Coastal Roots

July 28, 2011 http://coastalroots.lsu.edu

Two CR Schools Win Big for Stewardship!

Wow! Are we ever proud! Two of our CR schools won prizes in the **2010-11 Disney Planet Challenge: Zachary Elementary** and **Metairie Academy for Advanced Studies**.

Winning the **Disney Planet Challenge Grand Prize** and a trip to Disney Land for their class (among a lot of other cool prizes) was **Zachary Elementary**! Check out the YouTube video and the Disney website for pictures from April Fool's Day – which is when they heard that they won the Grand Prize from Mickey himself! Check out their announcement (http://dpcproject.com/winners2010/ElementarySchool.aspx), prizes (http://disney.go.com/planetchallenge/elementary-prizing.html), and YouTube video (http://www.youtube.com/watch?v=rDnhbSibJIc). The picture (above right) is from their award ceremony at Disney Land in Anaheim, California!

Winning the **Disney Planet Challenge State Prize for Louisiana** was **Metairie Academy for Advanced Studies** (lower right)! Check out their announcement (http://dpcproject.com/winners2010/StateWinners.aspx?school=elementary) and their prizes (http://disney.go.com/planetchallenge/elementary-prizing.html)!

Both of these schools used the LSU Coastal Roots Project as part of their Planet Challenge portfolio. We are very proud of the hard work of these teachers, **Breigh Rainey** and **Kristy Gilpin** (Zachary Elementary) and **Mona Herbert** and **Claudia Suazo** (Metairie Academy for Advanced Studies), for their continuing efforts to engage their students on coastal environmental issues in Louisiana. We are so proud of you!

CR Teachers Speak at International Conference

Two CR teachers, **Natalie Lartigue** and **Gina Egan (Belle Chasse Middle)**, traveled to Regina, Saskatchewan, Canada, in June to present their talk "Coastal Stewardship Takes to the Airwaves Using Low-Power AM Broadcasts" at the ***2011 Canadian Environmental Education and Communication Conference***. Natalie and Gina, along with **Libby Richards, Amanda Ogea, Boo Kay (Bishop Noland Episcopal Day School, Lake Charles),** and **Craig Howat (St. Charles Satellite Center, Luling)**, agreed to pilot a new effort on behalf of the LSU Coastal Roots Program.

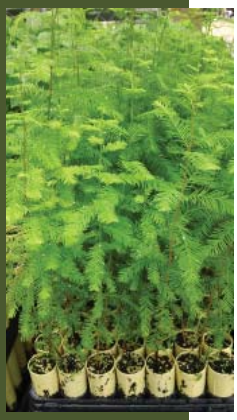
The pilot project, sponsored by grant funding from **Louisiana Sea Grant College Program**, is entitled ***Coastal Literacy Radio Stewardship Project for Kids*** (CLRSPK, pronounced 'Clear Speak' - but we've all just started calling it Coastal Roots Radio). The basic idea is that students can also be leaders in stewardship by helping their broader communities understand the issues involved in taking care of our coastal resources. The CLRSPK Project established classroom-based radio production studios at three CR schools. Students digitally record what they learn about critical coastal issues facing the Louisiana Gulf Coast in the form of prose, poetry, and song. Some of the broadcasts involve interviews students did on planting trips or with coastal experts. These student-created audio files are broadcasted to their local communities using their school-based low power AM radio transmitter, which has a range of about 1/4 to 1/2 mile. The broadcasts are also available on the CR website as podcasts (http://coastalroots.lsu.edu/TICRRadio.html). We eventually hope to have the text of the broadcasts also available. The Artist Boat (http://artistboat.org), a non-profit environmental organization from Galveston, Texas, assisted with training and technical oversight for this project.

Inside this issue...

