



The Chattooga Quarterly

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Dedicated to Dr. Eugene Odum Commemorating the Life of the Father of Ecology



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Director's Page

Buzz Williams

In my pursuit of the idea of conservation over the years, I consider myself extremely fortunate to have made the acquaintance of Dr. Eugene Odum. Though the number of occasions that I actually met with Dr. Odum was few, it is no exaggeration to say his influence on my conservation ethic was greater than anyone I have ever met. This will be no surprise to anyone who knows the life's work of the man known as the "Father of Ecology." Dr. Odum also contributed significantly to the *Chattooga Quarterly* and served as a mentor.

Consequently we dedicate this issue of the *Chattooga Quarterly* to Dr. Odum, who passed away on August 10, 2002 at the age of 88.

In this issue we present a biography of Dr. Odum and recount some of his writings from past issues. In addition, Dr. Odum's counsel has supplied inspiration and structure for future Conservancy programs, which I share here.

As we all remember Dr. Odum's influence several descriptive adjectives reoccur, for he was universally recognized as wise, kind, optimistic and extremely knowledgeable. He also served as a father figure to many of his students and colleagues. His influence was so profound that one student described his work as the scientific underpinnings of the modern environmental movement.

But it was his unique ability to foresee the future that set him apart from other scholars. I heard this ability once described as someone who could predict a storm before the clouds appeared. What Odum saw in the future was a great environmental holocaust wrought by humanity's greed. This wisdom to see pending doom was based on Odum's genius and method of study that focused on the big picture. The study of ecology, or looking at the whole as opposed to the individual pieces, allowed him insight into a cause-and-effect perspective that gave him visionary ability. But it was unyielding optimism and faith in the innate goodness of people that made Eugene Odum truly a great man. He refused to accept environmental holocaust as humanity's outcome. In his wisdom, Odum

laid down a road map that could change the course of "civilization" to avoid the devastating consequences of greed.

Dr. Odum's impact on our program of work at the Chattooga Conservancy has been profound. I recently re-read an interview with Dr. Odum conducted by Chas Zartman, then staff biologist for the Conservancy, that appeared in the *Chattooga Quarterly* in the spring of 1997. Some of the things he suggested in that interview have and will continue to guide our work. They are:

- ⇒ Think beyond small preserves and work toward landscape level conservation
- ⇒ Promote wasteless industry
- ⇒ Endorse locally based sustainable agriculture
- ⇒ Include environmental costs in market place economics
- ⇒ Provide a field site for ecological study for young people
- ⇒ Combine economics, ecology and ethics in the idea of conservation
- ⇒ Build coalitions for consensus for conservation.

In honor of Dr. Odum, the Chattooga Conservancy will be planning and executing a series of workshops and public education programs in the coming year, to implement a strategy for conservation based on Dr. Odum's wisdom. We also would

like to include our membership as a sounding board to develop these events. So give us a call, letter or email, or better yet, a visit!

Dr. Odum was my personal hero, and he will be missed greatly. However, his wisdom can still guide our work, and his vision can serve as inspiration. Personally, I will strive to recognize the problems we face with clarity while never giving up hope that we can make a difference.

What Eugene Odum saw in the future was a great environmental holocaust wrought by humanity's greed....

Yet his unyielding optimism and faith in the innate goodness of people refused to accept environmental holocaust as the outcome.

Dr. Eugene Odum *Father of Modern Ecology*

Carol Greenberger

In early August Eugene Odum passed away at the age of 88, and the world lost one of the most influential figures in the field of ecology. Dr. Odum has been dubbed “the father of modern ecology” and is credited with pioneering the concept of the ecosystem. His textbook *Fundamentals of Ecology*, published in 1953, was the catalyst that changed ecology from the study of the microcosm to the study of the macrocosm. Former President Jimmy Carter said, “The work of Dr. Odum changed the way we look at the natural world and our place in it.”

Eugene Odum was born in 1913 and grew up in Chapel Hill, North Carolina. Odum credited his forest surroundings with instilling in him a love of nature, and his father, a distinguished sociologist, taught him his holistic way of thinking. Eugene became interested in birds as a child, and while in junior high school wrote a nature column with a friend that ran in the local newspaper. Odum’s interest in birds led him to zoology and the University of North Carolina where he received his bachelor’s and master’s degrees. At that time scientific studies concentrated on specific components: individual plants or species, organisms, or molecules. Eugene realized that he wanted to examine the whole picture; he wanted to study living birds and how their lives related to their environment. He chose the University of Illinois for his doctorate because it was one of the few schools at the time that accepted this holistic approach.

After graduation, Odum took a job as resident naturalist for the Hyuck Preserve in upstate New York. There he began to research birds and their habitats, which led to a greater understanding of how entire ecosystems work. Odum became convinced that it was important to study how one part of an ecosystem affects another. In 1940 he began teaching zoology at the University of Georgia, as the school’s only ecologist. At that time, ecology, as a scientific discipline, existed as small-scale studies of individual systems, such as ponds or marshes, which could be understood in isolation. Odum considered ecology an integrated discipline that brings all of the sciences together instead of breaking them apart. He presented the idea of making ecology part of the core curriculum for biology majors, only to realize that no textbook on ecology existed. He began work on a textbook with the help of his brother Howard, also a noted ecologist.

Odum’s textbook explained that scientists could look at the whole system; weather patterns, watersheds, and regional plant and animal populations, as a whole. He made the relationship between human actions and the consequences of those actions on nature an essential part of the concept of an ecosystem. For ten years *Fundamentals of Ecology* was the only textbook in the field of ecology. It was translated into many languages and was crucial in the training of an entire generation of ecologists.

