our needs, involving stakeholders, and developing approaches which are truly enterprise-wide initiatives.”

C.J. Niles is not able to be with us today because she is representing Iowa at the Mid-American Council out-of-state. On behalf of C.J. and the Department of Economic Development, I want to reiterate our support of environmentally literate citizenry.

For the sake of our discussion, I would like to outline the four hallmark characteristics of such a citizenry. First, we recognize that a prosperous economy and environment are interrelated and mutually dependent upon one another.

Second, I see establishing Iowa as a state that provides an opportunity to support our citizens to be actively engaged and involved in their communities. The environment is going to be more and more critical in recruiting and retaining a talented and diverse work force.

Third, we understand that outreach, information, communication and partnerships between business and industry, citizens, and regulators are going to be crucial for our goal of making Iowa the food capital of the world. These efforts are going to be necessary for understanding each other's objectives, working through our differences, and reaching consensus - all of which is necessary in expanding our capacity to be environmental stewards.

And fourth, we realize that learning how to make more productive use of our natural resources - energy, and material and land - will not only have a distinct impact on our environment but upon Iowa's ability to compete globally.

Now reaching our goal of having an informed citizenry who values and supports a stable economy and environment is going to require building our state's capacity. I know that our first two speakers have

already tackled that, but it is going to take team effort and some serious hard work. It means that we are going to have to work at getting organized, assessing our needs, involving stakeholders, and developing approaches that are truly enterprise-wide initiatives. This goal means that we need to build bridges to each other and to our organizations and at some point rethink how we provide our services and support each other's mutual missions. When we are talking about the environment, it's about productivity and about the ability for Iowa to compete in the global economy.

Not only is the Department of Economic Development going to be well poised to assist with this effort, but for the past four years we have been working closely with the Iowa Department of Natural Resources, University of Northern Iowa, and several community colleges to support the efforts of "Recycle Iowa." The mission of "Recycle Iowa" is to conserve our natural resources which supports economic development to build the market demand and resource cycle commodities. "Recycle Iowa" achieves this in various ways.

First, the Iowa Waste Exchange works with companies to identify how one company's byproducts can become another company's input to their manufacturing process. This effort conserves natural resources and saves businesses the cost of sending the waste to the landfill and paying costly disposal fees. Since the inception of this program, over \$11.5 million in disposal costs have been avoided, and 450,000 tons have not been sent to the landfill.

We also work with businesses to use recycled commodities in their manufacturing processes. Partnership with the University of Northern Iowa and a testing service provide an opportunity for mid- and small-sized companies to test the viability of using recycled content in their manufacturing process. Through the "Buy Recycled Iowa" program, we provide information on recycled products to businesses - helping to build awareness and sound sustainable business practices.

How can we further assist in building environmental awareness and an informed citizenry? Well, we can be the best sales people we can be for Iowa's natural resources and recreation resources. We can continue to provide information and outreach to businesses to increase compliance of new regulations. I believe that we can offer to do more. We can facilitate cross department teams to provide regulatory permitting services and technical assistance for assuring all alternatives to reduce regulatory compliance burden and to reduce emissions.

We can support partnerships in initiatives that emphasize the beginning rather than the end of pipeline thinking known as transfer technology which emphasizes pollution prevention, waste reduction, and recycling.

We can also work more closely with the Department of Natural Resources on building Iowa as the center for renewable energy industry. We can encourage businesses to act as mentors to other businesses that support close-the-loop buying.

We can also encourage different approaches to education such as engaging businesses to act as mentors for schools so students can learn about the real-world applications of energy efficiency as an economic and environmental productivity indicator. We can help students to understand that increasing the level of efficiency of how we use our materials not only means sending less waste to the landfill but also to understand the impact that putting the product together in the first place has on the natural resources.

These are only a few of our ideas in reaching our goal of an environmentally informed citizenry. I want to thank you again for having an opportunity as we consider our upstream planning effect. Looking upstream and considering the impact our actions today will have on my children, your children, and Iowa's future generations is crucial for managing the down stream impact of our planning and our ability to leave a legacy for tomorrow's generations.

Lyle Asell, Department of Natural Resources

“I think it is important to look and evaluate ourselves and see how we are coming. Are we matching today’s program needs with today’s society or are we carrying out yesterday’s?”

I want to speak about challenges before us today as we look at environmental education. Right now it seems like it is very easy for people to be reactive on environmental issues, but it is difficult to be proactive on these issues. I think that is the challenge. I have been around environmental issues for a good long time, and it is imperative that people become more and more informed on environmental issues in their community, their county, and their state. So from an interim director’s stand point, I will pursue it for the DNR.

Our role is one of collaboration and coordination with other units of government, private groups, and environmental organizations. We have some strong educational programs available such as the Springbrook Education Center and human resources such as six environmental educators in the DNR.

