

ALIEN SPECIES AWARENESS PROJECT

*Susan Keith, Teacher
Caddo Magnet High School
Shreveport, LA*

Introduction to Stewardship Project

The waterbodies in northwest Louisiana are under assault by invasive exotic species. These species have a tremendous impact on one of the areas largest recreational sports: fishing. Hydrilla and water hyacinths clog up many of Louisiana's beautiful waterways, making boat travel and sport fishing difficult. Students at Caddo Magnet High School decided to take their newfound exotic species information "on the water." They developed flyers to distribute to area sport fishermen and women to encourage them to stop the spread of exotic hitchhikers on their boats, motors, and trailers.



Students greet bass tournament fishermen with flyers they made on how they can help prevent the spread of exotic aquatics .

Objectives

Students set out to share specific information with younger students (fourth graders at a nearby Shreveport school) on exotic species. They also wanted to distribute, in the form of posters and letters, information on invasive species to area fishermen.



Students talk with a sport fisherman at a boat and sports show about the importance of removing exotic species from fishing and boating equipment.

Student Activities

Students developed flyers that explained to sport fishermen how they could stop the spread of exotic species by taking the time to check their boats, motors and trailers for hitchhiking exotics. Students then went to a bass tournament at a marina on the Red River and talked with fishermen, passing out their flyers. They also attended a boat and sports show in Shreveport, passing out flyers and speaking with interested visitors. Students were pen-pals to fourth grade students at Sunset Acres Elementary School in Shreveport. They exchanged information on exotic species with these young learners.

Finally, students from Magnet High posted signs from Louisiana Sea Grant at local boat launches on Cross Lake and Cypress Lake.

Outcome/Impact of the Project

Students in this stewardship project had personal contact with hundreds of sport fishing enthusiasts in the Shreveport-Bossier area. Area boaters got information on the prevention of the spread of invasive exotic species so that now they will know what they can do to keep these species from moving to new bodies of water.

AMERICA'S MOST UNWANTED

Christine Hedge, Teacher

Carmel Junior High School

Carmel, IN

Introduction to Stewardship Project

Students at Carmel Junior High sought to educate their community about the many different exotic species invading America and the ecological and economic damage these invaders are causing. If people do not know that exotic species are a problem, then they are not going to take any interest in this issue—the key is to “know your enemy.”

Objectives

The first steps are knowing there is a problem and understanding how widespread the problem is. Our goal was to raise awareness about the issue of exotic invaders. We wanted to teach people in our community that exotic species are a major threat to biodiversity all around our country as well as in our own backyard.

Student Activities

Each team of two or three students researched one exotic invader and created a PowerPoint presentation to be shown to our school's students, teachers, and visitors from our community. We are in the process of attaching these presentations to our school Web site to educate our virtual community, and we hope that will be available during the 2001–2002 school year.

We have taught about exotic aquatic invaders from all over the United States. In addition, we selected a few terrestrial exotic invaders from our own county to bring our point home. These local invaders include gypsy moths and garlic mustard. Presentations were created about the following species: zebra mussels, Chinese mitten crabs, European green crabs, European ruffe, sea lamprey, purple loosestrife, nutria, round goby, Asian eel, garlic mustard, and gypsy moths. Students explained the following concepts for each species: Where is this species native? Where is it invading the United States? How, when, and where did it get to the United States? What are the ecological, economic, and human health problems caused by this invader? What kind of solution is being used to deal with this problem?



Students researched an exotic invader to create a PowerPoint presentation.



Showing the damage that sea lamprey inflict on native Great Lakes species was one way that students shared information at their school.

Outcome/Impact of the Project

Due to the success of this project, our community now knows that exotic species are more than just a nuisance. They know that these invading organisms threaten the biodiversity of many waterways and the economies of many communities. In addition, people went away with an understanding of what they can do as gardeners, aquarium owners, and boaters to help prevent the spread of exotics.