Best Nursery Practices for Hot Weather

Dr. Ed Bush, LSU School of Plant, Environmental, and Soil Sciences

The weather is steaming hot, so it's important to make sure that your irrigation system is properly working. Check your yards at least every 2 days or as often as possible because of the high water demand! Increase the water rate to at least 1" for the plants per day in the nursery. One way to measure the water output of your irrigation system is to use your Coastal Roots provided rain gauge. Pick a day where rain is unlikely and completely empty and clean your rain gauge. Place the rain gauge in the middle of the can yard and check the amount of water in the gauge after both the morning and afternoon watering. Increase or decrease watering time as needed. For directions on how to program your timer see the document Automatic Irrigation Timer Instructions (http://coastalroots.lsu.edu/NItimer.html) or the video Programming Your Timer (http://coastalroots.lsu.edu/NIcanyard.html) on the CR website.



Above: Catalpa (top) and baldcypress seedlings at St. Joseph's Academy.
Photo credit: CR.

If you have shade cloth, now would be a good time to ensure that the supporting rope/string is stretched tightly across the yard so that the shade cloth does not sag. This is important because a shade cloth that droops in the middle will funnel water toward the center of the yard. Not only will this kill the plants located in the center of the yard, but it will weaken the shade cloth and eventually cause it to tear. See the video Shade Cloth Installation (http://coastalroots.lsu.edu/NIcanyard.html) on the CR website for a demonstration and further instructions on how to properly install a shade cloth. Note: Shade cloths are NOT required for most yards. Remember, these plants grow in their natural habitats in full sun. If you think your plants are stressed from the heat, let Pam know, so we can determine if a shade cloth is necessary.

Finally, don't forget to shift your trays every two to three weeks to prevent your plants from pegging through your groundcloth. You should be watering with a liquid fertilizer all through the summer months and in August have your students add Osmocote (8-10 prills/beads) per cell. Your plants need this extra nourishment to grow into large robust seedlings and grass plugs. For complete instructions on fertilizing plants, view the video Fertilizing Your Plants (http://coastalroots.lsu.edu/NIcanyard.html) on the CR website.

What is *No Child Left Inside*?

by Kate March, LSU College of Education Graduate Student

The No Child Left Inside (NCLI) Act was first introduced to Congress in 2007. The NCLI Act was proposed in response to the No Child Left Behind Act of 2001, which resulted in reducing or removing environmental education from their curriculum in order to focus on high-stakes subjects. NCLI would help to address this problem by: 1) providing funding for educators to be trained in environmental education, 2) adding incentives for states to develop their own Environmental Literacy Plan, and 3) encouraging school systems to include environmental education in their curriculum by integrating it across core subject areas.

Why Do We Need Environmental Education? Serious environmental challenges will face the next generation. It is critical that students obtain a basic level of environmental literacy to prepare them to address environmental issues as adults. As children are become less active and more disconnected from the natural world, some researchers are seeing a rise in "nature-deficit disorder" (coined by Richard Louv in his 2005 book ***Last Child in the Woods)***. According to Louv, this deficit can be linked to several disturbing trends, including skyrocketing rates of childhood obesity, attention-deficit disorder, and depression. Environmental education can combat nature-deficit disorder by encouraging students to re-connect with the natural world. As environmental education is inherently interdisciplinary in nature, integrating it across the curriculum could potentially increase student achievement in math, science, reading, writing, and social studies.

Below: Chapelle High students after planting smooth cord grass on a Plaquemines Parish levee.
Photo credit: CR.

What is Louisiana Doing? As NCLI has not yet been passed into law, states are not required to provide environmental education to students. However, Louisiana has included environmental education in the state's PK-12 curriculum. Strand 5 of the LA Science Content Standards (Science and the Environment) specifically focuses on both environmental education and environmental literacy. Further, Louisiana's Environmental Education Commission is currently developing a state Environmental Literacy Plan.

What Can You Do? You can help combat nature-deficit disorder and support environmental literacy. Call your state representatives and tell them you support the NCLI Act. Take children outside for recess. Schedule more outdoor activities. Coordinate a field trip for your school to attend a nature center or walking trails (many sites are low-cost or free). Plan lessons that involve your school grounds. The possibilities are endless! For additional information go to http://www.nclicoalition.org/

This newsletter was partially funded by a generous donation from an LSU Alumni. We are very grateful for their support.