We work with a large variety of groups, not only the county conservation boards and other agencies but other wildlife agencies, environmental organizations, and groups.

We can always improve these relationships and plan to be there for collaboration and cooperation. One of the things that is always a challenge is how do we connect the dots? How do we pull everything together? It is essential that we look at the educational efforts, global community, and public communication as we look at the huge amount of individual initiatives that can take place.

Where is this all taking us? What is our central direction? I do think it’s important to connect the dots. I think it is important to look and evaluate ourselves and see how we are doing. Are we carrying out today’s program needs with today’s society, or are we carrying out yesterday’s? As society changes in rural Iowa, it is a serious question.

There are a great number of cooperative efforts for the state of Iowa, and one of the most recent ones is Earth Year 2000. The purpose of this effort was to encourage Iowans to become involved in their environmental issues locally. Also, we published “Portrait of the Land,” and we are now working on a conservation plan that is the follow-up of the one completed in the 30’s.

Earth Year 2000 has been quite successful, and we have 60% of Iowa communities (over 550) doing something. The goal was to get them involved in some kind of environmental activity at the local level. We will follow this up with a volunteer program called “Keepers of the Land.” This volunteer program will be an opportunity to be proactive and use a hands-on approach to environmental improvement, but it also carries an environmental education component as well. I encourage you to get involved.

We know that Earth Year 2000 has worked very well. One example is the Dubuque coordinator, Paul Schultz, who asked students to go door-to-door. They talked to 486 homeowners (about 40% of the people) about recycling and then evaluated efforts. Did it work? It increased recycling by 13.3%, which was measured in the reduction of waste hauling. That is a fairly significant decrease of waste hauling for a relatively small amount of effort in terms of dollars and cents. It is going to amount to thousands of dollars, so again it shows that environmental education and environmental improvement do not have to cost a lot of money.

The DNR has been committed to environmental education for a long time with money and staff and willingness to collaborate. We are committed to improving environmental understanding. The environment is a complex issue. You have to consider the ecological impacts and economic impacts as well, so tying them together is very difficult.

Part of this can be done through activities such as the citizen water-monitoring project that we got going. We can use it to tie in water quality impacts on the landscape and environmental education.

We are definitely committed to the planning process and must remain focused on the objective of what we want to get accomplished and not wander off into hinterland objectives. We must check back to see if we are carrying out our main objective. Is this getting us any closer to our objective?

I think we have to do something that is difficult. We have to take three small breaths. Anytime that you make a change, it is difficult. As Iowa changes, we have to change; and we have to take those risks to make progress. So, we at the DNR are supporters, but we have limited budgets and projects like everyone else does in protecting the land in ways that we can.

Stan Johnson, Iowa State University Extension

“In the past year we have trained about 1600 teachers on curriculum that helps students become more aware of the environment and their role and our role in the environment. Through this training we expect to reach about 30,000 students in Iowa.”

At various points through the program I will interject some things that tell you something about our vision for environmental education at Iowa State University Extension. The first of those items will be to talk about the focus that we have had on youth. In the past year we have trained about 1600 teachers on curriculum that helps students become more aware of the environment and their role and our role in the environment. Through this training we expect to reach about 30,000 students in Iowa. Our 4-H and Youth Program has about 120,000 young people in Iowa, which is somewhere between a third and a fourth of all the young people between 7 and 17 years old in Iowa. We are pleased that we have this level of participation, and we are also anxious to help them be good stewards of the Iowa environment as they grow and become citizens in Iowa. One of the new programs that we did this year is something called “Growing in the Garden” which is a program for K-3 students. This program lets young people understand things about the environment, lets them understand things about how plants grow, and how they interact with their environment. It also teaches them about how they are interacting with their environment. So this is one education program that I will introduce as the first snippet of our extension programs.

At Iowa State University we are very proud of the collaboration that is in place between the state agencies and the university. We are looking forward to participating in a new effort that will involve demonstrations. At Extension we do a lot of surveys about how people learn things. One of the things that we discover is that farmers, in particular, will tell you that the way they learn things is from their neighbors. Demonstration projects are an extremely effective way of providing education that fits to the local conditions and where the farmers and agriculturalists themselves are participants.

Extending cooperation in education programs through extension has been invaluable. Programs that I talked about earlier in a different arena would not have been the right things to include in school. The fact that we can work with the Department of Education to generate experiential and service-learning opportunities for students connects them with the community and connects them with the future in ways that help them learn. The experience also helps them appreciate the communities from which they come.