Odum was responsible for the establishment in 1954 of the University of Georgia’s Marine Institute on Sapelo Island, off the coast of Georgia. Tobacco tycoon R. J. Reynolds donated the use of the southern part of the island for the study of ecosystems in Georgia’s coastal marshes. The

Institute’s mission of marine research continues today. Odum was chiefly responsible for founding the U.S. Department of Energy’s Savannah River Ecology Laboratory, also operated by the University of Georgia. This 300 square mile environmental laboratory was established to determine if the nearby Savannah River Site, built in the early 1950’s to produce materials used in the fabrication of nuclear weapons, had any effect on the area’s plants and animals.

In 1960 the University of Georgia founded the Institute of Ecology and named Odum its first director. The Institute quickly made a name for itself, training a generation of scientists committed to Odum’s holistic method of looking at the world around us. The

environmental movement grew in the 1960’s and Odum’s concept of *ecosystem* became its cornerstone. By the time of the first Earth Day in 1970, his concept of the Earth as a vast set of interlocking ecosystems became the dominant theme of the environmental movement and it remains as important today.

Odum retired from the University of Georgia in 1984 but continued to work every day and published his last book, *Ecological Vignettes*, in 1998. Eugene Odum was awarded numerous honors throughout his career. His influence in the field of ecology is immeasurable. President Jimmy Carter summed it up when he said “We cannot overestimate the value of Dr. Odum’s work in making spaceship Earth a better place for us all.”

I don't think that I woke up one day and became enlightened. It's a gradual process. Some people have visions, and some people wake up thinking God told them to do that. But it was nothing like that, it was a gradual process. I'm an "optimist." I think we have terrible problems to face, but I remain optimistic that we can address them. If people can move to a more holistic view, benefits will follow.

Dr. Eugene Odum

Interview with Dr. Odum

In the spring of 1997, Dr. Eugene Odum spoke with us about his life, and study of ecology. Excerpts from this interview appear below; the full narrative can be found in the Spring 1997 Chattooga Quarterly

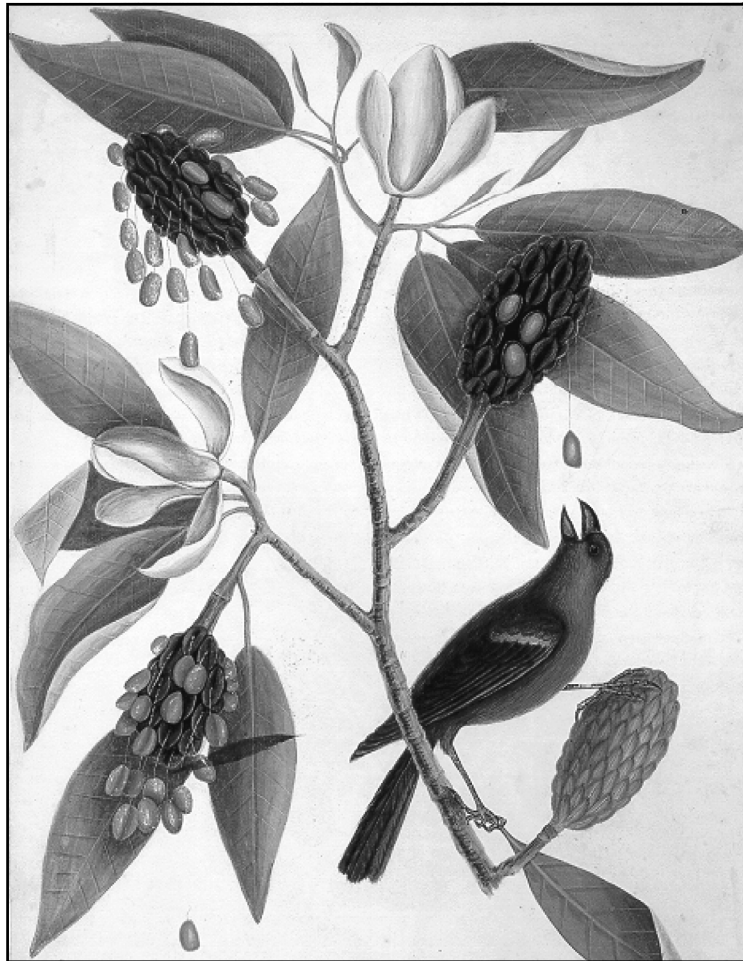
Through grade school I lived in Chapel Hill, North Carolina, and at that time the town and the University were just stuck in the woods. You could walk out of your back door and be in the woods. So as a kid, I became interested in birds. Ever since I can remember, I've gone out into the woods looking for birds. If you live in the city, you can't just step out the door and be in nature. I think

E. O. Wilson has said he doesn't think that there are going to be any more naturalists, because the majority of people live in cities now. He and I both grew up in small southern towns, and it was almost inevitable that you'd be interested in nature, although maybe not to the depth that we approached it with. I went from being interested in not just birds, but how birds operate. So, this developed into an interest in biology.

Essentially, I've always been into function, and after a while I felt it was important to know how birds function. So my next step was to become a physiological ecologist. My doctoral thesis was designing a crystal device for putting under bird nests to record their heart rate. I was more interested in function—not necessarily in structure—but rather, in how things work within the landscape. Next, I progressed to learning how populations function, and then onto the next logical step, how

communities function. When I first came back to the University in 1945 I suggested that maybe ecology ought to be a part of the core [curriculum]. Ecology wasn't one of the basic things in those days. Basic classes were physiology, pre-med. subjects and so on. They didn't know the difference between ecology and natural history. Natural history was describing—more or less—life in detail, taxonomy and the like. Ecology, of course, was studying the environment as a whole. It was then that I realized there had never been a textbook written on general ecology. This convinced me to write a textbook.

I've contributed to the concept of a top-down approach to the study of ecology. The idea of looking at the big thing first and the pieces last. This is the opposite from the nature of most science. Most science wants to start with the fundamental pieces, like at the level of genes. If you start from the top and work down you have to ask: What are the good pieces here? What pieces don't I know about? Do I need more hydrology work here to understand the river? How can I preserve the riparian zone beyond what is national forest land?



