

Summary of Refuge Club Activities 2002-2003
Environmental Education Grant #922608

The Sherwood Middle School Refuge Club members worked hard this year. During our bi-weekly meetings, we covered the history of the Refuge system in America, seasonal migration, bird identification, habitat protection, restoration, water quality and water testing, city storm water systems and function, wetlands function, macroinvertebrates, and tracks and scat. One meeting a month took place in the classroom where we covered one of these topics. The following meeting, we were at the Refuge using the knowledge we'd gained in the classroom. Our study was enhanced by hands on instruction from the Deputy Refuge manager, Chris Lapp, who met us at the Refuge during the months of November, December and January to introduce us to the thousands of migratory birds on the Refuge during those months.

We also had a part in the Tualatin River National Wildlife Refuge's Centennial Celebration. Our members were featured in an Oregonian article about the Celebration and were presenters at the day-long Saturday event. We also presented at the Migratory Bird Festival at the Refuge in May.

This year, Refuge Club members conducted tours of the Refuge for nearly 300 students. They ranged from nearly 250 fifth graders from Sherwood Schools, to 36 Tualatin Head Start kindergartners and pre-schoolers, to a second grade class from the Mitch School, a charter school in Tigard, to a handful of interested high schoolers.

These tours were the highlight of our year and the most difficult to pull off. Due to a shortened school year, teachers were reluctant to let the Refuge Club members loose for the morning to act as tour guides. Scheduling buses and classes and enough tour guides to go around was a real juggling act. However, when we saw how excited the students were to discover the Refuge and heard later how they had talked about their experience for days later back at their schools, we knew it was all worth it.

Thank you for supporting us so we could do this wonderful work. The Metro Greenspaces grant program has immeasurably enriched our district and students.

What students say

The following essays were written in January 2001 by students in the Refuge Club at Sherwood Middle School.

All four students have continued as Refuge Club members, according to teacher Janet Bechtold.

The essays were sent to the federal government to support funding requests.

The refuge is a large, beautiful place that we visit with Refuge Club. We go there and watch birds. We talk about what a wonderful experience we're

Celebrate the centennial

having. Every time we go, we see things like ducks, bald eagles and peregrine falcons. The last time we went, we saw the birds that had just migrated. There were so many of them! I think you should fund the refuge so more people can have the experiences I have had.

— Justin Grimes

Being in the Refuge Club has been a wonderful experience. My name is Kelsey Kothen. I am 11 years old and go to Sherwood Middle School. Science is one of my favorite subjects, and I am really glad that I am in Refuge Club! My mom is a chemist so I knew a lot about science stuff before I joined Refuge Club. (She is also a nature freak!)

But it is amazing how much other stuff I have learned in Refuge Club. It is great that kids can get hands-on experiences with nature and wildlife. There are so many great things

you can do on the refuge! We learn about what different animals and plants there are in different places. We learn how to do PH testing and a lot of other types of water testing. We learn and we also teach! We take groups of kids out and talk about the refuge. Being on the refuge is really fun!

— Kelsey Kothen

Being out on the refuge gives me a chance to relax and get in touch with the beauty of nature. Opening up the Tualatin River National Wildlife Refuge will give people a chance to see the wonders of the wilderness, even in this high-tech, computer-run world.

When I'm out on the refuge, everywhere I look I see a bird, an insect and varieties of plants you don't see anywhere else. Great Blue Herons surprise me when they fly out of the grass where they were once hidden. The sight of an endangered species, like the peregrine falcon, always seems to amaze me. Allowing people onto this

refuge will be a huge goal fulfilled. People will love to come out and enjoy things they may never see if the Tualatin River National Wildlife Refuge didn't exist. They will learn and discover new treasures of nature and be amazed at how much there actually is in such a small place. Please help in opening this refuge to all!

— Jessica Wright

When I go to the refuge, I feel a sense of peace. It's so quiet and peaceful out there. The birds fly silently above, and the water flows so smoothly. Just sitting out there looking around makes me calm down.

I would like other people to feel the same peace that I do. I want them to see all the birds that are there. When the gates are closed, they can't come and enjoy it. If the doors were open, people could learn a lot. They could have fun and feel peaceful.

— Mollie Norby

Refuge contact information

Tualatin River National Wildlife Refuge, 16507 S.W. Roy Rogers Road, Sherwood 97140, 503-590-5811.

Friends of the Refuge, P.O. Box 1306, Sherwood 97140, 503-972-7714.

Raindrops to Refuge, 503-625-4223, or crownj@sherwood.or.us.

Tualatin Riverkeepers, 16507 S.W. Roy Rogers Road, Sherwood 97140, 503-590-5813, info@tualatinriverkeepers.org.

Refuge Club students learn from natural environment

By **LAURA HARDMAN**
Of the Gazette

The Refuge Club based at Sherwood Middle School gives students a chance that most people don't get — spending time at the Tualatin River National Wildlife Refuge.

"We always tell the kids how lucky they are, because we're one of the few groups that has pretty much unlimited access," said Janet Bechtold, teacher and co-leader of the club.

Celebrate the centennial

Refuge Club students meet twice a month and visit the refuge once a month. Classroom activities on the non-refuge days prepare the students for what they'll see outside.

Recent topics included the definition of wetlands and learning about water runoff and retention ponds.

"Every development here in Sherwood has to have a retention pond," said Debbie Frankel, teacher and the other Refuge Club leader. "We'll go visit a retention pond. All of that water runoff goes into the refuge. They're learning how everything they do will affect the general health of the refuge."

Bechtold said students respond eagerly to walking around at the refuge and identifying bird species.

"The kids really feel a sense of ownership and stewardship, which is our goal," Bechtold said.