I can't resist the opportunity to comment on economic development in environment. We know a lot about what causes areas to develop. One of the things that cause areas to develop is that they are places where people want to live. In Extension we call this being place competitive. This topic concerns an easy regulatory environment but also has to do with managing the environment in such a way that it generates amenities that people find are attractive. It also has to do with the fact that people like to participate. No one likes to live in a community where there isn't an opportunity to become involved in the community. Environmental education and environmental management fit very nicely with ideas of how Iowa can be a more competitive place - both from the point of view of making our communities attractive and making our state attractive as a place to live and also from the point of view of activities that many people can contribute in what is good for them and good for the future of their community.

The theme of volunteerism is very important, I think, for all the agencies here. There's a huge amount of energy to be harnessed. At Extension we have master gardener programs, master conservation programs, master woodland manager programs, watershed projects integrated as management programs, nutrient management programs and other kinds of programs that provide education but also encourage volunteer efforts of improving the environment and educating our communities. I want to thank the panel members for being here – they are busy people. I think you also see that they are people who are committed to environmental education. We talked a lot about the challenges for Iowa, challenges that are also opportunities. We also talked about cooperation and collaboration. The state agencies that are represented here are largely responsible for the public interest that relates to stewardship of the environment in Iowa. Listen to what we say and come forward and hold us to our word about collaboration, cooperation, including volunteers, and making Iowa a place with a great future and solid environment. Thank you.

Governor's Conference 2000

Goals and Action Steps

One set of Action Steps were developed to meet both Goals 1 & 2

- 1. We have a citizenry that is environmentally literate, who understands:**
 - **The basic principles of conservation, ecology, sociology, and economics**
 - **The interconnections of all parts of the environment**
 - **The environmental and social costs and benefits of consumer decisions**
 - **The sources of energy and the relationship between energy use and lifestyle**
 - **The implications of economic and human populations trends**
 - **The impacts of personal life styles and personal choices**
 - **The importance of acting in a sustainable manner to protect the quality and diversity of the natural world**

- 2. Educational opportunities exist at every level to foster a relationship with Iowa's land and water and to help Iowans know that a healthy environment, a healthy economy, and a healthy populace are all interconnected.**

Action Steps

1. By 2002, develop a visual/thematic identity to band organizations and citizens behind the "Iowa Dream", as discussed in the Governor's remarks.
(See Region 7 Leadership Clinic Action Step 1 in Appendix 1 page 3 for the refined action steps to meet this goal.)

2. By 2003 at least one community per county will have completed community needs assessment.
This assessment will include support of stewardship learning opportunities.
Who: Department of Education, CCB, DNR, SWCD/watershed groups, ISU Extension & community leaders
(E.g., Chamber, local government, local service organizations, school districts, commodity groups, local non-profits, leadership groups)
Note: Make special effort to include under-represented populations (e.g., at-risk youth, immigrants, young/single-supported families, seniors)
Resources needed:
Local training/presentation/materials, staff, dollars, and time

3. By 2005, at least one community/county execute the identified stewardship learning project from the completed community needs assessment.

4. By 2001, develop a training program for community groups to serve as both proactive and reactive resource teams to capitalize on teachable moments when communities band around a "hot" issue and/or general community interest in improved quality of life.
(See Region 7 Leadership Clinic Action Step 3 in Appendix 1 page 4 for the refined action steps to meet this goal.)

5. By 2005, train at least one community group per county as a resource team as outlined above.
(See Region 7 Leadership Clinic Action Step 3 in Appendix 1 page 5 for the refined action steps to meet this goal.)

3. Iowa Citizens value wild places and wild things on both public and private lands, have the opportunity to experience the thrill of discovery in those places, and understand the role of management in maintaining and enhancing those lands.

1. By 2004, Local DNR biologists and botanists, CCB people, and NRCS will partner to complete a natural area inventory for each Iowa county and then distribute the inventory throughout the state. Iowa universities will provide assistance.

Resources needed:

More staff and financial resources will be needed.

2. By 2002, 50% of Iowa schools will include an environmental site plan within their school improvement plan.

Resources needed:

ICEC, IDNR, ISU, Extension, local planners, AEA's, DED, and DOE will assist schools in developing this plan. Good school models will be identified.

Revision of goal statement of action step at Region 7 leadership clinic: Encourage schools to include green building principles, outdoor multidisciplinary curricula, energy efficiency, and community outreach in their school improvement plans.

(See Region 7 Leadership Clinic Action Step 5 in Appendix 1 pages 6-7 for the refined action steps to meet this goal.)

3. By 2005, a residential and community service experience is implemented in secondary schools.

(See Region 7 Leadership Clinic Action Step 2 in Appendix 1 page 5 for the refined action steps to meet this goal.)

4. By 2003, regional environmental outreach educators provide local information and educational materials about soil, air, and habitat resources to local communities through e-technology and personal contact.

