Steve Simon – followed Shafely and Weakley in his community types.
PNV – potential natural vegetation.
Uwharries were likely an island arc when continents collided – mix of felsic and mafic areas.
Felsic – FE (ferrous), AL (aluminum) – lighter minerals like silica, aluminum, and potassium. Low bases (not as rich).
Mafic = MA (magnesium), FI (iron). – dark, heavy, magnesium, calcium, sodium – provide best approximation of richer, limestone-like rocks in terms of calcium. Have major impact on vegetation types that grow there due to richness. Mafic rocks also contain silica. Weather more generally into clay soils, and into terrain that is flatter than felsic rocks. In a dissected, knobby landscape as with felsic areas, natural fire compartments, which has a relevance to disturbance. Mafic landscapes – more frequent fires, and therefore more of a woodland community.

Xeric oak
Rock chestnut oak (Quercus Montana) – dominant tree species in mountains, but also found a lot in the Uwharries. Rockier substrates tend to favor vines though, since they can take root. On rocky ridge crests on felsic or mafic soils; differ from xeric hardpan forest because of topography – topography can't weather enough to form such shrink-swell clays.

Glades
Sloping outcrops of mafic rock – most extreme xeric and mafic community in the Uwharrie; rare here. Protected somewhat from fires, so rare species can exist here.

Shortleaf Pine-Oak Woodland – soil and fire maintained communities. Shortleaf, longleaf pines thrive on fire, but Virginia pine (not fire-tolerant) also here due to lack of frequent fires. Blackjack and post oak would have been below the woodland canopy of short and longleaf pines, since bark is adapted somewhat. Thin soils.

Xeric hardpan forest – thin rocky soils derived from mafic rock, lots of shrink-swell clays that physically destroy roots. Either very wet or dry - not good for plants. Occur in upland situations in depressions on ridges – flat or gently sloped areas. Rare on the UWH. Some shortleaf pines 300 yrs old.

Xeric, dry, dry-mesic, mesic, wet – most soils toward the xeric end (well-drained soils).

Longleaf pine woodland – open, low ridges and slopes on well-drained soil. 15% of UWH. In most of its range though, strictly a Coastal Plain tree. In past, frequent enough fire to keep understory under control, but too much fire leads to canopy predominantly longleaf and some shortleaf. Now, have some components of the Coastal Plain herb layer, but also have some of their own things.

Dry and Dry-Mesic Oak-Hickory
Dominant matrix community of the UWH – occurs in acidic, felsic and mafic soils. White oak, red oak, some chestnut and post oak.

Mesic Hardwood Slope Forest – in presettlement landscape, would have been dominated by beech and tulip tree. Restricted to a few yards of streams.

Wetlands – seepage wetlands have cane/native bamboo.
Upland depression swamps – occur high up on ridges, in a flat interfluve well away from any streams. No outflow. Water ponds 2-3 feet deep for 4 months of the year. Through most of the summer, dry or moist. Occur primarily in mafic areas where there's lots of clay pan. Dominated by sedges and grasses. Canopy species tend to be oaks associated with Coastal Plain riverine swamps – swamp chestnut oak, willow oak. Would have to go 40-50 miles into Coastal Plain to get other populations of these oaks. Important amphibian breeding areas.

No current active colonies of RCW on the Uwharrie. Habitat needs – need longleaf pine of a certain age range. Colonies need minimum of 30-40 acres of high-quality habitat, but more often 100 acres of standard habitat. Colony – one breeding pair and helpers (younger females; males disperse). Also won't

nest in an area if there's too much brush below. (Perhaps from increased incidence of crown fires, or extinct predators?)

Upland, dry, and dry-mesic communities probably had fire every 1-25 years to maintain landscape with less shrubbery. Sites with larger natural fire compartments (mafic areas) likely had more frequent fires, which promoted grass species, forbs, and other fire and sun-loving species beneath a more open canopy.

Disturbance history – UWH an area of very active Indian use. Tool quarries and factories built here. In some places, 5 feet deep of flakes for making points. Hardaway site in Morrow Mountain SP, and Town Creek Indian Mound south of UWH. Good evidence that wherever there were Indians, there was augmentation of fire – used it to manage game (deer) and blueberries.

UWH a small national forest, so often used as a trainer forest for people moving up to more prestigious forests like the Pisgah and Nantahala. Croatan has a good amount of biodiversity and activists promoting ecological management (same as the other two), but not the UWH, which ahs had a history of mismanagement. Historically, it's been a hunting-oriented forest. More recently, horse riders and OHV people have become major constituents, and the biodiversity faction has become very small in comparison. UWH also a very fragmented forest, without huge blocks of land. Landscape around it is very hunting and timber-oriented. Massive clearcuts once off forest land. Current trend is to plant loblolly in rows (before, was left to secondary succession), but neither is really good management.

Current plan is for 4% of the land to be wildlife food plots – theoretically said to create openings in a heavily forested landscape to attract different species (landscape diversity), but these are actually just baiting areas to increase hunting success.

****are there any plans in place to get people with private land in the Uwharrie to agree to conservation easements?

Uwharrie PETS – proposed endangered, threatened, and special concern species. Of all the plant species, half of the species are in fire woodlands. One glade species, many scour species (specialized areas occurring along rivers that are fire-maintained prairies – frequent flooding events that break down woody vegetation to keep prairies open), one slate-bottom stream species. GRANK – global rank. G5 – globally secure (found widely elsewhere, just not here). SRANK – state rank. USFWS – federal listing status (fish and wildlife service – focus on species that are rare rangewide). NCPCP – state listing status – rare within the state, but could be plentiful elsewhere. Now, they focus on G3 and higher (GRANK – National Heritage Commission – G3, G2, and G1), and everything that's federally listed.

Schweinitz's sunflower (Helianthus schweinitzii) – Piedmont prairie endemic; occurs along roadbanks and power line rights-of-way. Enough populations have been found to increase GRANK and SRANK to a less imperiled status, but they are along unstable areas, so maybe it shouldn't be G3. However, since it's federally listed, required by law to protect areas containing these.

Amorpha schwerinii – Piedmont endemic from here to Alabama, but most populations found in UWH. If we want to conserve this species, we should do it in the UWH – it's the best place.

NatureServe website – can see the S and G ranks of everything.

Plantago cordata – found elsewhere than in NC, but the 2 populations in Davidson county are genetically unique, which is why it has an E status in the state as well as a G4 status. Genetic diversity also important for conservation of this species.

Take-home messages
The UWH is highly fragmented, but does represent one of the larger chunks of Piedmont landscape available from Delaware to Alabama. Has substantial land acreage in public ownership – with some amount of leverage from public and biodiversity interests, could be useful for conservation. Planning

process for the USFS hard when the public is pushing in different directions. Major pushes are recreation.

Gary Kaufmann – looked at how invasive species incidence might be correlated with land use (OHVs, forestry, private lands). Microstegium widespread. Lonicera – on western side of Badin area and is slowly spreading there – was introduced there, and can be feasibly controlled.

One kind of fire management would help all the fire-obligate species – 10-15 yr fire regime of natural kind (lightning flashes and as augmented by Indians).

Email: weakley@unc.edu – OK to contact with questions. Over in Coker on 4th floor, in the back. Can use some of the invasive species data, and ask about any data he might have on species distributions (GIS layers or just counts and coordinates).