North Carolina Chapter Spring/Summer Internships 2012

To apply: *Please contact Maggie Porell* (mporell@tnc.org) *for an internship application. All completed applications for summer internships are due back to Maggie via email no later than* ***5:00 pm on Thursday, March 1st****, with the exception of Duke students who are applying for a Stanback Program internship. The Stanback process is run by Glenda Lee* (gslee@duke.edu) *at Duke, and has earlier deadlines and a separate application and interview process.*

Note: Most of these internship opportunities are for summer 2012, but there are also two paid, part-time internship opportunities in the mountains for the spring semester (Jan-May 2012). To apply for these spring semester internships, please contact Megan Sutton (msutton@tnc.org) *if at all possible by* ***5:00 pm on Friday, January 13th****. These positions will remain open until filled.*

TNC 2012 INTERNSHIPS - full descriptions are provided on subsequent pages:

1. Analysis of potential prescribed burn opportunities using predicted and observed climate data for NC
2. Freshwater resilience and environmental flows internships (2 positions)
3. Southern Blue Ridge national forest management plan revision internship
4. Management plan creation for TNC Grandfather Mountain Preserves & State Park natural resource management
5. Management plan creation for TNC Big Yellow Mountain Preserve & State Park natural resource management
6. GIS boundary survey project for TNC mountain conserved properties
7. Natural resource management at its best: Help facilitating volunteer work and learn parties
8. Identifying priorities for reptile and amphibian conservation at TNC's Shaken Creek Savanna Preserve – using field surveys to inform management
9. Implementation of a long-term monitoring strategy for the Albemarle-Pamlico region: water quality, shoreline erosion, and other ecosystem indicators
10. Constructing a searchable database to organize research literature and monitoring data

OPPORTUNITIES IN THE TRIANGLE AREA

1) Internship Name: Analysis of potential prescribed burn opportunities using predicted and observed climate data for NC

Description: Fire has been recognized as a frequent disturbance that has shaped most of North Carolina's ecosystems since the last ice age. Prescribed fire is often the most efficient and effective tool to manage natural habitats while also benefitting adjacent human communities by altering forest structure and hence reducing the threat to communities from severe wildfires.

TNC has been conducting prescribed burns on its lands in North Carolina since the late 1980's. A growing land base and increasingly limited burn windows (such as more frequent extreme weather events, more neighbors, increasingly stricter air quality regulations) have created a backlog of burning needs on TNC and as well as other conservation lands. For the past two decades, TNC has burned mostly during the January-April dormant period. To increase growing season burns to achieve desired ecological effects as well as to address additional fire needs, TNC would like to identify additional burn windows (such as the mornings of hot summer days, in the evenings or at night on dry days, and suitable fall days). Understanding how these windows are affected by climate oscillations including El Niño and La Niña will hopefully inform the most effective periods to hire seasonal crews. This information will be made available to other private burners and state and federal partners.

The successful applicant will meet with fire staff to be oriented to the project and fire program, burn and weather parameters, and then be directed to data sources to: 1) collect data from fire weather forecasts issued by the National Weather Service (NOAA), Remote Access Weather Stations (RAWS), Weather Information Management System (WIMS), and the state climate office and/or NOAA, 2) analyze the data to identify additional burn windows, and 3) identify how those windows might be expected to change under El Niño and La Niña and with anticipated changes in climate patterns. The intern will meet regularly with TNC's fire manager, Margit Bucher, to discuss progress and identify next steps.

Responsibilities: 1) Collect data from various sources (NOAA, RAWS, WIMS) and prepare it for analysis. 2) Work with TNC NC fire manager and burn bosses to identify criteria for burn windows based on weather, fuel conditions and smoke dispersal. 3) Analyze the data, prepare a report and presentation.

Qualifications: 1) Course work in forestry, ecology and or climate science. 2) Basic familiarity with data analysis programs and statistics. 3) Excellent written and oral communication skills. 4) Ingenuity and ability to work independently.