5. By 2005, a comprehensive curriculum exists to educate Iowans about local soil, water, air, and habitat.

Resources needed:

Utilize surveys and contract with curriculum writers and training facilitators.
Increase staff and funding to complete project

6. By 2002, every agency/organization with land management resources will host a minimum of one regional public management field day/year. This field day could be hosted by AEA's, CCB's, ISU Extension, and/or REAP Alliance members.

4. Every Iowan understands the current status of air, water, soil, and overall environmental quality and has the ability to participate in efforts to enhance it.

1. By 2003, regional environmental outreach educators provide local information and educational materials about soil, air, and habitat resources to local communities through e-technology and personal contact.

2. By 2002, The DNR, with cooperation of volunteer/ citizen monitoring, will have produced and successfully marketed Iowa's Environmental Report Card. Environmental components will include air, water, biodiversity, habitat, and other related environmental issues.

Resources needed:

Agency cooperation/clearinghouse of data compiled, published, and promoted.

3. By 2005, a comprehensive curriculum exists to educate Iowans about local soil, water, air, and habitat.

Resources needed:

Utilize surveys and contract with curriculum writers and training facilitators.
Increase staff and funding to complete project

5. All Iowans have access to timely, up-to-date useable information that is accurate and helps them make intelligent decisions regarding environmental issues.

1. By 2001, an Environmental Education Resource Committee will be formed to identify existing resources and areas of need for future environmental education materials.

The committee will appoint technical groups to assist in the development and review of course materials. They will organize the information into a useable form for environmental educators.

The advisory committee would include a small group of educational interests to include representatives from business and industry, non-formal education, formal educators, and regulatory agencies. ICEC will spearhead the formation (not oversight) of this group.

2. By 2001, an Environmental Resource Technical Advisory Sub-Committee will be formed. That sub-committee will be responsible for recommending existing resources and developing new materials.

The advisory sub-committee representation will include:

Association of Business and Industry
Iowa Society of Solid Waste Operators
Water and Wastewater Operators
Iowa Agriculture Awareness Coalition
National Soil Tilth Laboratory
Iowa Energy Center
Area Education Agencies
Iowa State University Extension
Secondary Education Institutions
EPA/DNR (i.e., Geological Survey, Wildlife, Waste Reduction, Air Quality – any research-generating divisions within the DNR)
Non-profit (research-generating) organizations

6. There is a statewide, comprehensive approach to environmental education, which focuses on individual responsibility for sustaining natural systems.

1. (No date) Complete a pre-action survey done to assess the general knowledge via a stratified random sample of population.

Resources needed:

unbiased third party to conduct the survey
funding

2. (No date) Develop opportunities/requirements for Environmental Education Service Learning

Resources needed:

Use the existing resources – service learning coupled with summer school, community education, YMCA, girl scouts, boy scouts, college for kids, after school programs, park and recreation programs, family day care providers, etc.

3. (No date) Develop a graduation requirement to include environmental education topics.

4. (No date) Develop comprehensive Environmental Education Curriculum/Benchmarks for each grade level.
5. (No date) Develop a Post Survey to be administered by DOE/School District

7. School requirements include a comprehensive environmental education component.

New Wording For Goal # 7

Comprehensive School Improvement Plans will include required EE components at the elementary, middle, and high school levels.

1. By the fall of 2002, ICEC will work with legislators to introduce legislation to require districts to include the above changes through lobbying measures, legislative discussions, and planning.
2. By 2002, The Department of Education EE consultant, Area Education Agencies, and local school curriculum coordinator will provide examples of processes for integrating and creating grade level benchmarks.

(See Region 7 Leadership Clinic Action Step 5 in Appendix 1 pages 5-6 for the refined action steps to meet this goal.)

8. There is opportunity for pre-service educators to receive training in basic environmental education programs and principles at every teaching training institution in Iowa.

1. (no date) An EE endorsement (equivalent to reading endorsement) exists for formal educators developed by DOE, DNR, ICEC, IAN, teacher training institutions and others.

Resources needed:

Committee to examine the steps needed to include an EE endorsement into the licensing requirements.

Licensing done by a separate Board housed in the Grimes Building, separate from the DE.

(See Region 7 Leadership Clinic Action Step 7a in Appendix 1 page 7 for the refined action steps to meet this goal.)

9. Every pre-K-12 child has hands-on experience with trained environmental educators, both in and out of the classroom, on an annual basis.

1. By 2001, there will be an updated EE resource directory accessible to every teacher, conservation organization, and EE Educator.
2. By 2001, implement "Models and Approaches for EE in Iowa" as the current recognized state guideline for hands-on experiences at every grade level.
3. By 2002, there will be an EE endorsement program for *formal educators* (equivalent to a reading endorsement) developed by DOE, IDNR, ICEC, IAN, teacher training institutions, and other relevant agencies.

(See Region 7 Leadership Clinic Action Step 7a in Appendix 1 page 7 for the refined action steps to meet this goal.)