National Wildlife Federation Funds CR Schools in Oil-Impacted Parishes

We are happy to announce that the National Wildlife Federation has provided funding to assist four Coastal Roots schools engaged in coastal restoration efforts on Grand Isle in Jefferson Parish: **Larose-Cutoff Middle** (Larose, LA), **St. Paul's Episcopal** (New Orleans, LA), **Lafayette Middle** (Lafayette, LA), and **Zachary Elementary** (Zachary, LA). Funds will be used to enhance their school-based plant nursery production of dune grasses, provide partial reimbursement for bus transportation and substitute teachers on the day of their planting trip. You can read about the projects funded by the National Wildlife Federation... and if you watch the video at the bottom of the webpage, you'll see students from **St. Paul's Episcopal School** planting bitter panicum on the beach at Grand Isle State Park last spring! The URL is http://www.nwf.org/News-and-Magazines/Media-Center/News-by-Topic/Wildlife/2011/04-20-11-NWF-Puts-Spotlight-on-Restoration-at-One-Year-Mark-of-Gulf-Oil-Disaster.aspx

Voice of the Wetlands Provides Funding to CR for Materials

We are grateful to **Tab Benoit, Christina Kogos,** and **Voice of the Wetlands** for requesting funding from the **Alliance for Gulf Coast Communities** to help CR purchase extra trays & cells, dibbles, as well as ice and drinking water for some of our warmer planting trips. Check out the work of the **Voice of the Wetlands** at http://www.voiceofthewetlands.org/

Take a Journey to Our Nation's Estuaries

Take a journey to our nation's estuaries by using the video clips in NOAA's National Estuarine Research Reserve Estuary Video Gallery (http://estuaries.gov/Estuarylive/VideoGallery.aspx)! This collection of short video clips is the "next best thing to an actual trip to an estuary" field trip. Use these video clips to teach and learn more about our nation's beautiful estuaries! There are over 150 video clips covering a range of topics!

- Estuaries & You: Explores the relationship between estuaries and humans, mostly from a cultural, arts and economic perspective.
- Life in an Estuary: Features plants and animals that make their home in an estuary.
- Protect & Restore: Stories about the human impacts on estuaries and the things that scientists, educators & students can do to protect and restore these wonderful places.
- Science & Technology: Includes stories about the type of research done and the equipment used in monitoring our nation's estuaries.
- K - Elementary: A reduced set of video clips that could be used with students at K-elementary grade levels.