AQUÁTICOS EXÓTICOS

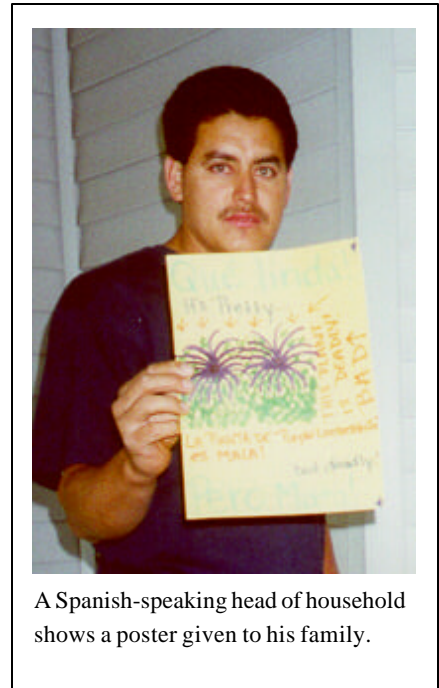
*Susan E. Marquez, Teacher
North White High School
Grades 9–12 Foreign Language
Monon, IN*

Introduction to Stewardship Project

Students in Susan Marquez’s Spanish class worked on raising awareness of the invasion of the purple loosestrife plant in the Spanish-speaking community. Many of the students were not aware of the plant’s presence, stating that some had seen the plant, while others had not. In Mexico and El Salvador, there are populations of purple loosestrife that can travel up into communities in the United States. Because of this, students decided to take their knowledge of the language to target the portion of the community that primarily spoke Spanish to show that the plant was a threat to the natural habitat.

Objectives

Students wanted to practice their use of the Spanish language by informing the Hispanic community, who had previously not known of the purple loosestrife, about the dangers this plant poses upon the habitat of their community. Students had the opportunity to use their Spanish with native speakers while creating awareness about the environment in that community.



A Spanish-speaking head of household shows a poster given to his family.



Learning the merengue and creating a dance about purple loosestrife invasion reinforced students’ understanding of purple loosestrife impacts.

Student Activities

To begin this project, students began to do research about purple loosestrife on the Internet and found nearly 5,000 sites dedicated to this plant. With this information, the students used their Spanish-speaking capabilities to translate the information. They were able to tie Spanish into science and agriculture, making this a very interdisciplinary lesson.

A play was chosen to present to the community via video. The third and fourth days of this activity were set aside for students to learn their

lines. As a break and a cultural experience, students learned how to dance the merengue, a traditional Spanish dance. Music was a great way to help students learn about this topic.

The following week, students designed bilingual posters to help their community become more aware of the plant. Each student used such Spanish phrases as “Be Careful with Purple Loosestrife!” and “It’s Pretty, But It Kills.” The class members told local citizens to look out for the plant in July, in the counties of La Porte, St. Joseph, and Starke, Indiana.

When all of these tasks were completed, the posters and video were presented to the community. Ten of the posters were prominently displayed in the school, while six other posters went out to homes and stores. Students who created the best posters were recognized in class.



Prize-winning posters were displayed throughout the Spanish-speaking community.

Outcome/Impact of the Project

This project was successful in raising awareness not only in Susan Marquez’s Spanish class, but also in the Hispanic community. The play, coupled with the construction of the bilingual posters, made this a great experience for the students as they had fun while practicing translating, writing, and speaking Spanish. The Hispanic community became more aware of the hazards of the plant—something most people had not previously known. The posters helped to spread the information to Hispanics that work in and visit Indiana Beach, thus increasing the reach and impact of the students’ efforts.

BEWARE! THE ALIENS HAVE LANDED

Cynthia Keith, Teacher
Sunset Acres Elementary School
4th Grade
Shreveport, LA

Introduction to Stewardship Project

Students in Cynthia Keith's fourth grade class learned about exotic aquatics and then put that knowledge to use by corresponding with their high school pen-pal buddies about the problems that certain exotic species in their area are causing in their local water bodies. Students learned about the particular problems caused by water hyacinth, hydrilla, and nutria to local recreational fishing.

Objectives

Students wanted to stop the spread of alien species that had been spotted on the “exotic radar screen” near their area lakes.

Student Activities

Sunset Acres Elementary School fourth grade students became pen-pals with Caddo Magnet High School students. They corresponded with each other about the problems of the exotic invasion that was occurring in the Shreveport area lakes. The fourth grade students made posters to display to the public at area marinas and boat launches. The posters focused on the problems caused by exotic species such as water hyacinth, hydrilla, and nutria. Students also included information about cleaning your boat of exotic aquatics when leaving the boat launch, as well as areas of Louisiana that are suffering from the effects of these exotic animals.