Eugene Odum wanted to study living birds and how their lives related to their environment.

Ecology now is the integration of the physical environment—organisms and humans. It's not just organisms; it's not just a biological subject. Other terms like zoology, the study of animals; botany, the study of birds, focus on specific entities.

Ecology is the study of houses—the place in which we live. This field had always been a sub-division in the field of biology, by some kind of precedent.

That's why we now have the Institute of Ecology—to study our home above the molecular and organism level. So the field of ecology is no longer the minor interest that it once was in 1945. In the case of my own evolution, it is simply a natural chronology that one goes through. You start becoming interested in the parts and then become interested in the whole.

Ecologists depend on both the top-down and bottom-up approaches for studying nature. We need both. The teaching of life science usually starts down at the bottom, with molecules, cells and genes and so on—with only lip service being paid towards the whole biosphere. My book was the first top-down approach. The first chapter starts with ecosystems. The first chapters of most other ecology books focus on the organisms. If you're taking biology and want to study a frog, it would be ridiculous to bring the leg in and study that, bring the heart in and study that. You'd

Interview with Dr. Odum

be best off bringing in the whole damn frog to start, then study the organs. Top-down. Ninety percent of other ecologists don't agree with that. All the other ecology books start with the pieces, and the focus on ecosystems is the last chapter, instead of the first. If you start at the top, then you're looking at the whole. In my abstract I mention that the reason we haven't done ecosystem management until recently is because the piecemeal, or what I call "quick fix," management often works so well in the short term. Timber managers have increased the short-term timber yield. Big game managers increase deer populations, but nobody thought about what the deer would do if you got too many of them around. They're eating up all the seedlings! No one thinks about what the forests are doing as a whole. This is evidence that we must move up to more holistic forms of management, in order to avoid the tyranny of small technology and micro-management. Since the ecosystem is the first complete unit, that is—it has all biological and physical components, it is a logical level to organize management around.

An ecosystem is a functional unit. It's not simply a piece of land. When applying ecosystem management, you need to think not only about what's inside the boundary, but what's going in and what's coming out. In other words, an ecosystem is an open-ended functional unit. It's a physical unit. In the hierarchy ranging from cells to ecospheres, the ecosystem is the first level that is complete. That's why we focus on it. A population can't live by itself. An organism can't live by itself. But the ecosystem theoretically is a sustainable unit. It has all the parts including not only the organisms, but also the input and outputs of physical energy: The energy flow. If you do not consider the physical components of an ecosystem, you're not taking into consideration the full unit.

You can't completely isolate and protect an ecosystem, because there is no such thing as a closed system in the natural world. When you set something aside for protection, you also have to know and be able to control what's coming downstream and what's coming into the watershed. You fail in your management if you don't consider what's coming in and what's going out. The Chattooga River is not going to stay unpolluted unless the headwaters and the watershed slopes remain in good shape. So the top-down approach is to start by looking at how productivity is affected by surrounding ecosystems. Only then can you be sure that what's inside remains sustainable. It's expanding your vision—that's all ecosystem management is.

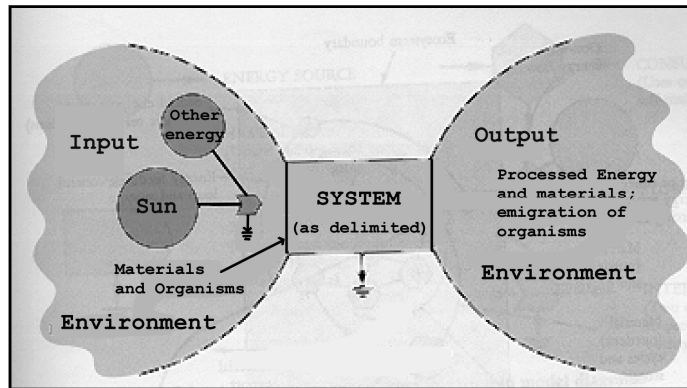
Expanding your vision to a larger, more holistic level. Ecology must combine holism with reductionism, if applications are to benefit society.

I think we have terrible problems to face, but I remain optimistic that we can address them. If people can move others up to a more holistic view, benefits will follow. Of course, one of the turning points was in the late 1960's when the astronauts first took pictures of the Earth. That's the first time we saw the Earth as a whole, you see. And so that started Earth Day, and the whole awareness movement and so on.

[In order to convince people who have limited knowledge of the natural world and of the non-market value of the natural landscape, we need to] talk about air and water. Point out that the three things you need to survive that are not in the market are clean air, clean water and food. Food's in the

market partly, but it's the work of nature that builds up the soil. Air is the best example. We require a certain amount of forests in nature, and green stuff and functional oceans to clean our air every day. We don't pay a dollar for that. And then talk about water. A third of the daily solar energy input goes into purifying water for us. The energy draws it up out of the sea, desalinates it and transports it many miles, and releases it as rain—giving us both water and

hydroelectric power. This process would make for a heavy cost, if you had to do it artificially. We don't pay nature for producing that energy for us, we just tap it. That's why hydroelectric power is so cheap. You can also point out that money is not a very good measure of wealth. There are so many other things that will make you wealthy. Things that are not bought or sold: your health, love, aesthetic value for the arts, music, and drama. Appreciating the beauty of nature is wealth, and it's all non-market. But market economists are telling people they should only give value and deal in human-made objects. That's what the free market system is good at. It's good at allocating human-made goods and services, but it isn't worth a damn at allocating nature's goods and services which are mostly external to the market. When people think about that, they may find ways to incorporate them in economics. I talk about bringing together the three E's: economics, ecology, and ethics. And if you want to get anything done in the real world, you also have to have the two C's: consensus and a coalition. You have a coalition on the Chattooga, but do we have a consensus on what is to be done?