4. By 2002, there will be an EE endorsement program for *nonformal educators* (equivalent to a reading endorsement) developed by DOE, IDNR, ICEC, IAN, teacher training institutions and other relevant agencies.

(See Region 7 Leadership Clinic Action Step 7b in Appendix 1 page 7-9 for the action steps to reach this goal)

5. By 2003 the directory will include a list of formal educators who have the EE endorsement, and non-formal certified instructors.

Resources needed:

ISU Extension and graduate students

Funding

Mechanism to update hardcopy every 2 years and Internet every 6 months.

10. There is an opportunity for every 5th grade student to participate in a three-day (or more) residential environmental education experience.

1. By 2002, develop state program standards for residential EE in Iowa.

(Rewrote goal) By 2005, a state law will be passed to provide incentives for every student to participate in a 3-5 day residential environmental education experience for 4th through 6th grade. [grade level concerns still exist here]

(See Region 7 Leadership Clinic Action Step 6 in appendix 1 page 6-7 for the action steps to reach this goal.)

Conference Closing

Dan Cohen, ICEC Chair

I will begin with a quote from Wendell Berry – a farmer, conservationist, and writer whose experience is in a culture similar to the agriculturally-based culture of Iowa. He said, “A culture that does not measure itself by nature, by an understanding of its debts to nature, becomes destructive of nature, and thus of itself.”

We know this to be true – it is in our experience.

We all have witnessed the destruction of nature. We have seen the loss of natural areas; the pollution of water, air, and land; and the results it has had on our culture. We also have witnessed the flip side – the reclamation of nature and the benefits of working with an understanding of nature and the environment.

So, we know that what Wendell Berry has said is true. However, we have also heard from the Governor that only eight percent of Iowans list the environment as a determining factor when voting. Let’s also look at another figure shown to us this morning. According to the Roper Poll, 95 percent of Americans support environmental education. These statements and figures indicate a unique ability of environmental education and the incredible need for it to reach all Iowans.

Unique ability of EE in Iowa – a personal stake and an incredible need

There is a unique ability of environmental education in Iowa. Education about the environment is different from other fields of education because it is in the personal experience of each citizen, which makes each of us a student as well as a teacher. We have a personal stake in educating ourselves and others about the air we breathe, the water we drink, the soils in which we grow our foods, and the natural communities that maintain and define the environment.

I also believe there is a unique need for environmental education in Iowa. Compared to other states, Iowa depends more strongly on an environmentally literate citizenry. In Iowa, private citizens own and manage both the natural and human landscapes, with only two percent of the land in public ownership. The process of environmental education has the unique ability to foster environmental literacy and private landowner responsibility.

The Governor has set his sights on a vision for 2010. We have all seen the natural resources goals outlined under the Governor’s plan, but the Governor’s vision centers on more than just goals for natural resources. In addition to natural resources, there are Vision 2010 goals for community, people, economics, and development. Environmental education addresses, and must increasingly address, all these vision areas.

Communities

Environmental education benefits communities by making better citizens, better neighbors, and advancing excellence in education. We heard from Iowa Secretary of Agriculture Patty Judge and others that Iowans communicate and learn from their neighbors. Take a look at the first goal from this conference, carefully reading each bulleted item in the definition of environmental literacy. Wouldn’t you like to have such a person as a neighbor?

Educated communities are reclaiming the environment. Wetlands are being restored as a means of protecting and cleansing water. Prairies are being reconstructed. Volunteers are monitoring the water. These things are happening as a result of environmental education – people who realize the benefits of a quality environment.

People

We each have a personal stake in environmental education. This involvement is apparent as EE links environmental health to human health, empowers people to care for themselves and others, and reaches out to all Iowans.

People must come to understand the connections between environment, economics, and health - and they must feel the ability to take action. Environmental education not only educates, but also empowers people and again, as the Governor mentioned, encourages them to be a part of our future.

Natural Resources

Environmental education is the means by which people make informed decisions concerning natural resources. It is also the means by which people come to place a value on wild things and develop the conservation ethic so often referred to throughout this conference. Let me once again repeat the importance of these values and ethics in a state dominated by private landowners.

Economics and Development

One of our greatest challenges in the coming decade is to help Iowans realize the economic benefits of a quality environment. Economics and environment are strongly connected through the maintenance of natural resources, energy production, and environmental health. During this conference we have heard the goal of sustainability in agriculture and business that can be largely accomplished through environmental education. The Governor commented on Smart Use Communities, which incorporates a more sustainable plan for development. Just a few weeks ago, I received a phone call from a business owner interested in locating his business in our county. He was calling to get information on our system of trails, parks, and opportunities for outdoor recreation. Businesses know that employees who understand and appreciate the outdoors and outdoor recreation are healthier, happier, and more likely to stay.