Celebrate
National Estuaries Day
September 24th, 2011

2011-12 LSU Coastal Roots Schools

1 Pierre Part Elementary (Pierre Part, Assumption Parish) 2001
2 Abbeville High (Abbeville; Vermilion Parish) 2001
3 St. Joseph's Academy (Baton Rouge, East Baton Rouge Parish) 2001
4 St. Louis, King of France (Baton Rouge, East Baton Rouge Parish) 2002
5 Harry Hurst Middle (Destrehan; St. Charles Parish) 2003
6 Our Lady of Mercy (Baton Rouge, East Baton Rouge Parish) 2003
7 St. James Science & Math Magnet (Vacherie, St. James Parish) 2004
8 Lafayette Middle (Lafayette; Lafayette Parish) 2005
9 St. Charles Parish Satellite School (Luling; St. Charles Parish) 2006
10 R.K. Smith Middle (Luling, St. Charles Parish) 2006
11 St. Martin Episcopal (Metairie, Jefferson Parish) 2007
12 Christ Episcopal (Covington; St. Tammany Parish) 2007
13 Metairie Academy for Advanced Studies (Metairie; Jefferson Parish) 2007
14 Isidore Newman School (New Orleans; Orleans Parish) 2008
15 Belle Chasse Middle (Belle Chasse; Plaquemines Parish) 2008
16 Central High (Central Community Schools, E. Baton Rouge Parish) 2008
17 South Cameron High (Grand Chenier, Cameron Parish) 2008
18 Grand Lake High (Lake Charles, Cameron Parish) 2008
19 St. Paul's Episcopal (New Orleans, Orleans Parish) 2008
20 Larose-Cutoff Middle (Cutoff, Lafourche Parish) 2008
21 Westdale Heights Acad. Elem Magnet (Baton Rouge, EBR Parish) 2008
22 Archbishop Chapelle High (Metairie, Jefferson Parish) 2008
23 LSU Laboratory School (Baton Rouge, E. Baton Rouge) 2008
24 Reeves High (Reeves, Allen Parish) 2008
25 Holy Cross School (New Orleans, Orleans Parish) 2009
26 Franklin High (Franklin, St. Mary Parish) 2009
27 Iberville Science and Arts Academy East (St. Gabriel, Iberville Parish) 2009
28 Bishop Noland Episcopal Day School (Lake Charles, Calcasieu Parish) 2009
29 Schools of the Sacred Heart (Grand Coteau, St. Landry Parish) 2010
30 Iberville Science and Arts Academy West (Plaquemine, Iberville Parish) 2010
31 Point aux Chenes Elementary (Montegut, Terrebonne Parish) 2010
32 J.B. Martin Middle (Paradis, St. Charles Parish) 2010
33 Zachary Elementary (Zachary, East Baton Rouge Parish) 2010
34 Covington High (Covington, St. Tammany Parish) 2010
35 Belle Chasse Academy (Belle Chasse, Plaquemines Parish) 2010
36 Northside High (Lafayette, Lafayette Parish) 2010
37 Patrick Taylor Science & Technology Acad (Jefferson, Jefferson Parish) 2010
38 Louise S. McGehee School (New Orleans, Orleans Parish) 2011

Installations Scheduled for Fall 2011

39 L. Leo Judice Montessori Elementary (Lafayette, Lafayette Parish)

DEMONSTRATION NURSERY

UNO Coastal Education & Research Facility (New Orleans, Orleans Parish) 2010

2011-12 Mississippi Coastal Roots Schools

Demonstration Nursery: MS Coastal Research and Extension Center (Biloxi, MS) 2009

1 Wool Market Elementary (Biloxi, Harrison County) 2009
2 Anniston Elementary (Gulfport, Harrison County) 2011
3 Long Beach Elementary (Long Beach, Harrison County) 2011
4 St. James Elementary (Gulfport, Harrison County) 2011
5 Ocean Springs High School Vocational Center (Ocean Springs, Jackson County) 2011

Putting Down Roots - LSU Coastal Roots Plantings from January through May 2011

Photo credits: [1]Emily Dawkins, [2]Lauren Joerg, [3]Christopher Timco; all others by LSU Coastal Roots staff

St. John Berchmans[1]
January 13, 2011
Avery Island

Sacred Heart Academy
January 13, 2011
Avery Island

St. Joseph's Academy
January 18, 2011
Fontainebleau State Park

Isidore Newman
January 27, 2011
Jean Lafitte NP - Barataria Preserve

Belle Chasse Academy
February 8, 2011
Bonnet Carré Spillway

Franklin High
February 17, 2011
Palmette State Park

Archbishop Chapelle High
February 24, 2011
Plaquemines Parish levee, near Empire

St. Martin Episcopal
February 25, 2011
LDWF Pointe aux Chene WMA

Pointe aux Chenes Elementary
March 1, 2011
LDWF Pointe aux Chene WMA

Bishop Noland
Episcopal Day School
March 3, 2011
Coastal Plain Conservancy,
Green House Historical Site

