

# Rachel Carson Centennial

## *Making the Environment Your Career*

### **Are You an Environmental Scientist? Inspire a Child**

Pollution is one of America's greatest environmental concerns. Like the proverbial "canary in the coal mine," fish and wildlife often signal pollution problems that ultimately affect people and their quality of life. Contaminant biologists in the Fish and Wildlife Service are dedicated to protecting wildlife and their habitat from pollution's harmful effects, helping to create a healthy world for all living things.

Researching malformed frogs, rescuing birds from oil spills, disposing of hazardous materials and studying the effects of chemicals on fish are just some of the cool projects an environmental contaminant biologist with the Fish and Wildlife Service may work on.

But how does someone become an environmental contaminant biologist? Students are interested in learning about the educational background and experience of biologists, what activities and programs are involved with the career, and both the challenges and rewards of having a career in science.

### **What a cool career!**

Who better to introduce students to an environmental career than a scientist working in the real-world, making a difference just like Rachel Carson!

#### *If you have 1 hour*

Call your local high school guidance counselor or science teacher and ask them if they would be interested in having you come to the school and talk to their science class or environmental club. Find out what subjects the students have been learning in class, and try to see if there's a connection to an environmental issue you are involved in.

Tell the students about yourself

- How did you get to be an environmental contaminants biologist?
- What type of degree(s) did you pursue?
- What types of classes did you take?
- Did you work any summer jobs or internships at a young age that helped your career?
- Tell them about what a day in the life of a biologist is like.
- Tell them about the scientific equipment you use – students may not realize that biologists use microscopes just like they do.
- Download some photos from the Service's image library ([www.fws.gov/images](http://www.fws.gov/images)) and show slides of biologists researching contaminants and pollution around the country.
- Invite one of your peers from a partner agency to join you and talk about working together to make a difference in your community.

Many schools also host a career day for graduating seniors where various universities and local organizations send representatives to talk to students and answer questions about careers they may be interested in.

- Volunteer to set up a booth and encourage students to pursue a career in natural resource management or the biological sciences;
- Bring some materials or websites on environmental careers;

- Call your local universities to find out what types of environmental careers they offer; and
- Encourage students to get involved in their community and explore their natural world.

#### *If you have 1 day*

Are you catching frogs and identifying abnormalities?

Are you electro-shocking fish to collect tissue samples?

Are you taking soil or water samples to test for pesticides?

Contaminants and pollution are tangible environmental problems – it is easy for people to recognize the effects of chemicals and pollutants on an ecosystem. Any project where you are outside, using scientific methods and techniques to collect data on how environmental contaminants impact fish and wildlife could make for a very exciting day for students. One way to inspire the next generation of conservationists is to let them see the type of work you do firsthand and give them an opportunity to be part of the action.

To start making that connection, contact a local science teacher or advisor to the school environmental club. You'll need to work closely with the teacher to coordinate current classroom curricula with local issues and community action.

A great place to start planning a classroom activity is with the thread that unites scientists from all specialties: *the scientific method*. By following the basic process of the scientific method, you can put real-world application to a school lesson. There are five main steps in the

scientific method:

- 1 Collect information and read previous research
- 2 Identify the problem
- 3 Create hypotheses
- 4 Conduct your experiment
- 5 Analyze your data and summarize your conclusion

To prepare students for getting involved in issues about environmental contaminants and pollution, first ask the students to collect information and do some background research.

■ What types of environmental issues are getting coverage in the local papers?

■ Ask the students to research the species and contaminant you are studying

■ What is the species natural history?

- How could this species come into contact with the contaminant?
- What effects does the contaminant have on wildlife?
- How could humans come into contact with the contaminant?
- How could humans be putting the contaminant in the environment?

As you work with the teacher to develop the classroom activity, make sure you include your partners. Many of your partners are also interested in youth stewardship, and may also help provide supplies or equipment you may not have. When you gather the materials and equipment you'll need to collect data, label samples and conduct scientific analysis, remember to prepare the proper safety equipment including protective eyewear and gloves.

When the field day arrives, spend some time with the students discussing the background information they researched previously. Make the connection between cause of how and why pollutants enter the environment and what the effects are to wildlife.

Then, give the students specific instructions on what they are to do on their field trip. The instructions on how

to conduct the experiment and steps students need to take to complete the activity will need to be very clear and concise.

After the activity, lead a group discussion summarizing their experiences and possible conclusions they reached after conducting their research.

- What might those conclusions mean to you as a government scientist?
- What are the implications of your research?
- What management or policy could develop as a result of your work?

You never know who you may inspire to join the field of environmental contaminants or pollution – maybe the next Rachel Carson.

**U.S. Fish & Wildlife Service**  
**1 800/344 WILD**  
**<http://www.fws.gov>**

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