Additional information:
Compensation: This is a paid internship, to be funded either through Duke University's Stanback Internship Program (limited to Duke students only), or through a TNC Wolf Fellowship, for qualified non-Duke students. All interested students are encouraged to apply, regardless of institution.
Duration: 3 months, summer 2012
Level of education: Graduate students preferred
Housing provided: No
Host office location: Durham

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2) Internship Name: Freshwater resilience and environmental flows internships (2 positions)

Description: In North Carolina, TNC is in the process of conducting several assessments of freshwater systems to aid us in prioritizing our freshwater conservation work, and to inform what strategies we employ in different places. We have two areas of focus for this research in 2012: 1) quantifying environmental flows for NC's rivers and streams (i.e. identifying the flow conditions needed to sustain fully functional natural systems), and 2) assessing the resilience of freshwater systems to changes in climate and land cover. For the latter, we aim to identify the most resilient stream networks in NC that will collectively and individually sustain native freshwater biodiversity even as the changing climate and land use alters current distribution patterns. These projects will guide TNC's freshwater efforts in NC, and will be shared broadly with chapters in the surrounding states and with our many partners who are working towards freshwater conservation.

Responsibilities: One of the two freshwater interns will work primarily with Dr. Kimberly Meitzen in TNC's Durham office to: 1) conduct a literature review of ecological responses to altered flow in the southeast, 2) analyze biological data collected under a range of flow conditions, 3) assist in modeling different flow scenarios for NC's watersheds, and 4) carry out a variety of other tasks related to freshwater flows. The other freshwater intern will work primarily with TNC GIS Coordinator Margaret Fields to gather and analyze spatial data related to other (non-flow related) aspects of freshwater resilience including: 1) current patterns of land cover and projected changes in land cover within each watershed, 2) patterns of freshwater connectivity across the state (based on stream networks bounded by dams, culverts, and other barriers), and 3) other spatial datasets related to the freshwater resilience project. This intern may also work as time permits with Dr. Meitzen on the flows project.

Qualifications: Both freshwater internships are suitable for graduate students or upper level undergraduate students with ecology and/or hydrology backgrounds. A basic familiarity with using GIS to manipulate and analyze data (and generate maps) is important, though expert knowledge is not critical. We are happy to work with interested students to further develop this work into part of their masters or honors theses.

Additional information:
Compensation: These are both paid, full-time internships
Duration: 3 months, summer 2012
Level of education: Graduate students or upper level undergraduates preferred
Housing provided: No
Host office location: Durham

OPPORTUNITIES IN THE MOUNTAINS

3) Internship Name: Southern Blue Ridge national forest management plan revision internship

Description: The Nature Conservancy's North America Conservation Plan includes a priority initiative of Restoring America's Forests. One of the strategies within that priority is influencing Land and Resource Management Plan revisions for national forests. This internship will contribute directly toward implementing that strategy in North Carolina. The Nantahala/Pisgah National Forests management plan revision is scheduled to begin in 2013. This intern will help TNC's NC Mountains Program use and adapt a methodology employed in Virginia's George Washington/Thomas Jefferson NF plan revision by TNC's Central Appalachians Program. Working with the NC Mountains Program Director, the intern will use ecological data from TNC's recent Southern Blue Ridge Ecoregion Matrix Forest Block analysis and other sources, as well as management designation data for the national forests and surrounding lands, to create maps and reports that outline alternative suggested outcomes for the Nantahala/Pisgah plan revision as it relates to matrix forest block conservation.

Responsibilities: 1) Review and distill key elements of relevant scientific and land management literature, including TNC's Southern Blue Ridge Ecoregion Matrix Forest Block Analysis Report, existing Nantahala/Pisgah National Forests Land and Resource Management Plan (LRMP), and revised GW/TJ National Forests and Uwharrie NF LRMPs. 2) Work with NC Mountains Program Director to identify specific series of map and report products of internship. 3) Work with staff and partners to compile relevant GIS data for conducting analyses and producing alternative suggested plan revision outcomes. 4) Confer with relevant TNC staff in other operating units and with key local partners in adapting Central Appalachians program methodology and shaping alternative suggested plan revision outcomes. 5) Meet frequently (2+ times/wk) with NC Mountains Program Director to guide, assess, and refine initial analysis results. 6) Create series of final maps and GIS reports depicting alternative suggested plan revision outcomes. 7) Write brief narrative reports describing additional considerations and trade-offs relevant to alternative suggested plan revision outcomes. 8) Compile results of mapping and reports into final report document.