Covington High
March 15, 2011
Fontainebleau State Park

Pierre Part Middle
March 16, 2011
Maple Bayou Hunting Lodge

Iberville MSA West[2]
April 1, 2011
BREC Sugar Land Drive Park

St. Paul's Episcopal[3]
April 14, 2011
Grand Isle State Park

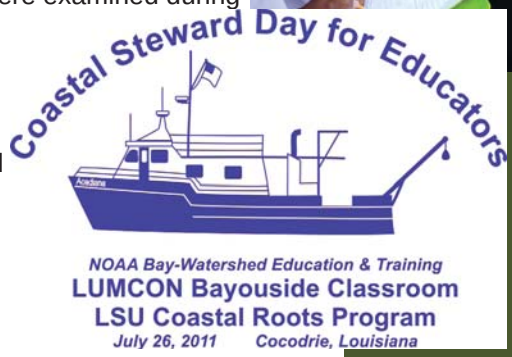
St. James SMA
May 17, 2011
Bonnet Carré Spillway

Photos or photo releases unavailable for
R.K. Smith Middle (February 22, 2011; *Bonnet Carré Spillway***)**
Lafayette Middle (March 18, 2011; *Avery Island***)**
St. Louis King of France (March 24, 2011; *Fontainebleau State Park***)**
JB Martin Middle (March 31, 2011; *LDWF Pointe aux Chenes WMA***)**
Grand Lake High (May 12, 2011; *Mae's Beach, Cameron Parish***)**

Below left: Educators gather in front of LUMCON"s R/V Acadiana. Below right: Educators measuring salinity. Photo credit: CR.

Coastal Steward Day for Educators

Educators participating in LUMCON's Bayouside Classroom, a water quality monitoring program, and the LSU Coastal Roots Program joined together for a day of learning on the waters of Terrebonne Bay. Made possible from funding through a **NOAA Bay-Watershed Education and Training** grant, **Murt Conover**, LUMCON Education Coordinator, took the group of educators on a three hour cruise aboard the *R/V Acadiana*. Participants practiced how to collect water quality information (dissolved oxygen, temperature, salinity, pH, and turbidity) and learned how sediment and fresh waters entering the bay from its watershed affect the health of the estuary. Teachers also collected nekton, which were examined during the cruise, and plankton samples, which were taken back to LUMCON for examination under microscopes. We made plankton slides and learned how to identify them using LUMCON's plankton ID website. Thanks to **Murt Conover** for organizing and leading such a great learning experience!



Becky Jones Graduates!

We are sorry to say goodbye to **Becky Jones**, who joined the Coastal Roots Program as a Graduate Assistant in May 2009 while pursuing her Masters degree in Education. Becky had been an elementary school teacher in Katy, Texas, prior to entering graduate school. Becky's thesis research involved the creation of a survey instrument, ***Attitudes of Children Towards Coastal Environmental Themes*** (ACCET), designed to measure the effect of coastal environmental education programs on the attitudes of middle school students. Becky administered the ACCET at the beginning of the school year and again after restoration planting trips to students in five CR schools, as well as to two (control group) schools not involved in the CR Program. Results of her study showed that, although the ACCET did not show a change over time in attitude among the CR students, the CR students scores significantly higher in attitudes toward coastal environmental themes than non-CR students.

Of her experience with our program, Becky said, "Coastal Roots has exceptional teachers participating in the program. I know they go above and beyond what they're expected to do in their schools, and I really appreciate that they're willing to do so much for their students. They've been a joy to work with. I learned a lot from their enthusiasm -- having only taught in one school, it was valuable to see how different schools operate and the different ways the various teachers go about implementing the CR program in their classrooms."

Becky's talents, especially in the area of technology, have enriched the CR Program tremendously. She edited almost all the 'how to' videos that are presently on the CR website and had a hand in designing the GPS data forms and database. After spending some time relaxing with family and friends, Becky is seeking employment in education outreach or adult education and plans to live in Denver, Colorado.

Above: Becky Jones.
Photo credit: CR.

MS Coastal Roots Program Growing!