An integral part of the ecosystem concept is the model of an ecosystem as an open, thermodynamic nonequilibrium system, with emphasis on the external environment.

Early Successional Habitat vs. Old Growth

Dave Martin

Almost two months ago, the Chattooga Conservancy received a letter from the Tallulah Ranger District scoping for public input on a proposed wildlife management project. As we gathered more information about the project, we discovered that one of the proposed project sites is in the middle of a very remote section of the Chattooga watershed, which many people frequent for the pristine high-elevation streams and substantial old growth forests. This site, entitled the Billingsley Creek Road site, follows a series of ridges above the confluence of Clear Creek and Overflow Creek. While impressive for its own serenity and remoteness, the confluence of these creeks is also the keystone to one of our last remaining native high-elevation ecosystems in the Chattooga watershed. Very few other areas in the Southern Appalachians have such a unique remote southern aspect above 2,000 feet. The Three Forks community, the Clear Creek community, Highway 106, Warwoman Road, and the Sarah's Creek Wildlife Management Area roughly outline this special area. The fact that it has no proper name or designation speaks highly for its remoteness.

The proposed areas are to be managed for early successional habitat, which requires the removal of 80% of the forest canopy, according to Forest Service Staff Biologist Andy Gaston. Managing a forest area as early successional habitat involves modeling naturally occurring heavy forest canopy disturbance, usually through "commercially harvesting the marketable timber." The habitat type occurs naturally as the result of fires, tornadoes, insect infestation, and any other time trees fall down, forming a gap in the canopy and allowing sunlight to reach the forest floor. When we cross-referenced the Billingsley Creek Road project site with the maps that correspond to a 1995 old growth forest survey conducted by the Tallulah Ranger District, we found that the intended project area overlaps two different areas classified as old growth in the report. Why, one might ask, did they not know that the area was classified as an old-growth forest, and why aren't they using their own surveys to account for outstanding resources when planning projects such as this? According to the 1995 survey, the project area abounds with Yellow Poplar, White, Black, Chestnut, Northern Red and Scarlet Oaks, Mountain

laurel, Witch Hazel, White Pine, Maple, American Holly, Black Gum, Dogwood, American Chestnut, and many more species. One of the oldest Black Oaks found in the survey is in this area, along with many other trees that are over 200 years old. The entire 125-acre area assessed at the junction of Overflow and Clear Creeks is the largest single old growth stand found outside of the Ellicott Rock Wilderness Area, and comprises roughly half of the largest contiguous old growth forest in the watershed, which spans a total of 242 acres.



These majestic oaks may be threatened by the Forest Service's Early Successional Habitat Project. Photo by Reis Birdwhistell

Why would the Forest Service consider an area like this for management that stops just short of being a clearcut? One reason is that according to USDA Forest Service, there is a decline in early successional habitat across the region, and certain species that are disturbance-dependent are showing declines in population. What they are not saying is equally as important to understand. The reason we are experiencing a decline in early successional habitat is because our forests are slowly recovering from the widespread clearcutting that took place in the first half of the century when timber barons were running rampant through the Southeast. A second wave of widespread logging under the Reagan administration contributed to an increase of this habitat as well. During these times, there was an unnatural surge in disturbance-dependent species such as the Golden Winged Warbler, and the Ruffed Grouse. In reality, a decline in disturbance-dependent species populations is actually an indication of a slow return to healthy

native forests.

Whether or not one considers an abundance early successional habitat important to overall forest health is largely a matter of interpretation. The Forest Service maintains that this habitat type plays a vital role in supporting healthy populations of certain species. We at the Chattooga Conservancy feel that while this fact may be true, forest-wide health must reflect a healthy native ecosystem, where one finds a balance of many species indigenous to that area. Dr. Odum astutely described this balance when he said, "An ecosystem is a functional unit. It's not simply a piece of land. When applying ecosystem management, you need to think not only about what's inside the boundary, but what's going in and what's coming out. In other words, an

Early Successional Habitat vs. Old Growth

ecosystem is an open-ended functional unit.” We are concerned that the Forest Service is only considering the need of the disturbance-dependent species, and not how their proposed project will affect the “open-ended functional unit” that is a native ecosystem of the upper Chattooga watershed. Many species, equally as imperiled as the Golden Winged Warbler, depend on contiguous interior old growth forest—an ecosystem which is far more scarce in the Southern Appalachians than early successional habitat.

Claiming that forest health is in decline because of a lack of early successional habitat in the National Forest System lands is very hard to believe. It doesn't take a biologist to see that in all their statistics supporting the need for more early successional habitat, the Forest Service fails to take *private lands* into consideration. According to a multi-organizational study of environmental conditions in the Southeast, the *Southern Appalachian Assessment Terrestrial Report of 1996*, 30% of all forest in public and private ownership is classified as early successional habitat in one of two categories—grass/seedling/shrub, or sapling/pole classification.

Why is the Forest Service taking such care to establish more of this habitat? Trying to get a straight answer has felt like herding cats, but no one can deny that the tender coppice growth, shrubs and grasses that grow up in early successional habitat create a virtual food plot for species that carry considerably more political clout in Georgia than the small migratory songbirds, such as White Tailed Deer, Wild Turkey, and Ruffed Grouse. As a hunter, I can appreciate the concern expressed by certain special interest groups for the integrity of game species such as the Ruffed Grouse, but I do not believe that the integrity of rare forest types like contiguous old growth ought to be treated as a special-interest on the same level as a game species. Preserving these native ecosystems should be a baseline principle on our federally owned lands. We must not sacrifice native forest health, the “open-ended functional unit,” in order to encourage the “surplus” of a thriving game species.