Qualifications: 1) Proficiency in the use of ESRI Geographic Information System analysis tools and report features. 2) Ability to produce GIS maps that clearly and attractively convey the map's theme. 3) Excellent verbal and written communication skills. 4) Ability to process and distill key information in complex documents, including scientific reports and national forest Land and Resource Management Plans. 5) Knowledge of general principles of landscape and forest ecology. 6) Familiarity with forestry practices a plus.

Additional information:
Compensation: This is a paid internship, to be funded either through Duke University's Stanback Internship Program (limited to Duke students only), or through a TNC Wolf Fellowship, for qualified non-Duke students. All interested students are encouraged to apply, regardless of institution.
Duration: 3 months, summer 2012
Level of education: Graduate students preferred
Housing provided: No
Host office location: Asheville

4) Internship Name: Management plan creation for TNC Grandfather Mountain Preserves & State Park natural resource management (Shared Intern with TNC and Grandfather Mtn State Park)

Description and Responsibilities: The intern will create a comprehensive management plan for TNC's two Grandfather Mountain preserves (approximately 1,000 acres collectively) that integrates with management of the adjacent North Carolina State Park. This setting is unique because Grandfather Mountain is not only a North Carolina Registered Natural Heritage Area, but also because its ecological and cultural significance is recognized by the United Nations as an International Biosphere Reserve. For TNC, the intern will compile all historical documents regarding management on the preserves, including the adjacent land management strategies of the neighboring state park, assess the current condition of the conservation targets, and create draft recommendations for future management. For State Parks, the intern will assist in natural resource management one day per week, with specific tasks to be determined. The intern's work site will be primarily Grandfather Mountain-either in the field or based at State Parks local office--with some work done in TNC's Asheville and/or Boone offices.

Qualifications: Natural Resource Management/Conservation Biology educational and/or professional background; GIS mapping ability; familiarity with GPS units and their use in the field; and excellent organization skills. Exemplary written and verbal communication a must. Intern must have own vehicle (no travel compensation), and be willing to work in variable weather conditions, at remote locations, on difficult and hazardous terrain, and under physically demanding circumstances. Intern must have own laptop available for use, preferably with ArcGIS license (although not required).

Additional information:
Compensation: This is an unpaid, full time internship. We can work with interested students and their departments to obtain course credit for this work, and to acquire outside funding.
Duration: 3 months, summer 2012
Level of education: Graduate students preferred
Housing provided: No, but good potential for low cost housing
Host office location: Asheville

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5) Internship Name: Management plan creation for TNC Big Yellow Mountain Preserve & State Park natural resource management (Shared Intern with TNC and Yellow Mtn State Natural Area)

Description and Responsibilities: The intern will create a new comprehensive management plan for a 425-acre TNC preserve that the Conservancy has owned since the 1970's and manages jointly with the Southern Appalachian Highlands Conservancy. This setting is unique because this preserve contains upwards of 80 acres of grassy bald natural community – a rare and unusual community type that is of global ecological significance—and which has been continuously managed since European settlement by livestock grazing. The intern will compile all historical documents regarding management on the preserve, assess stakeholder interests and the current condition of conservation targets, and create draft recommendations for future management. For State Parks, the intern will assist in natural resource management one day per week, with specific tasks to be determined. State Parks work site will be primarily the new Yellow Mountain State Natural Area and/or Grandfather Mountain State Park-either in the field or based at State Parks local office, with some work done in TNC's Asheville and/or Boone offices.

Qualifications: Natural Resource Management/Conservation Biology educational and/or professional background; GIS mapping ability; familiarity with GPS units and their use in the field; and excellent organization skills. Exemplary written and verbal communication a must. Intern must have own vehicle (no travel compensation), and be willing to work in variable weather conditions, at remote locations, on difficult and hazardous terrain, and under physically demanding circumstances. Intern must have own laptop available for use, preferably with ArcGIS license (although not required)

Additional information:
Compensation: This is an unpaid, full time internship. We can work with interested students and their departments to obtain course credit for this work, and to acquire outside funding.
Duration: 3 months, summer 2012
Level of education: Graduate students preferred
Housing provided: No, but good potential for low cost housing
Host office location: Asheville

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6) Internship Name: GIS boundary survey project for TNC mountain conserved properties

Description and Responsibilities: The intern will work to create geodatabase(s) of TNC protected properties in western NC with accurate property boundaries. This will entail contacting surveyors for electronic .dwg files, converting them into .shp files if projected and/or georeferencing unprojected files. If a survey is unobtainable, the intern will use written deed descriptions to map out property boundaries using the latest GIS technology. The intern will create metadata for all files added to geodatabase(s). This project will involve using ArcGIS Editor functions, creating geodatabase(s), georeferencing, creating metadata, and using advanced skills in GIS. The intern will work off site.