Excellence in Education

Another great challenge for each of us is to be advocates and supporters of excellence in education. We must demand that education be equitable and comprehensive – realizing the many opportunities for education to occur in the classroom, outdoors, in homes, and within businesses. Wherever possible, we must promote experiences – the expanding of minds through personal experience in the outdoors. Educators need and deserve the best training and support we can provide.

This conference addresses how we will realize the unique importance of environmental education in Iowa. The goals and action steps you have worked on will impact the agenda for the coming decade. As I look around this room, I see a gathering of people with diverse backgrounds - school teachers, naturalists, administrators, people from business, and other citizens of Iowa. I will close my comments with a quote from Rachel Carson who understood well that each of us, regardless of profession, has the potential to impact education:

“If you love nature and have living and accurate knowledge of some small part of it, teach! Do not fear your scientific reputation if you feel the call to teach. Your reputation is not to be made as a geologist or zoologist or botanist, but as a leader. When beginning to teach about birds, think more of the pupil than of ornithology. The pupil’s mind is to be expanded; the field of ornithology is not to be extended; the science will take care of itself. Remember that the spirit is more important than information.”

Thanks again for being a part of this working conference and giving Iowa a direction for environmental education in the coming decade.

Appendices



TEAM IOWA
Region 7 EE
Leadership Clinic
July 26-28, 2000
Lied Conf. Center
Nebraska City, NE

Iowa Conservation Education Council

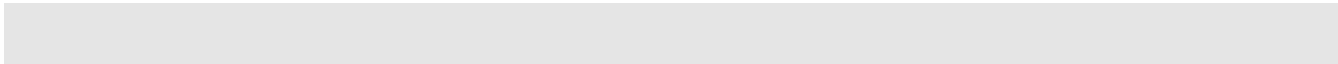
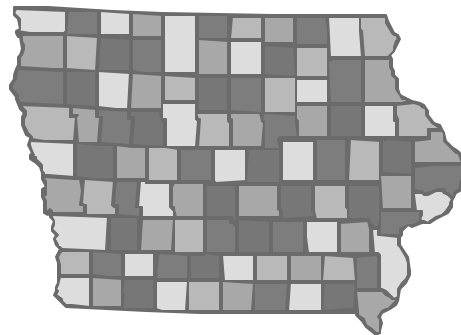
TEAM IOWA EE

Advancement Action

Steps



Iowa's opportunity to increase our environmental education capacity at the state and regional level through organization and focus...



Region 7 EE Leadership Clinic - TEAM IOWA

Iowa's opportunity to increase our environmental education capacity at the state and regional level through organization and focus...

TABLE OF CONTENTS:

Action Step #1 : Develop a visual /thematic identity; “New America/Iowa Dream.”	2
Action Step #2 : Provide stewardship learning opportunities both formal and nonformal.....	2
Action Step #3 : Community training and preparation to be proactive and reactive as hot environmental topics	36
Action Step #4 : Environmental education curricula meets cross-disciplinary benchmarks, needs and is incorporated into standards and benchmarks for all subject area.	36
Revised to read: “ <i>Models and Approaches for Environmental Education in Iowa</i> ” meets cross-disciplinary benchmarks for all public and non-public schools.	36
Action Step #5 : School improvement plans include environmental components such as outdoor classrooms, transdisciplinary curricula, energy efficiency, community outreach, etc.	37
Revised to read: Encourage schools to include in their school improvement plans green building principals, trans-disciplinary curricula, energy efficiency, community outreach, etc.	37
Action Step #6 : There is an opportunity for every Iowa student to participate in a 3-day residential experience at the grades 4 th - 6 th and high school levels.	38
Action Step #7a : An Environmental Education endorsement for formal educators.	6
Action Step #7b : An Environmental Education endorsement for non-formal educators.	7

Leadership Clinic Action Step #1: Develop a visual /thematic identity; “New America/Iowa Dream.” *(Corresponds with combined Goals 1 & 2 Action Steps of Governor’s Conference)*

WHO: The Iowa Conservation Education Council will include organizations and agencies associated with formal and non-formal environmental education in the state and region. Agencies and organizations included in this capacity may include but is not limited to the following: The Iowa Association of Naturalists (IAN), The Iowa Environmental Council (IEC), DNR, The Iowa Department of Economic Development, The Iowa Department of Education, and the Governor’s Office.