Kids leading kids

This spring Refuge Club members will lead tours for younger Sherwood students.

The club began in 2000, when students and their teachers edited and produced a refuge guide. It started as part of middle school science classes, but turned into an after-school club due to budget cuts. It is funded primarily through grants now.

"A lot of our focus of the Refuge Club is not only to expose the kids to the refuge, but also the scientific process," Frankel said.

Students have worked on identifying birds, looking at field guides and learning about equipment.

The Refuge Club receives help from refuge staff, Metro Greenspaces, the Diack Family Education Fund, the city of Sherwood and the Friends of the Refuge.

"Refuge Club wouldn't exist without their support," Bechtold said.

Once the refuge opens to the public, a wider range of educational opportunities will be available.

"One of the key things the Friends is looking forward to, once the refuge is open, is to increase the working partnerships with the schools," said Scott Schroeder, president of Friends of the Refuge. "We have a real strong, long-term commitment to working with curriculum developers in the school district to help provide educational opportunities."



Submitted photo

HANDS-ON LEARNING — Members of the Sherwood Middle School Refuge Club listen to Christopher Lapp, deputy refuge manager, during a visit to the Tualatin River National Wildlife Refuge.

Postcard contest winners announced

As part of the Tualatin River National Wildlife Refuge's centennial celebration, local students were asked to participate in a postcard contest.

Entries had to include an original work of art and an essay message on the back. The postcards were supposed to focus on the importance of the refuge and conserving natural spaces in general.

The winners by grade (according to the names printed

on the entries) were: kindergarten, Kenna Patterson; first grade, Samantha Altman; second grade, first place Jubilation Fields, second place Maggie Patterson; third grade, first place Arden Robinette, second place Jordan, honorable mention Gharett Born; fifth grade, first place Danielle, second place Patrick McGiveron, honorable mention Michelle S.; sixth grade, first place Lauren Moore, second

place Stephanie VanHecke, honorable mention Jennelle Raibley; seventh grade, first place Jessica Wright, second place Mollie Norby, honorable mention Katherine Walters; ninth grade, Carol Lam.

The winners will be recognized on March 14 as part of the celebration event. Their postcards will be sealed within the centennial time capsule, which will be reopened in another 100 years.

Some refuge facts

- There have been 167 species of birds sighted at the Tualatin River National Wildlife Refuge.
- The refuge has an approved boundary of 3,058 acres, and about 1,250 acres have been acquired.
- The National Refuge System includes 535 refuges totalling 93 million acres, which is about the size of Montana.
- The Tualatin River refuge was established with an initial 12-acre gift from private landowners in 1993. Since then, parcels have been added in 1994, 1995, 1996, 1999 and 2000.

REFUGES HIT 100-YEAR MARK



ROBERT BACH/THE OREGONIAN

Sherwood Middle School students (from left) Stephanie Van Hecke, Justin Grimes, Tristan Whitman and Megan Cottle check water quality last week at the Tualatin River National Wildlife Refuge, where the National Wildlife Refuge System centennial will be celebrated this weekend.

*Tualatin
refuge helps
the National
Wildlife Refuge
System celebrate*

By JANET GOETZE
THE OREGONIAN

SHERWOOD —

“Over there — a hawk,” said Megan Cottle, 11, pointing toward tall trees bordering wetlands at the Tualatin River National Wildlife Refuge.

The bird circled above the branches as Megan and three other Sherwood Middle School students hiked across the spongy ground last week after collecting samples of pond water to analyze for acidity and alkalinity.

The students, members of the school's Refuge Club,

study wildlife, native plants and the importance of water quality in the 1,253-acre refuge on the edge of Sherwood.

They expect to join other refuge visitors this weekend for events marking the 100th anniversary of the National Wildlife Refuge System. (See box on Page 4 for details.)

On Friday, the Sherwood High School Jazz Band will play at 3 p.m. on a knoll where a wildlife-viewing platform is to be built next year. Dignitaries will speak, then several schoolchildren will see their postcards and essays on natural resources buried in a time capsule, to be opened in 100 years.

Please see **REFUGE**, Page 4

Refuge: Tree plantings, fair, tours to mark anniversary

Continued from Page 1

A flight of birds usually passes over the pond below the knoll about sunset each day, and visitors may remain to see the sight shortly after 6 p.m. Friday, said Andrea Woodworth, an AmeriCorps volunteer assigned to the refuge.

On Saturday, visitors may plant trees starting at 9 a.m., buy native plants at an environmental fair starting at 11 a.m. and take guided walking tours of the refuge from noon to 2 p.m.

The Tualatin Riverkeepers will give visitors with reservations canoe rides on the river at 11 a.m. and 2 p.m.

Checking on the condition of the river helps ensure the survival of fish and other wildlife, the Refuge Club members said as the rumble of a frog drifted over the pond.

The ponds and marshes on the refuge are filters for pollutants that wash into streams from urban and agricultural lands, said Tristan Whitman, 13, an eighth-grader at Sherwood Middle School.

Seeing wildlife is the most exciting thing about visiting the refuge, said sixth-grader Stephanie Van Hecke, 11.

Seventh-grader Justin Grimes, 12, said, "The eagles are cool, because you don't usually see them in your everyday pond."

Seeing children enjoy the natural world is one reason Joan Patterson of Sherwood became a volunteer with Friends of the Tualatin River National Wildlife Refuge nearly eight years ago. She is now co-president of the group.

Patterson's 6-year-old daughter helped plant trees on her third birthday as part of a forest restoration project on the former farmland.

"Whenever we go out there, she asks, 'Mommy, where are my trees?' And we go look in the general area where they were planted," Patterson said. "I'm not sure I can identify them anymore, but we know about where they are."