Dr. Gary Bachman, MS Coastal Research and Extension Center, Biloxi, MS

In the past year the Mississippi Coastal Roots has started to gain momentum with five schools participating. We have had some fits and starts getting everything going at each school, but will finish in the next couple of months. One of our schools eliminated our teacher's position. This fall she will be at George County High School in Lucedale, MS, and we will move her can yard this fall.

We are excited about opportunities that MS Coastal Roots has developed in graduate education. Coastal Research and Extension Center, the home base for Mississippi Coastal Roots, has funded a graduate student whose thesis project, involving native plants found in the Crosby Arboretum in Picayune, MS, will benefit our programs. **Mr. Shane Huff** is evaluating a few native coastal highland and savannah plant species found in habitats within the Crosby Arboretum. He is evaluating the potential that our schools will have for successful propagation of these native plants.

I want to thank **Dr. Chris Boyd**, **Dr. Christine Coker,** and **Mr. Corey Wheeler** (known as Mr. Corey to our students) who are making big contributions to our growing program. And of course to Dr. Pam Blanchard and Dr. Ed Bush for their help, advice, and encouragement as we go through our growing pains.

Left top: Long Beach students learning the finer point of putting their irrigation system together.
Left center: Ocean Springs VoTech students in the traditional can yard completion pose.
Left bottom: Woolmarket students celebrate finishing their seed planting.
Photo credit: Dr. Gary Bachman

LSU Coastal Roots Summer Institute 2011

Above: Teachers learning how to determine dissolved oxygen levels in water at the CR Summer Institute.

Right: Teachers at the Baton Rouge Zoo after participating in a tree walk facilitated by Nancy Tarver, zoo horticulurist.
Photo credits: CR.

Twenty-four teachers representing 16 schools attended the LSU Coastal Roots 2011 Summer Institute on June 2-3 in Baton Rouge. This was our second CR workshop to be held at the **LSU AgCenter's LaHouse**, the showcase energy efficient home and landscape resource center, where we spent the first day in classroom sessions. In spite of unseasonably warm temperatures, participants enjoyed the cool indoors, as well as the beautiful landscaping of the surrounding vegetable and flower gardens. We thank **Kyle Huffstickler** and his staff for their wonderful hospitality.

Dr. Ed Bush conducted hands-on activities examining seeds, seedlings, and various types of root systems, and coached participants on advanced skills in managing a CR nursery. In her final installment of the LUMCON Bayouside Classroom Water Quality Monitoring Program for Coastal Roots teachers, program director **Murt Conover** instructed us in how to measure dissolved O_2 in water, and why this is an important indicator of ecosystem health and stability. Each school received a kit to use in conducting dissolved oxygen measurements with their students. Later that evening, **Dr. Carrie Knott** [LSU School of Plant, Environmental and Soil Sciences] presented information & techniques for propagating wetland grasses.

We spent the morning of our second day on a tree walk and exploration of the **BREC Zoo**. **Nancy Tarver**, the zoo's horticulturist, helped us identify tree types and shared tree stories from Native American and local mythology, while we made leaf and bark rubbings as we learned to distinguish and remember the various native species, some familiar and some not. Pam presented material on the history of the lower Mississippi River, providing participants with a deeper understanding of the events, geography, topography, and geology that influence the river's course through south Louisiana. We explored innovative ways to include and use GPS data and Google Earth to locate and map the trees planted by CR students, discussed the use of classroom resources available from NOAA, and reviewed CR's new *A Year in the Yard*, which provides a comprehensive, month-by-month summary of nursery planting and maintenance tasks. **Dianne Lindstedt**, LA Sea Grant Education Coordinator, stopped by with the new hot-off-the-press coastal land loss map. It was a rich and productive institute, and we extend our special thanks to all of our guest speakers, as well as those who helped with the planning, accommodations, and logistics of hosting the institute.