Methodology:

- 1) Identify the concepts necessary to illustrate to the public the benefits that environmental education can provide to individual citizens. Examples may include the use of environmental education to help people better understand the intensive interconnectedness that is associated to life more clearly than any other discipline. (A small stone may cause but one ripple, yet this ripple may multiply a thousand times to cause a tidal wave). Environmental education can also provide citizens with a true assessment of environmental costs of items. Environmental education can bring about civic pride and/or help people improve their community health/economy/water quality/air quality/recreation/and local social justice issues. Environmental Education is an excellent tool for community planning and development issues.
- 2) Organize or appoint an ad hoc committee to help identify the EE concept needs. Specifically include individuals outside the “traditional” environmental education spectrum.
- 3) Build coalitions/partnerships and gain support from groups who would utilize common materials/themes or provide monetary assistance.
- 4) Generate funding methods to enable employment of a marketing firm, associated materials, and tools.
- 5) Hire a Marketing Firm
- 6) Distribute resource materials
- 7) Evaluate the campaign...utilizing measurable objectives.

Leadership Clinic Action Step #2: Provide stewardship learning opportunities for both formal and nonformal audiences

WHO: Each federal and Iowa agency with land management responsibilities

Methodology

(By 2001) Will provide at least one public/school service learning project per year (i.e., state forest management, DOT roadside burns, fisheries stream bank stabilization, NRCS buffer strip planting, etc.)

- 1) Encourage participation of state agencies and organizations
- 2) Partner with NRCS district conservationists
- 3) Provide funds and advertising through agencies and organizations
- 4) Provide training assistance (one service learning workshop/yr. ICEC will provide resource list)
- 5) Encourage participation by county conservation boards, other local land managers, and private landowners will be encouraged to participate by providing service learning projects

WHO: Every Iowa high school student

Methodology:

(By 2002) will participate in at least one service-learning project

- 1) Incorporate service learning into the environmental component of school improvement plans
- 2) Provide training assistance to educators on service learning projects and the availability of service projects in Iowa (one service learning workshop/yr. ICEC will provide resource list)
- 3) Promote IOWATER and other ongoing service learning projects available to teachers

WHO: Volunteer organizations, especially those with an interest in conservation or the environment

Methodology

(By 2001) will have information about and access to service learning projects

- 1) Establish communication between a service learning coordinator and various volunteer groups, including NRCS volunteer group Earth Team (Scott Henney) and the DNR's Keepers of the Land group (Diane Ford-Shivers)

Leadership Clinic Action Step #3 : Community training and preparation to be proactive and reactive as hot environmental topics arise. (Corresponds with Goals 1 & 2 Combined Action Steps – Priority 4 of the Governor’s Conference)

WHO: Iowa Conservation Education Council

Methodology

- 1) Anticipate environmental topics where community training would be helpful.
- 2) Propose best management practices for educational strategies to address situations (rationale - common techniques that would apply to any issue, but also some would be content specific).
- 3) Identify audiences, education needed, and knowledge needed.
- 4) Propose advanced materials needed.
- 5) Propose educator roles (Audience-specific presenters)
- 6) Create overall network for accurate information resources
- 7) Create media strategies and develop media packet
- 8) Develop dissemination plan

Leadership Clinic Action Step #4 : Environmental education curricula meets cross-disciplinary benchmarks, needs and is incorporated into standards and benchmarks for all subject area. (Corresponds with action steps in Goals 6 & 7 of Governor’s Conference)

Revised to read: “Models and Approaches for Environmental Education in Iowa” meets cross-disciplinary benchmarks for all public and non-public schools.

WHO: Department of Education

Methodology

- 1) Develop process for integrating environmental education benchmarks in the district is needed.
- 2) Include outdoor classroom, interdisciplinary curricula, energy efficiency and community outreach in the benchmarks chosen for grades K-12.

- 3) Develop/implement a plan to disseminate “*Models and Approaches for Environmental Education in Iowa*” through an in-service program.

Leadership Clinic Action Step #5 : School improvement plans include environmental components such as outdoor classrooms, transdisciplinary curricula, energy efficiency, community outreach, etc. (Corresponds with action step “Opportunity - Priority 1” in Goal 7 of Governor’s Conference)

Revised to read: Encourage schools to include in their school improvement plans green building principals, transdisciplinary curricula, energy efficiency, community outreach, outdoor classrooms, etc.

WHO: Iowa Energy Center, Iowa Conservation Education Council, Iowa Recycling Association, Extension Offices, County Conservation Boards, Iowa Department of Natural Resources, Custodians, Teacher training/ PTO training organizations.