Boundary defined 11 years ago

The refuge boundary, totaling more than 3,000 acres, was approved 11 years ago at the urging of area residents. The U.S. Fish and Wildlife Service, which oversees the country's 95 million acres of habitat, has acquired more than one-third of the land in the boundary. It will gain additional property only from willing sellers or those who donate their land, agency officials said.

the federal budget for 2004 to build an entry road from Oregon 99W and build a 60-car parking lot, an information kiosk and a temporary platform to view wildlife.

As more money is secured, the refuge will add trails, photographer's blinds and wildlife study sites, Lapp said.

The refuge is at the top of the agency's list for a wildlife center with an auditorium, educational laboratory, interpretive exhibits and administrative offices. But the funds aren't available yet, Lapp said.

Roots in community support

Securing the initial money to develop the refuge was brought about because of strong community support, said Jim Rapp, who was Sherwood's city manager in the early 1990s.

As Sherwood and nearby communities started growth spurts a dozen years ago, many residents were concerned about the effects of development on water and land in the Tualatin River basin, Rapp said.

Then developer Jim Claus learned he couldn't build on a substantial portion of 40 acres he had purchased along the Tualatin because it was in a 100-year flood plain. He had experience preserving wetlands near property he owned in California. Instead of fighting city hall, he tapped his contacts with the U.S. Fish and Wildlife Service to try to create a refuge in the Tualatin Basin.

About the same time, Lisa Brenner and Tom Stibolt, who moved

from Illinois in the mid-1980s to be close to nature, were looking to preserve their Tualatin Basin property from development.

As Claus arranged for meetings among federal officials and city leaders, Rapp said, the idea of a refuge gained support among Sherwood's council members, the Chamber of Commerce, Washington County commissioners, King City councilors and local residents.

"It was sort of weird for those people in Washington, D.C., to have this city manager from a town of 3,000 come back every year and lobby for a wildlife refuge," Rapp said.

The strong local support won over federal decision-makers, he said. Two Oregon lawmakers at the time — Rep. Les AuCoin, a Democrat, and Sen. Mark Hatfield, a Republican — got money for the refuge into a budget after Brenner and Stibolt donated 12 acres along a bend in the Tualatin to the Fish and Wildlife Service.

Claus was one of the first to sell his land to the agency, and other property owners followed.

"There were no negative comments when they held a public hearing on the refuge," Brenner said, despite Sherwood's many differing voices.

"It was a positive decision to save something," she said. "In life, individuals have to have something positive to look forward to. I think that's true of communities, too. This was a positive action."

Janet Goetze, 503-294-5917; janetgoetze@news.oregonian.com

100 YEARS OF REFUGE

What: A celebration for more than 530 refuges in the National Wildlife Refuge System.

Where: At the Tualatin River National Wildlife Refuge near Sherwood.

Friday free events: 3-6 p.m.: Listen to the Sherwood High School Jazz Band. Hear remarks from Rep. David Wu, D-Ore., former Sen. Mark Hatfield, R-Ore., and Ann Badgley, regional director of the U.S. Fish and Wildlife Service. See children's "Message to the Future" postcards buried in a time capsule. Watch the evening flight of birds.

To get there Friday: Park at the Home Depot, 20260 S.W. Pacific Highway (Oregon 99W) and take a free shuttle bus to a section of the refuge where parking is limited.

Saturday free events: 9 a.m.: Plant 1,000 tree seedlings with other volunteers.

11 a.m. to 3 p.m.: Buy native plants, attend an environmental fair with local conservation groups, learn about conservation at a Kids' Corner, get a Second Day stamp cancellation for 37 cents.

Noon to 2 p.m.: See restored wetlands on guided walking tours every half-hour.

11 a.m. and 2 p.m.: Weather permitting, explore the river in Tualatin Riverkeepers' canoes with reservations. 503-590-5813.

To get there Saturday: 16507 S.W. Roy Rogers Road at Beef Bend Road.

Information: Andrea Woodworth, 503-590-5811, Ext. 44.