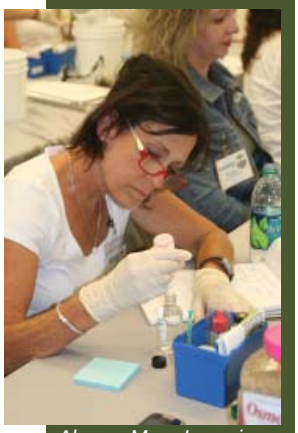
Bayouside Classroom Water Quality Parameter: Dissolved Oxygen

Murt Conover, Louisiana University Marine Consortium

Well everyone, we have come to final water quality parameter I have to share with you. Over the last three years I have been very lucky to spend time with all of you. It is my hope that in the Coastal Roots and Bayouside Classroom can work closely together to further environmental education and stewardship here in Louisiana. Thank you for being a great audience and such inspiring educators. In this article I will cover the basics about dissolved oxygen, but there is much more to understanding the increases, decreases, and impacts of oxygen levels in our aquatic systems. Please see the Bayouside Classroom (BC) teacher manual for more info [http://www.lumcon.edu/bayousideclassroom].

Dissolved oxygen is oxygen gas (O_2) that is dissolved in water. Thus it behaves like any other gas. Oxygen enters the water from the air and through photosynthesis. It is an important parameter to measure because most aquatic plants and animals need oxygen (at least 2mg/L) in order to survive.

The Bayouside Classroom uses the ***Winkler Titration method*** of measuring dissolved oxygen. This method is a chemical reaction that uses a series of chemical reactions to precisely determine the number of oxygen molecules in a water sample. First devised in 1889, the Winkler method is considered the "gold standard" for measuring the concentration of dissolved oxygen in a water sample. Through a series of chemical reactions, the O_2 combines with iodine to form a golden yellow chemical. Each oxygen molecule is associated with an iodine molecule and we can measure oxygen by measuring the iodine. When the iodine is neutralized by the addition of sodium thiosulfate, the golden color disappears, and we can determine how much iodine (hence oxygen) was in the sample. (Note: some oxygen test kits use a starch indicator that turns the iodine solution from yellow to a deep blue color to make it easier to distinguish the color change.)



Above: Mary Legoria (Westdale Heights Academic Magnet, BR) learning how to determine dissolved oxygen during the CR Summer Institute.
Photo credit: CR.

The amount of oxygen dissolved in water depends on temperature, turbidity, photosynthetic rates and respiration rates. In general, as water temperature rises, dissolved oxygen levels decrease because high temperatures lower the saturation point of oxygen and increase respiration rates. ***Turbidity***, or cloudiness of the water, reduces the amount of sunlight that aquatic plants receive, thus limiting the amount of oxygen produced by photosynthesis. ***Cellular respiration*** decreases the amount of oxygen in the water since oxygen is consumed to make energy. Respiration rates also comes into play when microbes and fungi use oxygen to decompose organic material, so waters with high organic loads may have lower levels of oxygen.

Hypoxia, or low oxygen, occurs when the dissolved oxygen level falls below two milligrams per liter. Oxygen levels this low cannot support fish and many other aquatic organisms. Bayous or smaller bodies of water will have their lowest dissolved oxygen levels just before dawn. This is because oxygen has been consumed by aquatic plants and animals all night. In late summer, water temperatures are high, making the solubility of gases lower. This relationship means lower levels of oxygen, which can cause fish kills. Put these two things together and you can better understand why fish kills due to lack of dissolved oxygen are most likely to occur in the early mornings of late summer.

Because there are many factors that influence dissolved oxygen levels, there are many ways to help maintain healthy dissolved oxygen levels. Human sources of organic matter, such as grass clippings, seafood boil residue, dead animals, animal waste, and fertilizers should never be put in the bayou or in storm drains. Planting native vegetation on the bayouside to shade the bayou, filter pollutants, and stabilize sediments can also help to keep the temperature down and dissolved oxygen levels up.

Websites with more information on hypoxia.