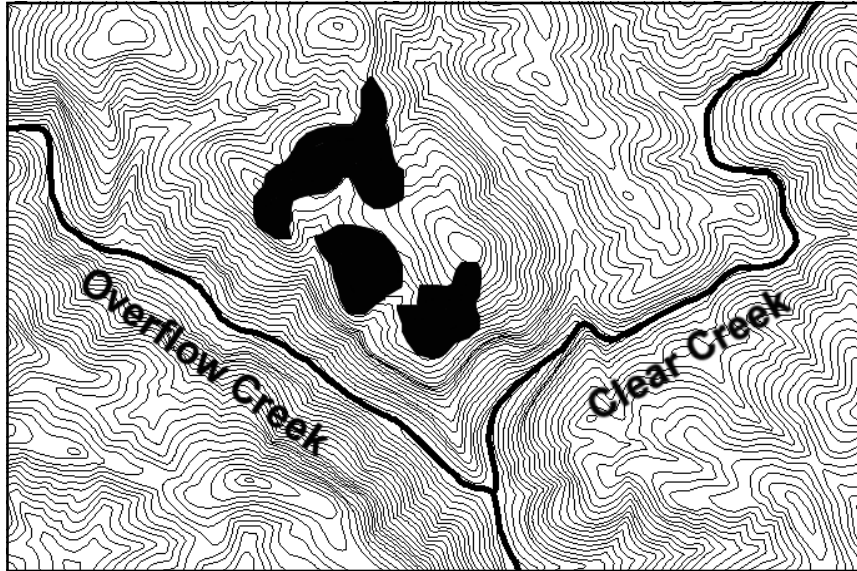
If one could choose the single most important lesson Dr. Eugene Odum left us in his legacy of conservation wisdom,

I believe it would be the importance of looking at “the big picture,” and preserving the health of our native ecosystems long before we begin to compartmentalize our public lands for the sake of single-species management, or even timber harvesting. According to the Carlson Old Growth Report, old growth forest comprises less than 4% of the Chattooga watershed area, most of which occurs in small, isolated fragments. Large blocks of old growth interior forest habitat such as those in the Ellicott Rock Wilderness Area and the

West Fork headwaters offer unique conditions which are not present in younger stands. The high degree of variability in chemistry, temperature, humidity, and other physical attributes across the terrain of these areas means a diverse habitat, and a rich collection of organisms in the forest interior. These organisms include a diverse array of herbaceous

understory plants such as orchids and ferns, salamanders, birds like the

Solitary Vireo and the Oven Bird, and large omnivorous mammals like the Black Bear.



The black shapes in this map represent proposed early successional habitat sites.

The integrity of old growth native forests is being sorely undervalued and overlooked in the Tallulah Ranger District. The only way this will change is if the rangers responsible for its management hear from the people who visit the national forest in this district. Traditionally, only a limited number of people who participate in the national forest planning process speak out for the integrity of what is already present in the forest. The process is too often used to entertain formal requests by special interest groups for designated use of the national forest. One of the greatest chances we have of seeing these areas preserved is to participate in this planning process, and advocate the integrity of our native forest ecosystems. Help us take land stewardship on public lands to a new level by calling the Tallulah Ranger District and asking them to list you as an *interested party* on projects in the district so that you will be notified of all proposed projects in the district. Let them hear that you want to see the Chattooga and its watershed protected for its unique native biological diversity. For more information on how to get involved in preserving the West Fork headwaters and other areas, call the Chattooga Conservancy.

Administration Attacks Environmental Policy

Dave Martin

After almost two years in office, George Bush Jr. has earned the title of least friendly president toward the environment in U.S. history. Beginning on Inauguration Day, he and his administration have used questionably legal tactics to roll back pro-environment legislation and federal regulations that protect the safety and health of American citizens and our forests. The administration has clearly shown that it is not interested in allowing the public to participate in forming policy with regards to how our public lands are to be managed.

Immediately after the Inauguration Day ceremonies on January 20, 2001, Chief of Staff Andrew Card issued a directive, now referred to as the *Card Memo*. This directed all federal agency heads to freeze the federal regulatory process so that the new administration could review regulations that had undergone years of public scrutiny and debate. As a result, two regulations were killed without any further public review. These included the Department of Agriculture's rule conserving roadless areas in national forests, and the Department of the Interior's rule regulating hard rock mining on public lands.

Troubled by these unprecedented attacks on the sound, non-partisan scientific research that went into the formation of these regulations, Senator Joseph Lieberman, Chairman of the Governmental Affairs Committee spearheaded an inquiry into the *Card Memo*. The committee concluded, "The story the documents tell is one of administration actions characterized by a troubling lack of respect for long established regulatory procedures – an attempt to give short shrift to public input when possible, and to discount the science or record supporting the rules under review" (*Majority Staff of the Committee on Governmental Affairs United States Senate October 24, 2002*). The Committee's official report on the investigation, released October 24, 2002, concluded the following:

Implementation of the Card Memo was of questionable legality and gave an early warning of the administration's lack of respect for the process of developing regulations, including those providing a variety of important environmental and public protections.

The administration's decision to revisit the three rules at issue appears based on a predetermined hostility to the regulations rather than a documented, close analysis of the rules or the agencies' basis for issuing them.

In the wake of a severe fire season out West, the administration came out with a "Healthy Forest Initiative"

which promises to clear out accumulations of fuel throughout the National Forest System lands, and will open up watersheds inventoried roadless areas to logging without any public input.

The National Environmental Policy Act (NEPA), which came into effect on January 1, 1970, offers a front line defense for anyone concerned about our air and water quality, and conserving natural resources on National Forest System lands. It can be best described as a "look before you leap law" which requires the USDA Forest Service to assess environmental impacts of potential projects, and consider public input before making a decision on a course of action.