Bitena Vista Custom Homes presents

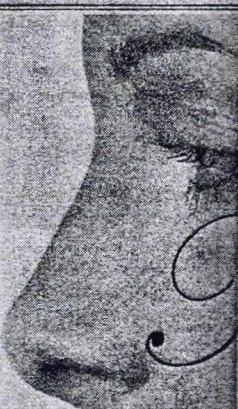
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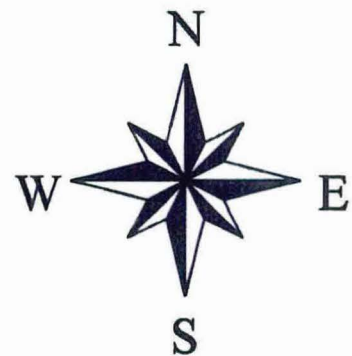
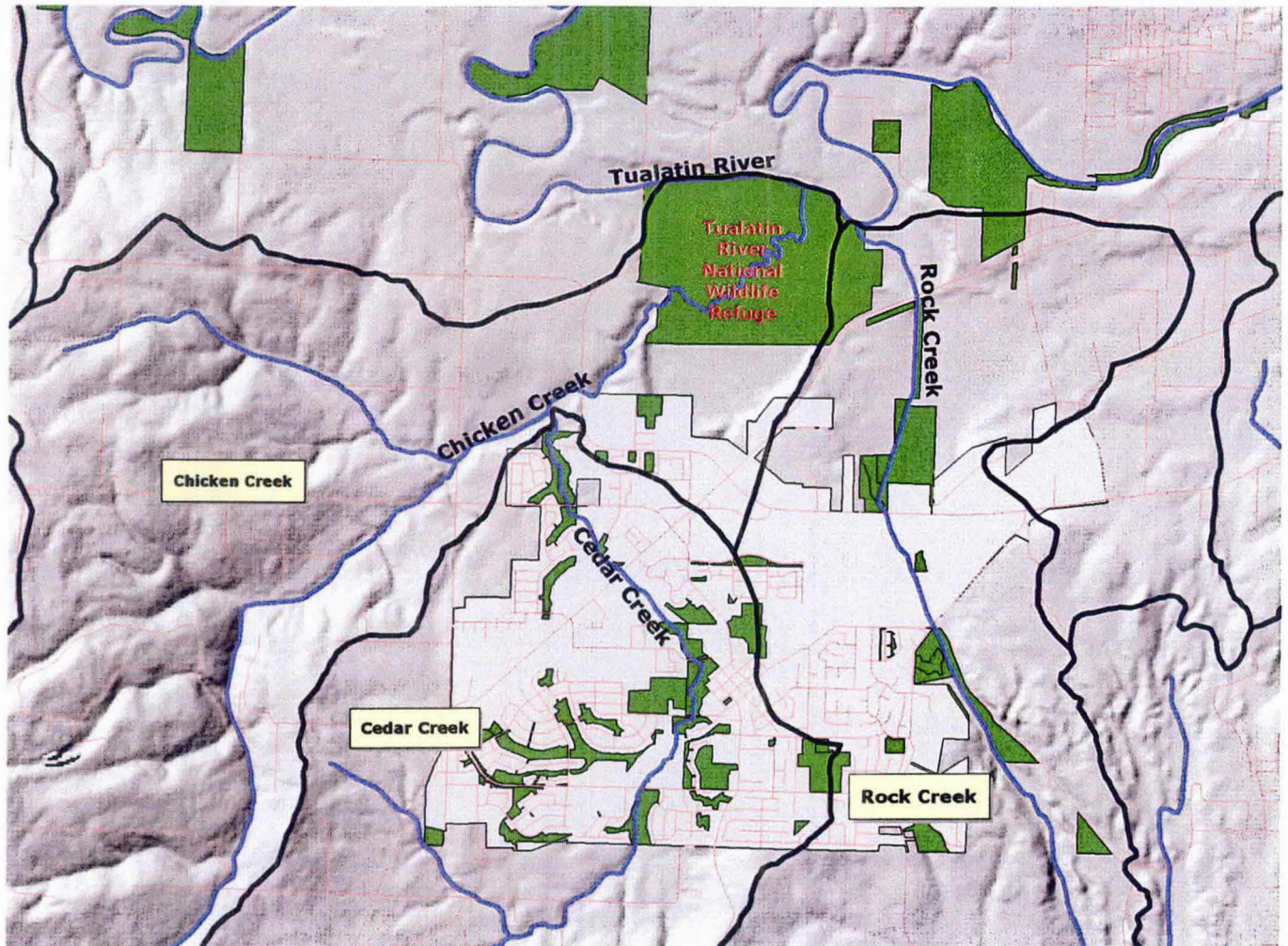
OPEN DAILY 12-5
 Direction:
 South on Tualatin-Sherwood Rd.
 Left on Boone's Ferry









Sculpting a more refined nose a face. Fortunately, this is true for a dramatic image improvement.

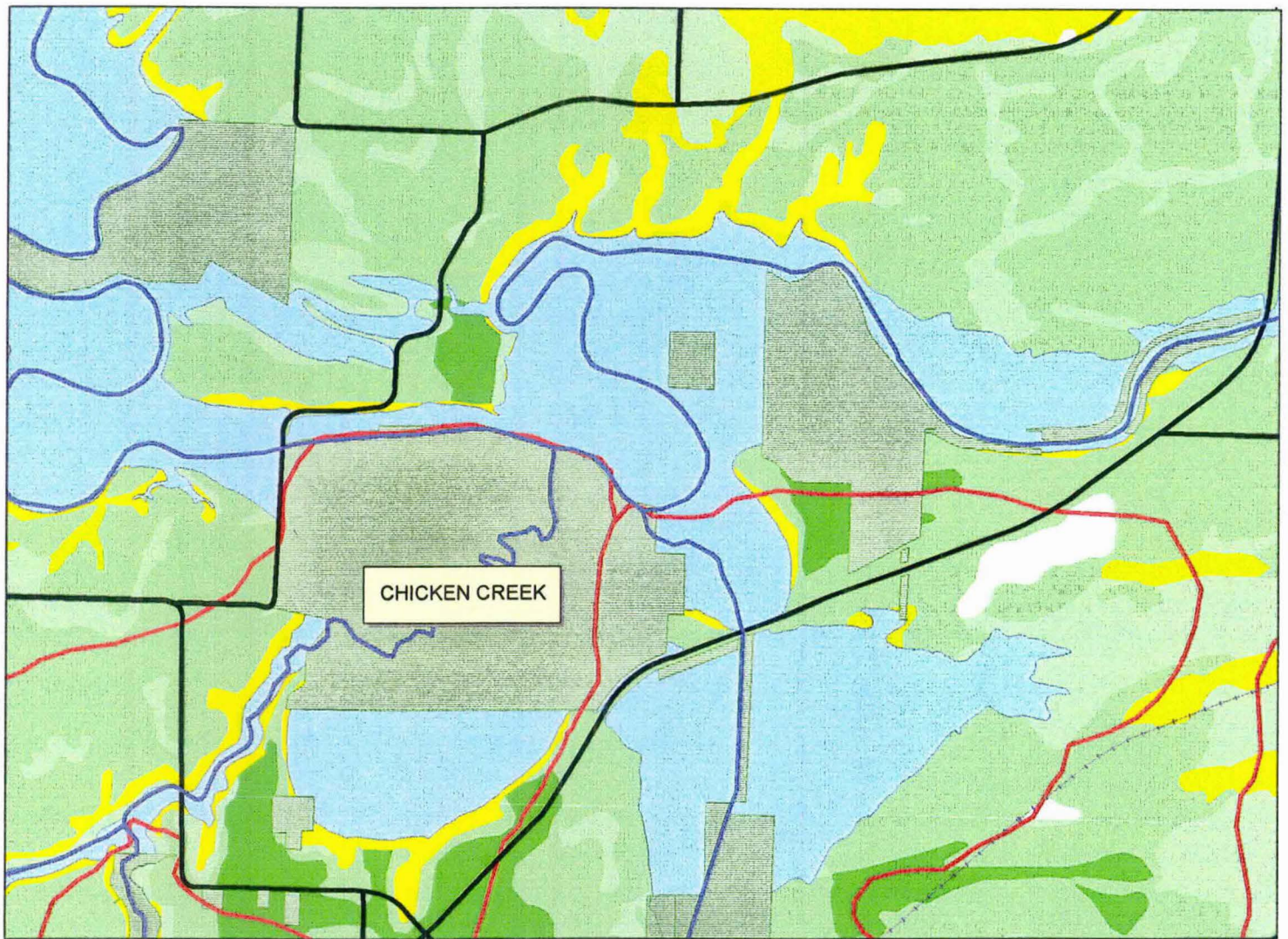
Renowned for his surgical and certified facial plastic surgeon the nose you want, what's in time, cost, in a leisure