Louisiana Universities Marine Consortium (http://www.lumcon.edu) and (http://www.gulfhypoxia.net)
Barataria – Terrebonne National Estuary Program (http://www.btnep.org)
NOAA gulf of Mexico Hypoxia Watch (http://ecowatch.ncddc.noaa.gov/hypoxia)
USGS Hypoxia in the Gulf of Mexico Studies (http://toxics.usgs.gov/hypoxia/)
World Resources Institute – Eutrophication & Hypoxia (http://www.wri.org/project/eutrophication)

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National Tree Benefit Calculator (http://www.treebenefits.com/calculator/)

The Tree Benefit Calculator allows anyone to make a simple estimation of the benefits individual street-side trees provide. With inputs of location, tree species and tree diameter, users will get an understanding of the environmental and economic value trees provide on an annual basis. Just one of our 1/4" baldcypress trees provides about $0.43 a year. When multiplied by a 500 tree crop from a single school, that adds up to over $215 a year in benefits from just one school's restoration efforts! This past year we planted over 6,744 baldcypress. The environmental and economic value of these trees amounts to a $2,899.92 benefit to the coastal habitat and citizens of Louisiana! What a great math extension for CR students! *Suggested by Libby Richards, Bishop Noland EDS. Thanks, Libby!*

LSU Coastal Roots Calendar

July 26	WORKSHOP: Coastal Steward Day for Educators, LUMCON, Cocodrie
Aug 1	Restoration Trip Information will be emailed out
Oct 7-9	2011 Voice of the Wetlands Festival, Southdown Plantation, Houma
Oct 15	National Wildlife Refuge's Wild Things Festival, LaPlace
Nov 3	LA Sea Grant's Ocean Commotion, Baton Rouge
Nov 10-12	NSTA Regional Conference, New Orleans

Check Out CR Nursery Resources and Videos!

Check out helpful videos about the best practices used in maintaining a working plant nursery:

- Fertilizing Your Plants
- Cleaning the Riser Screens
- Shade Cloth Installation
- Thinning Your Seedlings
- Programming Your Timer
- Using the Green Template to Plant Seeds
- Changing the Timer Battery
- Using the Garmin eTREX on Your Trip

Another helpful document is "A Year in the Yard." This document details by month the tasks that will keep your Coastal Roots nursery in tip-top shape. The booklet and the videos are located at http://coastalroots.lsu.edu/NIcanyard.html

Helpful Hands

An example of a school community watching out for their nursery during the summer occurred in mid-July at **St. Joseph's Academy**. Their plant nursery had to be moved (yes.... that means dug up and repositioned) due to construction of new buildings on campus. Contractors did a great job in moving the yard... but unfortunately, the wires connected to the timer came lose in the move. The following day **Arthur Smith** noticed that the plants had not been watered and contacted teacher **Linda Messina**, who in turned called Pam. The wires were reconnected and the plants (bald cypress and catalpa) are beautiful! That's teamwork!

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not."
– Dr. Seuss, The Lorax

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LSU Coastal Roots Restoration Partners

We thank our restoration partners for their willingness to work with and educate our LSU Coastal Roots students about the restoration needs of their site as well as other important coastal issues.

- Avery Island, Inc.
- Baton Rouge Recreation (BREC) – Dept. of Conservation
- Mae's Beach, Cameron Parish
- Cheniere au Tigre
- City Park, New Orleans
- Coastal Plain Conservancy
- Grand Isle Port Commission
- Jean Lafitte National Historic Park & Preserve
- LDWF Pointe aux Chenes WMA
- Louisiana State Parks
- Maple Bayou Hunt Club
- NRCS Coastal Prairie Restoration
- Plaquemines Parish Coastal Zone Management
- US Army Corps of Engineers, Bonne Carré Spillway
- Wetland Watcher Park, St. Charles Parish

LSU Coastal Roots Seedling Nursery Program

LSU College of Education College of Agriculture | Sea Grant | NOAA | LSU AgCenter Research & Extension

LSU Coastal Roots: Helping the LA coast one seedling at a time!

http://coastalroots.lsu.edu