Qualifications: GIS mapping ability-geodatabase creation, georeferencing capabilities, trouble shooting projection issues, creating metadata, advanced GIS skills; excellent organization skills, exemplary verbal communication

Additional information:
Compensation: This is a paid, part time internship (10-15 hrs/wk). We can also work with interested students and their departments to obtain course credit for this work.
Duration: SPRING SEMESTER 2012
Level of education: Undergraduate or graduate students
Housing provided: No
Host office location: Asheville

7) Internship Name: Natural resource management at its best: Help facilitating volunteer work and learn parties

Description and Responsibilities: TNC's Mountain office will be holding Work and Learn Parties at our Bat Cave Preserve this spring. These events will feature a three hour work component (removing invasive species and/or trail maintenance) with an opportunity to learn about a variety of natural resources from various experts. Each event will feature a different learning opportunity. The intern will assist TNC staff with facilitating these events. This will include, but is not limited to preparing the site prior to the arrival of volunteers, leading a small group during the event (demonstrating use of hand tools, invasive removal procedures, discussing the ecological importance of the site, documenting their experience) and help organizing after the event and preparing for the next one. Events will happen every other week from February through the end of April, sometimes during the work week and sometimes on Saturday and attendance at all events is required. During the off weeks, the intern will be expected to help out (either remotely or in our office) in preparation for the next event for approximately four hours/week. The internship will begin in mid-January so that there is plenty of time to participate in event and site planning and to learn about the preserve. At the end of the internship the intern will be expected to prepare a written report detailing the lessons learned and make recommendations for future events.

Qualifications: Experience working as or with volunteers is ideal; familiarity with GPS units and their use in the field; excellent organization and leadership skills; exemplary verbal and written communication; natural resource background needed. Intern must have own vehicle (no travel compensation).

Additional information:
Compensation: This is a paid, part time internship (10-15 hrs/wk). We can also work with interested students and their departments to obtain course credit for this work.
Duration: SPRING SEMESTER 2012; ideally mid-January through early May, approximately 1 day/week - 1 long day followed the next week by a half day, sometimes on Saturdays
Level of education: Undergraduate or graduate students
Housing provided: No
Host office location: Asheville

OPPORTUNITIES ON OR NEAR THE COAST

8) Internship Name: Identifying priorities for reptile and amphibian conservation at TNC's Shaken Creek Savanna Preserve – using field surveys to inform management

Description: Shaken Creek Savanna Preserve is a 6,054 acre site in Pender County, NC adjoining a number of other significant conservation lands. The preserve is comprised of a mosaic of diverse natural communities dominated by savannas, longleaf pine flatwoods and pond pine woodlands. Except for a history of fire suppression, which is currently being addressed, the site is in remarkably good condition and is habitat for a number of rare species. No systematic inventory has ever been conducted for reptiles and amphibians ("herps") at the site, although it should be a site rich with many species given both its diverse habitats and proximity to other herp-rich areas. Records for the very rare Carolina gopher frog exist but it has not been observed since TNC's conservation work at this site commenced in 2005. The site is near the northernmost range of the Eastern diamondback rattlesnake. This project will entail a survey of reptiles and amphibians and recommendations for management such that the Conservancy can best protect all species. Under the time constraints of this internship it is not expected that a survey can be thorough, however, with assistance from other herpetologists the intern should be able to effectively assess the potential for a variety of species.

Responsibilities: The responsibilities of this internship are to 1) evaluate the preserve for herp habitats with an emphasis on rare species and survey for the presence of common and rare species, and 2) provide site-specific management recommendations to optimize herp habitat. A large number of clustered, artificial excavations throughout the preserve serve as potential amphibian breeding sites. These sites should be inventoried and recommendations made on how to manipulate and manage them to further enhance this habitat. Assistance to this internship will be available from TNC personnel and herpetologists and field biologists with the Natural Heritage Program and Wildlife Resources Commission. Accommodation in an old hunting lodge will be available at the preserve, though the intern is welcome to commute to the site from the Triangle or other locations. The nature of this internship necessarily requires a long term approach, and thus the Conservancy encourages applicants who are interested in developing this further as their Masters Project. A basic understanding of the herps present on the preserve and their habitat requirements involves investigations at different times of the year and the work would therefore benefit from study that is not limited to the summer season. The intern will be introduced to the site and the topics by experts who will be ongoing resources, however much of the field work will be performed independently.