Posters made by these industrious fourth grade students traveled to several locations during the school year. They were displayed at the Krewe of Centaur’s annual fishing tournament. In addition, they were also displayed at the annual boat show sponsored by a local television station, KTBS Channel 3 in Shreveport, Louisiana.

The culmination of this project was when the fourth grade students met their high school pen-pals at a local boat launch. They ate lunch together, sang songs, and then “dedicated” a permanent sign that will serve to make boaters more aware of ways to help stop the “alien invasion.”



A class picture of Cynthia's fourth grade students at their dedication of a permanent sign to remind boaters to clean their boats when leaving the boat launch.



A student stands with a poster created by Cynthia Keith's fourth grade class at the Krewe of Centaur's Fishing Tournament.

Outcome/Impact of the Project

Students put their learning into action by creating colorful, eye-catching posters for display at local fishing tournaments, boat launches, and boat shows. They finished the year by joining with their high school pen-pals to dedicate a permanent sign at a local boat launch to inform fishermen about the importance of cleaning their boats and trailers of exotic debris when leaving the boat launch.



Peggy Meaux, Teacher

Acadiana High School

Lafayette, LA

Introduction to Stewardship Project

One important pathway for introductions of exotic species into our waterways is through the dumping of home and school aquaria. The purpose of this project is to build awareness of the consequences of dumping exotic species into our waterways.

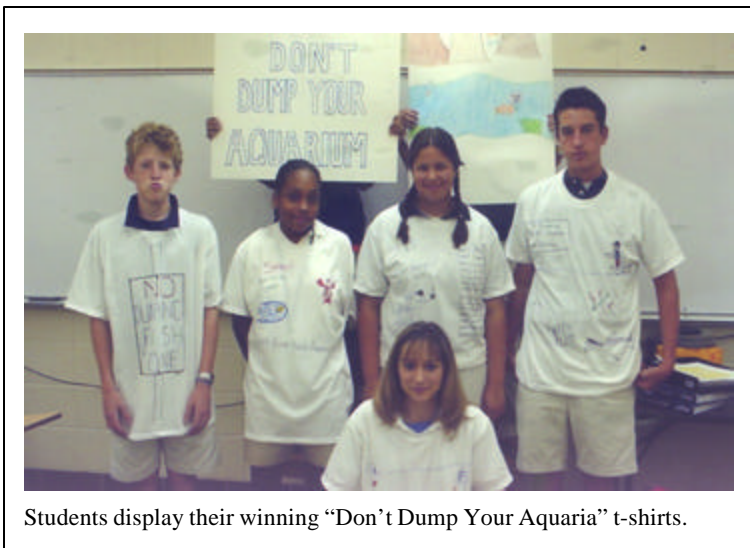
Objectives

Students will learn about how exotic aquatic animals and plants are introduced into our waterways, and then create a t-shirt design that explains why dumping aquaria contents into local waterways is not a good idea.



Student Activities

Students learned about the problems former exotic aquarium pets and plants pose to Louisiana’s waterways. Students decided they wanted others to be aware of the fact that dumping exotic fish into the water was not good for Louisiana’s ecosystems. The method they chose was to design t-shirts and have a t-shirt design contest to pick the five most creative and informative t-shirt designs. These five shirts were then displayed in the school library and later worn to school.



Outcome/Impact of the Project

When students wore their t-shirts to school, other students saw the shirts on campus and wanted to know more about what the shirts meant and what they, as stewards of their community could do to prevent aquarium pets from ruining Louisiana’s ecosystems. Students want to take the t-shirts to pet stores next year and ask store managers to display them in the store. They are also interested in designing and distributing bookmarks to pet stores, fellow students in the school, and other community members.

EXOTIC AQUATIC SLEUTHS GO PUBLIC

George Book, Teacher

S.P. Arnett Middle School

Lake Charles, LA

Introduction to Stewardship Project.

Eighth grade students at S.P. Arnett Middle School wanted to create an awareness of the problems that certain exotic species were creating in their hometown of Westlake, Louisiana.