Methodology

- 1) Develop Task Force:
 - a. Create information items for different audiences: i.e. Fact sheets
 - b. Partner with businesses - make this partnership an educational activity
 - c. Promote benefits to superintendent or school board School Improvement Team, Environmental Science Teachers and Area Education Agencies
 - d. Make recommendations on educational curriculum to utilize the green improvements made. (i.e. energy efficiency)
 - e. Develop a plan to present green building plan to target audience.
 - f. Target schools undergoing renovations
- 2) Conduct presentations to superintendents and Iowa school boards. (Maybe DNR Staff)
- 3) Develop model school districts with cost-benefit components and provide to school administration and superintendent. Use savings for further development.
- 4) Identify an instructor from inside the school to be the promoter or a closely linked school organization.
Student/youth involvement to further program.
- 5) Develop success stories for media. Organize promotion. Provide energy & water efficiency into school building plans and renovation plans. “green building plan”

Leadership Clinic Action Step #6 : There is an opportunity for every Iowa student to participate in a 3-day residential experience at the grades 4th- 6th and high school levels. (Corresponds with goal 10 action steps of Governor's Conference)

Identified barriers to current participation: lack of trained teachers, funding and approved camps, administrator and teacher support, and lack of whole school planning.

Methodology

- 1) In August 2000, establish a Residential EE Committee with membership from ACA, ICEC, IAN, & teachers. The committee will be directed to:
 - Develop a booklet/model/display to educate about the benefits of Residential EE to education and some information about how to conduct a residential experience.
 - Initiate school in-service visits to reach both indoctrinated and the new audiences.
 - Facilitate regional workshops at cooperating camps to inform teachers about the opportunities and how to take advantage of them. Also, how to incorporate residential EE experiences into a whole school improvement plan.
 - Provide input and work on the fundraising plans.
 - During the Launch Team visit to the governor, ask about obtaining CARA funds.
 - By May 2001, develop an ICEC mini-grants program, using corporate donors, to augment CARA or legislative funds, or lack of the same.
 - At the same time the mini-grants program is soliciting funds, be aware of any single corporate/utility donors/partners that can provide funds at the community level (i.e. Trees Forever).
 - Continue to explore the possibility of funding through the legislature.

Leadership Clinic Action Step #7a : An Environmental Education endorsement for formal educators. (Corresponds with goals 8 – 9 action steps of Governor's Conference proceedings)

Methodology

- 1) Form a committee to examine the steps needed to include an EE endorsement into the licensing requirements.

- 2) Establish criteria to determine what requirements would be needed for the endorsement. Teacher licensing institutions would need to be included in the process to enable them to provide the necessary training to meet the endorsement requirements.

Leadership Clinic Action Step #7b : An Environmental Education endorsement for non-formal educators. *(Corresponds with goals 8 – 9 action steps of Governor’s Conference proceedings)*

Methodology

- 1) Form an ad hoc committee to explore the potential utility and practical applications of such an endorsement. This committee should investigate the status of developing standards from the National Association of Interpreters, and also the status of the currently used Professional Standards of the Iowa Association of Naturalists that address some related issues.
- 2) Conduct background research on either the ad hoc committee or the organization/agency which activates an ad hoc committee.
 - Are there enough benefits to EE to be gained from pursuing this action step and who would make this determination (Does this help us fend off attackers of EE?)
 - How did other certification emerge in other fields – who led the charge, who asked for it to happen and how did they become formalized or accepted?
 - In other fields is the certification valued by the practitioners only, or is it recognized by a state licensing agency, is the certification requested for verification by user groups?
 - What role could/should the Iowa Department of Education play in this since they currently handle all formal education certification documentation and updates by law.
- 3) The ad hoc committee would provide recommendations for implementation, timelines, budgets, etc., back to the organization and ICEC. The ad hoc committee should use all the following questions merely as a place to begin their investigations: Consider how the endorsement might be used: camp staff, naturalists, any person with education in their job description could be certified or accredited. The ad hoc committee should investigate this issue with all the organizations in Iowa who might recognize this certification/competency. Determine if they would value knowing if an environmental educator met some basic competencies-would they recognize good/bad EE if they saw it? Would agencies expect to pay more for certified individuals?

The competencies of the EE person should be listed out in some detail – what would be measured or taught to the EE person who would be certified? What about experience in the field, course work, self-directed study? How do we account for out-of-state training experiences? Are there other areas we should certify or particularly avoid – child safety issues (mandatory child abuse reporters or not?), first aid/CPR, multi-cultural awareness training, basic outdoor safety awareness, valid driver’s licensing, etc. Usually these would be the responsibility of the hiring agency but would covering these things add value to a certification that employers would actually value and give preference to meeting the standards? At what point do legal considerations enter the certification process?

What group/agency would oversee and “monitor/regulate” the certification records? Would there be a cost to the individual, or to the employer? Would there be a cost to the continuing education and updating of certification? How often would someone need to renew the certification? Would continuing education be required or would it be a one-time certification? Are certain training courses automatically approved or are certain types of training excluded? What training institutions would either need to be developed or adapted? How would training fit in with current college programs, would extra classes be needed beyond the present courses needed? Does the certification occur only once a year, do paper and pencil testing accomplish it, or is a field test required? Who would administer the tests, particularly if a field test would be required?

Appendix 2

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