Watershed Overview Sherwood, OR









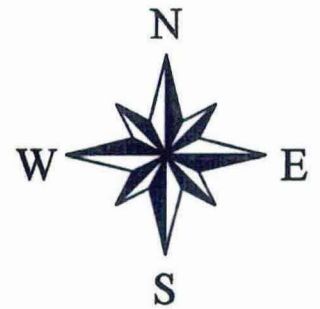
-  Watershed Boundaries
-  Streets
-  Streams
-  Parks
-  Sherwood

Map by Tristan Whitman and Chris Griffin
Data provided by Portland Metro RLIS



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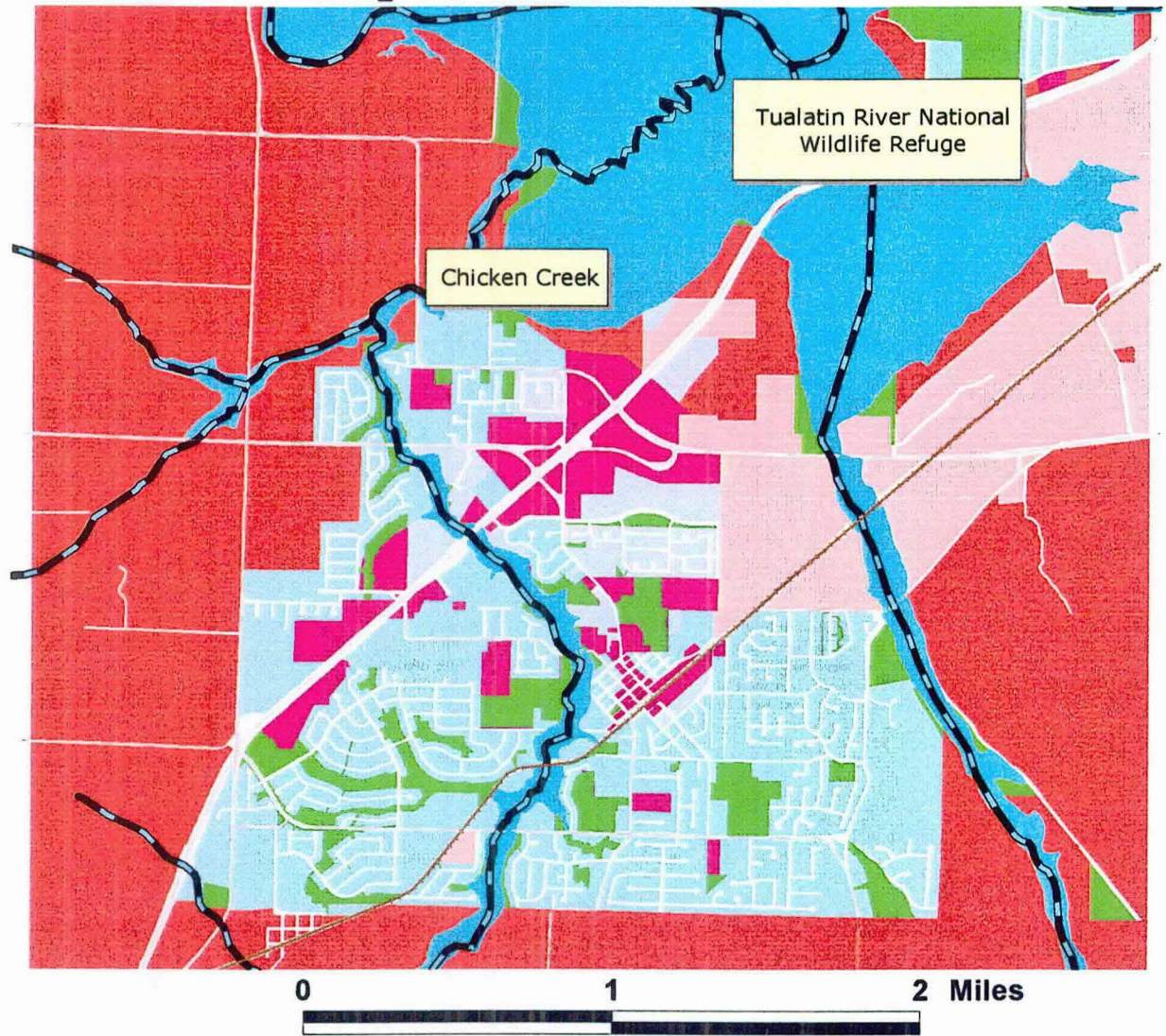
-  Streams
-  Railroad
-  Arterials
-  Chicken Creek Watershed
-  Parks
-  Floodplain
- Wetland Soil Classification**
-  Class 1
-  Class 2
-  Class 3
-  Class 4
-  Class 6
-  Class 7
-  Class 8