Objectives

Students gathered information through digital pictures, Internet, geography programs, encyclopedias, and hands-on activities concerning the following exotic species: fire ants, Formosan termites, pine beetles, and nutria rats. All of this information was organized into a presentation and posters that were presented to the city council and mayor of Westlake, Louisiana. They also contacted local newspaper about the topic and displayed their informational posters at city hall and the Kiwanis recreation building to show the exotic invaders in our community.

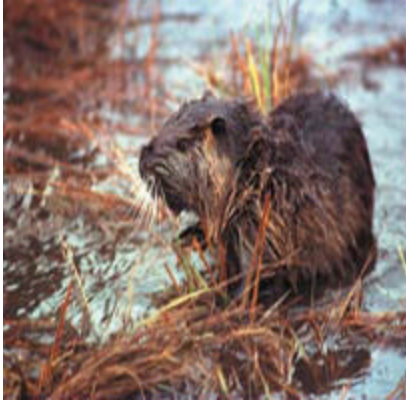
Student Activities

Several students collaborated in creating a presentation concerning these exotic species. These students went on field trips to find the habitats of the Formosan termite, pine beetle, nutria rat, and fire ant, so the students could take digital pictures. They also wrote down and organized information about the habitats and the effect the species have had on the area.



Exotic aquatic sleuths at S.P. Arnett Middle School. These students went public with information on local exotic species causing trouble in their community.

The group returned to the computer lab to find more information through the Internet and Geography programs like Encarta. We involved the whole community, including the mayor, and placed exotic species posters at City Hall. The students, with my guidance, organized a PowerPoint presentation on these species to make our community aware of these invaders. From this educational effort, we were able to work together to try to find a solution to the situation.



Nutria is a non-native aquatic mammal that has devastated wetland areas with its voracious appetite.

Source: Popular Mechanics Web site

Outcome/Impact of the Project

The community of Westlake became more aware of the problems these invaders cause in our region. The mayor and the city council were very supportive of the project and put up our exotic species posters. The students learned that they had a very serious problem in their community. They also became champions for the cause of advertising these invaders and finding a solution to the problem.

The area news affiliates were also very receptive to the advertisement concerning our four foreign invaders. Shortly after our project, the other newspapers in the area started to print information about our invaders and others in the region. Our community and other communities in southwest Louisiana are trying to come up with solutions to the devastating problems of the fire

ant, Formosan termite, nutria rat, and the pine beetle. As a result of our stewardship project, the region is learning about the problems caused by these exotics, as well as what they can do to help eliminate the problem.

EXOTICS INVADE THE AQUARIUM OF NIAGARA

Jeanette Brunner, Coordinator of Education

*Aquarium of Niagara
Niagara Falls, NY*

Introduction to Stewardship Project

The Aquarium of Niagara is a non-profit educational facility that serves the educational needs of thousands of students from across western New York. After attending the “Exotic Aquatics on the Move” workshop, education specialist Jeanette Brunner worked on getting the word out on exotic species to students, teachers, and guests who visit the Aquarium annually.

Objective

The Aquarium of Niagara wanted to create a display and disseminate information on exotic species to its visitors. Utilizing materials from the “Exotic Aquatics on the Move” workshop an educational display was created in the classroom at the Aquarium of Niagara. Copies of educational materials on exotics were produced for dissemination to teachers and other visitors at the Aquarium.



Many native fishes are endangered, including lake trout, because of the parasitic nature of the sea lamprey.

Photo credit: Great Lakes Sea Grant
Network Aquatic Species Library

Student Activities

By offering a class on exotic species of the Great Lakes, the Aquarium was able to create a map and display on the spread of exotics from other parts of the world to the Great Lakes. Students were asked to draw pictures of the exotics, and then yarn was used to show their “home” and the point of introduction into the Great Lakes. This student-created map was added to a larger display on exotic species that was developed by the Aquarium’s education department.

Outcome/Impacts of the Project

In one school year alone, more than 20,000 teachers and students were exposed to the display and materials on exotic species and their ecosystem impacts. Many visiting teachers took materials on exotics from the Aquarium back to their classrooms. The Aquarium education staff offered several classes on exotic species, or incorporated information on the ecosystem impacts of these invaders in classes related to the Great Lakes and the environment.