Claiming that radical environmentalists often paralyze the planning process with irrational appeals, the Bush administration waived NEPA regulations for several federal agencies, and has set its sights on ruthlessly streamlining the act through the Healthy Forest Initiative under the guise of

Speak out to your Members of Congress and tell them not to support H.R. 5319, the "Healthy Forests Reform Act of 2002," or any other legislation that will limit your right to comment on national forest management.

forest fire fuels reduction. In lock-step with the Initiative is Representative McInnis' (R-CO) bill H.R. 5319, the "*Healthy Forests Reform Act of 2002*" which would require the Council on Environmental Quality to declare an "emergency" on all federal lands threatened by wildfire. It would allow for an expedited NEPA review of fuels reduction projects, and waive the requirement that an Environmental Impact Statement be prepared for any project in inventoried roadless areas. In addition, any project that would provide "relief from imminent hazards" would be exempt from public review. It would also authorize "goods for services stewardship contracts" which would encourage loggers to cut the largest and most desirable trees in any given project.

Both the National Environmental Policy Act procedures and the establishment of Federal Regulations rely upon communication between the public and government agencies in order to be well-balanced. Although the extent to which this public input influences their decisions is largely discretionary, the procedures include parameters that require government agencies to justify their decisions and state on record why they have chosen a specific course of action. If you feel as we do, that public participation is a vital part of democratic society, and that our public officials must be able to justify their actions to their constituency, please take a stand. Speak out to your Members of Congress and tell them not to support H.R. 5319, the "*Healthy Forests Reform Act of 2002*," or any other legislation that will limit your right to comment on national forest management.

Overpopulation

Eric Orr

On August 20, 1944 the U.S. Coast Guard introduced 29 reindeer to St. Matthew Island, a 128 square mile land mass located in the Bering Sea. On a predator-free range of bountiful vegetation, the herd increased its number to 1350 animals by 1957. At that time, field studies indicated the average weight of the reindeer exceeded that of a typical domesticated herd, which would normally outweigh its wild counterpart. In 1963, the population had exploded to 6000 reindeer. The animals showed a significant reduction in body mass, more closely resembling an archetypal wild herd. Researchers returned to the island in 1966 to discover that a massive die-off had left only 42 surviving reindeer. Further study revealed that the population crash was caused by starvation.

It is a natural inclination of an organism to take the path of least resistance when it comes to survival. As a highly evolved species humans have learned to bend the rules that would otherwise keep our numbers in check. Now in an era of industrialization and global markets, we face an ever-increasing population that draws from a static pool of resources. Each year about 77 million people, roughly the population of 10

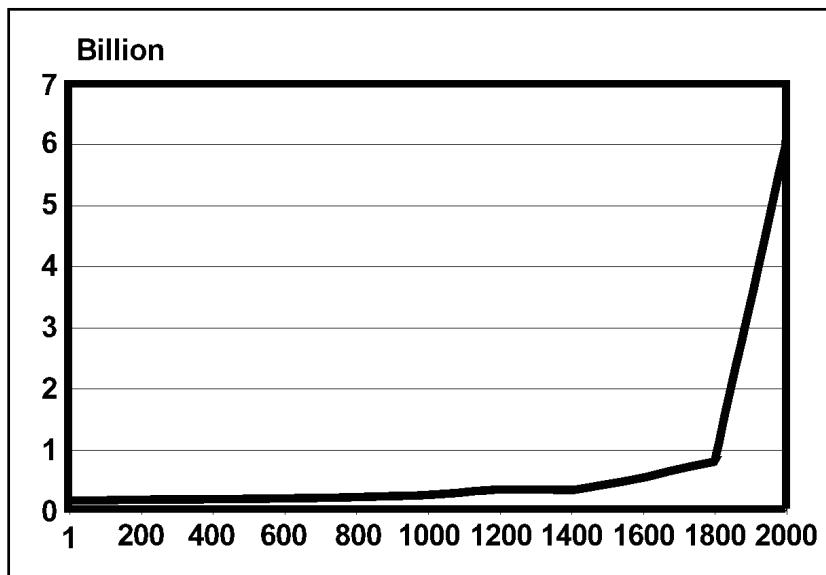
New York Cities, are added to the Earth. The good news is that the rate of increase has slowed down from 2.1 percent in the 1960's to 1.3 percent now. With a current population of 6.2 billion, this is still an alarming rate. The United Nations Population Division predicts that if existing trends continue, we will have between 7.9 and 10.9 billion humans inhabiting the Earth by the year 2050.

In the coming years water rights may well become the centerpiece of political conflict. More than half of the world's usable water is currently being tapped for human use. Today, 505 million people live in countries that are considered water-scarce, and by 2025 the number is expected to be between 2.4 and 3.4 billion. A rapidly depleting water supply directly affects the quantity of food available to us globally, while it renders agricultural communities incapable of sustaining their economies. A quarter of all imported grain currently goes to countries that are experiencing stressed water supplies in the Middle East,

Africa, and Asia. Ten countries share the water resources of the Nile River. Egypt, Sudan, and Ethiopia use the bulk of the water. Even if the Nile could be made available exclusively for Egypt's use, they would still have to import grain to sustain their current population. Forty percent of Egypt's grain is already imported, and the Egyptian population is expected to nearly double by 2050, while Sudan and Ethiopia will double and triple their populations respectively. By the time all 10 nations take their shares, there is little left as the Nile enters the Mediterranean Sea.

Ocean ecosystems are severely degraded as rivers are drained. In Central Asia the Amu Darya, which flows into the Aral Sea, is being heavily taxed of its water resources for irrigating cotton farms. As a result, the Aral Sea has dropped 40 feet since 1960, which has left the sea with 40 percent less volume and 66 percent less area. Towns that once lay along the coast are now 30 miles away. The fishery that until recently produced 60,000 tons of fish per year is now a watery wasteland. The high salt concentration of the disappearing sea has rendered the marine habitat fruitless.