Map by Kelsey Kothén
Data provided by Portland Metro RLIS

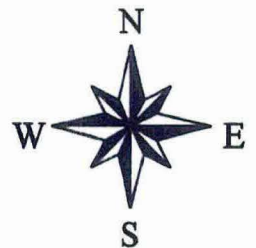
Wetland Soil Types and Coliform Levels Chicken Creek, Sherwood Oregon

Zoning and Phosphate Levels

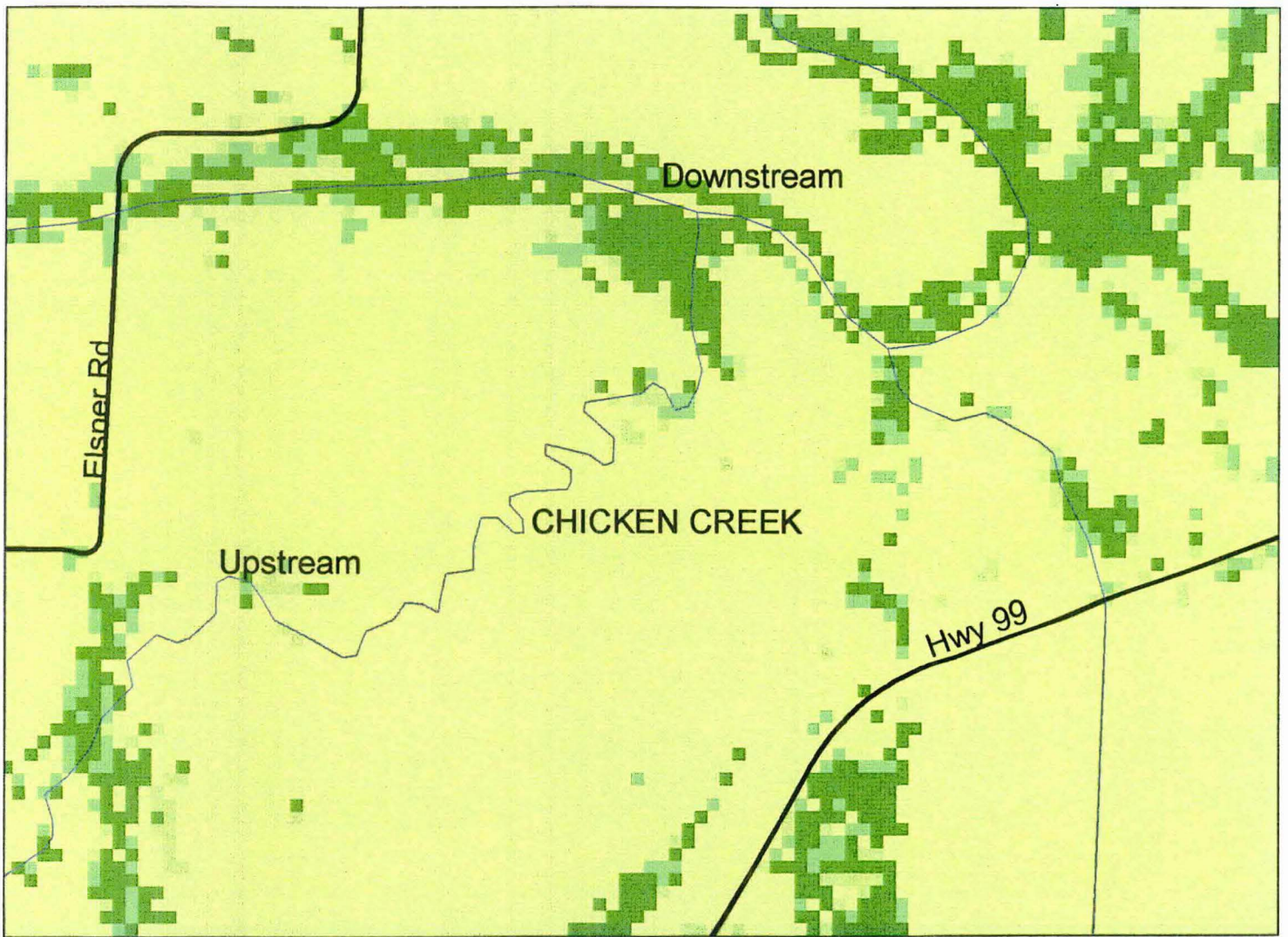


- Arterials
 - Railroad
 - Streams
 - Floodplain
 - Parks
- Zoning**
- Commercial
 - Industrial
 - Multi-Family Residential
 - Single Family Residential
 - Rural/Agricultural