Qualifications: While a specific knowledge of reptiles and amphibians is helpful, it is not essential to this internship. More important is a basic understanding of ecological concepts and a strong curiosity and interest in learning about herps in their natural habitats. The intern should enjoy being and learning in the outdoors and be able to handle the hardships that this naturally entails (heat, cold, bugs, etc.). Much self-initiative and the ability to work independently are critical as the intern will often be working on his/her own at the preserve site. In addition the intern should be knowledgeable in GIS and be able to write and communicate well.

Additional information:
Compensation: This is a paid internship, to be funded either through Duke University's Stanback Internship Program (limited to Duke students only), or through a TNC Wolf Fellowship, for qualified non-Duke students. All interested students are encouraged to apply, regardless of institution.
Duration: 3 months, summer 2012
Level of education: Graduate students or upper level undergraduates preferred

Housing provided: No
Host office location: Durham

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9) Internship Name: Implementation of a long-term monitoring strategy for the Albemarle-Pamlico region: water quality, shoreline erosion, and other ecosystem indicators

Description and Responsibilities: The Outer Banks Office of The Nature Conservancy is seeking an intern to continue long-term monitoring of individual components of a Climate Adaptation Project initiated by The Nature Conservancy and U.S. Fish and Wildlife Service on conservation lands in the Albemarle-Pamlico region. The objective of the Climate Adaptation Project is to ensure that as the ecosystems of the Albemarle-Pamlico region are inevitably altered by climate change and sea level rise, they are transformed into ones that remain complex and provide a suite of ecosystem services. Strategies include construction of shoreline oyster reefs to attenuate wave action, hydrologic manipulation to eliminate saltwater intrusion through drainage ditches, and salt-tolerant vegetation plantings to manage the rate of habitat transition. To assess the overall success of our adaptation strategies, a comprehensive, long-term monitoring program has been put in place. The intern will work with TNC and U.S. Fish and Wildlife Service staff, along with other partners, to implement the current monitoring program, fill any gaps, and continue collection of long-term data sets. Activities may include water quality, shoreline erosion, estuarine biota, oyster reef and/or vegetation monitoring among others.

Qualifications: 1) Background in natural resources, ecology, conservation biology, marine biology; or similar field; 2) ability to work independently in variable weather conditions, at remote locations, on difficult and hazardous terrain, and under physically demanding circumstances; 3) a self-starter able to work with minimal guidance; 4) experience with field monitoring techniques.

Additional information:
Compensation: This is a full-time, paid internship through TNC's Wolf Fellowship program. Students from any college or university are eligible to apply.
Duration: 3 months, summer 2012
Level of education: Undergraduate or graduate students
Housing provided: Yes
Host office location: Nags Head Woods (Outer Banks)

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10) Internship Name: Constructing a searchable database to organize research literature and monitoring data

Description and Responsibilities: The Outer Banks Office of The Nature Conservancy is seeking an intern to help organize electronic and print research articles, books, and reports into an interactive searchable database (e.g. EndNote), as well as to construct a Microsoft Access database to organize local monitoring data. The intern will gather research files from Outer Banks Office staff and enter pertinent data into a searchable database, noting where each file is stored (filing cabinet or local server). The intern will also create a Microsoft Access database from existing Excel files to create a more organized way of storing monitoring data.

Qualifications: 1) Experience with Microsoft Office, especially Excel and Access; 2) excellent organizational skills; 3) experience in natural resources, ecology, conservation biology, marine biology; or similar field; 4) ingenuity and ability to work independently.

Additional information:
Compensation: This is an unpaid, full-time or part-time internship. We can work with interested students and their departments to obtain course credit for this work.
Duration: 3 months, summer 2012
Level of education: Undergraduate or graduate students
Housing provided: Yes
Host office location: Nags Head Woods (Outer Banks)