As citizens of an affluent country like the U.S. it is often difficult for many of us to perceive



This graph represents the global population explosion we have experienced in the last 200 years.

the full weight of the social and ecological destruction that is occurring globally. The "American Dream" has essentially provided our nation with a detached sense of existence. Ominous statistics and foreboding accounts of far-off cataclysm are frequently received as tragic fairy tales. Closer to home is the Ogallala Aquifer in the Southern Great Plains, which provides water for irrigation and consumption in many western states. The Ogallala is slowly being depleted, as its relatively low rate of recharge cannot keep up with the demand for water. Irrigated agriculture in this region is gradually being replaced with dry land farming and many cities may soon face water shortage problems.

An even hotter topic in recent news is the vanishing wetlands at the mouth of the Mississippi River. For thousands of years little pieces of Louisiana coastal wetlands have crumbled into the gulf. Then when the Mississippi flooded every few years the wetlands were

Overpopulation

rebuilt with loads of silt from the vast expanse of earth upstream. So the Europeans came and built an extensive network of levees to prevent flooding and soil erosion to make more land inhabitable. And it worked. But now the coastal marshes are deprived of the silt needed for reconstruction. To make matters worse oil and gas companies have dredged and drilled the coastal area in an attempt to meet the growing need for fossil fuels. The mining canals have ruined banks and altered the flow of water in and out of the marshlands. Now there are 20,000 miles of pipeline that are quickly becoming exposed to the corrosive salt water as the wetlands sink at a rate of 25-35 square miles, approximately the size of Manhattan, per year. These coastal marshes provide habitat for millions of migrating birds and, aside from Alaska, generate more fish than any other state.

begins to dry up. Diminishing forests also mean there is less vegetation to dispose of methane, carbon dioxide, and other greenhouse gases.

It seems that the best solution to our population problem may be education. Teaching the virtues of birth control and restrained consumption is key. At this point change must occur not only on a grassroots level but also from the top down. Water stressed and water scarce countries must take measures to stabilize water supplies, incorporate sustainable agriculture practices, and encourage lower birthrates. Perhaps the biggest obstacle we face in this country is convincing the populous that overpopulation is indeed a serious threat. The natural world is the most powerful teaching aid we possess. When people experience nature, especially at a young age, they generally tend to feel more

connected with it, and in turn, they begin to realize the importance of symbiosis. The notion of ecology becomes clearer and clearer. Communities grow stronger as their members recognize the vital need to work toward the common good of sustainability.

An estimated ten percent of all people who have ever lived on the Earth are alive today. As more people enter the global population, crowded cities become isolated "human preserves," and our sense of being connected to the biosphere becomes



*A satellite image of the Earth's lights indicates heavily populated areas.
Note the high population density of the U.S.*

The immense human population has also drastically impacted forested areas throughout the world. In the early 20th century the Earth laid claim to 5 billion hectares of forestland. Now 2.9 billion hectares remain. Not included in this data are woodlands that do not take on new land use categories after being surrendered to clear cutting and burns. The increasing demand for cattle production, tillable land, and forest products is responsible for the huge loss. Imported forest products now exceed export levels in countries that have been heavily logged like the Philippines. Jobs and economies are destroyed by the depletion of forest resources, and water issues resurface when the effects of clear cutting are examined. A healthy rainforest retains $\frac{3}{4}$ of its water when moist air condenses into rain. The remaining $\frac{1}{4}$ makes its way to the sea by way of rivers. After being cleared for cattle production, $\frac{3}{4}$ of the water is lost to the sea. The surrounding landscape changes drastically as it

more and more disjointed. In his 1997 interview with the Chattooga Conservancy, Dr. Eugene Odum said, "When people are numerous, they chop up the landscape into strips and patches...". The modern western man is generally oblivious to his dependence upon the vast network of human corridors for most of his resources. An even more distant concept is the fact that these corridors sever the links between the ecosystems that sustain us. To most folks in our society, food is simply an abundant commodity easily obtained from the local supermarket, and "nature" is something we like to visit occasionally when we find the time to escape "reality." A community with a fleeting local land ethic is an imperiled population. It is time to rethink priorities and temper our desires with the wisdom gleaned from a decimated herd of reindeer.

Watershed Update

MATCHING FUNDS NEEDED FOR HEMLOCK WOOLLY ADELGID CONTROL PROJECT

We're pleased to announce that the National Forest Foundation has awarded a \$100,000 "matching funds" grant to the Hemlock Woolly Adelgid Biological Control Project, a cooperative project between the Chattooga Conservancy, Clemson University and the US Forest Service. While this is great news, ***we must match this grant, dollar for dollar, by raising an additional \$100,000.***

Thanks to individual donors' generous contributions we can report progress on raising the matching dollars, yet we still need about \$70,000. These funds will be used to start a breeding laboratory at Clemson University for the beneficial insect, *Pseudoscytmus tsugae*, which feeds exclusively on Adelgid species. A multi-year breeding program that can release large numbers of the *Pseudoscytmus tsugae* (*P. t.*) beetle at selected sites in the Chattooga watershed is our best hope for saving some of our Carolina and Eastern Hemlock trees. Please consider making a donation earmarked for the Hemlock Woolly Adelgid Biological Control Project, c/o the Chattooga Conservancy. ***All contributions are tax-deductible, and will be used exclusively to start the P. t. breeding lab.***

BARTRAM TRAIL DEBACLE

Many citizens use a backwoods path on Chattahoochee National Forest lands to access the renowned Bartram Trail at Courthouse Gap in Rabun County, GA. Recently hikers were astonished to find this path being bulldozed into a full-scale road leading to a tract of private property slated for "development." Normally, such activities would undergo full public disclosure during a process called "scoping," where the Forest Service contacts individuals and groups known to be interested or potentially affected by the proposed action on national forest lands. But Tallulah District Ranger David Jensen chose not to reveal this road-building plan to anyone, which has fomented the current controversy.