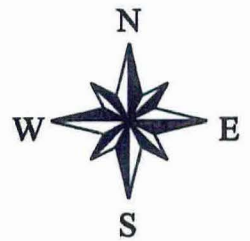
Chicken Creek Sherwood, OR



Map by Jenna Schnabel and Katherine Walters
Data provided by Portland Metro RLIS



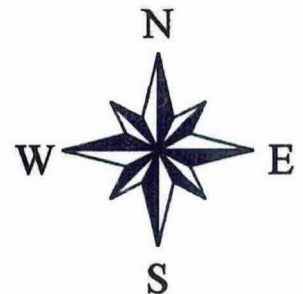
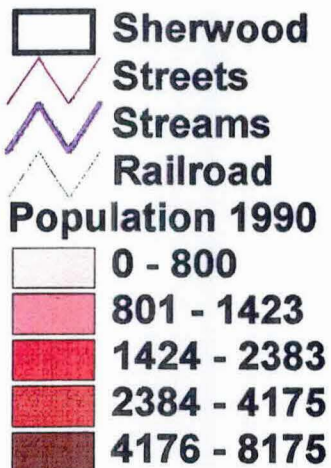
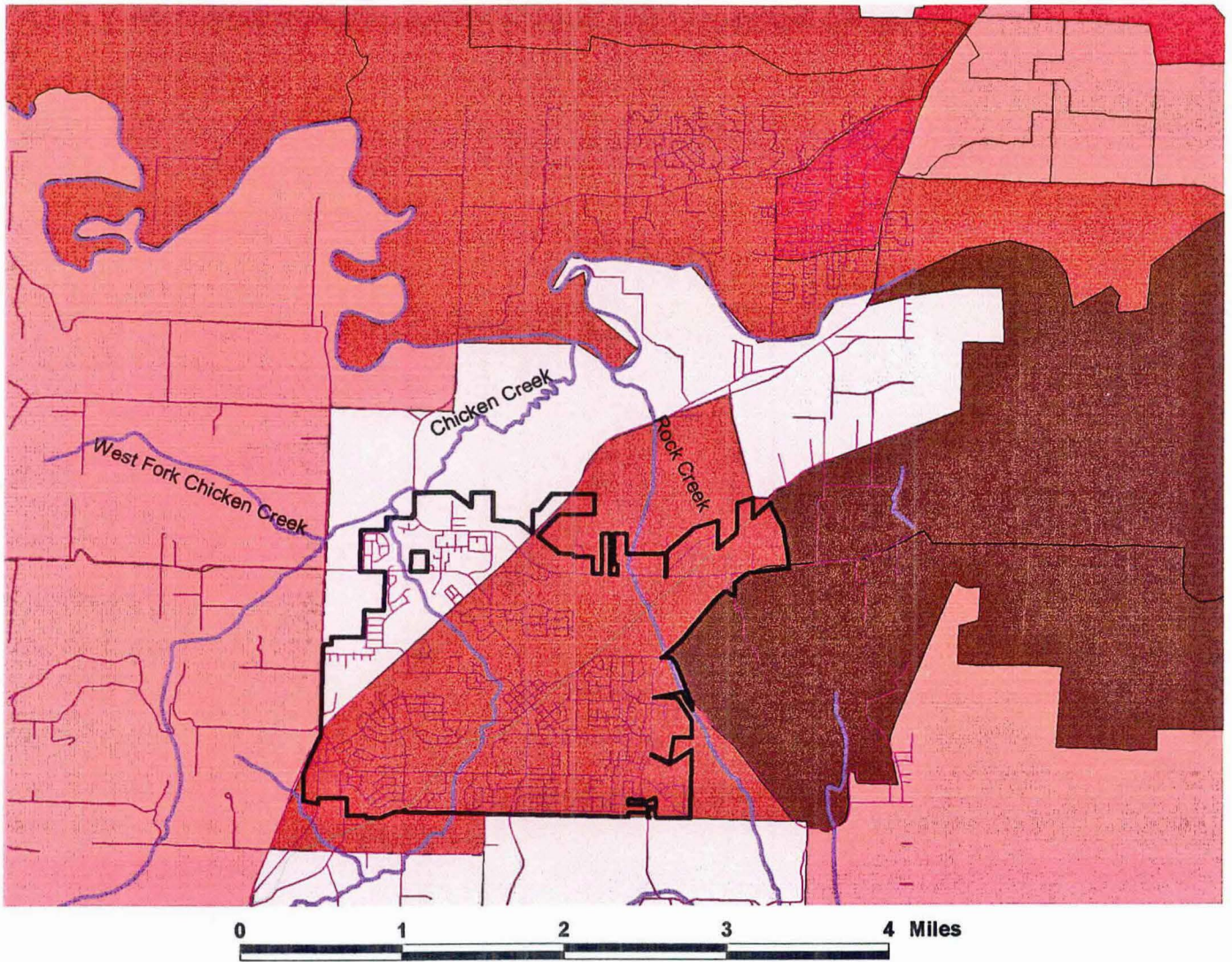
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Canopy Cover and Stream Temperature (Chicken Creek, Sherwood)

Map by Jessica Wright and Ilsa Paulson
Data provided by Portland Metro RLIS

Sherwood Oregon Population 1990



Map by Amber Choruby
Data provided by Portland Metro RLIS

2001-2002

**Summary and Evaluation of Grant Activities
Refuge Club
Environmental Education Grant #922608
Janet Bechtold Project Manager**

Summary

The focus for the second year of the Sherwood Middle School Refuge Club, an after-school environmental education club that has the Tualatin River National Wildlife Refuge as its focus, was leadership and stewardship training. Refuge Club members studied leadership and stewardship skills in club meetings. They then practiced these skills as they led groups of students from different grade levels on tours of the Refuge. They also made several presentations about the Club to different civic organizations. All the students involved showed growth through their activities this year.