By law the Forest Service must provide access through a "special use"



This sign marks the beginning of a Forest Service trail that is now being "improved" by a private developer.

permit to tracts of private land encircled by the national forest—but only if no other reasonable access exists. However, in this case there is already a road into the private land, which makes the granting of additional access across public land

unwarranted. The fact that the "road deal" was hatched up in secret has further aggravated this situation. The Chattooga Conservancy joins many concerned citizens in asking the Forest Service to suspend authorization for this new roadbed on Pinnacle Mountain, and to provide a full and public assessment that will re-visit the true need for a road plowing through a favorite hiking trail.

ATVs IN THE NATIONAL FOREST

Since the late 1980s, all-terrain vehicles (ATVs) have been allowed on 133 miles of designated trails and Forest Service roads in the Chattahoochee-Oconee National Forest. Last fall the Forest Service prohibited the use of ATVs on Forest Service roads. Now, bending to special interest pressure, they are allowing ATVs on the 400 miles of public roads within the Chattahoochee-Oconee National Forest. The Chattooga Conservancy, along with other conservation groups, opposes this move for several reasons.



The Forest Service has trouble upholding their present policies governing ATV use on national forest lands.

ATV use on illegal trails in the forest is an ongoing and expensive problem. Georgia Forest Watch spearheaded a survey last fall to assess damage caused by ATVs in the Chattahoochee-Oconee National Forest and found 550 miles of illegal trails. The Forest Service estimated that it would cost over \$1 million to rehabilitate the damaged areas' eroded stream beds, silted creeks, and general degradation. If keeping ATVs on legal trails is already a problem, allowing road access throughout the forest will surely serve to exacerbate it.

Another issue is whether ATVs are even road legal. Forest Service regulations state that ATVs must follow all state vehicle laws. In March 2000, the state told Georgia counties to stop selling registration tags to owners for their ATVs, because they are not permitted to be operated on public roads or streets. Ultimately the Georgia Legislature will probably have to clear up the controversy over the legality of road use for ATVs. While it remains unclear if ATVs are street legal or not, it will surely increase the problem of illegal ATV trails in the national forest for the Forest Service to expand their allowable use to public Forest Service roads.

Member's Page

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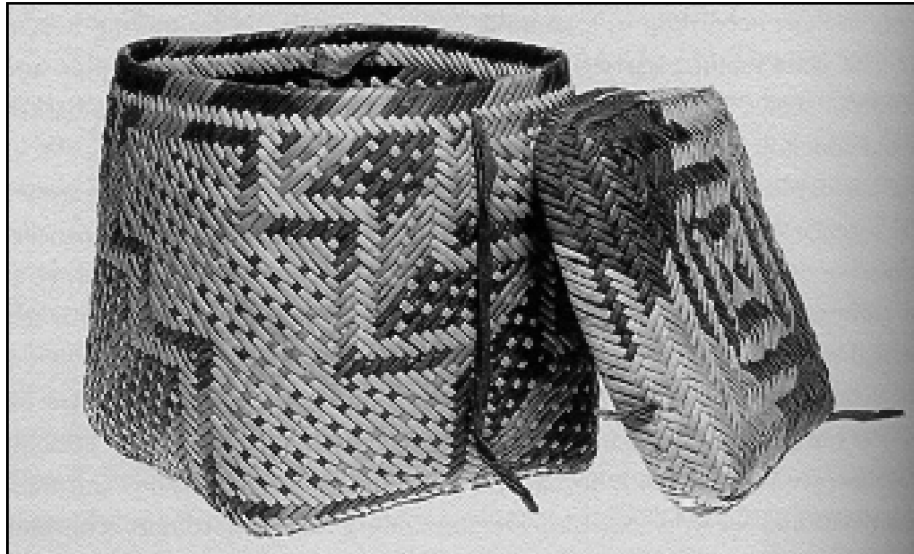
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2nd Annual Chattooga Conservancy

ART SHOW

**A Celebration of Nature and
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Join us for a display of traditional art

**Saturday, December 7th
3:00 p.m. - 7:00 p.m.**

Live Music & Refreshments!

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Fall 2002

Join the CC and help protect the Chattooga River watershed

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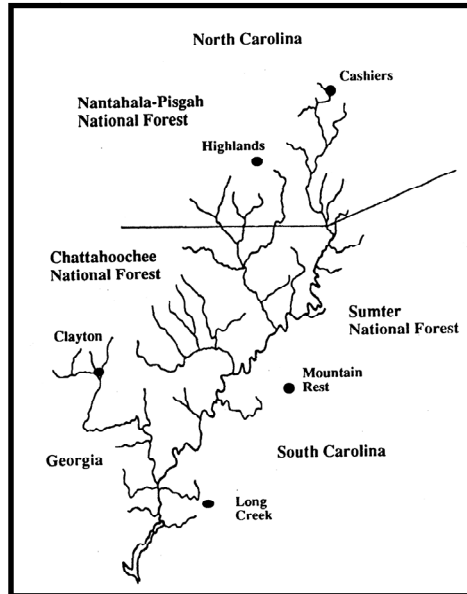
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(706) 782-6097 tel. (706)782-6098 fax crwc@rabun.net Email www.chattoogariver.org

Purpose: To protect, promote and restore the natural ecological integrity of the Chattooga River watershed ecosystem; to ensure the viability of native species in harmony with the need for a healthy human environment; and, to educate and empower communities to practice good stewardship on public and private lands.

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Goals:

- Monitor the U.S. Forest Service's management of public forest lands in the watershed
- Educate the public
- Promote public choice based on credible scientific information
- Promote public land acquisition by the Forest Service within the watershed
- Protect remaining old growth and roadless areas
- Work cooperatively with the Forest Service to develop a sound ecosystem initiative for the watershed

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