October was a busy month for the Refuge Club. We began the year by assisting USFWS with tours on the Refuge for the public on Refuge Appreciation Day, Saturday, October 6, 2001. Club members spent most of the day on the Refuge accompanying USFWS personnel and members of the Friends of the Refuge as they led tours. The students were knowledgeable additions to the tours. They were able to discuss wetlands, habitat and share the field guide they published last year. They also shared the field guide in presentations to the Sherwood School Board on October 9 and to the Sherwood City Council on October 22. Club members made favorable impressions at both meetings, so much so, that the City of Sherwood later donated \$500.00 to the Refuge Club!

In addition to our regular club meetings in October, we also hosted two field trips to the Refuge during the school day. Club members conducted tours for 40 fifth graders on October 16 and 50 more on October 23. These field trips are important not only for "practice" for our tour guides, but also because fifth graders are potential Refuge Club members when they reach middle school. We were recruiting as well as teaching and hosting.

The Refuge staff closes the Refuge to any tours during the winter months when migratory birds come in by the tens of thousands. They want to be sure that the birds are not disturbed as they feed and rest up for the next segment of their journey south. However, because of the relationship the Club has with USFWS, we were able to go to the Refuge once a month in November, December and January. Chris Lapp, Deputy Refuge Manager, met us after school on "the knoll", the best vantage point for viewing the migratory birds on the Refuge. He gave the students lessons in wetland function, habitat management and restoration, and hands-on, "eyes-on" lessons in bird identification. These three sessions were highlights of the year for club members and the parents that were able to accompany us.

In February we began to focus on water testing on the refuge. In preparation, we spent a full day at Magness Tree Farm (the Wildwood site was snowed in) with the folks from Wolfree learning water testing techniques on the stream that runs through the farm. A few weeks later, Pete Schmidt, the Refuge biologist, met us on the Refuge to discuss our testing there. He requested that we test the waters of Chicken Creek that flow through the Refuge. He showed us the specific sites he wanted tested and explained to the students why testing was important. We have established two testing sites, one where Chicken Creek enters the Refuge and another where it exits into the Tualatin River after flowing through the Refuge wetland areas. We have collected data once a month for four months.

We intend to map our test results using GIS (Geography Information System) technology. We were able to obtain the help of a GIS specialist from Portland State University who provided GIS training during four after-school meetings. Refuge Club members created GIS maps referencing the different tests they performed (please see attachment to this document) and will start loading their testing data into them next fall. They will create a power point presentation describing their findings to Sherwood City Council and Refuge staff next fall.

In March, Refuge Club members staffed an information booth about Refuge Club at the Children's Water Festival at Portland Community College at Rock Creek. Fifteen hundred elementary school children attended this festival focusing on all aspects of the importance of clean water. Our booth featured our field guides along with track replicas of many of the birds and mammals listed in the guide.

On April 4, April 25 and May 23, the Refuge Club members hosted field trips during the school day for groups of sixth, seventh and eighth graders, about 60 students in all. Also in April and May, the students focused on getting ready to present at the Migratory Bird Festival. The festival occurs every year in May on the Refuge and is sponsored by the Friends of the Refuge. Our students designed a large presentation board that featured photographs of members at work on the Refuge water testing and engaged in data collection. They shared their knowledge of the refuge and their field guide with the approximately 800 visitors to the festival that day. We concluded our year in June with a pizza party and a trip to the Refuge that was just to enjoy this beautiful place – no work on the agenda for that day!

We had a good year. Our students gained knowledge, experience, and confidence as Refuge Club members and Refuge ambassadors to the public. The effectiveness of these skills was confirmed this year when members of the Friends of the Refuge traveled to Washington D.C. to lobby for federal funding for the Refuge. Before they left, they asked Refuge Club members to write a short piece about what the Refuge meant to them to add to their packet of information for our congressmen and senators. When they returned from their trip, they reported to the club that their writings, accompanied by the field guide, were the most popular pieces in their presentations in the offices of the House and the Senate. You can't ask more from kids than that!

Evaluation

For the most part, we had a very successful year. However, we did learn early on that our goal of bringing students from all over the Metropolitan area out to the Refuge was a bit too ambitious. This was entirely due to lack of facilities on the Refuge. As mentioned before, the Refuge is only open to the public for special occasions – generally only twice a year. Parking areas are very restricted and there are no bathroom facilities. There in lay our problem. Sherwood schools are just a few miles from the Refuge and taking care of bathroom needs rarely was a problem. However, it occurred to us it would be a problem with a group of students who had traveled from the Metro area for a field trip. When I finally figured this out, I realized we would never spend out the transportation dollars in the grant. I had also neglected to consider that we would like the classroom teachers to be able to accompany their students on the field trips we had planned.

After speaking with a program grant manager, I was given permission to use some of the transportation money to cover subs so that teachers could join their students. I also received permission to use some of those funds to provide a fifth grade teacher with watershed teaching materials, water testing kit, and professional support through the Cascade Earth Force program. The transportation fund also paid for the buses to take approximately 130 Sherwood fifth grade students from two schools to the Children's Water Festival. We viewed this as a recruitment tool as we draw our new members from the incoming sixth graders at Middle School.

The Refuge Club began with the exciting, engrossing project of making a field guide. In some ways, that has been a hard act to follow. We found it was harder to hold the kids' interest without the excitement of a big "prize" at the end of the year. Our emphasis on water testing and GIS mapping appealed to some, but not to all. We also found that what they really like to do is to be on the Refuge as much as possible. Next year, we will be sure provide them with opportunities to be on the Refuge to just experience it - without a chore to accomplish while we're there.

Thank you for your support this year. We are so grateful for the supplies we were able to purchase and for the experiences we were able to give to so many students because of your generous assistance.





